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96th Congress
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THE BUSINESS CYCLE AND PUBLIC POLICY, 1929–80

A COMPENDIUM OF PAPERS

SUBMITTED TO THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

NOVEMBER 28, 1980

Printed for the use of the Joint Economic Committee

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LETTERS OF TRANSMITTAL

NOVEMBER 21, 1980.

To the Members of the Joint Economic Committee:

Transmitted herewith for the use of the Joint Economic Committee and other Members of Congress is a volume of papers on "The Business Cycle and Public Policy, 1929–80." This volume was prepared at my request by the Congressional Research Service of the Library of Congress and includes contributions by distinguished academic scholars as well as by CRS analysts and specialists.

On October 29, 1979, the Joint Economic Committee conducted a special hearing in observance of the 50th anniversary of Black Tuesday, the stock market crash which dates the beginning of the Great Depression. At that hearing, the committee explored the question "Can It Happen Again" with three distinguished economists, John Kenneth Galbraith, Alan Greenspan, and Walter Heller.

This volume of papers complements the hearing record by exploring specific issues concerning the nature of the business cycle today, as well as what we currently know about the business cycle. The papers focus on the institutional and structural changes that have occurred in the American economy during the past 50 years and on the problems these changes have created for public policy.

The 15 papers in this volume will, I believe, be of particular interest to Members of Congress who are concerned about the longrun prospects for our economy and about the policies we can take to conquer the inflation and unemployment problems that have plagued our economy for more than a decade. In general, the authors of these papers have eschewed the technical jargon that has made modern economics so inaccessible and instead have focused on the important policy issues that are of most concern to Members of Congress.

The papers in the volume express highly individualistic viewpoints by scholars who are specialists on the nature of the business cycle in the United States today. I believe, however, that by including authors with a wide variety of viewpoints, the Joint Economic Committee has created a balanced volume of papers that consider a number of the most important issues facing economic policymakers today.

The views expressed in these papers are those of the authors and do not necessarily represent my views or the views of any other member of the Joint Economic Committee.

Sincerely,

LLOYD BENTSEN,
Chairman, Joint Economic Committee.

NOVEMBER 19, 1980.

Hon. LLOYD BENTSEN,
Chairman, Joint Economic Committee, Congress of the United States, Washington, D.C.

DEAR MR. CHAIRMAN: I am pleased to submit a volume of papers entitled "The Business Cycle and Public Policy, 1929–80." This volume was prepared at your request by the Congressional Research Service of the Library of Congress.

The 15 papers in this volume were written by scholars and specialists who were invited to contribute on the basis of their experience and expertise. The views of the nongovernmental contributors are those of the individual authors and do not necessarily represent the position of the organizations with which they are associated. The papers presented by staff members of the Congressional Research Service are of the nature of CRS reports prepared for the use of the Joint Economic Committee. All of the papers were written in late 1979 and early 1980 and do not reflect subsequent economic developments.

Dr. John B. Henderson, Senior Specialist in Price Economics of the Congressional Research Service, and Dr. William R. Buechner, of the Joint Economic Committee staff, coordinated and edited the papers in this volume. They were ably assisted by Ms. Laura Layman.

Sincerely,

JOHN M. ALBERTINE,
Executive Director,
Joint Economic Committee.

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INTRODUCTION

By Senator Lloyd Bentsen, Chairman

On October 29, 1979, the Joint Economic Committee conducted a special hearing in observance of the 50th anniversary of Black Tuesday, the stock market crash which dates the beginning of the Great Depression. At that hearing, the committee explored the question "Can It Happen Again" with three distinguished economists, John Kenneth Galbraith, Alan Greenspan, and Walter Heller.

Today, the Joint Economic Committee is publishing a volume of papers entitled "The Business Cycle and Public Policy, 1929–80" which complements the hearing record by exploring specific issues concerning the nature of the business cycle today, as well as what we currently know about the business cycle. The papers focus on the institutional and structural changes that have occurred in the American economy during the past 50 years and on the problems these changes have created for public policy.

The 15 papers in this volume will, I believe, be of particular interest to Members of Congress who are concerned about the longrun prospects for our economy and about the policies we can take to conquer the inflation and unemployment problems that have plagued our economy now for more than a decade. The authors of these papers have eschewed the technical jargon that has made modern economics so inaccessible and instead have focused on the important policy issues that are of most concern to Members of Congress.

While the distinguished scholars and specialists who contributed to this volume were given complete freedom to develop their ideas as they wished, I was impressed by the fact that the ideas and recommendations in many of the papers in this volume are consistent with economic proposals made by the Joint Economic Committee during the past 2 years.

First, the contributors conclude that a solution to today's problems will require policies far more sophisticated and complex than the demand management policies that have been relied on until now. The almost exclusive postwar focus on policies that affect aggregate demand has diverted our vision from the impact of Government policies on the productive capacity of our economy. We have manipulated demand without considering the problem of supply and it is no wonder that we have gotten into a fix where investment has been inadequate, productivity has been declining, inflation has been increasing, and our competitive position has been eroding. In our 1979 and 1980 Joint Economic Reports, the members of this committee unanimously argued that a solution to today's problems will require a judicious mix of demand and supply management policies, with less emphasis on manipulating aggregate demand and more emphasis on strengthening investment and our economy's productive capacity. This

is, admittedly, a longrun approach to problems that have until recently been considered only in a shortrun context. But the shortrun approach of churning up aggregate demand during recessions and putting the brakes on the economy to stop inflation has proven inadequate, and our problems keep getting worse rather than better. By focusing on developments over the last 50 years, the contributors to this volume have been able to put shortrun business cycles into a longrun context, with important conclusions for the conduct of economic policy.

Second, most of the contributions to this volume mesh with the Joint Economic Committee's 1980 midyear recommendation that economic policies taken during a recession should aim toward creating the conditions for a high-quality recovery and growth period, rather than focus on ending the recession. After looking back at the past six postwar contractions, the committee found that almost every antirecession measure enacted by Congress became effective only after the recession had come to its natural end, and that many of these measures contributed instead to inflation by providing unnecessary stimulus or the wrong kind of stimulus during the ensuing recovery. By the time a recession is underway, it is almost too late for Congress to end it. Instead, any action that Congress takes in the wake of a recession should help create a high-quality recovery characterized not only by rising employment, but also by strong investment, growing productivity, lower inflation, and industrial balance.

This meeting of the minds on these basic approaches to economic policy should not be taken to imply that the contributors to this volume were cut from a mold. In fact, just the opposite is true. The papers in the volume express highly individualistic viewpoints by scholars who are specialists on the nature of the business cycle in the United States today. I believe, however, that by including authors with a wide variety of viewpoints, the Joint Economic Committee has created a balanced volume of papers that consider a number of the most important issues facing economic policymakers today.

The papers are presented in seven sections:

- The first is concerned with the Changing Nature of the Business Cycle. It deals with several basic issues of economic fluctuation such as whether the economic system is secured against a recurrence of the great depression of the 1930's and whether, after a period of relatively mild business cycles following World War II, a longrun cyclical movement in the direction of more severe fluctuations is in prospect.
- The second section is devoted to papers that take account of the enormous changes that have occurred in international economic relations over the past half century, and examines some implications for the United States.
- Third, there are papers which evaluate the consequences of the great expansion of the Government sector of the U.S. economy since 1929, not only in regard to the development of programs to mitigate the damage resulting from economic downswings but also in regard to the kinds of changes in the business cycle which have emerged from the increasing role of Government at all levels.

- One aspect of the ideological changes resulting from the great depression is a new regard for fiscal activism in countercyclical policy. The fourth section deals with stabilization measures in the context of events since World War II and the inflationary environment of the 1970's.
- The same emphasis on events since World War II is evident in the studies presented in the fifth section, which deals with the altered cyclical problems of monetary management under intensified inflationary expectations. These papers address the stability of the financial system, the efficacy of monetary policy, and the consequences of a shifting institutional environment.
- The sixth section deals with the transformation of the role of government and labor unions that has resulted from the trauma of the 1930's, and evaluates the consequences for business cycle policy.
- Finally, there is a paper which examines the impact of countercyclical monetary policy and other policies on a sector of the economy, housing, which has characteristically been a major victim of the business cycle.

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I. THE CHANGING NATURE OF THE BUSINESS CYCLE

THE GREAT DEPRESSION OF THE 1930s—CAN IT HAPPEN AGAIN?

By Gottfried Haberler

I. Introduction

The 50th anniversary of the outbreak of the Great Depression and the crash on the New York Stock Exchange in October 1929 coincided with high inflation, an impending recession in the United States, decline of the dollar and a fantastic rise of the price of gold, a veritable gold mania. No wonder that the question is asked with increasing urgency and anxiety—will it happen again?

Let me recall that it is not the first time that a repetition of the dismal experience of the 1930s has been widely expected. During World War II and the first years after the war many economists, especially the Keynesians—not so much Keynes himself as his followers—expected that deflation and stagnation were the dangers the world would face in the post-war period, and in the early post-war recessions many saw the beginning of a deep depression. When the depression again and again failed to materialize the general mood changed. The 1950s and 1960s were the heydays of Keynesianism. It was widely assumed that the business cycle had been finally tamed, if not eradicated, by clever fine-tuning of the economy. It did not turn out this way; the business cycle which had been declared dead on earlier occasions (for example in the 1920s) is still with us. In the 1970s the rising inflation and the worldwide recession of 1973–75 produced again a change; the euphoria of the 1950s and 1960s gave way to pessimism and gloom.[1]

Actually, the first quarter century after the war, or even the 35 years since 1945, including the recent years of the world recession of 1973–75 and high inflation 1976–80, has been a period of almost unprecedented prosperity and growth for the United States and the rest of the Western World, including the less developed countries. It is true, however, that rising affluence has been marred increasingly by inflation, and in the last few years the rate of growth has decreased in all industrial countries. Still, the contrast of the post-World War II period and the twenty years after World War I is tremendous. The interwar period saw two severe depressions, the so-called first post-war depression of 1920–21 and the Great Depression of the 1930s. Since

[1] See my paper "The Present Economic Malaise" in Contemporary Economic Problems 1979, American Enterprise Institute, Washington, D.C. 1979, pp. 261–292.

1945 there were six mild recessions in the United States, but no depression, if by depression we mean a decline in economic activity of the same order of magnitude as the two depressions of the interwar period and earlier ones.[2] It should be stressed that even the recession of 1973–75, although longer and more severe than the earlier ones, was definitely a mild recession compared with the Great Depression of the 1930s and earlier ones.

II. The Great Depression

The Great Depression of the 1930s was a world-shaking event. For the world economy and economic policy it was a watershed. It gave rise to the Keynesian revolution and shook the confidence in the free market-capitalist economy. It led to far-reaching government interventions in the economy and made central planning popular in the West. It gave a tremendous boost to the communist system of the East which seemed to be impervious to the economic disaster that had engulfed the Western World.

The economic depression had enormous political repercussions. It helped Hitler come to power and gave him the opportunity for great economic successes which he effectively used to prepare for World War II which he unleashed in 1939, it made the Soviet system and Stalin's dictatorship respectable in the West, and it strengthened the militarist regime in Japan. The depression-inspired U.S. policy of boosting the price of silver ruined the Chinese monetary system that was still based on silver and so contributed decisively to the defeat of the Chiang Kai-shek regime ("The Nationalists") and to the rise to power of Mao Tse-tung in China.

The principal center of the depression was the United States which had emerged from World War I as the world's dominant economic power. Let me briefly recall the salient facts. The U.S. depression was almost entirely homemade. Comparatively minor adverse influences from abroad (which were largely feedbacks of the previous foreign impact of the U.S. depression) will be mentioned later. The depression started slowly in the summer of 1929, several months before the stock exchange crash in October. It lasted 43 months (August 1929–March 1933), the longest and deepest depression in the 20th century. Money GNP declined by 50 percent, real GNP by 33 percent, industrial production by 53 percent, and unemployment rose to 25 percent of the labor force. The depression was followed by an expansion which lasted 50 months (March 1933–May 1937). But the expansion came to an end long before full employment was reached. For 1937 as a whole unemployment was still over 14 percent. The long expansion was followed by a short but extremely precipitous slump (May 1937–June 1938). Money GNP fell by 16 percent, real GNP by 13 percent, industrial production by 32 percent and unemployment shot up from 11 percent in March 1937 to 20 percent in June 1938—all in the short span of 13 months. At the outbreak of the war in Europe (1939) U.S. unemployment was still about 17 percent. Full employment was not reached

[2] The terminology "recession-depression" is of recent origin. Earlier writers made a roughly similar distinction between "Kitchin" and "Juglar" cycles (Schumpeter), major and minor cycles (Hansen), mild and severe depression cycles (M. Friedman). The distinction is one of degree, but it is clear-cut in most cases.

before the United States entered the war in 1941. Thus the whole decade 1929–1939 was a severely depressed period.

The depression was worldwide almost from the start and there were some epicenters, for example in Germany and central Europe. It is controversial to what extent the depression in Europe was due to autonomous forces or was caused by the U.S. depression or, as some say, by the sudden cessation of U.S. capital exports in 1928 (which in turn has been attributed to the boom on the New York stock exchange that preceded the depression). But we need not go into that question; for whatever the answer, under the then-existing system of fixed exchanges (gold standard), the depression in the dominant U.S. economy was bound to spread swiftly to the rest of the world.

World trade, as measured by exports, fell in nominal terms (gold dollars) to about one-third, from $33 billion in 1928 to $13 billion in 1932). In real terms it shrank by about 25 percent, the difference reflecting the enormous deflation—the sharp decline of prices of internationally traded goods; or in other words, the enormous rise in the value of gold (gold's purchasing power in terms of real goods).

In passing it may be mentioned that the rise in the real value of gold operated sharply to increase world liquidity by encouraging gold production and boosting the real value of the existing gold reserves. Thus the ratio of the Western World's international reserves to world imports rose from 42 percent in 1928 to 117 percent in 1937.[3] This is the classical way by which the economy under the gold standard works its way out of a depression—a slow and painful process.

During the 35 years since the end of World War II, in sharp contrast to the interwar period, international trade has grown by leaps and bounds. In nominal terms (U.S. dollars) world exports and imports have sharply increased without interruption throughout the period.[4] In real terms there was a slight contraction in one year: in the recession year 1975 the quantum of world exports declined by 2 percent.[5]

III. Why Was the Depression So Severe and Why Did It Last So Long?

A. Non-Monetary Explanations

I think that with the benefit of hindsight a straightforward answer can be given to the question why the depression of the 1930s was so severe and why it has not happened after World War II—at least not so far. However, when it happened in the 1930s few economists were aware of what was going on and even now controversies about the origin and cause of the Great Depression are still going on.

I will first mention some explanations that were popular in the 1930s and 1940s, some of which have been echoed in recent years.

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[3] See International Reserves and Liquidity. A study of the Staff of the International Monetary Fund, Washington, D.C. 1958, p. 18. The increase in international liquidity did not go unnoticed. There was concern in the middle 1930s that the plethora of gold could produce inflationary dangers. See references to the literature in my essay The World Economy, Money and the Great Depression 1929–1939. American Enterprise Institute, Washington, D.C. 1976, p. 20.

[4] See International Financial Statistics, International Monetary Fund.

[5] See International Trade 1978–79, General Agreement on Tariffs and Trade (GATT), Geneva 1979, Table 1, "Growth of World Exports and Production 1963–1978," p. 2.

Marxist economists and communist propaganda took the disaster of the 1930s simply as a confirmation of Marx's theory that under capitalism depressions would become more and more severe until in a final big crash the capitalist system would collapse. In the 1950s and 1960s this view had lost its power of conviction even among faithful Marxists; but their hope has been revived in recent years.

Those who lacked the prophet's guidance had a harder time to explain the slump. The Keynesians fashioned the theory of secular stagnation, chronic oversaving and of vanishing investment opportunities due to the drying up of technological progress and slower population growth. Keynes himself never fully embraced this pessimistic theory, although he came very close to accepting it in the General Theory. There was, however, a convergence of Keynesian and Marxian thought. Among Keynes' followers we may distinguish a right wing and a left wing. Keynes, especially in his later years, belonged to the right or conservative wing of his school. Keynes' radical followers, led by Joan Robinson—the Marxo-Keynesians as Joseph A. Schumpeter used to call them—accepted the Marxian thesis that capitalism was beyond repair. The right wing, among them Roy Harrod and most American Keynesians (whom Joan Robinson calls "bastard Keynesians"),[6] have not accepted the secular stagnation theory or have abandoned it. In the light of later developments the secular stagnation explanation of the Great Depression makes little sense indeed. Excessive saving, lack of investment opportunities and slow technological progress can hardly be said to be characteristic of the post-war period or even the last five years.[7]

There is another related explanation of the Great Depression that was very popular in the 1930s and later, namely the theory that the depression's exceptional severity and length was due to deep-seated real maladjustments and distortions, both on the national and international level, "in the productive structure of most countries and the world economy as a whole which the war had left behind, and rigidities in the economic systems of all countries which made the correction of these maladjustments by market forces alone impossible." [8] These maladjustments were for several years papered over by inflation and capital exports from the United States until the bubble burst in the Great Depression.

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[6] This does not mean that there are no radical economists in the United States. There are quite a few but they have broken allegiance to Keynes and have organized themselves in the Union of Radical Political Economists (URPE).

[7] The theory that slower population growth and its impact on construction was at the root of the Great Depression was recently revived. See Clarence L. Barber, "On the Origin of the Great Depression," Southern Economic Journal, vol. 44, No. 3, January 1978, pp. 432–455. This factor could conceivably have helped to trigger a recession. But the recession could not have snowballed into a catastrophic depression without massive mistakes of commission and omission on the part of the monetary authorities.

[8] The quotation comes from the report of a study group on post-war economic problems organized by the Royal Institute of International Affairs, London. The Economic Lessons of the Nineteen-Thirties, Report drafted by H. W. Arndt, London Oxford University Press, 1944, pp. 287–288. The role of real maladjustments in the depression was the central theme of two other very influential studies. One is the majority report of the so-called Gold Delegation of the Financial Committee of the League of Nations, a group of highly respected financial and economic experts, with the task to study the working of the international monetary system. See Final Report, Geneva, 1932. (There was, however, a minority report signed by Gustav Cassel, the famous Swedish economist, among others, which rejected the view that the trouble was due "to the various economic maladjustments enumerated by our colleagues" (ibid., p. 64) and put forward an essentially monetary explanation.) The other study stressing real maladjustments is a large volume by Ingvar Svennilson, Growth and Stagnation in the European Economy, United Nations, Economic Commission for Europe, Geneva, 1954.

The maladjustment explanations are refuted by the fact that in country after country the alleged giant maladjustments disappeared as myteriously as they had suddenly made their appearance earlier, as soon as deflation was stopped. Furthermore, the maladjustment theory of the Great Depression is at variance with the post-World War II experience. Surely destruction, maladjustments and dislocations wrought by World War II were much greater than those caused by World War I. Yet there has been no depression after World War II—mild recessions yes, but no severe depression. Why? Because there has been no case of monetary deflation since the end of the war.

The same criticism applies to another type of maladjustment explanation of the Great Depression, namely that based on the so-called Austrian theory of the business cycle as developed primarily by Friedrich A. Hayek and Lionel Robbins—a theory that has important monetary elements.[9]

According to this theory every depression is the inevitable consequence of maladjustments in the "vertical" structure of production created by the preceding inflationary boom. Inflation depresses the interest rate below its equilibrium level, which leads to overinvestment, an overexpansion of the "higher stages of production" involving an unsustainable shift of original factors of production to the capital goods industries. The boom can be prolonged by larger and larger monetary injections, but the longer it lasts, the greater the maladjustments and the more painful the unavoidable correction.

It would lead too far to discuss this theory in greater detail.[10] Suffice it to say that Robbins later changed his mind and abandoned the maladjustment theory of the depression. He did not exclude the possibility that "inappropriate investments fostered by wrong expectations" and perhaps by the stock exchange boom may have triggered the downtrend. But these real maladjustments, whatever their magnitude and nature, "were completely swamped by vast deflationary forces." [11]

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[9] See Friedrich A. Hayek, Prices and Production, 1st edition 1931, 2d edition, London 1935. Lionel Robbins, The Great Depression, London 1934. In my book Prosperity and Depression I discussed this theory in greater detail under the title "Monetary Over-Investment Theories."

[10] See my The World Economy, Money and the Great Depression, 1929–1939, ibid., pp. 24–25. There it is pointed out that a major difficulty of the application of the Hayek-Robbins theory to the Great Depression was that in the United States the price level was virtually stable from 1921 to 1929. Thus, there seems to have been no period of inflation preceding the Great Depression. Hayek and Robbins tried to overcome this difficulty by arguing that there was a *hidden* inflation. The 1920s was "a period of rapidly rising productivity. The comparative stability of prices, therefore, so far from being a proof of the absence of inflation, is a proof of its presence." (Robbins, ibid., pp. 48–49) It would lead too far and is hardly necessary any more to show why this is not a satisfactory answer.

[11] See Lord Robbins, Autobiography of an Economist, London 1971, pp. 153 et seq. The present writer fully agrees with Lord Robbins. He, too, had accepted Hayek's theory at one point, but has long since given it up. (See Gottfried Haberler, "Money and the Business Cycle" in Gold and Monetary Stabilization, Harris Foundation Lectures, Quincy Wright, editor. University of Chicago Press 1932; reprinted in The Austrian Theory of the Trade Cycle and Other Essays, Center of Libertarian Studies, Occasional Paper No. 8, New York 1978.)

Two prominent German economists, Albert Hahn and Wilhelm Röpke, both of conservative and anti-Keynesian persuasion, had stressed real maladjustments caused by inflationary booms that made a smooth transition to a non-inflationary equilibrium impossible. But when the depression deepened, they distinguished between the "primary depression" (caused by the real maladjustments) and the "secondary deflation" due to monetary policy mistakes of commission or omission. Like Robbins they realized that the "secondary deflation" completely swamped the so-called "primary depression." See Wilhelm Röpke, Crises and Cycles, London 1963, p. 120.

B. Monetary Explanations

There can be no doubt in my opinion that the most important cause of the exceptional length and severity of the Great Depression was massive deflation in the United States. Through acts of commission (deflationary measures) and omission (failure to take sufficiently strong anti-deflationary, expansionary measures) the Federal Reserve system caused or permitted the quantity of money to contract by about 30 percent from 1929 to 1933.

This explanation is now firmly associated with the work of Milton Friedman who in his and Anna J. Schwartz' "truly great book", *A Monetary History of the United States 1867–1960*,[12] has given the most convincing and best documented monetary explanation. It is not necessary, however, to be an extreme monetarist to realize that a destruction of a third of the money stock was bound to produce a catastrophic depression. And there can be no doubt that it was in the power of the Federal Reserve to stop the monetary contraction in its track and to prevent the collapse of the American banking system.[13] This is convincingly demonstrated in "the masterly"—Sir Roy Harrod's words—Chapter 7 of the *Monetary History* on "The Great Contraction 1929-1933". There it is shown in great detail that the Federal Reserve not only failed to counteract the ongoing deflation, but took highly deflationary steps on several occasions.

The failure to prevent the collapse of the banking system through massive open market operations or other means can be described as a failure of the Federal Reserve to perform the function of a lender of last resort. It will be recalled that Charles P. Kindleberger in numerous writings has stressed the absence of a lender of last resort as the main cause of the great debacle of the 1930s. It follows that Kindleberger's

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[12] National Bureau of Economic Research, Princeton University Press 1963. The words "truly great" come from Sir Roy Harrod's review of the book in The University of Chicago Law Review. Vol. 32, No. 1, Autumn 1964, pp. 188–196. This is high praise coming from an avowed Keynesian, but is by no means inconsistent with the author's Keynesian beliefs. Harrod emphatically rejects the view adopted by many Keynesians "that the events of 1929 to 1933 proved the impotence of monetary policy" and emphasizes that "monetary policy was not attempted in the United States in 1929 to 1933" (Ibid. p. 196). The same conclusion had been reached earlier by Lauchlin Currie, "The Supply and Control of Money in the United States," Harvard University Press, Cambridge, Mass. 1934 passim, William Fellner, "Monetary Policies and Full Employment." California University Press, Berkeley, Calif., second edition 1947, pp. 212–213, and Walter S. Salant, "Some Comments on the Effectiveness of Credit Policy in Combatting a Recession." Memo presented to a Staff Committee of the Council of Economic Advisers, May 21, 1948 (mimeographed).

[13] This categoric statement has been challenged on two grounds: First, it has been said that psychologically, ideologically and politically it was not possible for the Federal Reserve to engage in sufficiently massive open market operations. Second, it has been questioned whether a prevention of monetary contraction would have had a strong effect on the real economy. The first doubt is inconsistent with the fact that the New York Federal Reserve Bank, surely not a hotbed of monetary radicalism, was in favor of strong monetary anti-deflationary measures. Friedman and Schwartz have shown that the power in the system shifted from the New York bank to the Federal Reserve Board after the untimely death in 1928 of Governor Benjamin Strong who had dominated the system. The point is that if the Board instead of overruling the New York bank had joined forces with it, the System need not have been afraid of ideological or political obstacles.

The answer to the second question is this: What is asserted is that prevention of the breakdown of thousands of banks and of the tremendous contraction of money and credit would have drastically reduced the catastrophic fall in output and employment. This can hardly be doubted but leaves open two more questions: First, would monetary measures also have prevented a recession, perhaps a somewhat more severe one than the two mild recessions of 1924 and 1927? Second, can it not be argued that, after the depression had gathered momentum, stronger measures than easy money were required to stop the slide quickly? (For an affirmative answer to the second question see below.)

explanation is very close to that of Milton Friedman, although he argues vigorously against the monetarist explanation.[14]

It will be observed that my formulation of the monetary explanation does not exclude the possibility that the depression may have been triggered by some "real" factors, by "real maladjustment" as Lord Robbins said. Nor does it deny that there occurred powerful aggravating real shocks later in the course of the depression. The authors of The Monetary History are fully aware of this. Good examples of aggravating real shocks are protectionist moves such as the introduction of a skyscraper tariff (Smoot-Hawley Tariff) under the Hoover administration in 1930, the abandonment of free trade and imposition of a high import tariff by Britain in 1932 and protectionist reactions elsewhere. In their global effect these protectionist measures greatly aggravated the world depression, although such measures, regarded in isolation and in the short run, did stimulate the economy of the country in question. However, the preponderant importance of monetary factors and reflation of aggregate demand is demonstrated by the fact that the Smoot-Hawley Tariff did not prevent numerous countries from extricating themselves long before the United States from the world depression by cutting their currencies loose from gold and the dollar and taking expansionary monetary and fiscal measures. (See below.)

Another important point that must not be overlooked is that every deflation (just as every inflation) tends to become cumulative and to feed on itself. The authors of The Monetary History mentioned this, although a little bit as an afterthought, in the last paragraph of Chapter 7. ". . . small events at times have large consequences . . . there are such things as chain reactions and cumulative forces. It happens that a liquidity crisis in a unit fractional reserve banking system is precisely the kind of event that can trigger—and often has triggered—a chain reaction. And economic collapse often has the character of a cumulative process. Let it go beyond a certain point, and it will tend for a time to gain strength from its own development as its effects spread and return to intensify the process of collapse. Because no great strength would be required to hold back the rock that starts a landslide, it does not follow that the landslide will not be of major proportions." (p. 419)

In this passage the authors refer specifically to the "liquidity crisis", the run of frightened depositors on the banks. But what they say about chain reaction and cumulative forces applies also to the depression as a whole. The Great Depression became a major landslide. Prompt monetary measures of moderate strength may have "held back the rock that started the landslide". But it is not unreasonable to argue that after a depression has gathered momentum stronger measures than open market operations and lower discount rates are

[14] This was pointed out in the review of Kindleberger's latest book "Manias, Panics and Crashes. A History of Financial Crises." New York 1978) by Patrick Minford in The Economic Journal (Vol. 89, December 1979, p. 948). ". . . it is not clear how one distinguishes between a failure of the Federal Reserve Board to maintain the money supply (as Friedman says) and such a credit contraction (as Kindleberger puts it); for credit is simply the other side of the bank's balance sheet. Kindleberger's views are much closer to Friedman's than he recognizes, if not identical."

indicated to stop the slide. These stronger measures are direct injections of money into the expenditure stream through government deficit spending. Eventually expansionary monetary measures will turn the tide, but it will take a long time. Relying on monetary policy alone courts the danger that a large pool of liquidity will be created which later, after the economy has turned the corner, will lead to an unhealthy inflationary boom.[15] Thus, as far as combating an ongoing cumulative deflation is concerned, monetarists and Keynesians should be able to agree on a common strategy.[16]

The Keynesian revolution pushed money and monetary policy into the background, but the so-called monetarist counterrevolution had started long before the advent of modern monetarism. Many earlier writers emphasized the monetary causes of the Great Depression. For example, as mentioned above, Lauchlin Currie (The Supply and Control of Money in the United States, 1934) and William Fellner (Monetary Policies and Full Employment, 1946) had given inept monetary policy its full due for causing the exceptional severity of the Great Depression. And Friedman himself has pointed out that emphasis on money was in the Chicago tradition of Frank H. Knight, Henry Simons, Jacob Viner and others.[17]

Many writers have pointed out that under the gold standard (fixed exchanges) great wars breed deep post-war depressions, because countries often deflate to restore the prewar gold parity of their currency. Edward M. Bernstein put it this way: "War [inflation] exhausts the money creating power of gold standard countries. Consequently, after a war the monetary authorities were unable to provide the economy with the expanding money supply required to maintain economic growth in an environment of price stability. [Thus] in virtually all countries a severely restrictive monetary policy was begun in 1920" which led to the first post-war depression.[18]

This theory had many adherents in the 1920s (and later) among economists and there was much apprehension in financial circles that a scarcity of gold, due to the rise in prices (reduced real purchasing power of gold), would cause serious deflationary pressure on the world economy. Thus, a conference of financial experts in Genoa in 1922

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[15] A mechanism of this kind has been used by several economists (e.g. by Ralph G. Hawtrey, the great British monetarist) to explain the business cycle.

[16] This thought has been developed in my paper "Austria's Economic Development After the Two World Wars: A Mirror Picture of the World Economy" in *Empirische Wirtschaftsforschung and Monetäre Ökonomik*, Berlin 1979, pp. 177–197. See also my paper "Notes on Rational and Irrational Expectations" in a Festschrift for Odolf Jöhr, Tübingen 1980. Both papers are available as American Enterprise Institute reprints.

[17] The older members of the Chicago School have emphasized a development that greatly intensifies the disastrous impact of monetary deflation, namely the increasing rigidity of wages and prices—a factor that the next generation of monetarists tends to neglect or to minimize. Thus, in 1941 Frank Knight wrote with the Great Depression in mind: "In a free market these changes (in aggregate demand and prices of different goods) would be temporary, but even then they might be serious; and with important markets as unfree as they actually are . . . the results take on the proportion of a social disaster." (F. H. Knight, "The Business Cycle, Interest and Money", reprinted from Review of Economics and Statistics, Vol. 23, May 1941, in F. H. Knight, "On the History and Methods of Economics," Chicago 1956, p. 335.) A. C. Pigou in his classic book Industrial Fluctuations, second edition, London 1927 assigns equal weight in explaining the business cycle to monetary and banking arrangements and to wage rigidity. Recent research has demonstrated the decreasing responsiveness of inflation to declining aggregate demand due to increasing rigidity of wages. (See Jeffrey Sachs, "The Changing Cyclical Behavior of Wages and Prices 1890–1976," National Bureau of Economic Research Working Paper No. 304, New York 1978, mimeographed.)

[18] Edward M. Bernstein, "The Nature and Causes of Deep Depression," EMB Ltd., Washington, D.C. 1962 (mimeographed). See also his article "International Monetary Organization" in International Encyclopedia of the Social Sciences, Vol. 8, New York 1968, p. 19.

recommended the adoption by many countries of the gold exchange standard and other measures to reduce the demand for gold to forestall the emergence of deflationary pressures.[19] The well-known French economist and financial expert Charles Rist made the same point in numerous writings. J. R. Hicks in his *Contribution to the Theory of the Trade Cycle*,[20] put forward a "real" theory of the business cycle in terms of interaction of multiplier and accelerator; but he realized that for the slump after 1929 the multiplier-accelerator explanation was wholly inadequate: "The monetary system of the world had never adjusted itself at all fully to the change in the level of money incomes which took place during and after the war of 1914–18; it was trying to manage with a gold supply which was in terms of wage-units extremely inadequate. Difficulties in the postwar adjustment of exchange rates (combined with the vast changes which the war had produced in the creditor-debtor position of important countries) had caused the consequential weakness to be particularly concentrated in certain places; particular central banks, as for instance the Bank of England and the Reichsbank, were therefore particularly incapable of performing their usual function as "lenders of last resort." [21]

The best-known recent example where the Rist-Bernstein explanation applies is the British revaluation of sterling in the 1920s. It will be recalled that during World War I the British pound was pegged to the dollar. When the peg was removed after the war the pound depreciated in the foreign exchange market by about 20 percent. It was then decided to restore the prewar parity, and in order to achieve that purpose the Bank of England applied deflationary measures. As a consequence Britain found herself throughout the 1920s in a depressed position with unemployment of about 10 percent while the rest of the world enjoyed a high rate of growth.[22] Keynes criticized the policy in his famous essay "The Economic Consequences of Mr. Churchill" who as Chancellor of the Exchequer was responsible for the policy.[23]

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[19] On the origin of the gold exchange standard, its growth and the deflationary consequences of its breakdown in the depression see Ragnar Nurkse, "International Currency Experience Lessons of the Inter-War Period," League of Nations 1944, pp. 27–46.

Several writers, especially Jacques Rueff, have argued that the gold exchange standard had been an inflationary factor and then through its inevitable breakdown and liquidation was largely responsible for the extraordinary severity of the depression. The liquidation of the gold exchange standard surely was a deflationary factor. But compared with the massive internal deflation in the United States, which was almost entirely due to domestic causes (institutional weaknesses and monetary mismanagement), it must be judged a factor of minor importance.

[20] London, 1950.

J. A. Schumpeter, whose theory of the business cycle is usually not classified as a monetary one (although it has monetary elements), flirted with the idea that the severity of the depression was due to the confluence of the depression phase of several superimposed types of concurrent fluctuations. But his considered view was that "the darkest hues of cyclical depression . . . are due to adventitious circumstances". (J. A. Schmpeter, "The Historical Approach to the Analysis of Business Cycles" in Conference on Business Cycles, National Bureau of Economic Research, New York 1951, p. 150.) By "adventitious circumstances" he meant deflationary shocks due to collapse of the banking system, and other complications which are not regular features of the business cycle.

[21] Op. cit. p. 163.

[22] In most countries on the European continent inflation had reached a much higher level than in Britain. Therefore, a return of their currencies to the pre-war parity was out of the question. For example the French franc was stabilized at a low level which enabled France to accumulate a large gold reserve which put additional deflationary pressure on Britain.

[23] London 1925. Reprinted in Essays in Persuasion, various editions. The whole episode is analyzd in depth in D. E. Moggridge, "British Monetary Policy, 1924–1931: The Norman Conquest of $4.86," Cambridge 1972. The subtitle is an allusion to Montague Norman, the powerful governor of the Bank of England who was to a large extent responsible for the return to gold at the prewar parity of $4.86. The new material tends to exonerate Churchill. In a remarkable "most secret" memorandum addressed to his advisers before the decision to return to gold at the old parity was made, Churchill had asked all the relevant questions. But he received wrong or misleading answers from his advisers.

Keynes' warning was based on orthodox classical principles. A hundred years earlier, after the Napoleanic wars, the same mistake of restoring the prewar gold parity was made with the same consequences. In 1821 David Ricardo wrote to John Wheatley: "I never should advise a government to restore a currency which was depreciated 30 percent to par; I should recommend . . . that the currency should be fixed at the depreciated level." [24] Under 20th century conditions of wage rigidity we would say even 10 or 5 percent overvaluation is too much to be dealt with by deflation rather than by devaluation of the currency.

It is interesting that another great depression in the United States, that of the 1870s, offers striking parallels with the British depression in the 1920s. Large budget surpluses followed the deficits during the Civil War and the premium on gold was gradually reduced from 57 percent in 1865 to zero in 1879, the terminal year of the depression.[25] True, the general economic background in 19th century America was quite different from that of 20th century Britain. But the difference in the surrounding conditions makes the similarity of the consequences of the same kind of policy all the more remarkable and supports the view that monetary factors were decisive.

Summarizing, we may say that the three episodes mentioned—the developments after the Napoleonic war in Britain, after the Civil War in the United States and after World War I in Britain—as well as the so-called first postwar depression of 1920–21 mentioned by Bernstein, support the hypothesis that during the era of the gold standard, due to monetary mismanagement, big wars were apt to be followed by deep depressions.

But the theory does not explain the Great Depression of the 1930s.[26] The United States was not forced to take deflationary measures by gold losses, a weak balance of payments, a weak dollar or the wish to restore the prewar parity of the dollar. The U.S. depression was homemade; it was due to inept monetary policies as the authors of the *Monetary History of the United States* have made abundantly clear. The United States had emerged from the war as the dominant economic power. Under fixed exchanges (gold standard) a severe depression in the dominant economy was bound to spread swiftly to the rest of the world. Let me repeat that there were other weak spots in the world economy. The British economy was semi-depressed as we have seen. When Britain was hit by the Great Depression, unemployment rose from about 10 percent to 20 percent. Germany and Central Europe were in bad shape. But these and other trouble spots had only a negligible impact on the dominant U.S. economy and could not have dragged the whole world into depression if the United States had not sunk into deep depression or had experienced merely a mild recession like the ones in 1924 and 1927.

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[24] "The Works and Correspondence of David Ricardo," edited by Piero Sraffa, Vol. IX, Cambridge 1952, p. 71.

[25] See Rendig Fels, "American Business Cycles 1865–79," American Economic Review, June 1951, pp. 335–349, and his book "American Business Cycles 1865–1897," Chapel Hill, N.C. 1959.

[26] This was pointed out with reference to J. R. Hicks in my paper "The Quest for Stability: The Monetary Factor" in "Stability and Progress in the World Economy, The First Congress of the International Economic Association," edited by Douglas Hague. Macmillan, London 1958, p. 165. An abridged and slightly altered version appeared under the title "Monetary and Real Factors Affecting Economic Stability. A Critique of Certain Tendencies in Modern Economic Theory" in the Banca Nazionale del Lavoro Quarterly Review, No. 38, September 1956, Rome, p. 25.

Before examining the role of the international system, a look at the depression in Germany is instructive. The depression hit the German economy, the second or third largest in the western world, even harder than the American economy. As in the United States monetary deflation was the dominant force, but unlike the United States international developments had a strong impact—reparations, international capital flows, the U.S. depression, the Smoot-Hawley tariff, and the devaluation of the British pound all had a powerful depressive impact. In Germany the depression started earlier and ended earlier than in the United States (April 1929 to August 1932). Whether the early onset of the depression was due to the cessation of U.S. capital exports and whether the latter was caused by the New York stock exchange boom pulling capital away from other uses (as some economists have argued) is debatable. But it cannot be doubted that later capital flight from Germany, because of the rapidly deteriorating economic and political situation, had a strong depressing effect. Reparations that the victorious powers, especially France, imposed on Germany, had a most unsettling effect largely by poisoning the political atmosphere thoughout the interwar period until they were formally abolished, along with the allied war debts to the United States, by the Hoover moratorium in 1934. In January 1923 France and Belgium occupied the Ruhr to collect reparations. This greatly intensified the hyperinflation in Germany, whose political consequence—contributing to the rise of Nazism—was grave and prolonged.

Later on there was a direct link between reparations and deflation. The German Chancellor Heinrich Bruening thought that his deflationary policy would enable him to get rid of the reparations. This would be accomplished by large German exports disrupting world markets. He "estimated that in twelve to fourteen months his policy would call forth a cry in the world for cancellation of the reparations".[27] The British devaluation in 1931 had a strong depressive effect on the German economy. Germany did not follow the British example of devaluing the currency as had been recommended by many experts, partly because this would have interfered with Bruening's policy of bringing about the end of reparations by forcing disruptive German exports on foreign markets.

The depression reached its lowest point in the summer of 1932. The recovery was slow at first, but picked up speed after Hitler came to power early in 1933. It is interesting to compare the American and German recovery. Roosevelt and Hitler came to power at approximately the same time and both found a deeply depressed economy. The American recovery, although long and pronounced, was marred by unusual price rises in the midst of still heavy unemployment—an early case of stagflation. These price rises induced the Federal Reserve to step on the monetary brakes which led to the sharp slump of 1937–38. As we have seen, full employment was not reached before the American entry into the war in 1941.

The German recovery, in contrast, proceeded without interruption and reached substantially full employment within two or three years.

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[27] See the memoirs of Heinrich Bruening, Memoiren 1918–1934," Munich, Deutscher Taschenbuch Verlag 1972. Vol. 1. p. 204. For further details see my "The World Economy, Money and the Great Depression," American Enterprise Institute, Washington, D.C. 1976. pp. 27–31.

The price level, unlike that in the United States, remained remarkably stable.

It would be tempting to attribute the rapid recovery to large spending on armaments. Heavy government spending there was, but massive rearmament came later. Possibly German public spending was comparatively larger than in the United States, but this would not explain the different price performance. The main difference between the American and German recovery policy lies elsewhere. In the United States the New Deal combined deficit spending with deliberate wage and price boosting, through NRA, AAA, the Wagner Act and other measures. Thus, an exceptionally large part of the rising nominal GNP took the form of higher prices rather than larger output and employment.[28] In Germany, by contrast, money wage rates remained fairly constant, although the average annual earnings of labor rose rapidly in monetary and real terms, because unemployment disappeared and the workweek lengthened.[29]

True, under the Hitler dictatorship there were wage and price controls which later, after full employment was reached and massive preparation for war came into full swing, became very oppressive. Scarcities, unavailabilities and quality deterioration of numerous commodities combined with rationing made the stable price index increasingly unreal. But this does not alter the fact that the recovery from the depression was handled very effectively. Hitler was able quickly to liquidate the miseries of the depression and to provide guns and butter at the same time. The great economic successes strengthened his hold on the German people enormously. The gold parity of the mark was formally not altered. There was no devaluation, but an increasingly tight web of exchange control, import restrictions and export subsidies amounted to a disguised, messy, discriminatory and exploitative devaluation of the currency—the Schachtian System.[30] Hitler's economic success made a deep impression on many economists, on Keynes himself, who however soon changed his mind,[31] and on Keynes'

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[28] Keynes sympathized with Roosevelt's reform measures but felt that "undue haste in the reform program" would prejudice recovery; and recovery should have priority over reform. For Keynes' criticism of the New Deal see R. F. Harrod, "The Life of John Maynard Keynes." London-New York, 1951, p. 447.

[29] See Gerhard Bry, "Wages in Germany 1871–1945," National Bureau of Economic Research, Princeton University Press, 1960.

[30] So named after Hjalmar Schacht, Hitler's economic wizard.

[31] Richard (Lord) Kahn in his paper "Historical Origins of the International Monetary Fund" (in Keynes and International Monetary Relations, The Second Keynes Seminar held at the University of Kent at Canterbury, 1974, edited by A. P. Thirlwall, St. Martin's Press, New York 1974) quotes a memorandum that Keynes distributed in the Treasury in September 1941 entitled "Post-War Currency Policy." In this memorandum Keynes said "It was only in the last years, almost in the last months, before the crash, that . . . Dr. Schacht stumbled in desperation on something new which had in it the germs of a good technical idea. . . . Dr. Schacht's idea was to introduce 'what amounted to barter'. . . . In this way he was able to return to the essential character and original purpose of trade whilst discussing the apparatus which . . . had been supposed to facilitate, but was in fact strangling it. This innovation worked well, indeed brilliantly." Two years later (October 1943) Keynes wrote in the same vein to a U.K. Treasury official: "I believe that the future lies with (I) state trading for commodities; (II) international cartels for necessary manufacturers; and (III) quantitative import restrictions for non-essential manufactures. Yet all these instrmentalities for orderly economic life in the future you (and the U.S. State Department) seek to outlaw" (quoted in R. F. Harrod, "The Life of John Maynard Keynes," London-New York 1951, p. 568.) Harrod remarked: "In the preceding ten years he (Keynes) had gone far in reconciling himself to a policy of planned trade: these ideas had sunk deeply in. Even for him, with . . . his power of quick adaptation, it was difficult to unlearn so much." (loc. est.) But unlearn he did, and very fast indeed. In May 1944 in a letter to The Times defending the Bretton Woods agreement against criticism by Thomas Balogh, Keynes wrote: "Since we are not (so far as I am aware), except perhaps Dr. Balogh, disciples of Dr. Schacht, it is greatly to our interest that others should agree to refrain from such disastrous (Schachtian) practices." (The Times, May 20, 1944,

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radical followers who were strengthened in their conviction that only comprehensive controls and central planning can assure full employment and rapid growth without inflation. Fortunately, another German economic miracle, the sustained economic recovery and growth after World War II, conclusively demonstrates that liberal trade policy and sound finance, the "classical medicine" as Keynes called it, works even better than the Schachtian system of comprehensive controls. Equally important, the German economic success also shows that a liberal policy can successfully be carried out in a democracy.[32]

IV. The International Monetary System During the Interwar Period

It is misleading to speak of an international explanation of the Great Depression in contrast to explanations in terms of mistakes of U.S. monetary policy, or other domestic circumstances in the United States or elsewhere.[33] There can be no doubt, however, that the world

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reprinted in Thomas Balogh's "Unequal Partners," Vol. II, Oxford 1963, p. 118.) Keynes, reconversion to liberalism (which was probably due largely to listening to James Meade, Redvers Opie, and Lionel Robbins) is described in detail in Harrod's book (see especially p. 609.) In his famous posthumously published article, "The Balance of Payments of the United States" (The Economic Journal, June 1946) Keynes urged that "the classical medicine" should be allowed to work and concluded "that the chances of the dollar becoming dangerously scarce . . . are not very high," thus rejecting the theory of the permanent dollar shortage which was propounded by his radical disciples as the basis of their violent objections to the policy of non-discrimination. Keynes criticized these theories "as modernist stuff, gone wrong and turned sour and silly." (See ibid. pp. 185–186.) In a letter to Lord Halifax he expressed himself even more strongly (see "The Collected Writings of John Maynard Keynes," Vol. 24, "Activities 1944–1946, The Transition to Peace," edited by Donald Moggridge, Cambridge 1979, p. 626).

[32] It is not surprising that the German economic "miracle" which started with the currency reform of 1948 and the simultaneous abolition of all controls by Ludwig Erhard, was completely unforeseen and misjudged, even after its early success had become apparent, by British admirers of Schacht. On this see T. W. Hutchison "Notes on the Effects of Economic Ideas on Policy: The Example of the German Social Market Economy" in Zeitschrift für die Gesamte Staatswissenschaft. Currency and Economic Reform, West Germany after World War II, A Symposium, Vol. 135, Tübingen, September 1979, pp. 436–441. I cite only one example: Thomas (Lord) Balogh predicted that the policies of Erhard could not be sustained. "The currency was reformed according to a wicked formula." It "helped to weaken the Trade Unions . . . . Their weakness may even inhibit increases in productivity, since large scale investment at high interest does not pay at the present low relative level of wages. In the long run the income pattern will become intolerable and the productive pattern unsafe." Balogh said that Dr. Erhard and his "satellite economists" are trying to discredit "enlightened Keynesian economic policies" and "to apply to real life an abstract obsolescent and internally inconsistent economic theory and certainly did not succeed." Balogh predicted alarming political consequences and pointed in "a final warning to the gains which the Soviet Zone of Germany has been able to record." Balogh was however right in pointing out the extreme contrast between the economic ideas and policies prevailing in the Federal Republic of Germany and those in Britain. However, the results were the opposite of what Balogh and the other critics had predicted: German real GNP per capita has grown to almost twice that of Britain. (See T. W. Hutchison, op. cit. pp. 435–439 and Thomas Balogh "Germany: an Experiment in 'Planning' by the 'Free' Price Mechanism", Banca Nazionale Del Lavoro Quarterly Review 3, Rome 1950, pp. 71–102.) Hutchison also shows that German economic policies were similarly misjudged by American representatives of the "New Economics", Walter Heller among them.

I offer a supplement to Hutchison's list of misjudgments by advocates of central planning and comprehensive controls of the German revival of laissez faire liberalism: In 1948, criticizing the view "that if, somehow, the German economy could be freed from material and manpower regulations, price controls and other bureaucratic paraphernalia, then recovery could be expedited", John K. Galbraith concluded: ". . . There never has been the slightest possibility of getting German recovery by this wholesale repeal [of controls and regulations]". (J. K. Galbraith, "The German Economy" in Foreign Economic Policy for the United States, edited by Seymour E. Harris, Harvard University Press, Cambridge, Mass. 1948, p. 95). Galbraith's paper abounds with predictions of dire political and economic consequences of Erhard's dash for economic freedom. To quote Keynes again: Rarely has "modernist stuff gone wrong and turned sour and silly" so fast!

[33] Charles P. Kindleberger "takes exception to the findings of those" who stress monetary policy in the United States and other major countries, slower population growth or autonomous changes in the propensity to spend, and "insists that the origins of the Great Depression were international." Charles P. Kindleberger "The International Causes and Consequences of the Great Crash", The Journal of Portfolio Management, Fall 1979, p. 11. This paper summarizes Kindleberger's full-dress analysis, *The World in Depression 1929–1939*, London-New York 1973.

depression had been intensified—greatly in smaller countries and slightly, primarily through feedback-effects, in the United States—by the malfunctioning and mismanagement of the international monetary system then in operation. Contrary to a widely held view, the trouble was not excessive volatility of floating exchange rates, but rather excessive rigidity of exchange rates under the gold standard.[34]

To bring out the perversity of the operation of the system, consider how it should have operated and would have operated if it had been properly managed. After the depression gathered momentum, the ideal policy would have been an internationally agreed policy of joint monetary-fiscal expansion—the dominant economic power, the United States taking the lead. Since the United States did not take the lead but let its economy sink deeper into depression the second best policy would have been for other countries to go ahead with expansionary measures and promptly let their currencies depreciate as many countries did in the end. This, however, was against the spirit of the times. What actually happened was that most countries took deflationary measures to protect the parity of their currency. As a consequence, protectionist propensities became very strong. As mentioned above, the United States gave a bad example by imposing in 1930 the highly protectionist Smoot-Hawley tariff. In Britain Keynes recommended first a "revenue tariff", then a uniform import tariff plus an equal export bounty (which would have been roughly equivalent to a depreciation of the currency), and still later a system of differentiated import tariffs and export bounties (which would have been equivalent to what later became known as the Schachtian (Nazi) system).[35] On September 21, 1931 Britain took the historic step of cutting the link to gold and let the pound float. On top of that, she introduced in February 1932 a stiff import tariff.[36] The combination of devaluation and protection served its purpose; it stimulated the British economy but exerted strong deflationary pressures on other countries including the United States where the Federal Reserve reacted by deflationary measures.[37]

In 1933–34 the gold value of the dollar was gradually reduced from $20.67 per ounce of gold to $35 for the purpose of raising the price level and so stimulating the economy—a flagrant case of beggar thy neighbor policy which resulted in heavy deflationary pressure on the countries whose currencies were still linked to gold—France, The Netherlands and Switzerland among them. They reacted by further deflating and imposing import restrictions. In 1936 the "gold bloc" countries devalued. In the meantime other countries—Australia and the Scandiavian countries among them—had cut the link to gold and

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[34] However, criticism of the gold standard in its dying phase does not mean that it was a bad system under more propitious circumstances in the liberal era before 1914.

[35] This was Keynes' nationalistic-protectionist period. One of Keynes' great admirers commented: "Even Keynes succumbed to the current insanity . . . A sad aberration of a noble mind." Lord Robbins' Autobiography of an Economist, London 1971, p. 156. Keynes later changed his mind, but some of his followers have continued the "insanity" to this day.

[36] Keynes opposed the devaluation and pleaded for his import-tariff, export-bounty scheme. After the devaluation had occurred he argued that protectionist measures were no longer necessary. But it was too late, "Die ich rief, die Geister, die werd ich nun nicht los." (Goethe, "The Sorcerer's Apprentice".)

[37] See Friedman-Schwartz, Monetary History, p. 317.

the dollar, launched expansionary measures, and so extricated themselves from the deflationary spiral.[38]

The upshot is that, although each devaluation can be defended as unavoidable and serving its purpose of relieving deflationary pressure in the country concerned, the time pattern of the process, the slow-motion adjustment of exchange rates, stamps the whole approach as a sadistic policy, calculated to maximize the pains of adjustment. If I may use a simile that I have used before, it was like cutting off the tail of a dog piece by piece instead of all at once as it might have been done (if there had existed an International Monetary Fund) by raising the gold price all around, thus enabling simultaneous expansion in all countries.

V. Fifty Years Later: Can It Happen Again?

Can it happen again? The short answer is: It is thinkable but very unlikely. Why? A plausible but not entirely satisfactory answer, that only a few years ago would have been given by many economists, mainly Keynesians,[39] is this: The Great Depression and earlier ones were due to deflation (a sharp decline of the money stock and aggregate expenditures) and this is not likely to happen again. True enough, but avoidance of monetary deflation may not be enough to prevent recessions and depressions. In recent years it has become general knowledge (what previously was known only to a few economists) that inflation is not incompatible with unemployment. The recession of 1973–75 was a highly inflationary one. Is an inflationary depression with unemployment as high as in the 1930s (25 percent) not possible?[40]

The probability of this happening is, I believe, greater (probably much greater) than the probability of a monetary deflation (sharp decline in money GNP). The reason is that it is much easier to stop a monetary contraction than an inflationary recession or depression. A decline in money and money GNP can always be stopped by monetary-fiscal measures. But that may not be enough to stop an inflationary depression. Keeping the growth of money and money GNP at the level that corresponds to the growth of full employment real GNP ("growth potential" as it is often called) is a necessary but not a sufficient condition for preventing an inflationary recession or depression. Even if the monetary stability condition is fulfilled, that is to say, even if monetary growth is equal to the full employment real GNP growth, inflation accompanied by unemployment (an inflationary recession) is thinkable, namely if organized pressure groups push wages and other costs,

[38] For details see my, "The World Economy Money and the Great Depression 1929–39" and the literature mentioned there.

[39] Keynesians rather than Keynes himself. Already in 1937, one year after the appearance of the General Theory. Keynes had become very worried about inflation and called for a shift in policy, although inflation was low by present day standards (less than 10 percent) and unemployment was rather high (about 11 percent). See T. W. Hutchison, Keynes versus the "Keynesians." Institute of Economic Affairs, London 1977.

[40] It could be argued that 25 percent unemployment today is not equivalent to 25 percent in the 1930s, because generous unemployment benefits and welfare payments have not only reduced the cost of unemployment in terms of human suffering, but also means that an unknown but surely significant fraction of the registered number of the unemployed represents voluntary unemployment. It follows that 25 percent unemployment in the 1930s would be equivalent, to, say 35 percent now.

such as energy, above the full employment level. This could also be described as a case of cost-push inflation and stagflation.

The crucial question thus is what one assumes about the power and behavior of such pressure groups. The answer to this question has important implications. Monetarists assume that, provided the monetary authorities stand firm, labor unions and other pressure groups would not want to, or would not be strong enough to, push up the cost level significantly so as to produce a recession or depression, although some transitional unemployment may have to be accepted to eliminate inflation after it has been allowed to gather momentum. This assumption implies that by and large the economy still operates according to the competitive rules.

I, myself, believe that this diagnosis is too optimistic. Wage push is a real threat. After all, there have been inflationary recessions. The question is: Can the wage push become strong enough to produce a real inflationary depression of an order of magnitude of the Great Depression? In my judgment the answer to this generation is: no; an inflationary depression is not likely to occur. This judgment is based on the assumption that at an unemployment level of, say, 12–15 percent or more unions would moderate their wage demands substantially.

However, this conclusion does not justify great optimism for the future. For one thing, our society's tolerance for unemployment is much lower today than it was 50 years ago. As a consequence, governments react strongly even to low levels of general unemployment and to patches of unemployment in limited areas, by all sorts of measures, massive deficit spending, ill-conceived regulations, large subsidies to, or nationalization of, inefficient and uncompetitive industries or firms, restriction of imports, and so on. The result is an enormous growth of the public sector, a stifling tax burden, lower productivity, sluggish growth and more inflation. In some western countries there are strong reactions to these collectivist tendencies. But it remains to be seen whether there will be a real reversal of the trend.

For another thing, paradoxical though it may sound, an old-fashioned, classical depression with falling prices, even a depression of as catastrophic dimension as the Great Depression of the 1930s, is easier to stop than the mild inflationary recessions of our times. Easy money and crude deficit spending is the straightforward cure for old-fashioned depressions, while an inflationary recession—stagflation—poses a nasty policy dilemma: If fiscal-monetary expansion is used to combat unemployment, inflationary pressures increase; if tight fiscal-monetary measures are applied to curb inflation, unemployment goes up.

Space does not permit a thorough discussion of the dilemmas and perils of stagflation. I must confine myself to a few remarks.

First, inflation must be stopped by tight monetary-fiscal policies, because the cost of long-lasting inflation is much greater than is commonly realized.[41] Second, most economists, including Keynesians and Monetarists, should be able to agree that the transitional (or long-lasting) unemployment caused by disinflation will be less and thus the chances of a disinflationary policy to be adopted and successfully

[41] See Martin Feldstein, "The Welfare Cost of Permanent Inflation and Optimal Short Run Economic Policy," Journal of Political Economy, vol. 87, No. 4, August 1979, pp. 749–768.

carried out will be greatly improved, if the economy is brought closer to the competitive ideal by removing impediments to competition, vigorous anti-monopoly policy (keeping in mind that free trade is the most effective and administratively easiest anti-monopoly policy), deregulation of industry and similar measures. However, since such reform measures take a long time to be adopted and to become effective, curbing inflation by monetary-fiscal policies cannot wait until institutional reforms have been carried out. Third, recent theoretical developments (monetarism, rational expectations theory, William Fellner's credibility approach) as well as practical experience have demonstrated the crucial importance of inflationary expectations. If market participants (including labor unions and other pressure groups) are convinced that inflation will continue, they raise their wage and price demands and inflation accelerates. As William Fellner[42] has stressed, the government can help to induce market participants to change their expectations by making it clear that it will stick to its anti-inflation policy. If a credible anti-inflation policy persuades market participants that the government will pursue its anti-inflation policy consistently and will not change course as soon as unemployment goes up a little bit, unions will moderate their wage demands in order not to price themselves out of the market. The difficulty is how to make the policy credible after many years of stop and go.

The international monetary system of the post-war period was a great improvement over the gold standard of the interwar period. The Bretton Woods system served the world well for 25 years. It provided a forum for continuous consultations so that necessary exchange rate changes could be made more promptly than under the gold standard and convertibility of currencies could be restored. Tariffs were reduced and world trade was liberalized under the aegis of GATT.

Although protectionist pressures have increased in recent years, a protectionist explosion has been avoided because, unlike what happened in the 1930s, balance of payments adjustment is being effected by exchange rate changes and floating rather than by exchange control and import quotas.[43]

In the later 1960s, however, the Bretton Woods system came increasingly under stress and in the early 1970s it broke down because its method of changing exchange rates, the "adjustable" or "jumping" peg, was too slow to cope with the strains and stresses caused by rising inflation and increasing international mobility of capital. Bretton Woods was followed by widespread managed floating of all major and many minor currencies although a large number of smaller countries continue to peg their currencies to the dollar, the German mark, the Japanese yen, to SDRs or some other baskets of currencies.

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[42] William Fellner, Towards a Reconstruction of Macroeconomics, Problems of Theory and Policy. American Enterprise Institute, Washington, D.C. 1976, and "The Valid Core of Rationality Hypotheses in the Theory of Expectations," paper prepared for a Conference on Rational Expectations held at the American Enterprise Institute, Washington, D.C. Feb. 1, 1980. The proceedings are published in The Journal of Money, Credit and Banking. Volume 12, No. 4, Part 2, November 1980, Columbus, Ohio.

[43] On the trade front there has been some backsliding. Import restrictions have been imposed in a number of cases, usually not by higher tariffs but by "non-tariff" measures including the so-called "voluntary" export restrictions forced on foreign exporters. But these restrictions are protectionist in nature designed to protect particular industries; they are not across the board to "protect" the balance of payments as they were in the 1930s.

Despite much criticism and disenchantment, it can be said that the present system of managed floating—or non-system as some prefer to call it—has served the world quite well, certainly much better than the adjustable peg would have. Floating has enabled the world economy to adjust to a series of nasty shocks—a major inflationary commodity boom followed by the oil shock, the severe recession of 1973–75 and the large inflation differentials between major countries that have developed in recent years.[44]

The dollar is still the world's most important reserve and transactions currency. The dramatic decline of the dollar, mainly vis-à-vis the German mark, Swiss franc, Japanese yen and currencies linked to the mark, is due to the fact that the strong currency countries have managed to reduce the rate of inflation to a much lower level than the United States. True, the United States inflation declined from 12 percent in 1974 to below 5 percent at the end of 1976; but it got stuck at that level and rose again to the two-digit level after the new administration in 1977 prematurely switched emphasis from fighting inflation to more rapid expansion while the strong currency countries continued to wind down inflation. This divergent policy stance created a (temporary) growth differential as well as an inflation differential between the United States and the strong currency countries. No wonder that the dollar slumped! The greatest, nay indispensable, contribution to a smooth working of the international monetary system and further growth of the world economy that the United States could make is to bring down its rate of inflation to the German level.

But floating is here to stay. It has served the world well. Despite turmoil in the foreign exchange markets and protectionist pressures, world trade has continued to expand rapidly. Only in one year, the recession year of 1975, was there a small decline in the volume of world trade.

VI. Concluding Remarks

The Great Depression of the 1930s was not a regular cyclical downswing; its catastrophic severity and length did not signify a basic instability of the capitalist free enterprise system, as Marxists and Keynes' radical followers, Marxo-Keynesians (as Schumpeter used to call them) believe. It was due to horrendous monetary-financial policy mistakes of commission and omission on the national and international level. The international monetary system then in operation, which provided for fixed exchanges under the gold standard, was responsible for the rapid worldwide sweep of the slump and greatly added to its severity.

These basically monetary mistakes were not repeated in the post-war period and are most unlikely to be committed in the future. The international monetary arrangements of the post-war period, first the Bretton Woods regime then the present system of managed flexibility of exchange rates, have been a great improvement over the regime of fixed exchange rates in the 1930s. It follows that another depression

[44] See Otmar Emminger, *The International Monetary System Under Stress. What Can We Learn from the Past?*, Reprint No. 112, American Enterprise Institute, Washington, DC 1980 and Gottfried Haberler, "The Dollar in the World Economy: Recent Developments in Perspective", *Contemporary Economic Problems* 1980, William Fellner, Project Director, American Enterprise Institute, Washington, D.C. 1980.

of the same kind and severity as the Great Depression, a *deflationary* depression, is almost inconceivable.

This conclusion is, however, no reason for complacency. There are different ways of getting into serious difficulties. Chronic inflation has become a grave calamity and we have learned that in the longer run inflation, far from being a remedy, becomes the cause of stubborn unemployment. There are good reasons to believe that an inflationary *depression* approaching the severity of the Great Depression of the 1930s, although not unthinkable, will be avoided. But we have already had several *inflationary recessions;* the last one of 1974–75 was serious and worldwide. The tolerance of our society for unemployment is much lower today than it was 50 years ago. The consequence is that governments overreact even to comparatively low levels of unemployment and associated inflation—by excessive monetary-fiscal expansion, thus accelerating and perpetuating inflation; by ill-conceived regulations, by price and wage controls, and by import restrictions and subsidies in different forms to noncompetitive firms and industries. This leads to an enormous growth of government bureaucracy and stifling taxation—a potent discouragement of saving and investment—and to economic inefficiencies. Thus, the growth of productivity slows down and comes to a halt which makes it still harder to stop inflation. This vicious circle undermines the foundation of the capitalist, free market economy, and endangers the future of democracy itself.

A LONG-RUN LOOK AT THE BUSINESS CYCLE

By Geoffrey H. Moore

A Long-Lived Definition

Business cycles have been sufficiently stable in their characteristics that a definition formulated in 1927, and modified slightly in 1946, has served to identify business cycles in the United States for nearly one hundred and fifty years. A chronology of cycles based upon this definition begins in 1834 and extends to 1975, the latest recorded upturn in the cycle. The definition refers to such characteristics of the cycle as its duration, its amplitude, and its scope. Although expressed in general terms, its operational character is demonstrated by the fact that decisions pertaining to the existence of recession or recovery at particular times and to the designation of peak and trough dates marking the beginning and end of recessions have occasioned little controversy. In short, although every business cycle differs from its predecessors, they have not changed so much that a single definition could not retain its validity for nearly a century and a half.

The definition referred to runs as follows (we cite the 1946 version):

> Business cycles are a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises: a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle; this sequence of changes is recurrent but not periodic; in duration business cycles vary from more than one year to ten or twelve years; they are not divisible into shorter cycles of similar character with amplitudes approximating their own.

The business cycle chronology based upon this definition is given in Table 1. This serves to identify the phenomenon whose stable and changing characteristics we wish to consider.

TABLE 1.—BUSINESS CYCLE EXPANSIONS AND CONTRACTIONS IN THE UNITED STATES, 1834–1975

Trough (months)	Peak (months)	Quarters		Calendar years		Duration in months			
								Cycle	
		Trough	Peak	Trough	Peak	Contraction (peak to trough)	Expansion (trough to peak)	Trough to trough	Peak to peak
				1834	1836	-------	1 24	-------	-------
				1838	1839	1 24	1 12	1 48	1 36
				1843	1845	1 48	1 24	1 60	1 72
				1846	1847	1 12	1 12	1 36	1 24
				1848	1853	1 12	1 60	1 24	1 72
December 1854	June 1857	4Q—1854	2Q—1857	1855	1856	1 24	30	1 84	1 36
December 1858	October 1860	4Q—1858	3Q—1860	1858	1860	18	22	48	40
June 1861	April 1865	3Q—1861	1Q—1865	1861	1864	8	46 W	30	54
December 1867	June 1869	1Q—1868	2Q—1869	1867	1869	32	18	78	50
December 1870	October 1873	4Q—1870	3Q—1873	1870	1873	18	34	36	52
March 1879	March 1882	1Q—1879	1Q—1882	1878	1882	65	36	99	101
May 1885	March 1887	2Q—1885	2Q—1887	1885	1887	38	22	74	60

TABLE 1.—BUSINESS CYCLE EXPANSIONS AND CONTRACTIONS IN THE UNITED STATES, 1834–1975—Continued

Trough (months)	Peak (months)	Quarters: Trough	Quarters: Peak	Calendar years: Trough	Calendar years: Peak	Duration in months: Contraction (peak to trough)	Duration in months: Expansion (trough to peak)	Duration in months: Cycle: Trough to trough	Duration in months: Cycle: Peak to peak
April 1888	July 1890	1Q—1888	3Q—1890	1888	1890	13	27	35	40
May 1891	January 1893	2Q—1891	1Q—1893	1891	1892	10	20	37	30
June 1894	December 1895	2Q—1894	4Q—1895	1894	1895	17	18	37	35
June 1897	June 1899	2Q—1897	3Q—1899	1896	1899	18	24	36	42
December 1900	September 1902	4Q—1900	4Q—1902	1900	1903	18	21	42	39
August 1904	May 1907	3Q—1904	2Q—1907	1904	1907	23	33	44	56
June 1908	January 1910	2Q—1908	1Q—1910	1908	1910	13	19	46	32
January 1912	January 1913	4Q—1911	1Q—1913	1911	1913	24	12	43	36
December 1914	August 1918	4Q—1914	3Q—1918	1914	1918	23	44 W	35	67
March 1919	January 1920	1Q—1919	1Q—1920	1919	1920	7	10	51	17
July 1921	May 1923	3Q—1921	2Q—1923	1921	1923	18	22	28	40
July 1924	October 1926	3Q—1924	3Q—1926	1924	1926	14	27	36	41
November 1927	August 1929	4Q—1927	3Q—1929	1927	1929	13	21	40	34
March 1933	May 1937	1Q—1933	2Q—1937	1932	1937	43	50	64	93
June 1938	February 1945	2Q—1938	1Q—1945	1938	1944	13	80W	63	93
October 1945	November 1948	4Q—1945	4Q—1948	1946	1948	8	37	88	45
October 1949	July 1953	4Q—1949	2Q—1953	1949	1953	11	45W	48	56
May 1954	August 1957	2Q—1954	3Q—1957	1954	1957	10	39	55	49
April 1958	April 1960	2Q—1958	2Q—1960	1958	1960	8	24	47	32
February 1961	December 1969	1Q—1961	4Q—1969	1961	1969	10	106W	34	116
November 1970	November 1973	4Q—1970	4Q—1973	1970	1973	11	36	117	47
March 1975		1Q—1975		1975		16		52	
Averages:									
5 cycles	1834–1855					[1] 24	[1] 26	[1] 50	[1] 48
20 cycles	1854–1933					22	[2] (23)25	48	49
8 cycles	1933–1975					11	[2] (37)52	53	53
33 cycles	1834–1975					19	[2] (27)32	51	51

[1] Based upon calendar year dates.
[2] Parenthetic figures exclude wartime expansions, marked "W".

Note: For a basic statement of the method of determining business cycle peaks and troughs, see Arthur F. Burns and Wesley C. Mitchell, Measuring Business Cycles (New York: National Bureau of Economic Research, 1946), ch. 4. Some of the dates shown there (p. 78) have since been revised. For a description of how the method has been applied more recently, see Victor Zarnowitz and Geoffrey H. Moore, "The 1973–1976 Recession and Recovery," Explorations in Economic Research, 4 (Fall 1977). For a related chronology covering the period 1790–1925, see Willard L. Thorp, Business Annals (New York: National Bureau of Economic Research, 1926).

Source: National Bureau of Economic Research.

Business Cycles and Growth Cycles

In recent years a significant variant of the foregoing concept of the business cycle has been developed, which has come to be known as the growth cycle. It is, in effect, a trend-adjusted business cycle. The above definition is applied, not to measures of aggregate economic activity in their original form, but to such measures after adjustment for long-run trend. Instead of an absolute rise and fall in activity, the growth cycle consists of a rise and fall relative to long-run trend. Otherwise the same elements of the definition apply.

Because the growth cycle concept may become more widely used in the future, both in the United States and in other countries, we shall consider some of its stable and changing characteristics as well as those of the business cycle per se. A chronology of U.S. growth cycles is given in Table 2, beginning in 1948. This chronology has not been extended back historically as far as the business cycle chronology has, but the overlapping period enables us to say something about the relationship between them.

TABLE 2.—GROWTH CYCLES AND BUSINESS CYCLES IN THE UNITED STATES, 1948–75

Business cycle and reference dates		Duration in months		Growth cycle and reference dates		Duration in months		Lead (−) or lag (+) in months of growth cycle at business cycle	
Peak (P)	Trough (T)	Contraction (P to T)	Expansion (T to P)	Peak (P)	Trough (T)	Low-growth phase (P to T)	High-growth phase (T to P)	Peak	Trough
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
November 1948	October 1949	11		July 1948	October 1949	15		−4	
[1]	[1]			March 1951	July 1952	16	17		0
July 1953	May 1954	10	45	March 1953	August 1954	17	8	−3	+3
August 1957	April 1958	8	39	February 1957	April 1958	14	30	−6	0
April 1960	February 1961	10	24	February 1960	February 1961	12	22	−2	0
[1]	[1]			May 1962	October 1964	29	15		
[1]	[1]			June 1966	October 1967	16	20		
December 1969	November 1970	11	106	March 1969	November 1970	20	17	−9	0
November 1973	March 1975	16	36	March 1973	March 1975	24	28	−8	0
Average		11	50			18	20	−5	0

[1] No corresponding business cycle turn.

Source: National Bureau of Economic Research, Inc.

What I propose to do in this paper, then, is first to consider what the business cycle and growth cycle chronologies have to tell us about the duration of these cycles. Are recessions becoming longer or shorter? Has the expansion phase of the cycle become extended relative to the contraction or recession phase? We then look into possible explanations for the changes we find and into their implications for future cycles and for inflation.

DURATION OF BUSINESS CYCLES

Even a cursory examination of Table 1 attests to the validity of one aspect of the definition of business cycles cited above: business cycles are recurrent but not periodic. The variation in their duration since 1834 is obvious, whether one considers the contraction phase alone, the expansion phase alone, or both phases together. Contractions have been as short as 7 months and as long as 65 months. Expansions have varied from 10 months to 106 months. Cycles measured from peak to peak or from trough to trough have ranged from 17 months to 117 months. There is, however, more of a central tendency than these ranges suggest. Half of the 28 contractions have lasted 11 to 18 months, that is, a year to a year and a half. Half of the 28 expansions have lasted between 21 and 37 months, roughly two to three years. Half of the full cycle periods occupied a span of three to four and a half years. But these ranges have never been tight enough for one to predict with reasonable confidence when the next turn in the cycle would come merely from knowledge of when the last turn had been reached. Business cycles are not periodic.

It is evident also from Table 1 that business cycle expansions are subject to prolongation by the occurrence of a major war. Each of the wartime expansions—during the Civil War, World War I, World War II, the Korean War and the Vietnam War—was much larger than most of the others. These five wartime expansions lasted 46, 44, 80, 45, and 106 months, respectively. Of course, in most instances the expansions might have occurred anyway—the last three began well before war broke out—but it does appear that wars extended their life. Only two peacetime expansions have rivaled the wartime expansions in length. One was the 50-month expansion that began in March 1933 at the bottom of the Great Depression. The other was the expansion that began in March 1975. The peak date marking the end of the latest expansion has been placed at January 1980; hence it has been unusually long. Nevertheless, it is in line with a trend that began some years ago.

The trend becomes clearer from the averages at the bottom of Table 1. Recessions have become shorter, expansions longer. The average recession since the Great Depression has lasted half as long as the average recession before then. A year is now the norm, two years was then the norm. The average expansion has become longer, whether one includes the wartime expansions or not. Three years has been the norm for peacetime expansions since 1929; two years was the norm before then.

This means there has been a substantial shift in the proportion of time the economy is enduring recession. Before 1929 the ratio was

about one to one; the average peacetime expansion was not much longer than the average recession. Since 1929 the ratio has been about three to one (or five to one if one counts wartime expansions). Relative to expansions, recessions have been cut by two thirds (or by four fifths if one counts the wartime expansions). Worrying about recession should now be occupying our attention much less; seizing the opportunities provided by expansions and avoiding their dangers should be occupying our attention far more.

The trend toward longer expansions and shorter contractions could have come about in two ways: from a speed-up in the long-run growth rate of the economy, or from a reduction in the amplitude of the cyclical fluctuations apart from trend. With a given size fluctuation, more rapid growth tends to produce longer expansions and shorter contractions. With a given growth trend, smaller fluctuations have a similar effect. It is clear that the growth of the U.S. since 1929 has been slower, not faster, than it was before (see Table 3). Hence from the trend factor alone one would not have expected the durations of expansions relative to contractions to be larger since 1929 than in the earlier period. On the contrary, slower growth should have reduced the length of expansions relative to contractions. The primary cause must therefore be a reduction in the size of cyclical fluctuations apart from trend.

TABLE 3.—GROWTH RATES IN REAL GNP AND INDUSTRIAL PRODUCTION, 1860–1979

	Initial year level	Terminal year level	Number of years	Annual rate of growth (percent)
Real gnp:				
NBER (Kendrick) estimates: 1874[1]–1929 (billions of 1929 dollars)	11.5	104.4	55	4.1
BEA estimates: 1929–79 (billions of 1972 dollars)	314.6	1,431.1	50	3.1
Industrial production:				
NBER (Nutter) estimates: 1860[2]–1929 (1913=100)	7.5	188.3	69	4.8
FRB estimates: 1929–79 (1967=100)	21.6	152.2	50	4.0

[1] Decade average, 1869–78.
[2] First year estimated.

Source: U.S. Department of Commerce, Long Term Economic Growth, 1860–1965, pp. 166–167, for figures before 1929. Economic Report of the President, January 1980, pp. 204, 248, for figures after 1929.

This is precisely the measure of cyclical fluctuations provided by the growth cycle concept. Unfortunately we do not have available comparable measures of cyclical fluctuations based upon the growth cycle concept prior to 1948. We cannot, therefore, test our conjecture about the size of cyclical fluctuations directly. Nevertheless, we can learn something from the growth cycle chronology in Table 2, and from other evidence.

Duration of Growth Cycles

What a difference a trend makes! That is the lesson that Table 2 teaches when compared with Table 1. Growth cycles are more sym-

metrical than business cycles, and shorter. Between 1948 and 1975 the contraction phases of growth cycles lasted 18 months on the average while the expansion phases averaged 20 months. This compares with averages of 11 and 50 months for the corresponding phases of business cycles during the same period. There were eight growth cycles, averaging about 3 years in length, but only five business cycles, averaging five years. The greater symmetry of the growth cycles is attributable to two factors. One is that the long business cycle expansions are interrupted by slowdowns which become growth cycle contractions. This shortens the expansions. The other is that growth cycle slowdowns begin before business cycle peaks but end at about the same time as business cycle troughs. This lengthens the downswing in the growth cycle and shortens the upswing.

What this means is that the U.S. economy since World War II has been subjected to cyclical fluctuations (growth cycles) of a roughly symmetrical shape but that the long-run upward growth trend lengthened the expansion phases and shortened the contraction phases of business cycles. Presumably the steeper growth trends prior to World War II had similar effects. Why did they not produce even greater asymmetry? Apparently the answer is that the cyclical fluctuations then were of larger amplitude than they have been recently.

It is important to resolve this question because of the possibility that the reduced amplitude of the cyclical movements in recent years may have been achieved *at the expense* of a steeper growth trend. Cycle and trends can interact. If recessions have become shorter relative to expansions because of factors that have not only reduced cycle amplitudes but have also reduced long-run growth, we should be aware of the trade-off. Unfortunately relatively little research has been done on this point, but in the following sections we call attention to some relevant considerations.

Employment and Unemployment During Recessions

Recessions since 1948 have produced smaller reductions in employment but have not produced commensurately smaller increases in unemployment. Table 4 brings together some measures of changes in output, employment and unemployment during recessions since 1920. The declines in nonfarm employment have become progressively shorter since 1929. The most recent decline, during the 1973–75 recession, was the shortest on record (6 months). There has been a similar trend in the percentage declines in employment. The latest decline was not the smallest, but it was smaller than most of the others. The employment drop in 1973–75 was less than one tenth the size of the 1929–33 decline, whereas the 1973–75 decline in real GNP was about one sixth as large as its 1929–33 decline.

TABLE 4.—SELECTED MEASURES OF DURATION, DEPTH, AND DIFFUSION OF BUSINESS CYCLE CONTRACTIONS

[From peak (first date) to trough (second date)]

	Jan. 1920 July 1921	May 1923 July 1924	Oct. 1926 Nov. 1927	Aug. 1929 Mar. 1933	May 1937 June 1938	Feb. 1945 Oct. 1945
Duration (months):						
Business cycle (table 1)	18	14	13	43	13	8
GNP, current dollars	(1)	6	12	42	9	6
GNP, constant dollars	(1)	3	3	36	6	(1)
Industrial production	14	14	8	36	12	27
Nonfarm employment	(1)	(1)	(1)	43	11	22
Depth (percent):[2]						
GNP, current dollars	(1)	−4.9	−3.0	−49.6	−16.2	−11.9
GNP, constant dollars	(1)	−4.1	−2.0	−32.6	−13.2	(1)
Industrial production	−32.4	−17.9	−7.0	−53.4	−32.4	−38.3
Nonfarm employment	(1)	(1)	(1)	−31.6	−10.8	−10.1
Unemployment rate:						
Maximum	[3] 11.9	[3] 5.5	[3] 4.4	[3] 24.9	20.0	4.3
Increase	[3] +10.3	[3] +2.6	[3] +2.4	[3] +21.7	+9.0	+3.4
Diffusion (percent): Nonfarm industries, maximum percentage with declining employment[4]	[5] 97	[6] 95	[7] 71	[8] 100	[9] 97	(1)

	Nov. 1948 Oct. 1949	July 1953 May 1954	Aug. 1957 Apr. 1958	Apr. 1960 Feb. 1961	Dec. 1969 Nov. 1970	Nov. 1973 Mar. 1975
Duration (months):						
Business cycle (table 1)	11	10	8	10	11	16
GNP, current dollars	12	12	6	9	(10)	(10)
GNP constant dollars	6	12	6	9	15	15
Industrial production	15	8	14	13	14	9
Nonfarm employment	13	16	14	10	8	6
Depth (percent):[2]						
GNP, current dollars	−3.4	−1.9	−2.8	−0.4	(10)	(10)
GNP, constant dollars	−1.4	−3.3	−3.2	−1.2	−1.1	−5.7
Industrial production	−9.9	−10.0	−14.3	−7.2	−8.1	−14.7
Nonfarm employment	−5.2	−3.4	−4.3	−2.2	−1.6	−2.7
Unemployment rate:						
Maximum	7.9	6.1	7.5	7.1	6.1	9.1
Increase	+4.5	+3.6	+3.8	+2.3	+2.7	+4.2
Diffusion (percent): Nonfarm industries, maximum percentage with declining employment[4]	[11] 90	[12] 87	[13] 88	[14] 82	[15] 83	[16] 90

[1] Not available.
[2] Percentage change from the peak month or quarter in the series to the trough month or quarter, over the intervals shown. For the unemployment rate the maximum figure is the highest for any month during the contraction, and the increases are from the lowest month to the highest, in percentage points.
[3] The maximum figures are annual averages for 1921, 1924, 1928, and 1933 (monthly data not available). Increases, in percentage points, are for 1919–21, 1923–24, 1926–28, and 1929–33.
[4] Since 1948 based on changes in employment over 6 mo span in 30 nonagricultural industries, centered on the 4th month of the span. Prior to 1948 based on cyclical changes in employment in 41 industries.
[5] September 1920.
[6] April 1924.
[7] November 1927.
[8] June 1933.
[9] December 1937.
[10] No decline.
[11] February 1949.
[12] March 1954.
[13] September 1957.
[14] August 1960.
[15] June 1970.
[16] January 1975.

Source: U.S. Department of Commerce, U.S. Department of Labor, Board of Governors of the Federal Reserve System, National Bureau of Economic Research. For a fuller version of this table, see Solomon Fabricant, "The Recession of 1969–1970," in The Business Cycle Today, V. Zarnowitz, ed. (New York: National Bureau of Economic Research, 1972), pp. 100–10.

Unemployment does not show as favorable a trend as employment. The maximum rate reached during the 1973–75 recession, 9 percent, was higher than in any of the earlier recessions since World War II, and more than a third as high as the peak in the Great Depression. Even the increase in the unemployment rate (about four percentage

points), which is a better measure of a recession's effect, was relatively large—about one fifth of the 1929–33 increase.

The greater stability in employment during recession is attributable, at least in substantial measure, to the increasing importance of employment in the service industries, such as retail trade and government. Employment in these industries tends to hold up during recessions, as compared with employment in manufacturing and construction, and in recent decades they have become far more important sources of jobs. In 1929, according to Table 5, the industries that generally have had the largest percentage reduction in employment during recession employed about two thirds of the work force. Now they are employing only about one third of the work force. In the 1973–75 recession total employment declined about 2 percent. If the industrial composition of employment had been what it was in 1929, the decline would have been about three percent, assuming that each industry experienced the same percentage decline as it actually did in 1973–75. This is not a negligible difference. It means that an additional million persons would have been unemployed. The shift in industry mix has continued. A repetition of the 1973–75 recession in 1979, by the same calculation, would have produced a still smaller decline in total employment. By 1990, if the industry growth projections of the Bureau of Labor Statistics are near the mark, a 1973–75 type recession would produce a decline in total employment only two thirds as large as in 1973–75, reducing the loss of jobs by about half a million.

TABLE 5.—GROWTH IN RECESSION-PROOF INDUSTRIES SINCE 1929 HAS REDUCED RECESSION'S IMPACT UPON EMPLOYMENT

	Number of jobs (millions)		Ratio, 1979 to 1929	Percent of total		Number of jobs (millions)		Percent change, 1974–75
	1929	1979		1929	1979	1974	1975	
Recession-prone industries:								
Manufacturing	10.7	21.0	2.0	26	23	20.1	18.3	−8.7
Mining	1.1	1.0	0.9	3	1	0.7	0.8	+7.9
Construction	1.5	4.6	3.1	4	5	4.0	3.5	−12.3
Transportation and public utilities	3.9	5.2	1.3	9	6	4.7	4.5	−3.9
Agriculture	10.4	3.3	0.3	25	4	3.5	3.4	−3.2
Total	27.7	35.0	1.3	66	38	33.0	30.5	−7.5
Recession-proof industries:								
Wholesale and retail trade	6.1	20.1	3.3	15	22	17.0	17.1	+0.4
Finance, insurance and real estate	1.5	5.0	3.3	4	5	4.1	4.2	+0.4
Services	3.4	17.0	5.0	8	18	13.4	13.9	+3.4
Government	3.1	15.6	5.1	7	17	14.2	14.7	+3.6
Total	14.1	57.8	4.1	34	62	48.7	49.8	+2.2
All industries	41.8	92.8	2.2	100	100	81.8	80.3	−1.8
Estimated percent change, 1974–75:								
Assuming 1929 distribution of jobs among industries								−3.0
Assuming 1979 distribution of jobs among industries								−1.5

Notes: Data on agricultural employment are from the household survey and represent the number of persons engaged in agricultural work. Data on nonfarm employment are from the establishment survey and represent the number of workers on payrolls, as reported by employers. Persons with more than 1 job may be reported more than once. Proprietors and unpaid family workers (outside of agriculture) and domestic workers in households are not included. Hence the totals shown for "all industries" differ from the total number of persons reported as employed in the household survey, which were 47,600,000 in 1929, 85,900,000 in 1974, 84,800,000 in 1975, and 96,900,000 in 1979.

Source: Bureau of Labor Statistics.

With employment more stable because of a shift to industries that retain their workers during recessions, why hasn't there been a similar change in the unemployment picture? Probably there has been, but other factors have offset it. One of them is that the shift to the service industries has brought many more women into the labor force, and women are subject to higher unemployment rates than men because they leave and re-enter the labor force more frequently. Another factor is that unemployment compensation benefits have eased the burden of unemployment on the individual so that he can be more selective about jobs. A third factor has been the increase in the number of two-earner families, which permits longer spells of unemployment, since the earnings of one member can sustain the family temporarily while the other seeks work.

What this implies is that the unemployment figures have become doubly misleading. Not only have they failed to reflect the real improvement in the stability of employment during recessions, they have also registered an apparent deterioration because of factors that have eased the burden of unemployment. While the real situation has improved, the figures have gotten worse. This is no reflection on the statistics themselves, merely upon the interpretation that is usually placed on them. It emphasizes the importance to be attached to the employment figures, which are less ambiguous in this respect.

One other effect of the trend toward service-industry employment should be noted. It has tended to produce lags in the downturns of total employment at business cycle peaks. That is to say, employment may continue to rise for some months after total output, sales and income have begun to decline. In 1973–75, for example, the business cycle peak came in November 1973. Real GNP began declining about then, and so did employment in the goods-producing industries. But service industry employment continued rising until November 1974 and then declined for only two months. This kept total nonfarm employment on an upward path until October 1974, nearly a year after the decline in total output began. The shift towards the service industries has had a larger effect on employment than on output, because the service industries contribute relatively more to employment than to output.

Output and Income During Recessions

Two measures of output are recorded in Table 4: real GNP and industrial production. In terms of the length of the declines in these measures during recessions it is difficult to see any trend towards shorter declines. Indeed, for real GNP the two shortest declines occurred in the 1920s. In both the 1923–24 and 1926–27 recessions, real GNP dipped in only one quarter, thus refuting the popular rule of thumb that a recession is when real GNP declines for two consecutive quarters. The declines in these two recessions, however, were just as large as or larger than those that occurred in subsequent recessions, and other evidence (some of which is shown in the table) clearly indicates that they really were recessions.

It is in the magnitude of the declines in output rather than their length that one can observe some tendency towards milder recessions. The output declines in 1920–21, 1929–33 and 1937–38 were all substantially larger than in any of the recessions since 1948, and even the 1923–24 decline exceeded all but the most recent recession. It is noteworthy that the trend is just as visible in industrial production as it is in real GNP, because industrial production is confined to the output of mines, factories, and public utilities whereas GNP covers construction and services as well. Services have not been as large a factor in stabilizing GNP as in stabilizing employment, but the trend toward milder recessions is apparent nonetheless, even in a measure of output that is restricted to minerals, manufactures, and power.

The greater stability in output has been achieved partly through greater stability in income, income being the source of funds for the expenditures on which output is based. Real personal income, that is income after allowance for changes in the level of prices, is shown in two forms in Table 6: including and excluding transfer payments. The difference reveals one of the major sources of greater stability. Some types of transfer payments, such as unemployment compensation, move counter-cyclically, and hence offset part of the decline in income during recessions. Other types of transfer payments, such as social security benefits, are highly stable but have been growing very rapidly. Hence they also have offset recessionary declines in income. The result is that total real personal income has declined much less than it would have without the transfer payments. Indeed, the offset has been getting larger. In the 1948–49 recession, one-fourth of the decline in income from other sources was offset by transfer payments; in 1973–75, more than one-third of a much larger decline was offset in this way. At the start of the 1948–49 recession transfer payments were 5 percent of income; when the 1973–75 recession began they were 11 percent of income. By the end of 1979 they had climbed to 13 percent of income. Back in 1929 they were merely 2 percent of income.

TABLE 6.—EFFECT OF TRANSFER PAYMENTS ON DECLINES IN REAL PERSONAL INCOME DURING RECESSIONS, 1948–75

Business recession		Total real personal income							Real personal income less transfer payments						
		Peak		Trough		Length of decline (months)	Size of decline		Peak		Trough		Length of decline (months)	Size of decline	
Peak	Trough	Month	1972 dollars (billions)	Month	1972 dollars (billions)		Amount (billions)	Percent	Month	1972 dollars (billions)	Month	1972 dollars (billions)		Amount (billions)	Percent
November 1948	October 1949	October 1948	$372	July 1949	$361	9	−$11	−3	October 1948	$354	July 1949	$338	9	−$16	−5
July 1953	May 1954	June 1953	455	April 1954	444	10	−11	−2	June 1953	433	April 1954	419	10	−14	−3
August 1957	April 1958	August 1957	521	April 1958	509	8	−12	−2	August 1957	489	April 1958	472	8	−17	−3
April 1960	February 1961	June 1960	561	December 1960	555	6	−6	−1	June 1960	521	December 1960	512	6	−9	−2
December 1969	November 1970	(1)		(1)					(1)		(1)				
November 1973	March 1975	November 1973	1,008	February 1975	971	15	−37	−4	November 1973	895	February 1975	838	15	−57	−6

[1] No cyclical contraction.

Source: U.S. Department of Commerce.

Inflation and Growth Cycles

The trend toward longer expansions and milder recessions has had a significant consequence for inflation. This stems from the fact that slowdowns and recessions have been the times when inflation abates. Indeed, they have been the only times when inflation has abated. The converse is also true. During expansions, inflation accelerates. The longer they last, the more inflation we have to contend with.

A full demonstration of these propositions and the reasons for them remains to be written. The evidence that we have assembled is incomplete, but it is persuasive. Part of it is in Table 7, which traces a long-standing relationship between the major swings in wholesale prices and the prevalence of recession. The relationship was first set forth by Wesley Mitchell and Willard Thorp in 1926. Thorp had developed, after a painstaking study of business records, chronologies of prosperity and depression in 17 countries. He and Mitchell used the chronologies for the United States and England, which extended back to 1790, to show how the proportion of years of prosperity vs. depression varied between periods when the general level of wholesale prices was rising as compared with when it was falling. Some twenty years later, in 1946, Arthur Burns and Wesley Mitchell repeated the analysis using the business cycle chronologies that had by then become available, which distinguish between expansion and contraction rather than prosperity and depression. Table 7 brings the story up to date. It shows that

TABLE 7.—INFLATION AND BUSINESS CYCLES, 1790–1979

Trend in wholesale prices			Estimated change in Consumer Price Index (1967—100)			State of the business cycle		Ratio, expansion to contraction
Direction	Dates	Number of years	Initial year	Terminal year	Percent change at annual rate	Months of expansion	Months of contraction	
Rising	1789–1814	25	30	63	3.0	[1] 210	[1] 90	2.3
Falling	1814–43	29	63	28	−2.8	[1] 162	[1] 186	.9
Rising	1843–64	21	28	47	2.5	194	74	2.6
Falling	1864–96	32	47	25	−2.0	175	211	.8
Rising	1896–1920	24	25	60	3.7	163	108	1.5
Falling	1920–32	13	60	41	−2.9	70	88	.8
Rising	1932–79	47	41	217	3.6	462	87	5.3

[1] Based upon years of revival, prosperity, recession and depression as designated by Willard Thorp, Business Annals, p. 94 (National Bureau of Economic Research, 1926). We have classified revival and prosperity as "expansion", and recession and depression as "contraction".

The periods of rising and falling trends in wholesale prices are those designated by Burns and Mitchell, (*Measuring Business Cycles*, 1946, p. 432) from 1789 to 1932 and extended to 1979 by Moore. The periods are substantially the same as those given by Mitchell and Thorp (Thorp, *Business Annals*, 1926, p. 66), except that Burns and Mitchell place the trough in wholesale prices in 1843 rather than 1849.

The consumer price index from 1800 was estimated by the Bureau of Labor Statistics by splicing several indexes together, namely: 1800–1851, Index of Prices Paid by Vermont Farmers for Family Living; 1851–1890, Consumer Price Index by Ethel D. Hoover 1890–1912, Cost of Living Index by Albert Rees; 1913-date, Bureau of Labor Statistics. See *Handbook of Labor Statistics*, 1971, p. 253. For 1789 we obtained an estimate by splicing the Warren and Pearson wholesale price index to the Vermont price index at 1814 (see *Historical Statistics of the United States*, U.S. Department of Commerce, 1975, p. 201–202). In these early years the figures give only a rough indication of what was happening to consumer prices and cannot pretend to be comparable with more recent figures.

The classification of business cycle expansions and contractions into the periods of upswing and downswing in wholesale prices follows Burns and Mitchell, op. cit., pp. 437, 538, from 1843 to 1932. All business cycles since 1932 are included in the latest upswing. The expansion that began in March 1975 is included through December 1978, an arbitrary cut-off point that does not imply that the expansion ended then. From 1789 to 1843 the classification into years of prosperity and depression is based upon Thorp's Business Annals, (1926), p. 94, and Mitchell's Business Cycles: The Problem and its Setting (1927), pp. 444–445.

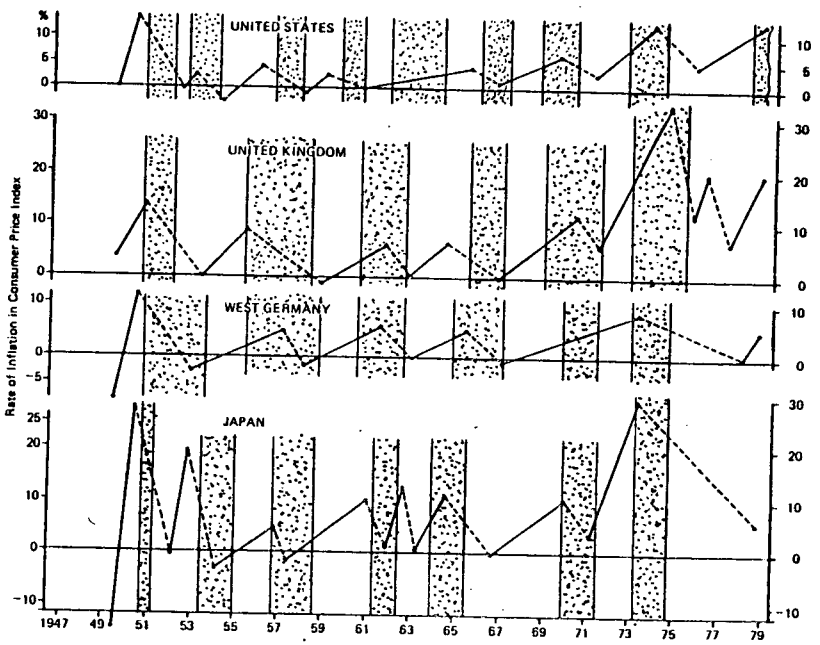
Source: Center for International Business Cycle Research, Rutgers University.

when the analysis is extended beyond the period covered by Mitchell and Thorp, (1790–1920), the same relationship appears. Long upswings in wholesale prices have been characterized by long business cycle expansions and short contractions. The latest upswing in prices, which began in 1932 and has been almost continuous ever since, fits the previous pattern well.

Additional evidence on the affinity between business cycles and inflation is contained in Figure 1. Here we use the growth cycle chronologies that are available for four countries since 1950, and record the highs and lows in the rate of inflation as measured by the Consumer Price Index in each country. The results are striking. In each country every decline in the rate of inflation was associated with a slowdown or recession, every increase with an expansion phase of the growth cycle. Conversely, virtually every slowdown or recession was associated with a reduction in the rate of inflation. Despite the efforts of these countries to avoid both recession and inflation, the record does not reveal conspicuous success. No country has been able to break the connection. The goal of policy in the future must be to break this cycle.

Figure 1.

Does Recession Slow Inflation? Evidence from Four Countries.



Note: Shaded areas are growth slowdowns or recessions. Declines in inflation rate are marked – – –.
Source: Center for International Business Cycle Research, Rutgers University.

The forces that put this recession-inflation pattern together are powerful. Recession is not the time for a company to raise prices if it can be avoided. It is the time to reduce costs, and companies that are hit by recession concentrate on doing that. Profit margins are squeezed even before recession begins—this is one of the factors prompting cost reduction. Overtime is reduced, labor saving practices and other economies are introduced, and a "tight ship" becomes the rule. During expansions, on the other hand, the incentives run the other way. Workers seize the opportunity to secure wage increases, managers concentrate on filling orders, salesmen forget the discounts they were offering during recession. Costs rise, profit margins rise, and prices rise. Inflation accelerates.

In the light of this sketch it is not difficult to understand why the Mitchell-Thorp pattern has prevailed for nearly two hundred years, or why growth cycles and inflation cycles have pursued one another closely in each of the major industrial countries. It becomes easier to see why the unusually long expansion in the United States since 1975 has generated an unusually large acceleration in inflation.

Within the past year or so inflation has come to be recognized as the nation's number one economic problem. Even more recently it has come to be recognized as a problem that is closely tied to another one, recession. We have shown that the connection has been of long standing. Our Founding Fathers faced the same problem. We have shown that the connection is pervasive. Other countries face the same problem. Long stretches of rapid economic growth, interrupted by only brief and mild recessions, are prone to generate inflation.

The policy implication would appear to be that expansionism can be overdone, or at least done badly. Brief and mild recessions, or none at all, are obviously more desirable than severe and prolonged depressions, which no one wants. The danger lies in the intervening expansions, and it is here, I believe, that our attention should be concentrated. How to avoid over-stimulation during the initial stages of recovery; how to avoid taking anti-recessionary action when the economy is only slowing down; how to avoid policies that lead to prolonged, widespread, and substantial increases in the costs of doing business; how to promote cost-reducing investments and productivity-enhancing practices—these are the important questions to be addressed.

CYCLES IN THE FIFTH KONDRATIEFF UPSWING

By W. W. Rostow

I. Introduction

In one way or another virtually all analysts recognize the connection between business cycles and the process of growth. The connection flows from the simple fact that variations in the level of investment are at the heart of business cycles; but investment incorporating new technologies is also the instrument which carries forward economic growth. Thus the business cycle is the form which growth has historically assumed. Growth unfolded in a sequence of more or less regular fluctuations in output and employment rather than at a steady pace.

There have been, broadly, two ways in which analysts have dealt with this linkage. In the wake of the refinements in the analysis of national income, associated with the Keynesian revolution, most modern business cycle theorists have tended to formulate sophisticated models of fluctuations in which growth faded into the background. For example, investment was divided into two parts: one, responding to the rate of increase in income, via the accelerator; the other was taken to be exogenous, arising from inventions generated mysteriously and erratically outside the economic system. Thus, a pure abstract cycle could be delineated in which the multiplier (measuring changes in income associated with changes in investment) interacted with the accelerator to expand the system up to the limits of its capacity and then contract it to a trough where net investment was zero. And when growth was directly addressed, in Harrod-Domar or neo-classical growth models, the elements determining growth were again introduced exogenously in highly abstract and aggregated form; that is, the rate of population and working force increase, the rate of productivity increase, and the proportion of income invested.

A second way of looking at growth and business cycles derived from an older tradition. This approach insisted on making the linkage betwen growth and business cycles much more explicit. This is the tradition of, say, Wesley Mitchell, D. H. Robertson, and Joseph Schumpeter, carried forward in recent decades by Robert A. Gordon, William Fellner, and myself. Students of this cast of mind were uneasy at the separation of business cycle analysis from the particular kinds of investments which dominated each expansion and uneasy with the distinction between exogenous investment and investment induced endogenously by the accelerator. They insisted, for example, on bringing the process of technological innovation and the expansion of new sources of food and raw material supply fully within the cyclical process. But innovations occur in particular industrial or

service sectors; new sources of basic commodities are generated not in general but in wheat, cotton, coal, or whatever. Analyses of this kind, therefore, tend to be both more historical in texture and more disaggregated sectorally than those of the neo-Keynesians.

This distinction bears on the title as well as the form of this essay. Its concluding theme is, simply, that the future path of the business cycle will depend on how we in the United States—and others—deal with the sectoral problems posed by what I call the fifth Kondratieff upswing—and, above all, with the problem of energy.

N. D. Kondratieff was a Russian economist. Writing in the 1920s, he suggested that capitalist economies were subject to long cycles, some 40–50 years in length. His views were published in the United States in summary in the mid-1930s. They generated considerable professional discussion and debate, but dropped from view in the great boom after the Second World War. Most contemporary economists vaguely remember having run across his name and ideas in graduate school but have forgotten precisely what it was he said.

Looking back from the mid-1920s, Kondratieff saw two and one-half cycles in various statistical series covering prices, wages, interest rates, and other data expressed in monetary terms. And he found these cycles in a number of countries including Great Britain, the United States, and France. Their troughs came about 1790, in the late 1840s, and the mid-1890s; their peaks about 1815, 1873, and 1920. He sought but failed to find persuasive evidence of concurrent cycles in production indexes.

Kondratieff did not attempt directly to provide a theory of the long cycle, beyond the assertion that prices and production oscillated in a rhythm of 40–50 years about an equilibrium path. Critics in the West asserted that the phenomena he was examining reflected special historical occasions: changes in technology, wars and revolutions, the bringing of new countries into the world economy, and fluctuations in gold production. Kondratieff asserted that none of these phenomena could be properly regarded as independent of the workings of the world capitalist system. He implied that a coherent explanation must exist; but, in his own phrase, he never developed "an appropriate theory of long waves."

There have been various efforts to explain the long irregular cycles that Kondratieff first effectively dramatized. They are worth trying to explain because they have, in a rough-and-ready way, continued to unfold in the period after Kondratieff first wrote about them. There was, in my view, a trough in the mid-1930s; a peak about 1951; and a trough again in 1972 on the eve of the explosive rise of grain and then oil prices.

My explanation for Kondratieff cycles would focus on the relative prices of food and raw materials on the one hand, industrial products on the other. Other forces were, evidently, at work; but, at their core, I believe that what we observe in these cycles are periods of relative shortage and relative abundance of food and raw materials. Changes in relative prices underlie the shifts in income distribution, the directions of investment, trends in interest rates, real wages, and the overall price level which are the hallmarks of a Kondratieff cycle.

If oscillations in relative prices are the heart of the matter, why were these cycles so long compared, for example, to conventional business cycles which averaged, say, nine years? The answer seems to lie in the fact that the opening up of new sources of food and raw materials required substantial periods of time—much more time than it takes to build a new factory or house. The lags involved in responding to a relative rise in food or raw material prices, and the fact that the response often required the development of whole new regions, led to an overshooting of world requirements and a period of surplus. A relative fall in the prices of food and raw materials then followed. This trend persisted, gradually slowing down, until expanding world requirements caught up with the excess capacity and stocks generated in a Kondratieff upswing.

I do not believe we can understand the character of cyclical fluctuations in the longer past, their peculiarities during the 1970s, or their prospects in the 1980s outside the context of fluctuations in relative prices; for it is movements of relative prices, combined with the flow of technological change, which determine the areas of profitability, thus the appropriate directions of investment, and thus, also, the character and growth content of business cycles.

So much by way of background and to render my biases clear and explicit.

I shall proceed in three steps; a brief history of cyclical fluctuations from the early eighteenth century to 1973; then a more detailed look at the fluctuations in the world economy from 1973 to 1979; finally, an examination of business cycle prospects in the 1980's and, to a degree, beyond.

II. A Short History of Business Cycles, 1701–1973

Why Do Business Cycles Happen?

Business cycles happen for two reasons: because investment takes time; and because investors make systematic errors in predicting future profitability. If there were no lags and if investors were perfectly knowledgable and wise, investment would be allocated to each sector (agriculture, energy, housing, particular branches of industry and services, and the like) in ways which exactly met future requirements and kept the marginal rate of return on investment equal in all sectors at each moment of time. Overall growth would proceed smoothly as each sector followed its optimum dynamic sectoral path. In fact, of course, growth unfolded in an extremely irregular way. This irregularity derived from distortions in the process of investment away from its optimum sectoral paths caused by these factors: investment decisions tend to be determined by current indicators of profitability rather than by rational long-range assessments; these indicators tend to make many investors act in the same direction, without taking into account the total volume of investment in particular sectors that is being induced by current profit expectations; and, beyond these technical characteristics of the investment process, there is, psychologically, a follow-the-leader tendency, as waves of optimism and pessimism about the profits to be earned in particular sectors sweep the

capital market and industries where profits are (or are not) being plowed back in the expansion of plant. In both trend periods and business cycles the result is phases where capacity exceeds current requirements or falls short of them.

What we observe historically, then, are dynamic, interacting national economies trying rather clumsily to approximate optimum sectoral paths, tending successively to undershoot and overshoot those paths, making their way through history like a drunk going home on Saturday night. And although it doesn't concern us here, modern socialist economics, with fully developed institutions for central planning, don't do much better.

The length of a cycle depends on the length of the period of gestation (that is, on the time it takes to carry out a particular type of investment) and the longevity of that type of investment. Thus, cycles in inventories are relatively short (a few years) while building cycles tended historically to average about twenty years. It took less time to build up inventories than to build a house; and a house, once built, lasted much longer than stocks in inventory. The correction of inventory over-shooting and under-shooting could thus come about quite quickly.

Cycles in the Eighteenth Century

A few words on cycles in the eighteenth century may be helpful for two reasons. First, we can see the cyclical process at work before the coming of the first phase of modern industrialization in Britain of the 1780s. Second, we can observe a mechanism at work, through the impact of bad harvests, not unlike the unpleasantness we experienced in the 1970s as the result of surges in the price of oil.

TABLE 1.—BRITISH BUSINESS FLUCTUATIONS, 1700–83

Trough	Length of cycle (trough to tough)	Peak	Length of cycle (peak to peak)
1700		1701	
1702	2.0	1704 (1705?)	3.0
1706	4.0	1708	4.0
1712 (ca. 1711)	6.0	1714	6.0
1716	4.0	1717–18	3.5
1722	6.0	1724–25 (1724)	7.0
1727 (1727)	5.0	1728	3.0
1730	3.0	1733	5.0
1734	4.0	1738 (1736)	5.0
1742	8.0	1743	5.0
1746 (1744)	4.0	1746	3.0
1748	2.0	1751 (1753)	5.0
1755	7.0	1761	10.0
1763 (1762)	8.0	1764	3.0
1769	6.0	1771–72	7.5
1775	6.0	1777 (1776)	5.5
1781 (1781)	6.0	1783	5.0
Average	5.1		5.0

Note: Dates in parentheses are peaks and troughs of building cycles, from Lewis.

Source: T. S. Ashton, Economic Fluctuations in England, 1700–1800, pp. 172–173; John Parry Lewis, Building Cycles and Britain's Growth, p. 14.

Table 1 exhibits cyclical turning points in general and for housing construction for Great Britain from 1700 to 1783. Britain is the only country for which such estimates exist for the eighteenth century.

Strangely enough, the average length of these cycles (about 5 years) is just about the length of those marked off from 1788 to 1914 (5.25

years); and the average length of the building cycles (17.4 years) is close to the twenty years of the modern housing cycle. But, in fact, we know that wars and the erratic rhythm of the harvests had more to do with the course of eighteenth century cycles than was later to be the case. There is, however, some evidence for the rhythm of an inventory cycle in British foreign trade.

As for the harvests, we know something about how they had their impact on the British economy. There were two major routes of impact. First, there was a direct effect on real income. The high food prices they caused reduced the resources available for purchases of textiles and other manufactured goods. Large scale farmers may have made more from higher prices than they lost from reduced output; but the overall effect of bad harvests on rural as on urban areas was depressing. Second, there was a deflationary impact through the balance of payments and the monetary system. When Britain experienced a bad harvest it generally bought more grain from abroad at a time when prices were high. This burden on the balance of payments affected the domestic credit supply and reinforced the direct depressing effect of high food prices on real income.

These were, essentially, the two routes—via real incomes and the balance of payments—by which the rise in oil prices in 1973–1974 and 1979 induced supply-side recessions in the United States and elsewhere.

Cycles in the Classic Era, 1792–1914

Table 2 exhibits cyclical turning points in four major economies from the 1790s down to the First World War. This era, relatively peaceful after 1815, is the period when the modern business cycle emerged and was first identified and analyzed.

TABLE 2.—CYCLICAL TURNING POINTS: UNITED STATES, FRANCE, GERMANY, AND GREAT BRITAIN COMPARED, Pre-1914 Era

	Great Britain	United States	France	Germany
Peak*	1792			
Trough	1793			
Peak	1796	1796		
Trough	1797	1798		
Peak*	1802	1801		
Trough	1803	1803		
Peak	1806	1806		
Trough	1808	1808		
Peak*	1810	1811		
Trough	1811	1812		
Peak	1815	1815		
Trough	1816	1816		
Peak*	1818	1818		
Trough	1819	1820		
Peak*	1825	1825		
Trough	1826	1826		
Peak	1828	1828		
Trough	1829	1829		
Peak	1831	1831		
Trough	1832	1833		
Peak*	1836	1836	1831	
Trough	1837	1837	1837	
Peak	1839	1839	1838	
Trough	1842	1843	1839	
Peak*	1845	1845	1846	
Trough	1846	1846		
Peak	1847	1847		
Trough	1848	1848	1848	
Peak	1854		1853	1852.
Trough	December 1854	December 1854	1854	1855.
Peak*	September 1857	June 1857	1857	1857.

TABLE 2.—CYCLICAL TURNING POINTS: UNITED STATES, FRANCE, GERMANY, AND GREAT BRITAIN COMPARED, Pre–1914 Era—Continued

	Great Britain	United States	France	Germany
Trough	March 1858	December 1858	1858	1858.
Peak	September 1860	October 1860	1864	1860.
Trough	December 1862	June 1861	December 1865	1861.
Peak*	March 1866	April 1865	November 1867	1863.
Trough	March 1868	December 1867	October 1868	1866.
Peak		June 1869	August 1870	1869.
Trough		December 1870	February 1872	1870.
Peak*	September 1872	October 1873	September 1873	1872.
Trough			August 1876	
Peak			April 1878	
Trough	June 1879	March 1879	September 1879	February 1879.
Peak*	December 1882	March 1882	December 1881	January 1882.
Trough	June 1886	May 1885	August 1887	August 1886.
Peak		March 1887		
Trough		April 1888		
Peak*	September 1890	July 1890	January 1891	January 1890.
Trough		May 1891		
Peak		January 1893		
Trough	February 1895	June 1894	January 1895	February 1895.
Peak		December 1895		
Trough		June 1897		
Peak*	June 1900	June 1899	March 1900	March 1900.
Trough	September 1901	December 1900	September 1902	March 1902.
Peak	June 1903	September 1902	May 1903	August 1903.
Trough	November 1904	August 1904	October 1904	February 1905.
Peak*	June 1907	May 1907	July 1907	July 1907.
Trough	November 1908	June 1908	February 1909	December 1908.
Peak		January 1910		
Trough		January 1912		
Peak*	December 1912	January 1913	June 1913	April 1913.
Trough	September 1914	December 1914	August 1914	August 1914.

Sources: U.S. annual turning points, 1796–1832, estimated from a combination of data in Willard L. Thorp, Business Annals (New York: National Bureau of Economic Research, 1926), pp. 113–121, and W. B. Smith and A. H. Cole, Fluctuations in American Business, 1790–1860 (Cambridge, Mass: Harvard University Press, 1935), pp. 384. French annual turning points, 1831–48, estimated from Francois Crouzet, "Essai de construction d'un indice annuel de la production industrielle francaise au XIX• siecle," Annales, Economies, Societes, Civilisations, No. 1 (January-February 1970). German annual turning points, 1850–66, estimated from Walther G. Hoffman, Das Wachstum der Deutschen Wirtschaft seit der Mitte des 19. Jahrhunderts (Berlin: Springer-Verlag, 1965). Otherwise, dates are taken from Burns and Mitchell, Measuring Business Cycles, pp 78–79.

These cycles, especially in the early years, were not all of the same magnitude. Some were essentially inventory cycles in foreign trade. But starting with the powerful expansion in Britain, which peaked in 1792, there was a distinctive cycle, averaging about nine years in length, with long term investment at its core. As other nations moved into modern economic growth, and experienced what I call their take-off, they were seized by this rhythm. An asterisk (*) in Table 2 marks the peaks of these major cycles.

The most striking lesson of Table 2 is, evidently, that the business cycle was an international phenomenon. The peaks and troughs as among the four countries do not exactly conform. The United States, for example, exhibits a number of minor cycles not shared by the others between 1885 and 1913. And the monthly turning points are not identical. But the world economy over this period of more than 120 years was evidently an interacting phenomenon, kept more or less in step by a trade and monetary system, capital markets and markets for commodities which were, of their nature, truly international.

As I noted earlier, if one examines each of the major cycles closely one can identify with some precision the surges in growth which dominated each expansion. For example, the British and American booms peaking in 1825 were marked by exceedingly rapid expansion in the factory production of cotton textiles; and, although we do not have formal French business cycle data before 1831, that was also true for France. The 1830s, when cotton and grain prices went

up, was marked by a boom in which large flows of capital were diverted by the market process to the expansion of cotton acreage in the South and into other agricultural areas. In the 1840s agricultural prices fell and capital flowed to an extraordinary railway expansion in Britain and the American Northeast. There was also considerable railway building in Northwest Europe. Railways were again central to the boom of the 1850s in Germany, France, and the United States; but, in our case, they were linked to the opening up of the grain fields of the middle west out to Minneapolis.

This is not the occasion to trace out the sectoral content of each of the great expansions. For our purposes the central point is this: in periods when relatively rising prices of basic commodities occurred or an innovation cutting the cost of basic commodities (for example, the refrigerator ship for meat and butter) the flow of capital within the world economy shifted promptly to exploit the profit possibilities thus opened up; and the peripheral areas benefited (for example, the United States [down to 1890], Canada, Australia, Argentina). When the prices of basic commodities were relatively falling, capital generally flowed to exploit in a more single-minded way the potentialities for industrial innovation. These tended also to be times of relatively low interest rates. Housing booms came easier in the metropolitan areas, notably in Great Britain.

The benefits to food and raw material producing areas in periods of relatively high basic commodity prices in the pre-1914 era are worth specifying because we have been able to observe similar phenomena during the 1970s in certain oil exporting countries and regions (for example, Alaska, the Mountain states, Alberta). There were three virtually universal routes of impact and a fourth possible effect:

A favorable shift in the terms of trade (that is, a greater rise in export than import prices) directly lifted real incomes;

Foreign as well as domestic capital flowed to expand output in the high-priced basic commodities;

Immigrants flowed in to take advantage of the abundance of jobs and relatively rising real wages; and

In some cases, the commodity-based boom stimulated a wider-ranging industrial expansion.

Inter-War Cycles: 1919–1939

Table 3 sets out the cyclical turning points for the four major industrial economies of the inter-war period.

Despite the differences in cyclical turning points, the broadly shared cyclical movements of the period emerge in Chart 1. After about six months of postwar reconversion, an intense typical postwar boom occurred, peaking (except for Germany) in 1920. The recession was also short, giving way to the prolonged expansion of the 1920s, which the four principal economies shared in different degree and with differing minor cycle fluctuations. The cyclical downturn leading to the Great Depression began in the spring and summer of 1929 (earliest in Germany), well before the October stock market crash in New York, except in France, which continued in prosperity until March 1930. Recovery began in the summer of 1932, except in the United States, where it was delayed by about nine months. The United States led the way in both the recession of 1937–1938 and the recovery from it.

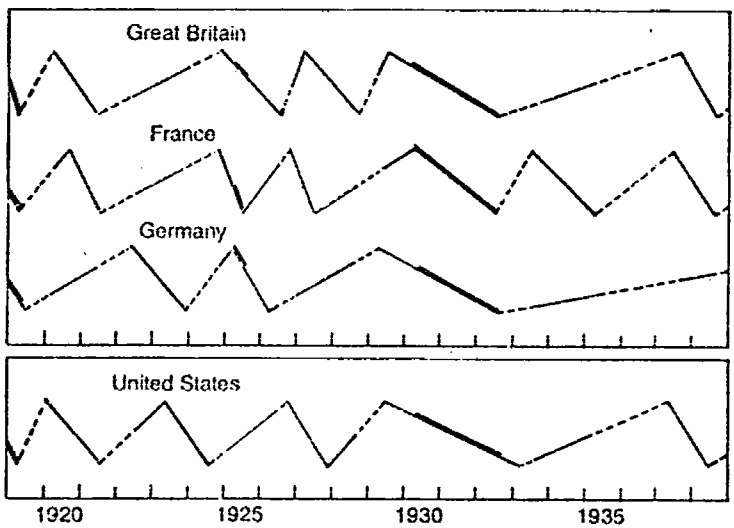
TABLE 3.—BUSINESS-CYCLE TURNING POINTS: UNITED KINGDOM, UNITED STATES, FRANCE, AND GERMANY, 1919–39

	United Kingdom	United States	France	Germany
Trough	April 1919	April 1919	April 1919	June 1919.
Peak	March 1920	January 1920	September 1920	May 1922.
Trough	June 1921	September 1921	July 1921	November 1923.
Peak	November 1924	May 1923	October 1924	March 1925.
Trough			June 1925	
Peak			October 1926	
Trough	July 1926	July 1924	June 1927	March 1926.
Peak	March 1927	October 1926		
Trough	September 1928	December 1927		
Peak	July 1929	June 1929	March 1930	April 1929.
Trough	August 1932	March 1933	July 1932	April 1932.
Peak			July 1933	
Trough			April 1935	
Peak	September 1937	May 1937	June 1937	
Trough	September 1938	May 1938	August 1938	

Source: Burns and W. C. Mitchell, Measuring Business Cycles, pp. 78–79.

The greater differences in the timing of cycles than in the pre-1914 era reflect a variety of unique, traumatic events and experiences which bore on individual European countries; for example, the French occupation of the Ruhr, the German hyperinflation of 1922–1923, the British general strike of 1926, the post-1930 political as well as economic vicissitudes of France, when British devaluation reversed the French exchange advantage of the previous six years, its effects compounded by the American devaluation of 1933. After 1929 they also reflect the increasingly nationalist cast of economic policy.

CHART 1.—Interwar Cyclical Turning Points: Three European Economies and the United States



For the three European countries, the heavy solid line represents correspondence between the three countries in contraction; the dashed line, correspondence in expansion; and the fine solid line, no correspondence.

For the United States, the three types of lines indicate correspondence or no correspondence between the United States and all three European countries.

Source: Oskar Morgenstern, "International Financial Transactions and Business Cycles," p. 43.

Despite these powerful distorting elements at work on the contours of interwar cyclical fluctuations, there was, in a narrow sense, considerable continuity with a longer past. The immediate postwar pattern of readjustment, boom, and slump (1918–1921) echoed the sequence after the Napoleonic Wars a century earlier (1815–1819) and anticipated the sequence after the Second World War (1945–1949). In a fashion familiar since the eighteenth century, peace brought a powerful wave of residential building. In conventional business-cycle terms, the major interwar peaks (1920, 1929, 1937) came at intervals which gave them a rough and ready continuity with the nine year major cycle rhythm of the era that began in 1783. The minor cycles, in the United States at least, continued to occur in the shorter rhythm their inventory character would suggest. The tools of business-cycle analysis generated to explain the sequence from 1783 to 1914, therefore, remain relevant to the interwar years despite their special pathology.

But there was a new element at work which anticipated to a degree the thirty years after the Second World War, namely, the role of the automobile and durable consumers' goods, the latter related to the concurrent expansion of electricity production and consumption.

For the United States, Robert A. Gordon's account of the 1920s is sharply focused on the role of the new consumer-oriented leading sectors.

> The most important stimulus to investment and to expansion of total output in the twenties was the automobile. Like electric power, this was a prewar innovation. But its full impact on the American economy was not felt until the 1920's. . . .
>
> The effect of the automobile on aggregate demand came from two sources—the expansion in the *production* of cars and trucks and the enormously increased *use* of motor vehicles. . . .
>
> . . . Motor vehicle production nearly trebled between 1919 and 1929, but the increase in registrations—the number of cars and trucks on the road—was even larger. And steadily greater use was made of each vehicle. The result was an enormous expansion in employment in oil refining, filling stations and garages, truck and bus driving, selling of supplies and accessories, and construction and repair of roads. . . .
>
> Another prewar innovation, electric power, was a highly important stimulus to investment. Electric power production more than doubled between 1920 and 1929, and generating capacity increased in proportion. Use of this power in turn required electrical equipment and opened up methods of reducing costs that involved other types of new machinery. Value added by the electrical machinery industry also more than doubled between 1919 and 1929, compared to an increase of about 30 percent for manufacturing as a whole. Along with the growth of electric power production and the use of electrically driven machinery and handling equipment in industry went rapid expansion in the telephone industry (again a prewar innovation), the growth of radio (entirely a postwar development), and the rapid electrification of the home.[1]

Gordon is clearly conscious in this passage of the links of the automobile to various service sectors and to residential construction as well as to a wide range of industries. On the other hand, in dealing with the depth of the post-1929 depression and the incomplete American recovery down to 1937, he adduces a much more general "overinvestment" and "exhaustion of investment opportunities." For example, in explaining the downturn of 1937 he points to the rise in wage rates from the end of 1936 to the middle of 1937, concluding: "Under more favorable conditions, the increase in costs could have been absorbed by an expanding demand fed by a rising volume of private invest-

[1] Robert A. Gordon. Business Fluctuations, second edition (New York: Harper and Row, 1961), pp. 410–411.

ment. In 1937 the depressing effect of the rise in costs was not offset by continued expansion in demand." [2] In analyzing the boom of the 1920s, then, Gordon sees clearly the role of the leading sectors and the accelerator (broadly defined), stimulating investment through the expansion of incomes; in dealing with the unsatisfactory boom of the 1930s, he is back in the world of the multiplier, looking for autonomous investment opportunities that were not there. As the post-1945 experience of the United States, Western Europe, and Japan was to demonstrate, the sectoral complexes which carried forward the American economy of the 1920s were far from exhausted, once an environment of steady full employment and rising incomes was re-created and maintained. It was the lack of sufficient stimulus to effective demand, not exhausted investment opportunities, that caused the chronic high levels of unemployment of the 1930s.

For our purposes a second distinctive aspect of the interwar period should be noted, again foreshadowing the 1950s and 1960s: it was a period of relatively cheap basic commodity prices and favorable terms of trade for the advanced industrial countries as compared to the period from the mid-1890s to 1914. The movement of the British terms of trade and the American farm parity ratio tell the story reasonably well (Table 4).

TABLE 4.—UNITED KINGDOM TERMS OF TRADE AND U.S. FARM PARITY RATIO: 1913, 1919, 1929, 1933, 1937

[1913=100]

	United Kingdom terms of trade	U.S. farm parity ratio
1913	100	100
1919	116	111
1929	119	93
1933	147	65
1937	131	94

The favorable terms of trade for Britain in 1919 did not result from cheap imports. They were due to a coal shortage which pushed British export coal prices temporarily to extravagant heights. They fell more than 50 percent in 1921, but by that time British import prices were falling so rapidly that the terms of trade remained favorable (and the U.S. farm parity ratio depressed) down to 1929. Basic commodity prices collapsed in the Great Depression with results clearly evident in the 1933 figures in Table 4. The subsequent worldwide recovery and production restriction schemes for basic commodities (like the AAA in the United States) account for the partial reversal of affairs by 1937.

This period, the third Kondratieff downswing (1920–1933), affected particular nations in different ways. In the United States, for example, cheap commodity prices, while damping farm incomes in the 1920s, raised urban real wages and helped sustain down to 1929 the boom in automobiles, consumer durables, and the flight to suburbia. The damping of farm incomes was not sufficient to prevent a period of strong expansion in the economy as a whole. In the Great Depression, the further sharp downward movement of the relative prices of basic commodities raised the real incomes of those employed but brought

[2] Ibid., pp. 442–446.

true disaster to farmers, with depressing effects that extended far beyond the farm community.

In Britain the equivalent of the depressed American farmers of the 1920s were the world's producers of the food and raw materials Britain imported. The low prices for their exports reduced their incomes in ways which reduced also their capacity to buy British exports. Chronic high unemployment in Britain's export industries was the price Britain paid for enjoying favorable terms of trade. More imaginative policies could have adjusted to this situation, for example, a combination of devaluing the pound, exporting capital to regions providing basic commodities, and stimulating domestic demand. But such policies were only adopted in 1931 after a decade when unemployment averaged over 10 percent of the working force.

The interwar years not only foreshadow something of the much more successful 1950s and 1960s; they also display the advanced industrial economies struggling with a set of problems inverse to those of the 1970s and 1980s.

Cycles in Growth Rates: 1945–1973

As Table 5 reveals, down to 1951 the recovery of the postwar world proceeded in an environment of relatively high prices of basic commodities, favorable terms of trade for those who produced them, unfavorable terms of trade for those who imported them. Then came the fourth Kondratieff downswing, with a radical relative decline of basic commodity prices in the 1950s which continued more slowly in the 1960s or leveled off well below the level of 1951. As in the interwar years, the American farmer's price parity ratio captures these movements: the ratio stood at 94 in 1939 (1967=100); rose to 148 by 1951; declined to 108 by 1960, 96 in 1972.

TABLE 5.—WORLD TRADE OF MARKET ECONOMIES: TERMS OF TRADE [1]

(1963 = 100)

Regions [2]	1938	1948	1951	1953	1958	1965	1966	1967	1968	1969	1970	1971	1972
Developed market economies [3]	98	95	89	93	96	100	100	101	101	101	102	101	102
North America [4]	116	101	86	94	97	101	102	103	104	104	103	102	98
Europe	96	92	85	92	95	100	100	101	100	101	102	103	105
EEC	92	91	85	92	95	100	99	99	100	100	102	103	104
EFTA	97	87	84	91	97	102	103	103	104	104	104	104	105
Other Europe	127	107	101	93	94	102	103	106	102	100	98	96	99
Africa [5]	92	103	128	115	100	99	97	96	99	99	98	88	85
Asia [6]	84	85	95	95	99	94	93	96	98	102	103	105	111
Oceania	102	117	173	125	85	95	97	90	88	88	83	79	92
Developing market economies	79	95	118	106	104	99	101	100	101	100	101	102	100
Excluding petroleum	79	96	128	108	102	101	104	102	103	106	106	101	100
Africa	70	93	126	105	110	100	104	104	105	108	103	103	98
Asia	88	94	120	103	106	98	99	98	100	100	99	103	99
Asian Middle East	107	88	116	97	116	97	95	96	97	92	89	96	81
Excluding petroleum	90	62	138	100	106	95	95	99	97	95	94	83	------
Other Asia	86	96	122	105	100	99	100	99	100	102	104	104	100
Latin America	70	100	124	110	100	103	103	100	99	100	101	101	102
Excluding petroleum	67	98	134	112	100	105	107	102	102	104	106	103	105

[1] Unit value index of exports divided by the unit value index of imports.
[2] The geographical regions used in this table are in accordance with the United Nations Standard Country Code, Annex II, Country Classification for International Trade Statistics (Statistical Papers, Series M, No. 49).
[3] Excluding the trade of Centrally Planned Economies.
[4] Canada and the United States.
[5] South Africa.
[6] Israel and Japan.

Source: "United Nations Statistical Yearbook, 1972, p. 42, data added and corrections for 1969–71 made from the 1973 edition, p. 54.

In an overwhelmingly urban society like the United States (and in Western Europe and Japan as well) this relative cheapening of basic commodities acted strongly to raise real incomes. The great global boom of the 1950s and 1960s can not be understood without taking this factor into account, nor can the benign form that business cycles assumed.

Those decades were, in fact, the most remarkable phase of economic growth in modern history. The average annual rates of growth of both world industrial production (about 5.6 percent) and world trade (about 7.3 percent) exceeded by a substantial margin any before experienced. This happened because the potentially depressing effects of relatively low terms of trade for producers of foodstuffs and raw materials were overridden by two factors: the extraordinary demand oriented boom in automobiles, consumer durables, and certain services in the industrialized regions of the world; and the cushioning effects of a considerable flow of intergovernmental assistance to the less industrialized nations, most of which were also governed by policies designed to accelerate economic growth. Trade among the industrialized nations expanded faster than between them and the less developed nations; but there was nothing like the interwar stagnation and collapse of trade with the less developed regions. The process was strengthened, notably in Europe, by flows of migration from south to north, reinforcing the impulses to growth in both regions, and by movements within nations from rural to urban areas, accompanied by rapid increases in agricultural productivity. The whole period was framed by stable international monetary arrangements, with the dollar serving as the world's reserve currency down to 1971, and by increasingly liberal trade policies. It was also a time of unexampled price inflation for a time of relative peace.

Putting aside the question of inflation, the major nations did all the things they should have done between the wars; and in considerable part, this was because the lessons of the earlier period were well learned. Endemic inflation was, in part, a result of this great success. But, down to 1972, inflationary pressures were eased in most industrialized nations by the relatively low level of foodstuffs and raw-material prices.

As Table 5 indicates, this was a time of relatively cheap food, raw materials, and energy. The relative cheapening, however, took place in the period down to the mid-1960s, even earlier for Latin American exports. As the 1960's wore on, there was evidence of strain between the requirements of population increase and the food supply, and between the requirements of industrial growth and the supply of raw materials and energy. The price explosion of 1972–1974 thus came against a background which signaled that things were changing; but the real or believed reserve position of the United States as a supplier of food and energy had powerful constraining effects on world prices until the precarious underlying position was revealed by events.

Tables 6, 7, 8 and Chart 2 dramatize the setting of the 1960s out of which emerged the grain price explosion of 1972–1973. Their major features are these:

North America filled the gap in grain exports as Asia, Eastern Europe and the USSR, Africa, and then Latin America shifted to increasingly deficit positions (Table 6).

TABLE 6.—THE CHANGING PATTERN OF WORLD GRAIN TRADE

[In millions of metric tons]

Region	1934–38	1948–52	1960	1966	1973 preliminary (fiscal year)
North America	+5	+23	+39	+59	+88
Latin America	+9	+1	0	+5	−4
Western Europe	−24	−22	−25	−27	−21
Eastern Europe and U.S.S.R.	+5	----------	0	−4	−27
Africa	+1	0	−2	−7	−4
Asia	+2	−6	−17	−34	−39
Australia	+3	+3	+6	+8	+7

Source: Lester R. Brown, "In the Human Interest" (New York: W. W. Norton, 1974), p. 81. Based on U.S. Department of Agriculture data.

NOTE.—Plus=net exports; minus=net imports.

TABLE 7.—WORLD PRICES OF MAJOR FOOD COMMODITIES, 1960–73

[Unit value of U.S. exports]

	Rice (dollars per 100 lb)	Wheat (dollars per bushel)	Soybeans (dollars per bushel)
1960	$6.62	$1.69	$2.27
1961	5.99	1.77	2.41
1962	6.62	1.81	2.41
1963	6.77	1.79	2.58
1964	7.02	1.80	2.71
1965	7.21	1.63	2.85
1966	7.79	1.69	3.09
1967	7.80	1.74	2.93
1968	8.61	1.68	2.75
1969	8.44	1.64	2.64
1970	8.48	1.58	2.97
1971	8.41	1.68	3.13
1972	9.40	1.75	3.38
1973 (January–June)	12.00	2.12	5.35
1973 (July–December) (preliminary)	19.00	3.80	6.20

Source: Brown, "In the Human Interest," p. 59. Based on IMF, "International Financial Statistics," and U.S. Department of Agriculture data.

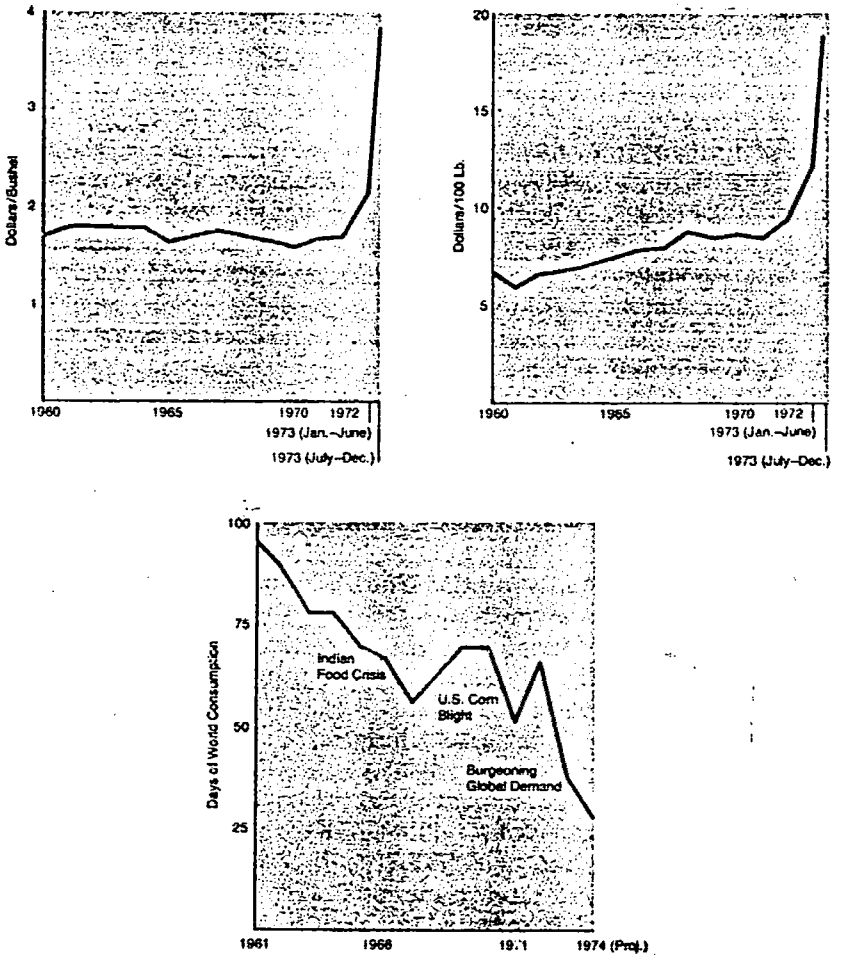
TABLE 8.—INDEX OF WORLD FOOD SECURITY

[In millions of metric tons]

	Reserve stocks of grain	Grain equivalent of idle U.S. cropland (million metric tons)	Total reserves	Reserves as days of annual world grain consumption
1961	154	68	222	95
1962	131	81	212	88
1963	125	70	195	77
1964	128	70	198	77
1965	113	71	184	69
1966	99	79	178	66
1967	100	51	151	55
1968	116	61	177	62
1969	136	73	209	69
1970	146	71	217	69
1971	120	41	161	51
1972	131	78	209	66
1973	103	20	123	37
1974 (projected)	89	0	89	27

Source: Brown, "In the Human Interest," p. 56. Based on U.S. Department of Agriculture data.

CHART 2.—World Wheat and Rice Prices, 1960–1973, and World Grain Reserves, 1961–1974



Upper left: world wheat price, 1960–73 (unit value of U.S. exports).
Upper right: world rice price, 1960–73 (unit value of U.S. exports).
Lower: world grain reserves as days of world consumption, 1961–74 (includes production potential of idled U.S. cropland).

Source: Brown, "In the Human Interest," pp. 58, 57, and 55. Based on U.S. Department of Agriculture data.

This process was accompanied by an occasionally broken but powerful trend decline in world food reserves as measured by days of annual world grain consumption, including idle U.S. cropland (Table 8).

U.S. reserve stocks and idle croplands were drawn down as a matter of public policy to deal with the Indian harvest failures of 1965–1967; but they rose in 1968–1970, fell in 1971, and rose again in 1972 (Table 8). A narrow view of the U.S. position as of 1972 would not have suggested the vulnerability of the global

position. To understand that position required a sense of the longer trends toward food deficit in the various regions of the world and, especially, of the global reserve position measured in relation to rising world grain consumption.

The availability of U.S. stocks and reserve cropland kept wheat price fluctuations in a relatively narrow range from 1960 to 1972, although there was a rising trend in soybeans and, even more markedly, in rice (Table 7 and Chart 2).

A convergence of bad harvests in the USSR and Asia, combined with the U.S. grain deal with the Soviet Union, produced the attenuation of stocks, the rise in prices, and the elimination of idle cropland to be observed in Table 8.

The revolution in petroleum prices in 1973 was, of course, the product of policy decisions by OPEC; but the underlying position of the United States with respect to energy production and reserves also played a significant role. This was the case for two reasons: first, the image of large and regularly expanding U.S. energy reserves and the U.S. potential as a residual supplier at a time of crisis in oil supplies helped contain petroleum prices; second, when the United States became increasingly dependent on imports, the scale of its demand was great, even though the proportion of its imports to total consumption was relatively modest as compared to those of Western Europe and Japan.

In effect, the United States behaved with respect to energy consumption the way the developing continents behaved with respect to population and the food supply: it permitted demands to develop which required an increasing reliance on imports; it permitted its ready energy reserves to be drawn down; and it failed to anticipate the consequences of this situation by altering its domestic policies and its patterns of consumption and investment, which (as with the developing nations) were geared to the notion of indefinitely low prices and world surpluses. The spot price for oil began to rise in the early 1970s. OPEC perceived its opportunities in this situation and produced in 1973–1974 an exaggerated version of the kind of price increase the markets yielded in the case of grain. Perhaps the gravest American misjudgment, shared by government and the petroleum industry, was the belief that the oil producers were incapable of the organization and discipline required to exercise their monopolistic power in these circumstances. The mechanism that gave OPEC its opportunity has been thoroughly described in the many energy studies which emerged after the crisis of 1973.

As late as 1950 the United States was a net exporter of energy. In the 1950s the decline in coal production shifted American status to that of net importer, despite the rapid expansion in the production and use of natural gas. Two significant steps in public policy were taken in this decade; starting in 1954, the Federal Power Commission controlled the wellhead price of natural gas entering interstate commerce and held the price relatively constant; in 1959, in reaction to the curtailment of Middle East oil exports during the Suez crisis of 1956–1957, quotas were imposed on imported oil which kept the U.S. price somewhat above the world price, encouraged the drilling of new wells, and for a time generated a margin of quickly available excess capacity

in the form of production below the maximum efficient recovery rates arbitrarily set in the oil-producing states. But the real cost of establishing a unit of oil and gas reserves was rising rapidly. By 1960, the United States was importing about 7 percent of its energy.

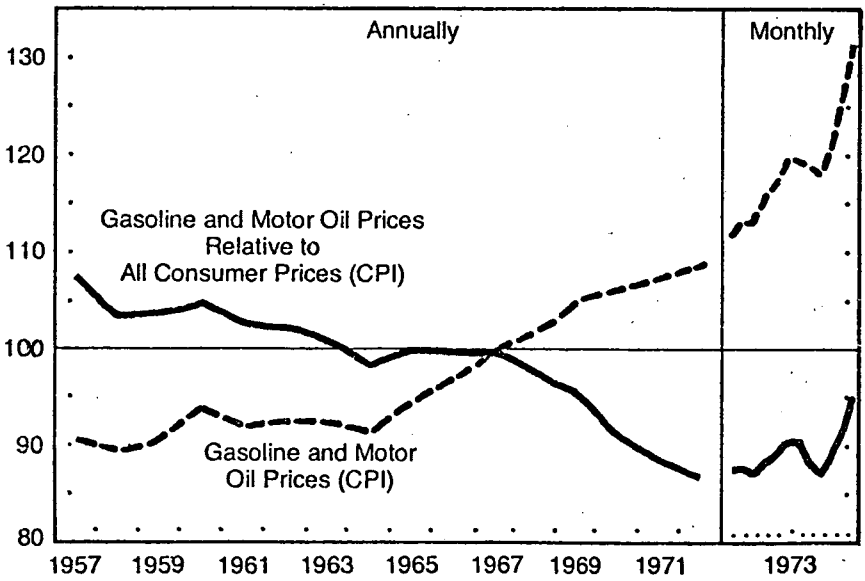
As the 1960s wore on, the energy market began to tighten. First, the increase in U.S. energy consumption accelerated with the increased pace and energy-intensive character of economic growth: from an annual average rate of 2.7 percent in the 1950s to 3.79 percent for 1960–1965, and 4.8 percent for 1965–1970. The volume of petroleum imports grew from 10 percent of total crude petroleum consumption in 1960 to 28 percent in 1968. In response to the pressure of demand, older American wells moved up to their maximum efficient recovery rates, eliminating a reserve significant as a symbol in world markets as well as in substance. U.S. oil production increased, but suddenly peaked out in 1970, declining substantially over the subsequent five years. The only major new American oil discoveries were in Alaska and the Outer Continental Shelf, their exploitation delayed by controversy over environmental impact, as well as the lag which in any case exists between discovery and production. Enlarged American dependence on oil imports, with no short-term ready reserve, was dramatized for all to see. Prior to the embargo of October 1973, the United States was importing 36 percent of its petroleum consumption. Meanwhile, the Middle Eastern producers could observe a decline in immediately available reserve production capacity in Venezuela and Canada, as well as in the United States. Finally, the United States was proceeding to increase its reliance on natural gas at an astonishing rate. Between 1960 and 1970, gas consumption increased 5.7 percent per annum, while proved resources increased at about 1 percent. The administered low price made new drilling unprofitable. The decline during the 1950s in the production of bituminous coal and lignite reversed in the 1960s; but the increase was not sufficient to compensate for shortfalls elsewhere. Coal continued slowly to decline as a proportion of U.S. energy production, despite some increase in price and movement toward surface mining. The decline in coal as a proportion of U.S. energy consumption was even greater, since substantial amounts were exported to Japan and elsewhere.

U.S. petroleum policy made sense only if the supply of Middle Eastern oil would remain cheap and reliable; gas policy made no sense at all. Consumer prices of energy declined quite steadily relative to other consumer prices from 1960 to 1972. And, indeed, the real cost of producing and distributing the marginal source of America's (and the world's) energy from the Middle East was low—lower, even, than the prices charged by the international oil companies which controlled the industry down to the end of the 1960s. But the free market spot price of oil began to reflect the underlying tightening of the global position. The political and economic temptation of exploiting their potentially monopolistic leverage, combined with a sense that their reserves might last only another generation or so at the existing global rate of increase in oil consumption (about 8 percent annually), proved too much for the Middle Eastern producers to resist; and they were soon joined by the other exporters.

The crises in food and energy prices of the early 1970s were, thus, both caused by a rate of increase in demand that drew down readily available reserves in the United States and rendered unrealistic the existing price level. The two cases differed sharply, however, in that there was no agricultural equivalent of the short-term reserve represented by Middle Eastern oil; and there was no equivalent to OPEC operating among the three major agricultural exporters.

The relatively low prices of energy between 1951 and 1971 contributed to the momentum of the leading sectors which carried forward the growth of the advanced industrial nations. The automobile, chemicals, and many of the most rapidly diffusing durable consumers' goods depended, in different ways, on energy; and these sectoral complexes clearly played a key role in the great global boom of the 1950s and 1960s.

CHART 3.—Consumers' Prices of Gasoline and Motor Oil Relative to All Consumers' Prices: United States, 1957–1973 (1967=100)



Source: U.S. Department of Labor, in "Economic Report of the President" (February 1974), p. 113.

There was also a marked acceleration in the share of the consumers' real resources going to education, medical services, recreation equipment, foreign travel, religious and welfare expenditures; Table 9 shows the percentage increase of consumption expenditures between the censuses of 1960 and 1970. It is the rise of these service subsectors that helps define the character of the shift from the 1950s to the 1960s in the United States.

On the public side, outlays for purposes other than defense rose disproportionately in the 1960s, despite the remarkable sustained surge in the economy as a whole and the fiscal burden of war in Southeast Asia: nonmilitary federal purchases of goods and services were 1.7

TABLE 9.—*Personal consumption expenditures by product: United States, 1960–70 (ranked by order of percentage increase)*

	1960–70
1. Private education	181
2. Medical care	148
3. Personal business	122
4. Foreign travel	118
5. Recreation	113
6. Housing	97
7. Personal care	91
8. Clothing, accessories, and jewelry	89
9. Religious and welfare activities	87
10. Household operations	83
11. Transportation	81
12. Food, beverages, and tobacco	63

Source: Ben J. Wattenberg, "The Real America," p. 85, from U.S. Bureau of Economic Analysis.

percent of GNP in 1960, 2.4 percent in 1968; state and local purchases were 9.1 percent in 1960, 11.3 percent in 1968. In money terms, transfers by the federal government doubled in these years, moving relatively from 7.5 percent to 9.9 percent of GNP. In this process, grants-in-aid from the federal government to state and local governments rose from $6.5 billion in 1960 to $18.4 billion in 1968. As Table 10 indicates, the rapid rise of GNP in these years masks a movement of resources to welfare purposes which, by normal standards of American politics, must be judged remarkable.

TABLE 10.—FEDERAL, STATE, AND LOCAL EXPENDITURES AS PROPORTIONS OF GROSS NATIONAL PRODUCT: UNITED STATES, 1959, 1963, 1968

[In percent]

	1959	1963	1968
National security (including space, foreign aid, and veterans)	11.0	10.9	10.7
Interest payments	1.4	1.4	1.4
Law, order, and administration	2.2	2.5	2.5
Economic and environmental services	4.4	4.4	4.6
Social services	9.7	10.9	14.2
Total	28.7	30.1	33.4

Source: W. W. Rostow, "Politics and the Stages of Growth," p. 233.

In this setting from 1945 to the recession of 1974–1975—for almost thirty years—cyclical fluctuations assumed a new form in the more advanced economies of the noncommunist world. Cycles became primarily systematic fluctuations in the rate of growth, rarely broken by the absolute declines in output which marked off the classical cycles of the past. Put another way, the average level of unemployment declined markedly, as compared to the pre-1914 era as well as with the interwar years. Even for the still abnormally volatile United States, GNP in real terms declined only three times between 1947 and 1973: in 1954, 1958, and 1970. And those brief declines averaged less than 1 percent. Unemployment averaged only 4.7 percent for these twenty-seven years, just about the average level for the prosperous 1920's.

Postwar growth cycles differed considerably among the various advanced economies. For example, Table 11 presents gross and net in-

TABLE 11.—GROSS AND NET INSTABILITY COEFFICIENTS FOR SELECTED COUNTRIES, 1950–64

	Net coefficient	Gross coefficient	Ration of gross to net coefficien
Japan	4.5	10.6	2.
Canada	2.7	6.8	2.
United States	2.6	5.0	1.
Denmark	2.5	8.8	3.
Austria	2.4	8.3	3.
Netherlands	2.3	10.9	4.
Germany	1.9	5.0	2.
Switzerland	1.8	6.9	3.
Sweden	1.5	6.0	4.
United Kingdom	1.4	4.6	3.
Norway	1.4	6.3	4.
France	1.4	4.5	3.
Italy	1.4	4.8	2.

Source: Erik Lundberg, "Postwar Stabilization Policies," ch. 15 in Bronfenbrenner (ed.), "Is the Business Cycle Obsolete?," p. 482.

stability coefficients calculated by Erik Lundberg for thirteen countries over the period 1950–1964: the gross coefficient is the sum of the annual average variations of six GNP components (private consumption, fixed investment, inventory investment, government demand for goods and services, exports, and imports); the net coefficient is simply the average variation of the growth of total GNP. They are arrayed in the table in order of the variation in the net instability coefficient. Excepting Japan, with its uniquely high but variable rate of growth, the gross coefficient is largest in the smaller countries, where foreign trade is often a high proportion of GNP, but where export and import fluctuations tend to be mutually offsetting. The net coefficient differs over a significant but narrower range and indicates a much lesser instability than in earlier periods.

Despite these and other distinctions, certain structural changes in cyclical behavior were general: low average levels of unemployment; a stable international environment permitting rapid expansion in exports to other industrialized countries; an increased relative role for fluctuations in durable consumers' goods and inventories; endemic inflation; and, above all, a tendency for rapid growth phases to be brought to a halt via balance-of-payments pressures.

The dates for turning points in postwar growth cycles are set out in Table 12, and, for part of the period, presented visually in Chart 4.

There are, evidently, considerable variations in cyclical turning points among these economies. But some major movements are widely shared; for example, the trough of 1954 (excepting the United Kingdom); the trough of 1958 or early 1959; the peak of 1969–1970; the virtually universal boom of 1972–1973. The most substantial discrepancies occur in the period 1962–1966.

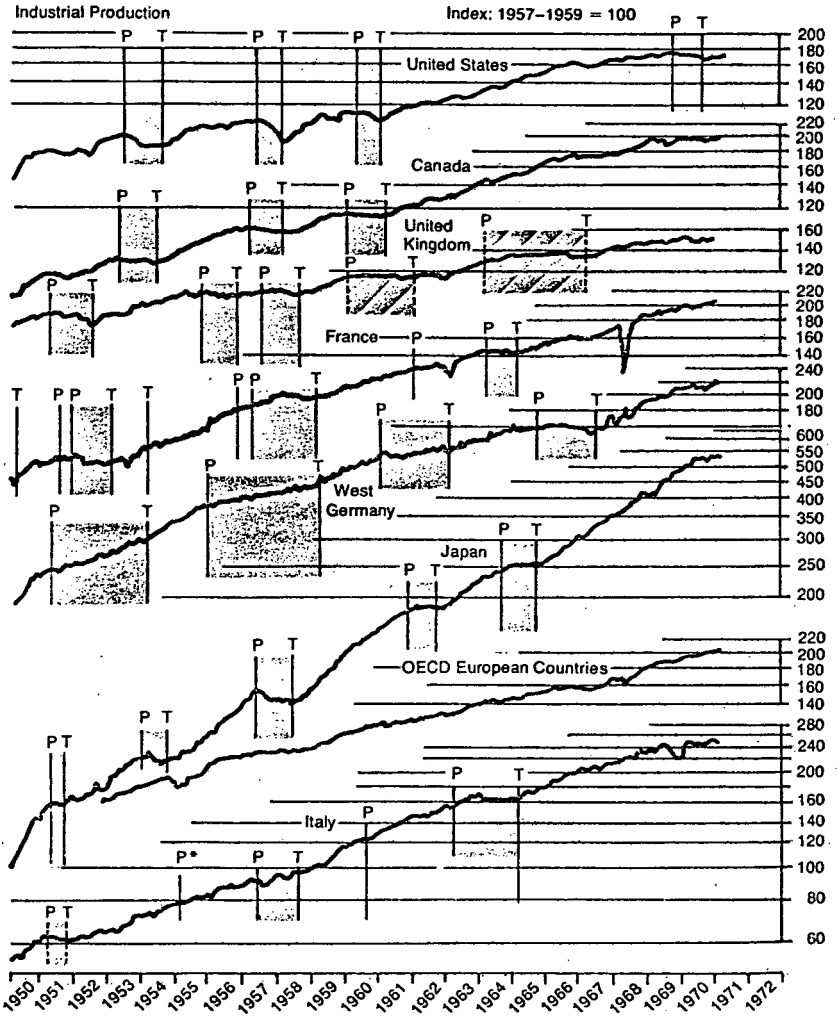
TABLE 12.—BUSINESS-CYCLE TURNING POINTS: 6 MAJOR ECONOMIES, 1945–74

	United States	United Kingdom	Germany	France	Japan	Italy
Trough	October 1945	[1947]		I 1949		
Peak	November 1948			II 1950		
Trough	October 1949					
Peak		1951	April 1951		June 1951	
Trough		1952			October 1951	
Peak	July 1953			I 1952	January 1954	
Trough	August 1954		January 1954	II 1954	November 1954	1954.
Peak	July 1957	December 1955	January 1956	II 1957	June 1957	II 1957.
Trough	April 1958	November 1958	March 1959	I 1959	June 1958	III 1958.
Peak	May 1960	November 1960	January 1961		December 1961	
Trough	February 1961	February 1963	February 1963		October 1962	
Peak	[April 1962]	August 1965		II 1964	October 1964	III 1963.
Trough	[April 1963]			I 1965	February 1965	I 1965.
Peak	[June 1966]		December 1965	II 1966		
Trough	[October 1967]	December 1968	August 1967	II 1968		
Peak	[June 1969]	II 1969	May 1970	II 1970	March 1970	II 1969.
Trough	November 1970	February 1972	July 1972	II 1971	March 1972	II 1971.
Peak	October 1973	IV 1973	February 1973	II 1973	I 1973	II 1974.

NOTE.—Roman numerals refer to quarters of relevant years.

Sources: See note 41, W. W. Rostow, "The World Economy: History and Prospect," p. 774.

CHART 4.—Business-Cycle Turning Points and Indexes of Industrial Production: Seven Market-Oriented Economies, 1950–1970



P: Peak.
T: Trough.
*J.C.R. Dow notes the period 1954–1957 as "flat" in terms of growth cycles ("Cyclical Developments in France, Germany, and Italy since the Early 1950's," pp. 178–179).

Source: Philip A. Klein, "The Management of Market-Oriented Economies," p. 153.

Table 13 confirms the generality of these movements. It establishes the contours of an international growth cycle from 1954 to 1973 by averaging the performance of eight countries, excluding the United States, and comparing their average cyclical behavior with that of the United States.

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TABLE 13.—GROWTH RATES IN THE UNITED STATES AND 8 OTHER COUNTRIES, 1953–73

	Median percentage change, 8 countries, excluding United States					Percentage change, United States				
	Industrial production	Real GNP	Value of imports	Value of exports	Consensus of peaks and troughs	Industrial production	Real GNP	Value of imports	Value of exports	Consensus of peaks and troughs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1953 to 1954	[1] 9.2	4.4	3.8	11.2	----	[2] −5.3	[2] −1.4	[2] −5.6	[2] 4.2	(2)
1954 to 1955	8.4	[1] 7.0	12.3	[1] 15.1	(1)	[1] 12.7	[1] 7.6	[1] 11.3	11.6	(1)
1955 to 1956	7.5	4.8	[1] 16.6	12.3	----	4.4	1.8	11.1	[1] 21.7	----
1956 to 1957	4.6	4.1	10.6	10.4	----	1.3	1.4	3.8	11.4	----
1957 to 1958	[2] .4	[2] 2.4	[2] −9.2	[2] .4	(2)	[2] −6.5	[2] −1.1	[2] −2.6	[2] −16.1	(2)
1958 to 1959	8.2	5.4	9.4	10.4	----	[1] 11.9	[1] 6.4	[1] 18.6	.3	(1)
1959 to 1960	[1] 9.8	[1] 6.7	[1] 17.2	[1] 15.8	(1)	2.2	2.5	[2] −3.6	[1] 19.4	----
1960 to 1961	5.4	[2] 5.2	7.4	[2] 5.0	(2)	[2] .8	[2] 1.9	−1.5	[2] 2.3	(2)
1961 to 1962	[2] 5.2	[1] 6.0	[2] 6.6	5.7	----	[1] 8.2	[1] 6.6	[1] 11.9	3.3	(1)
1962 to 1963	6.4	[2] 4.8	11.8	9.2	----	[2] 6.0	[2] 4.0	[2] 4.8	7.2	(2)
1963 to 1964	[1] 8.7	[1] 6.7	[1] 14.9	[1] 16.2	(1)	6.8	5.5	9.7	[1] 14.5	----
1964 to 1965	[2] 4.6	4.6	[2] 4.4	11.0	----	9.2	6.3	15.0	[2] 3.8	----
1965 to 1966	[1] 6.2	[2] 4.2	[1] 12.4	9.8	----	[1] 9.8	[1] 6.5	[1] 18.5	[1] 10.8	(1)
1966 to 1967	[2] 2.9	4.5	[2] 5.8	[2] 7.4	(2)	[2] 2.1	[2] 2.6	[2] 5.4	[2] 4.6	(2)
1967 to 1968	6.6	6.1	12.2	15.0	----	[1] 5.7	[1] 4.7	[1] 22.8	[1] 9.7	(1)
1968 to 1969	[1] 10.7	[1] 6.3	[1] 18.8	[1] 17.8	(1)	4.7	2.7	[2] 8.5	[2] 8.2	----
1969 to 1970	5.8	5.5	16.8	17.2	----	[2] −3.7	[2] −.4	11.1	[1] 15.3	(2)
1970 to 1971	[2] 2.4	[2] 4.0	[2] 12.1	[2] 14.6	(2)	.2	3.2	14.3	[2] 1.9	----
1971 to 1972	7.0	4.2	19.9	20.2	----	7.9	6.1	22.5	14.0	----
1972 to 1973	[1] 8.4	[1] 6.1	[1] 34.7	[1] 32.5	(1)	[1] 9.8	[1] 6.2	[1] 27.9	[1] 45.4	(1)
Averages, 1955–72:										
Peak years		6.6					6.3			
Trough years		3.8					2.8			
All years		5.1					4.5			

[1] Peak years.
[2] Trough years.

NOTE.—The 8 countries are Belgium, Canada, France, West Germany, Italy, Japan, Netherlands, and the United Kingdom.

Source: Geoffrey H. Moore, "The State of the International Business Cycle," "Business Economics," vol. 9, No. 4 (September 1974), p. 24.

The United States emerges, once again, as a somewhat more volatile economy than the median of the other eight, with a lower average rate of growth. But still, its average growth rate was slightly higher over these twenty years than for the decade before 1929. For a full generation Americans never suffered more than a series of minor recessions—five, in fact, including the exceedingly mild setbacks of 1960, 1963, and 1967. For the whole advanced industrial world this was a unique passage in economic history.

Within this framework, however, there is much familiar from the longer past about the minor fluctuations that did occur: the various sensitive business-cycle indicators continued to lead and lag in their old ways; the short rhythm of inventory fluctuations could still be detected and measured; the various other components of investment remained volatile and still accounted substantially for business fluctuations as a whole, although the economies of Western Europe and Japan now joined North America in experiencing the short-run sensitivity of fluctuations in durable consumers' goods. And, as Table 13 reveals, the average length of cycles remained close to the 5 years which marked the rhythm of the British economy as far back as the eighteenth century.

III. Cycles in the Fifth Kondratieff Upswing: 1973–1980

In narrow cyclical terms, the behavior of the world economy over the six years 1974–1979 is reasonably straightforward. The sharp recession of 1974–1975 gave way to an uneven recovery which continued down to 1979, as Table 14 indicates. Deceleration or decline in real GNP is almost universally predicted for 1980; for example, the OECD Secretariat analysis of October 31, 1979 foresees real GNP growth for the OECD countries of only 1.4 percent for 1980, less than half the 1979 figure. If 1980 turns out to be a cyclical trough, we have yet another five-year cycle.

Looked at more closely, however, the central message of Table 14 is the fact that average growth rates were about half their 1960–1973 average.

TABLE 14.—GROWTH RATES IN REAL GROSS NATIONAL PRODUCT, 1960–79

Area and country	1960–73 annual average	1974	1975	1976	1977	1978	1979 [1]	1974–79 annual average
OECD countries	4.8	0.5	−0.4	5.2	3.7	3.9	3.3	2.7
United States	3.9	−1.3	−1.0	5.5	4.8	4.4	2.0	2.1
Canada	5.4	3.5	1.1	5.7	2.7	3.4	2.8	3.2
Japan	10.5	−1.0	2.4	6.0	5.4	5.6	6.0	4.1
European Community [2]	4.7	1.7	−1.4	5.1	2.3	3.1	3.0	2.3
France	5.7	3.2	.2	4.9	2.8	3.3	3.0	2.9
West Germany	4.8	.5	−2.1	5.6	2.8	3.5	4.3	2.2
Italy	5.2	4.2	−3.5	5.7	1.7	2.6	4.0	2.4
United Kingdom	3.2	−1.5	−1.0	3.7	1.3	3.3	.5	1.2
Other OECD [3]	5.4	3.5	.2	3.8	1.9	2.3	3.0	2.4

[1] Preliminary estimates.
[2] Includes Belgium-Luxembourg, Denmark, Ireland, and the Netherlands, not shown separately.
[3] Growth rates are for OECD countries other than the Big Seven (United States, Canada, Japan, France, West Germany, Italy, and the United Kingdom).

NOTE.—For Italy and United Kingdom, data relate to real gross domestic product. For France, data relate to real gross domestic product excluding nonmarket activity such as compensation of employees in the Government sector.

Sources: Department of Commerce, International Monetary Fund, Organization for Economic Cooperation and Development (OECD), and Council of Economic Advisers. This table is published in "Economic Report of the President Transmitted to the Congress January 1980," p. 325.

Moreover, as we are all acutely aware, this deceleration was accompanied by four major pathological developments which operated unevenly but almost universally through the advanced industrial world:

Rates of inflation higher than typical of the 1950s and 1960s.

Higher rates of unemployment (Table 15) and lower rates of capacity utilization (Table 16).

Radical deceleration or decline in the rate of growth of business investment (Table 17).

Radical deceleration and, in the case of the United States, slight absolute decline in productivity (Table 18).

TABLE 15.—ADJUSTED UNEMPLOYMENT RATES IN SELECTED OECD COUNTRIES[1,2]

[Percent of total labor force, seasonally adjusted]

	Average 1962–74	1977	1978
United States	4.6	6.9	5.9
Japan[3]	1.3	2.0	2.2
Germany	(.7)	(3.6)	(3.5)
France[3]	(2.3)	4.9	5.2
United Kingdom[3,4]	(3.1)	(6.1)	(6.1)
Italy[5]	(6.3)	7.1	7.2
Canada	5.0	8.0	8.3
Australia	1.9	5.6	6.4
Finland	2.1	6.0	7.4
Norway	(2.0)	1.5	1.8
Spain	(2.0)	5.5	7.3
Sweden	1.9	1.8	2.2
Total[6]	(3.1)	(5.3)	(5.2)

[1] Figures in brackets have been adjusted to international definitions by the OECD. Due to recent important changes introduced for some countries, the method used in "Economic Outlook" 19, July 1976, will be updated in a future issue.
[2] For several countries, the adjustment procedures and assumptions are similar to those recently introduced by the U.S. Department of Labor; minor differences may appear with the corresponding rates computed following the U.S. concepts, due essentially to the fact that the latter refer to the "civilian labour force".
[3] Revised data. Historical average does not correspond to present figures.
[4] Preliminary, subject to revision.
[5] Due to major changes introduced since 1977 in the Italian labor force survey, unemployment has been notably raised; the U.S. Department of Labor excludes from the unemployed persons not actively having sought work in the past 4 weeks (about 50 percent of the unemployed according to the U.S. definitions).
[6] Representing about 90 percent of total OECD.

Source: OECD, "Economic Policy Committee: Economic Prospects, Summary and General Assessment" (Note by the Secretariat), Oct. 31, 1979, p. 35.

TABLE 16.—MANUFACTURING CAPACITY UTILIZATION RATE SEASONALLY ADJUSTED, PERCENTAGE

	Average 1964–73	Average 1974–78
U.S. Federal Reserve Board	85.5	80.5
Japan, MITI Index (1)	92.6	84.9
Germany, IFO[2]	86.4	80.0
France, INSEE	84.8	82.7
United Kingdom, CBI[3,4]	45	32
Italy, ISCO[4]	78.5	73.2
Canada, Statistics Canada	87.0	84.5

[1] 1973 average—100.
[2] First month in period.
[3] Percentage of firms at full capacity.
[4] Last month in period; average covers 1969–1973; total industry.

Source: OECD, "Economic Policy Committee: Economic Prospects, Summary and General Assessment" (note by the Secretariat), Oct, 31, 1979, p. 22.

TABLE 17.—PRIVATE INVESTMENT PERFORMANCE IN 8 OECD COUNTRIES

	Average annual percentage growth of business investment	
	1960–73	1973–78
United States	5.3	1.1
Japan	13.7	−.1
Germany	4.7	1.2
France	7.2	.2
United Kingdom	3.9	3.4
Italy	4.6	−1.2
Canada	5.6	2.0
Sweden	4.3	−.3

Source: OECD, "Economic Policy Committee; Economic Prospects, Summary and General Assessment" (note by the Secretariat), Oct. 31, 1979, p. 20.

TABLE 18.—EMPLOYMENT AND PRODUCTIVITY
TOTAL ECONOMY, PERCENTAGE CHANGES, SEASONALLY ADJUSTED AT ANNUAL RATES

	Average	
	1963–73	[1] 1973–80
United States:		
Employment	2.2	2.0
GNP/Employment	1.9	−.1
Japan:		
Employment	1.4	.8
GNP/Employment	8.7	3.4
Germany:		
Employment	0	−.8
GNP/Employment	4.6	3.1
France:		
Employment	.9	.1
GNP/Employment	4.6	2.5
United Kingdom:		
Employment [2]	−.1	0
GNP/Employment [3]	3.0	.2
Italy:		
Employment	−.6	.9
GNP/Employment	5.4	1.6
Canada:		
Employment	3.3	2.4
GNP/Employment	2.4	.5

[1] Forecast values for 1979 and 1980.
[2] Great Britain, employees only.
[3] Based on GNP growth, excluding the contribution from North Sea oil.

Source: OECD, "Economic Policy Committee; Economic Prospects, Summary and General Assessment" (note by the Secretariat), Oct. 31, 1979, p. 32.

Why did these things happen?

The short answer is contained in Table 19. It exhibits the terms of trade of a group of advanced industrial countries for 1960 and 1977, with 1970=100. In varying degree, all except Canada, Germany, and Norway experienced significant deterioration in their terms of trade between 1970 and 1977. Canada and Norway escaped because of their high-priced exports; Germany, because of its redoubtable performance in controlling inflation and otherwise maintaining the strength of its currency. But none wholly escaped the indirect effects of the reversal of the terms of trade of the OECD nations which occurred in the course of the 1970s. The advanced industrial world of the 1970s made as bad a job dealing with unfavorable terms of trade as it did in dealing with excessively favorable terms of trade during the inter-war years.

TABLE 19.—TERMS OF TRADE: ADVANCED INDUSTRIAL COUNTRIES
(1970=100)

	Terms of trade	
	1960	1977
Australia	116	88
Belgium	110	93
Canada	98	106
Denmark	108	92
France	93	93
Germany, Federal Republic of	90	101
Italy	104	78
Japan	102	76
Netherlands	100	91
Norway	91	101
Sweden	109	97
United Kingdom	95	85
United States	93	79

Source: World Bank, "World Development Report, 1979," p. 141.

Although more than the rise in the oil price is involved in the shift in the terms of trade, its central role is evident and well reflected in the fact that the terms of trade for 1977 for Saudi Arabia, Libya, and Kuwait (1970=100) were, respectively, 422, 316, and 449. The figures would be considerably higher (and for the OECD, lower) if we had the data for early 1980.

The unfavorable shift in the terms of trade struck the advanced industrial countries in multiple ways which, taken together, substantially account for all four of the pathological phenomena which accompanied the deceleration of growth rates since 1974.

First, the unfavorable shift in the terms of trade meant that a larger real quantity of resources had to be surrendered for a given quantity of imports. This process struck directly at the real incomes of the oil importing countries and gravely weakened their balance of payments position.

Second, the relative rise in domestic energy prices meant that the proportions of total real income that had to be allocated for energy purchases either reduced purchases of other goods or reduced savings.

Third, the raw-materials-push inflation induced by the rise in import prices (including the effects of a weakening dollar) set in motion efforts by labor unions in particular and workers in general to protect real wages through demands for higher money wages. The combination of raw materials and wage-push inflation thus created induced public authorities to try to damp inflation from the demand side by tighter monetary and fiscal policies.

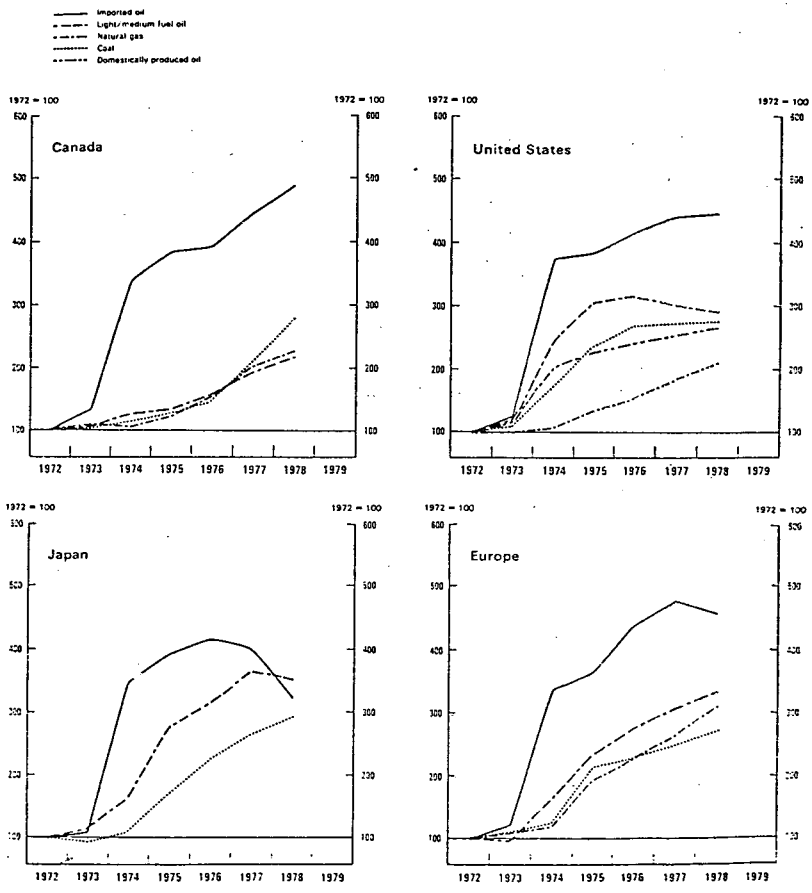
One result was the following: average gross real weekly earnings in the non-agricultural sector in the United States, which increased at an annual average rate of 1.8 percent between 1952 and 1972, declined at an annual rate of 1.4 percent between 1972 and the third quarter of 1979. There was, in fact, a decline of 4 percent between September 1978 and September 1979 responding to the sharp further rise in the real price of energy.

In effect, the complex process set in motion by the radical, unfavorable shift in the terms of trade sharply throttle back the engine which had driven forward the boom of the 1950s and 1960s; for, it will be recalled, the momentum of the leading sectors of that boom in the advanced industrial world depended directly on the continued rise in

consumers' real incomes—automobiles, consumer durables, the move to surburbia, enlarged outlays for education, health services, and travel. Moreover, the relative rise of energy prices struck with special force at those leading sectors that were energy-intensive; and deceleration of private real incomes generated strong pressures (of which Proposition 13 was an example and a symbol) against the continued expansion of public services and transfer payments.

The role of the terms of trade in determining the path of growth in the OECD world in the 1970s is clarified if one looks at short term movements. After the initial traumatic rise in the price of oil in 1973–1974, which plunged the world economy into its sharpest recession since the 1930s, there was a period of remission. Although it took several years for the effect of the initial oil price increase gradually to elevate domestic energy prices, the increase in the international oil price decelerated. Lower growth and conservation slowed up the increase in demand, while the coming on stream of North Sea and Alaska oil improved the global supply situation (see Chart 5). In

CHART 5.—Energy Prices



Source: OECD, "Economic Policy Committee: Economic Prospects, Summary and General Assessment" (Note by the Secretariat), Oct. 31, 1979, p. 64.

general, the real price of international oil declined slightly. In the case of Japan, with the yen strengthening against the dollar, in which the oil price was denominated, there was an absolute decline in the international oil price in 1976–1978. For the year 1978 OECD as a whole enjoyed a transient 2 percent terms of trade improvement. These developments help explain the cyclical expansion of 1975–1978. But in the wake of the Iranian crisis, at the close of 1978, the terms of trade sharply reversed, setting in motion the deflationary forces now at work in the world economy.

Although the central argument of this analysis is post-Keynesian (if not a bit anti-Keynesian), it should be underlined that without the built-in income stabilizers installed in the advanced industrial economies as a result of the Keynesian revolution the world economy might have been plunged in the 1970s into a depression as serious as that of the 1930s. But the sharp deceleration in real income that did occur struck hard at the pace of investment. In economic jargon, the catalytic agent that drove the growth process forward in the 1950s and 1960s was the accelerator; that is, investment geared to the rate of expansion of real income. The unfavorable shift in the terms of trade decelerated real income, and thus brought about the rather extraordinary slowdown in the rate of growth of investment in the 1970s indicated in Table 17. It is the deceleration of investment, at a markedly greater rate than the deceleration of output as a whole, which is the main cause of the deceleration of productivity, as well as abnormally high unemployment and idle industrial capacity.

IV. The Business Cycle in the Fifth Kondratieff Upswing: Alternatives for the 1980s

It is against the historical background this essay aims to provide that one must try to answer the question: what will be the business cycle experience in the 1980s? The answer is quite simple: if the world economy goes on with present inadequate energy policies, we can expect a progressively aggravated version of the 1970s; if greatly invigorated policies of energy production and conservation are pursued, the world economy has an opportunity to break out of the trap into which it has fallen and enjoy a powerful and sustained expansion.

In different ways the recession of 1974–1975 and that envisaged for 1980 were both products of a rise in the price of oil. Between those dates the prospects for OPEC production capacity and production altered radically:[3]

> The outlook for OPEC oil production in the early and mid-1980s has worsened over the past two years or so. As recently as 1977, the consensus view of the petroleum industry was that OPEC sustainable crude productive capacity in 1985 would fall in a range of 43 million to 47 million barrels per day. The CIA projection was within these bounds. We now think the figure for the early 1980s is more likely to be on the order of 35 million b/d. Oil company capacity projections, although somewhat higher than what we are projecting, are moving in the same downward direction. The conservationist trend among OPEC governments has resulted in production policies that, if adhered to, would limit output to about 30 million b/d over the next half dozen years.

[3] CIA, National Foreign Assessment Center. The World Oil Market in the Years Ahead, p. 43.

With OPEC domestic consumption rising, the prospects are for a slow decline in OPEC exports. Major political or military crises involving important OPEC suppliers could radically alter that prospect for the worse. Modest increments in oil exports can be expected from Mexico, the North Sea, and Egypt; but these will be countered by the waning export capacity of the USSR. After 1980, when Alaskan oil reaches its peak flow, U.S. oil production is expected to decline as a result of continued reduction of oil output in the lower 48 states, despite high drilling rates.

Under optimistic assumptions about both energy conservation and OPEC supplies, the CIA concludes that if the OECD countries try to achieve a 3 percent real growth rate in the period 1979–1982, there would be a shortfall of 2–4 million barrels of oil per day; if a 3.5 percent real growth rate were attempted, the shortfall would be of the order of 3–5 million barrels of oil per day. The shortfall would assume the form of higher real prices of oil or lowered real growth rates, unless unprecedented conservation measures were undertaken, perhaps in the form of stringent energy rationing. In fact, all three results are probable.

In the short run, economies induced by high energy prices and recession may yield a temporary oil glut; but the prospects for global oil demand and production do not appear compatible with high or even modest growth rates in the United States, Western Europe, and Japan over the years ahead. We face the prospect, therefore, of being plunged promptly into another and perhaps deeper recession after a brief and incomplete recovery from the present recession. If present policies continue, the 1980s could, then, be a decade of progressively slower growth, progressively higher unemployment, continued high inflation and stagnant productivity, accompanied by progressive erosion of public services and progressive weakening of our strategic position on the world scene, which an increase in military hardware alone cannot correct.

On this view, then, the business cycle in the 1980s would take the form of an exacerbated version of the pattern already experienced from 1974 to 1979.

The question arises: Is there an alternative? Is there any way to break out of the trap? Is this pattern of frustrated growth inherent in the dynamics of the fifth Kondratieff upswing?

The experience of the past, in other Kondratieff upswings, provides some insight into the answer to these questions. In the other four cases the relative rise in basic commodity prices, which I take to be the hallmark of a Kondratieff upswing, led to a shift in the direction of investment. Capital flowed to exploit the profit possibilities opened up by the change in relative prices.[4] The result, as indicated earlier in this paper, was a strong cyclical expansion in which the leading sectors were related to the expansion of basic commodity output; for example, the U.S. expansions of the 1790s, 1830s, and 1850s; the

[4] This process is examined in considerable historical detail in my World Economy: History and Prospect, Austin: The University of Texas Press, 1978, Part Three. Formal mathematical models of the process are developed and related to the five historical cases in a paper, written jointly with Michael Kennedy, with the assistance of Faisal Nasr, "A Simple Model of the Kondratieff Cycle," Research in Economic History, vol. 4, 1979, pp. 1–36.

Canadian, Australian, and Argentine expansions in the pre-1914 decade. The world economy as a whole was involved in all but the first of these cases because it helped supply the capital which made the opening up of new supplies possible. The world economy also reflected the whole process through its impact on overall price and interest rate movements and shifts in income distribution.

In short, if the world economy was operating in the fifth Kondratieff upswing as it did in the past, we should be experiencing a major boom led by greatly enlarged investments in energy, energy consumption, food production, and other sectors where the supply structure of the world economy is endangered (for example, raw materials, the control of environmental degradation). There is not the slightest doubt that, so far as the United States is concerned, the order of magnitude of required supply-side investments could easily take us to full employment. In fact, a rise in the proportion of GNP invested is almost certainly required.

The United States is suffering from a series of degenerative resource problems; that is, problems which will be worse next year than this year unless corrective action is taken in the form of enlarged investment in certain particular directions. Those problems include: rising oil imports; a decaying rail transport system; water supply and soil erosion problems which threaten the American food surplus; air and water pollution problems; urban degeneration; a slackened rate of productivity increase and much obsolescent industrial plant, notably but not exclusively, in the Northeast and industrial Middle West. In addition, I believe the United States ought to increase sharply its investment in research and development.

In a paper summarized in 1978 at a meeting of the American Association for the Advancement of Science,[5] I undertook to measure roughly the contribution to sustained full employment that an effective national energy program might make in the United States. An effective program was defined as one which would bring United States oil imports down to 6 million barrels of oil per day by 1985—a minimum required target if the OECD world is to avoid risking a cataclysmic crisis in the 1980s. I concluded that, depending upon whether infrastructure outlays are added to plant and equipment requirements, U.S. investment for energy production for the years 1977–85 would be $770–1160 billion (in 1976 dollars); for energy conservation, $200–365 billion. Roughly speaking, a doubling of the proportion of energy-related investment to GNP is required: from, say, 2.7 percent of GNP in 1974 to an average of, say, 5.25 percent over the whole period 1977–85. The investment gap in the United States, preventing a return to high sustained growth rates, was estimated at about 1.7 percent of GNP. I argued, in short, that an effective national energy program would, in the United States, match or exceed the investment gap and bring that economy back to sustained full employment. With the heightened requirement for a massive and urgent program of synthetic energy production, my confidence in this proposition is considerably strengthened as of early 1980.

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[5] This paper appears in full in Charles J. Hitch (ed.), Energy Conservation and Economic Growth, Boulder, Colorado: Westview Press, 1978, pp. 59–112.

There are no reliable estimates of investment requirements in the other degenerating sectors except for air and water pollution control. Outlays for that purpose in the United States are expected to rise from 2.1 percent of GNP in 1975 to 3.1 percent in 1984. From fragmentary data on transport, water, and soil erosion investment requirements, I conclude that when the resource issues are confronted the American problem will not be sluggish growth but excessive investment requirements and the need for either a higher investment rate or investment priorities. A higher investment rate (say, 20–22 percent) would simply put the United States in the same range as most of the countries of Western Europe.

Reverting to economists' jargon, the driving force in the next sustained American expansion should be the multiplier; that is, an expansion of income caused by increased investment in resource-related fields. A rise of income thus set in motion will, of course, induce further investment; but the appropriate dynamics for the 1980s are quite different from that of the 1950s and 1960s. In a sense, we are back in the pre-1914 world where growth was driven forward in the first instance by investment on the supply side; for example, by investment in railroads, steamships, new technologies in metals and chemicals, the opening up of new areas and sources of food and raw materials.

The question then becomes: Why is the corrective process, centered on changed directions of investment, which operated successfully in the first four Kondratieff upswings, not operating fully in the fifth? The answer is that the central supply-side sectors are now in the hands of governments; and public policy has thus far failed to facilitate the diversion of private capital flows to the appropriate sector. This is quite clear, for example, with respect to energy policy in the United States.

First, energy prices have only been slowly and uncertainly adjusted to the realities of the world energy market. However understandable the short-run consumers' interests may be which have obstructed this necessary adjustment, the upshot has been to reduce the incentives to conserve and to produce energy.

Second, the proposed diversion of excess profits into public hands via an excess profits tax has led to the danger that these large revenues will not be fully or efficiently ploughed back into energy production but directed to a variety of other purposes which, however worthy, may reduce energy production below levels it would attain if a plough-back tax rather than an excess profits tax were installed.

Third, energy investment has been gravely inhibited by a variety of uncertainties arising from the failure of public policy to settle promptly and definitively the environmental rules of the game. This failure affects almost every aspect of the nation's energy balance: oil and gas drilling on the Federal Estate; coal and nuclear production; the conversion of utilities to coal; synthetic production from coal and shale.

Fourth, public-private collaboration to set in motion large commercial production of synthetics (as opposed to research and development) has been exceedingly slow in getting started and the efficacy of the arrangements incorporated in current legislation is still to be proved.

Despite these inhibitions, energy-related investment has no doubt risen in the United States, although we still lack adequate measurement of this critical variable. In fact, if we were to disaggregate our analyses of the American economy by sectors and regions, the vitality of the energy sector in all its dimensions (and of the energy-producing regions) would, I believe, substantially explain the difficulty the monetary authorities have had in inducing a recession in 1979–1980. On the other hand, U.S. policy has prevented the expansion of energy-related investment on a scale sufficient to reduce rapidly our oil import requirements and to lift the balance of payments constraint which yielded the pathological behavior of investment, unemployment, capacity utilization, and productivity from 1974 to 1979.

As noted earlier, if one adds to the enlargement of energy-related investment the increased requirements for investment in the rehabilitation of the American railway net, urban mass transport facilities, the control of pollution, the conservation and development of water supplies for agriculture, research and development and the modernization of obsolescent industrial plant, one can easily conclude that a substantial increase in the U.S. investment proportion is required. In part, these requirements will be balanced by relatively reduced investments in the expansion of the inter-state highway network; educational and, possibly, health facilities; and in the large automobile sectoral complex. A firm conclusion is difficult because investment data are not regularly collected and published in a way that permits useful sectoral disaggregation. On balance, however, a significant rise in the investment rate appears indicated for the United States. This conclusion is strengthened if one takes into account the legitimate claim on an additional margin of U.S. resources (and those of other OECD countries) for investment to assist the developing nations meet their increased requirements for energy and agricultural investment at a time when many of them already suffer from balance of payments positions gravely attenuated by the high price of imported oil and the debt burdens acquired in the 1970s to permit their import levels to be maintained.

If the United States and the world economy as a whole face up to the imperatives of the fifth Kondratieff upswing the 1980s could see a great period of sustained expansion based on greatly enlarged and urgently needed supply-side investment. Such a boom would remove the problems of unemployment and idle capacity from the agenda and strengthen the dollar as U.S. oil imports declined. A strengthening of the dollar would reduce some of the inflationary pressure now operating on the American economy; and a redoubtable effort to commercialize synthetic oil production could set a ceiling on the OPEC oil price, ending the progressive degeneration of the terms of trade. Nevertheless, the kind of powerful expansion envisaged would make urgent a serious approach to the problem of wage-push inflation which, even now, is the major component in American inflation. In 1979, for example, compensation per hour in the private business sector increased by 9.3 percent; output per hour declined by 0.9 percent; unit labor costs rose by 10.4 percent. A strong expansion should, as noted above, increase productivity but might well add an element of demand-pull inflation to the equation. An effective incomes policy would,

therefore, be required. But as the dismal data for 1979 indicate, it is already an urgent requirement.

In short, the business cycle prospect for the 1980s cannot be predicted. The outcome depends on public policy. We can either drift into a national and international economic disaster as serious as that of the 1930s, or, by taking our destiny into our hands, generate the powerful and sustained expansion the imperatives of the fifth Kondratieff upswing make necessary and possible.

II. THE INTERNATIONAL DIMENSION

THE RISE AND FALL OF THE UNITED STATES IN THE WORLD ECONOMY

By Charles P. Kindleberger

The last fifty years have seen a vast change in the role of the United States in the world economy. The dollar, now weak, was then strong; the balance of payments, then in surplus, is now in deficit. Trade connections with the rest of the world, then limited, are now pervasive. Deflation has given way to inflation. More significantly perhaps, the United States has moved from aloofness in its assumption of responsibility for the course of the world economy to leadership, and is currently en route back to a position of greater concern for the national interest than for that of the world as a whole.

An illustration from international monetary arrangements may be illuminating. In 1929 to 1931, the United States largely stood aside from Europe, limiting its role as a lender of last resort to "too little and too late", while the monetary system went down the drain with the successive bankruptcies of Austria, Germany and the United Kingdom, followed by Japan, the United States itself and the gold bloc. In the 1950s and early 1960s, after having pushed for the creation of the International Monetary Fund, this country dominated it: an early official once said that if the United States did not put forward proposals in the international organizations such as the International Monetary Fund (IMF), the General Agreement on Tariffs and Trade (GATT) or the Organization for Economic Cooperation and Development (OECD), nothing happened. Today, the IMF is engaged in pushing a substitution account to fund the huge overhang of dollars. The countries agree on the objective but differ on the means to achieve it.

From isolation, to dominance, to going back into the pack succinctly summarizes the experience of half a century. Dominance is defined by Francois Perroux as an asymmetric condition in which the other countries respond to the dominant power when it takes action, but such power does not, or at least need not, take action when the initiative comes from elsewhere. In political science, the expression is hegemony, and the hegemonic power gives orders to lesser countries, takes none in return. To illustrate United States dominance in the 1950s and early 1960s, take the dollar system under Bretton Woods. All countries other than the United States fixed their currencies in terms of dollars; the dollar was fixed in terms of gold. There was strong asymmetry between the United States and the dollar on the one hand, and all

other countries and currencies on the other. The dollar was international money, and like money in a system of commodities, every other currency was priced in terms of dollars, but the price of the dollar was the reciprocal of the prices of other currencies. The United States could (but would not) change the price of gold, as the French for one could not. And, until 1971 the United States could not change the price of the dollar because it could not arrange a simultaneous and uniform change in the value of all other currencies.

The United States arrived at dominance, with its peculiar limitations on the power of the country to act in its narrow interest, from a position of isolation. After World War I, the country refused to subscribe to the Treaty of Versailles, join the League of Nations, admit any connection between war debts and reparations, or adjust war debts in an effective way to remove that cancer from the international economy. The success of the Dawes loan in 1924 led to a burst of foreign lending that was cut off abruptly in 1928 when the sharp stock-market rise started. Already before the crash in 1929, the United States was preparing to raise tariffs in excessive fulfillment of President Hoover's pledge in the election campaign of 1928 to do something for agriculture. When the world moved into depression in the fall of 1929, the country went ahead with the Hawley-Smoot tariff on agricultural and industrial goods alike, leading to retaliation by 30-plus countries and a harsh repression of international trade, already hard hit by the collapse of commodity prices associated with the stock-market crash. When the financial structure of Europe began to unravel in the early months of 1931, the United States in concert with France took a few reluctant steps to come to the aid of Austria, Germany and England, but on the whole was unwilling to throw good money after bad.

The author has expressed the view that the 1929 depression was so wide, so deep and so prolonged largely because there was no international economic leadership, such as Britain provided from 1870 to 1914, and the United States from 1945 to (say) 1965. World stability needed free markets for commodities, steady or countercyclical foreign lending, fixed exchange rates, and a lender of last resort to mitigate financial crises. Neither Britain nor the United States took on these tasks after October 1929, and the U.S. in particular closed its markets, shut down foreign lending in depression, turned away from foreign-exchange stability in the World Economic Conference of 1933, and made inadequate stabilization loans. Britain turned inward to the Commonwealth at the Ottawa Conference of 1932 and established preferences for members of the Commonwealth in trade and access to the London capital market. The purpose was to protect export markets threatened by countries like Japan. Germany sank back into autarky, Japan transferred its interest from the world market to the Greater East Asia Co-prosperity Sphere. The world came upon what Roepke called "International Economic Disintegration." To reverse the position called for strong leadership. An astute New Zealand observer wrote as World War II was starting:

> Whatever solutions may be found in practice for these problems of international organization, one fact will remain of supreme importance. The national policies of the great Powers will determine what kind of organization, if any, can be brought into being, what powers will be entrusted to it, and whether those powers can be effectively discharged. After the war, which will

certainly exhaust and impoverish the European Powers, the greatest responsibility must inevitably devolve upon the United States. The responsibility may be unsought and unwelcome; but it is inescapable. Not what Americans think, but what the United States does, will largely determine the pattern of international relations for the immediate future. Even inaction is a policy, negative but nonetheless decisive. The United States may refuse the responsibility and retreat into isolation. That is a logical policy to follow, provided its costs are weighed against its advantages. . . .

If, on the contrary, the United States should take bold constructive steps to initiate the creation of international institutions, that also would be a logical policy; but its costs should be squarely faced also. Some of them have already been suggested. On the economic side, it would be necessary to acquiesce in a practically world-wide depreciation against the dollar, in a substantially greater rise of prices in the United States than elsewhere, and in an effective lowering of the American tariff. This would mean heavy transitional losses in protected industries, particularly in agriculture, and a further displacement of labor in mineral and agricultural employment as well as in some of the older manufacturing industries. These losses would be more than compensated by the gain in other industries, but the transitional costs would be heavy and would bear harshly on particular interests.

Moreover, no system of economic or financial co-operation can be effective for long unless it is firmly based on political security, which means collective security. In assuring collective security, the United States must assume a large share of responsibility and make far-reaching political and military commitments. It is simply unrealistic to blink this fact. If an international system is to be restored, it must be an American-dominated system, based on a Pax Americana.[1]

There is an interesting question as to when the movement from isolation to involvement should be dated. One could choose 1934 when Secretary of State Cordell Hull was given the green light by President Roosevelt over George Peck, and started down the long road of tariff reduction through the Reciprocal Trade Agreements Act. Cordell Hull was an obdurate free-trader and opponent of Commonwealth tariff preferences, into which Britain had moved during the depression to safeguard its remaining export markets. One could mark the start as September 1936 when the French wanted international support to disguise an embarrassing devaluation of the franc. Or perhaps one might move the date forward to the 1940 destroyer deal and the 1941 Atlantic Charter signed by Churchill and Roosevelt in which the two countries committed themselves, Britain under some duress, to a liberal organization of the world economy after the war. Whatever the exact moment of conception, by the end of the war a full-blown program of creating and maintaining liberal world markets had been delivered. There was UNRRA, for relief and rehabilitation after the war, the IBRD or World Bank for reconstruction and development, the still-born International Trade Organization (ITO) to maintain liberal rules of trade, and the International Monetary Fund to provide the assistance needed by countries in balance-of-payments difficulties. All were organized on international lines. Each in fact functioned effectively only insofar as the United States paid the piper and called the tune. The ITO failed to get off the ground because other nations of the world incorporated in the draft treaty so many exceptions to non-discriminatory trading that the Congress felt that the charter would impose free trade on the United States but permit discrimination and quantitative barriers by others.

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[1] J. B. Condliffe, The Reconstruction of World Trade: A Survey of International Economic Relations, New York, W. W. Norton & Co., 1940, pp. 392–94.

And at that stage, no U.S. signature, no treaty. The General Agreement on Tariffs and Trade, not requiring Congressional ratification, was substituted for the ITO.

When UNRRA wound up, largely because of the Cold War and because of the absence of agreed principles for dividing assistance for relief and reconstruction, the United States provided first post-UNRRA relief, then Interim Aid, and finally, as the Cold War intensified, the Marshall Plan for the reconstruction of western Europe. This was followed by Point IV for aid to developing nations, supplementing the World Bank, that evolved through several institutional metamorphoses into the Agency for International Development. The United States maintained pressures for non-discrimination, for convertibility, achieved in 1958, and for lowered duties, resulting in the negotiation of the Dillon and Kennedy and Tokyo rounds in GATT.

As the 1950s turned into the 1960s, United States corporations and investors increased their holdings of foreign assets and to a certain extent securities, but largely made direct investments in primary products in developing countries and manufactured goods in developed.

At this time fears were expressed that the United States was taking over the running of the world. "Free-trade imperialism", a term devised to explain the British drive for free trade in the 19th century as a means of hammering down the trade barriers in Europe and maintaining its own foreign markets, was applied as an accusation to the United States. Jean-Jacques Servan-Schreiber wrote of the "*défi*" or challenge of the American multinational corporation, ready to throttle foreign infant industries in their cradles. All the while, however, the dominance of the United States was being not only questioned but undermined.

In the first place, there was the success of post-war economic policies in Europe and Japan. Growth rates, especially in Germany, Italy, France and Japan, were far in excess of those in the United States, as new investment replaced obsolete and damaged capacity, and American technology was diffused to the rest of the world by the multinational corporation, licensing of patents, and productivity teams under the Marshall Plan. Secondly, U.S. assistance and European borrowing, after satisfying the imperative need for goods, was used in part to build liquidity, and this was interpreted by the United States and Europe as a deficit in the U.S. balance of payments. As early as the fall of 1960 under President Eisenhower, American worries about the balance of payments began to appear. President Kennedy was quoted as having said that the two most critical questions in the world were nuclear proliferation and the U.S. balance of payments. Later a few critics would insist that borrowing for liquidity is a normal economic transaction between firms on the one hand, and banks on the other, and that a $3 billion-a-year, balance-of-payments "deficit" (on the out-moded liquidity definition) was compatible with long-run stability, just as a bank that increases its deposits every year is not inevitably headed for disaster. The United States was a bank, compared to other countries that traded as firms—another asymmetry in the system—and in this view it was a

mistake to take alarm. The position is not widely accepted. Many analysts thought the dollar already overvalued in 1960, accounting for the outflow of direct foreign investment, and the failure of the current account to respond fully to the outflow of capital as called for by the transfer process. Others believed that the major difficulties lay in high levels of military assistance through government channels, and the heavy flow of financial and industrial investment abroad.

Attempts were made to stem the flow of capital. In 1963 a prohibitive tax was applied to the purchase of foreign securities from abroad, the Interest Equalization Tax (I.E.T.). This was then applied to bank lending under the Gore amendment. The Federal Reserve Board further laid down regulations on foreign lending by U.S. banks and, in 1968, the earlier (1965) Voluntary Credit Restraint Program on direct investment was converted into a mandatory one. The rules were not applied to individuals, however, and there is a considerable debate, not clarified by the use of econometrics, whether the restrictions were effective.

The beginnings of a weakening of the United States position on free trade can be traced back to 1955 and the blanket waiver for agricultural products sought by the United States in order to restrict their import into the country. This incident is said to have caused "GATT's first major crisis and had resulted in a considerable loss of confidence in the United States as a leader and principal proponent of freer world trade." [2] At the turn of the decade, the United States was beginning to suffer under Japanese exports of cotton textiles and clothing, and worked to impose on Japan, or rather to require Japan to impose on itself, voluntary quantitative restrictions on exports. In due course, pressures for such "voluntary" export control programs would be felt in synthetic fibers, shoes, color TV and steel.

One aspect of leadership is to keep markets open for goods in excess supply, and the United States, despite the record set forth in the last paragraph, did so especially as it made room for Japaness exports to a far greater extent than did Europe. A second aspect is to make goods in short supply available. During the 1950s and 1960s, in periods of acute shortage this country sold off commodities from its strategic stockpile, to restrain the pressure of upward price movement. It was in a position to do so because the importance of stockpiles diminished as the prospect of the Cold War turning hot was pushed further into the future, and animosity turned into détente. Some domestic forces sought to restrain exports of goods used as inputs in the United States. The American plywood industry objected to the export of Douglas fir peeler logs to Japan. In 1973 at the time of the Nixon *shocku*, moreover, in order to halt the price rise, the Administration imposed an export embargo on soya beans on which our ally Japan depended critically. In 1973, the Administration clumsily allowed the Soviet Union to buy its stockpile of wheat (at subsidized prices), when it could be argued that wheat was held not only to support farm prices in America but also as a reserve for the world against such catastrophes as the drought in the Sahelian desert.

[2] See Gerald and Victoria Curzon, "The Management of Trade Relations in the GATT," Andrew Shonfield, ed., International Economic Relations of the Western World, 1950–1971, vol. 1, Politics and Trade, London, Oxford University Press, 1976, p. 258. See also T. K. Warley, "Western Trade in Agricultural Products," in ibid., pp. 345–48.

Failure of the United States leadership occurred not only in commodities and trade policy, but also in the field of money. After long resisting the argument put forward by Robert Triffin that the world would run short of reserves when the country succeeded in correcting its balance of payments and halting the flow of dollars into world reserves, in 1966 under Secretary of the Treasury Henry H. Fowler, the country changed its position and pushed for the adoption and issuance of special drawing rights (SDRs), to supplement gold and foreign exchange, largely dollars, in central-bank reserve holdings. The argument that the world needed additional liquidity was clearly invalid in the light of the heavy load of reserves of dollars accumulated by foreign central banks. The action appeared more nearly as support of the narrow United States interest, to increase the reserves behind its dollar liabilities to others. But the rights were issued not only to the financial powers of the world which had joined together in 1960 in the supplementary General Arrangements to Borrow alongside the IMF, but to non-financial countries as well, interested not only in liquidity but even more in the acquisition of real assets.

The American position in world finance had also been weakened by the gold pool, created in 1960, and for which it provided major support until its abandonment in the two-tier agreement of March 1968 which separated privately held gold from central-bank holdings; and by the growth of the Euro-dollar market and the Euro-dollar bond market. As widely understood, these institutions like the multi-national corporation grew up outside national jurisdiction of a single country in response to the greater mobility of men and money, and to take advantage of the possibility of escaping vexing national regulation. Regulation Q limiting interest rates paid on time deposits was perhaps foremost among these, with its loophole for foreign time deposits. U.S. depositors could get a higher return by putting dollars in, say, London, since London banks could earn a higher return in New York than that available to U.S. depositors. In 1966 in a credit crunch, U.S. banks went to London to borrow Euro-dollars, although, as in the case of the Federal-funds market, the action of any one bank in borrowing dollars in London redistributed bank reserves in the United States but did not add to them. After a time the Euro-dollar market began to serve European and other foreign borrowers who were seeking not especially dollars but loanable funds in general. With the dollar weak, business borrowers were not concerned over the exchange risk involved in dollar indebtedness, and would borrow Euro-dollars for conversion, to say, Deutschemarks, selling the dollars to the Bundesbank which would redeposit them in the Euro-dollar market. This led to a sizable increase in the Euro-dollar market, and strengthened the links among foreign money markets. If New York and Frankfurt were both connected with the Euro-dollar market, they were connected to each other.

In these circumstances, a serious mistake was made in 1971 when the Federal Reserve System undertook to lower interest rates in the United States to hasten economic recovery from the 1969–70 recession before the 1972 U.S. presidential election. A Swedish economist, Assar Lindbeck, has discovered the existence of a "political business cycle" that is based on the proposition that before elections, governments seeking

re-election will expand monetary and fiscal policy to sustain employment and attract votes, whereas courageous contractionary policies to repress inflation are generally timed immediately after one election and long before the next. The mistake in 1972 was to undertake an independent monetary policy in the United States without coordination with European money and capital markets with which the United States was intimately connected. Germany, as it happened, was embarked on a policy of restraint, which was equally mistaken in the light of U.S. intentions. As Germany sought to raise interest rates and the United States to lower them, a flood of dollars was drawn to the Eurodollar market, and thence to Frankfurt and Dusseldorf. U.S. dollar liabilities to foreigners rose by $7 billion in 1970, by $27.5 billion in 1971 and by $11.4 billion in 1972.

It was not the capital outflow of 1971 that led to the sharp change in the postwar international monetary system, however. The U.S. government adopted a program of "benign neglect" with respect to that portion of the balance of payments. Foreigners could choose whether they wanted to hold dollars or sell them and appreciate their currencies. (Conversion of dollars into gold was not actually forbidden, but was strongly discouraged.) What precipitated the August 1971 Connally shock that led to a 10-percent devaluation of the dollar in December 1971, and ultimately to the abandonment of the fixed par system of Bretton Woods and floating exchange rates in February 1973, was the precipitous and unexplained change in the current account in the balance of payments, largely in merchandise, and most significantly in manufactured imports. Between 1970 and 1971 the merchandise trade balance worsened by close to $5 billion, with imports rising almost $6 billion, and manufactured goods imports $4.5 billion. In 1972 manufactured goods imports rose by another $7.7 billion, and total imports by almost $10 billion. The expansionary boom was responsible for a substantial portion of these changes, but something deeper was going on, as the ratio of manufactured exports to manufactured imports fell from 210 percent in 1958 to 120 percent in 1968 and 1970, 100 percent in 1971 and dropped below 90 percent in 1972. Secretary of the Treasury Connally insisted on this country getting control of its exchange rate and formally cut off exchange of dollars into gold. A 10-percent import surcharge was levied in the absence of ability to force other countries to permit the United States to depreciate by that amount. At the Smithsonian meeting of December 1971 he put through a 10-percent formal devaluation. That failed to impress the market or to reverse the view that the dollar was weak. Speculation against the dollar intensified in 1972 and reached new peaks in February and March 1973. At this point foreign central banks refused to buy and hold more dollars, and a new era of floating currencies was ushered in.

The results of floating were on the whole disappointing to those academic experts who had recommended it to a string of successive government administrations. The dollar moved in a fairly wide range up and down. Exports seemed to react slowly to new exchange rates, and imports perversely because of the lag implicit in the so-called "J-curve" that suggests that the balance of trade after depreciation has to get worse before it gets better because the decline of quantity lags behind the rise in price. It is true there was a decline in foreign

direct investment, even some repatriation of United States capital, plus increased European and Japanese investment in the United States. But the rapid redressment expected by the "elasticities" school of balance-of-payments adjustment did not on the whole materialize. Part of the reason, to be sure, was the price increases in oil engineered by OPEC in the fall of 1973 and spring of 1979, on which more below.

By way of slight digression, it may be useful to note that there are at least three main schools of balance-of-payments adjustment:

The elasticities school, just referred to, which believes that balances of payments adjust to exchange-rate changes speedily and without trauma, because of high elasticities of demand for foreign goods;

The absorption school, which defines the balance of payments on current account as the difference between output and expenditure (absorption) and thinks it impossible to improve the balance without producing more and absorbing less, which usually means increasing the ratio of savings to disposable income. Since 1971, the ratio of personal savings to disposable income has in fact declined from 7.7 to 4.1 in 1979, which compares unfavorably with ratios of about 17 percent in Germany and close to 25 percent in Japan. Unless depreciation can raise the rate of savings, according to this school, it will have little success in improving the balance of payments.

The third, or monetary school, which ties the money stock of a country to its balance of payments. If the country's demand for money exceeds its supply, it will push exports and slow down imports to acquire the sought-for increase in money stocks, thus improving the current account, or attract capital from abroad through higher interest rates. When money supply grows faster than money demand, the excess ends up as an excess of imports over exports, or an outflow of capital to abroad. This is a long run theory because in the long run the markets for goods, income and money all have to clear. In the short run, people use money to balance discrepancies between income and expenditure rather than the reverse.

The elasticities school got a boost in the case of the OPEC increases in the price of oil in 1974 and the spring of 1979, although the increase in export prices in the OPEC states tended to improve rather than worsen their balances of payments, as elasticity optimists would have said, because of the low elasticity of foreign demand for oil, made up of an overall low elasticity of demand for energy and a low elasticity of supply of competitive fuels. In the case of the United States depreciation of the dollar worked slowly to improve the balance of payments by 1975, but left the current account still below the levels of the first half of the 1960s. And neither the absorption theory nor the monetary approach furnished an explanation of why personal savings slipped or whence the need arose to keep expanding money stocks. As this is written all three schools expect an improvement in the balance of payments in 1980 and 1981, the elasticities school because of the recent depreciation of the dollar, and this despite the spring of 1979 further increase in the oil price, the absorption school because of the

expected recession, and the monetary school because of the October 6, 1979 action of the Federal Reserve system in slowing down the rate of increase in the money supply. The improvement then, if it takes place, will provide a conclusive test for none of the three theories.

One more fact is worth adding. During the 1970s, the rate of productivity increase in the United States slowed down and with it innovation in new goods and the rate of new company formation. This is connected with the balance of payments on current account in a disequilibrium theory of some interest that goes back to the analysis of John H. Williams in 1929. It is also connected to the product cycle of Raymond Vernon. According to Williams, the United States current account was positive in dynamic disequilibrium, because of new goods and new processes for producing old goods. New goods sold abroad gave rise to transitional export surpluses in the United States, and import surpluses abroad, but before a new equilibrium position could be restored further inventions came along. Old goods could be lost to foreign producers through the product cycle, under which the United States exported new goods until their technlogy had been diffused around the world, at which stage this country might even import them from overseas. But so long as the rate of innovation and productivity increase—the latter often producing substitutes for imports—was sufficiently high, the current account of the balance of payments stayed buoyant. When the rate of innovation and productivity increase slowed down in the 1970s, with the decline in the rate of saving, a long-run structural shift took place, replacing a normal current-account surplus with a current-account deficit for the first time in this century.

The temptation is to blame U.S. troubles on some devils: on Keynesians, OPEC, McCarthyism, the Vietnam war, oil companies, the multinational corporation, environmentalists, the hubris that led to the space program, trade unions, the decline in R and D, or the undue share of world defense that the United States assumed as Europe and Japan became "free riders" under the protection of this country. Some philosophical souls explain that the recovery of Germany and Japan was inevitable and that the dominant position held by the United States in 1950 could not possibly last, just as British dominance in 1851 at the time of the Great Exhibition in the Crystal Palace was foreordained to wane. It is not clear why the space program should have had only a limited fall-out in new technology useful commercially when the R and D undertaken in the defense effort in World War II produced new aircraft, extended computers, and gave the United States a lift in pharmaceuticals and chemicals, but such seems to have been the case.

Two theories of some interest have been put forward, by Burton Klein and Mancur Olson, Jr. In *The Elements of Dynamic Economics* (Cambridge, Mass. Harvard University Press, 1978) Klein argues that the trouble lies in bigness in the United States, and specifically in the merger and conglomerate movements that have taken place in the last 10 or 15 years. Small companies take risks in order to make their way. Some fail, some succeed, and the latter produce new goods and substantial changes in productivity. Big companies, with much more at stake, are hesitant to take risks. In many industries they follow the

leader, investing defensively to be certain that the limited but powerful opposition does not get too far ahead. A classic example of this attitude, perpetrating a great business blunder, was the action of the American Motors Company in abandoning the Rambler American automobile in which it had pioneered among sub-compacts, just when it was on the verge of a major market success, to ape the pattern of the Big Three in building bigger, heavier, roomier cars. Small companies have high rates of mortality but overall produce rapid rates of change, and "fast history." Big companies abstain from risks, make "slow history," and only occasionally run into the difficulties of a Penn Central, Youngstown Sheet and Tube, Lockheed or Chrysler, from which they have to be rescued because of their bigness.

Olson seeks to explain less the slowdown in the United States and England than the fast growth in Germany and Japan. Defeat in these countries dissolved the vested interests in industry, labor, and government, and required a return to salvation through individual effort rather than through group political action. The dissolution of pre-war associations turned the economies away from what Anne Kreuger calls "rent-seeking," or trying to jack up the price on an activity to which one has a claim, and back to work in competitive markets. While not all dying industries were allowed to die in Germany—*vide* shipbuilding and coal mining—fewer were supported in *Sozialwirtschaft*, a competitive market claiming to take into consideration social necessities, than in the victorious countries, and still fewer in Japan. The *Zaibatsu* were broken up in Japan under American occupation, and while they were ultimately reconstituted in large part, the period when they were repressed allowed a number of new Japanese firms to rise to greatness, e.g., Sony, Honda, Nissan, Toyota. Not so many new German firms were created, but both old and new firms turned to export markets to escape two decades of having been cut off from the world. The competitive world market made them innovative, whereas the small percentage of output exported in the United States meant that this stimulus to fast history was missing. The defeated powers were forced by circumstances to adapt to the market, to work hard and find a niche here or there, to transform their economies to outside requirements, rather than the reverse.

Both these theories can be subsumed under a more general explanation that the United States economy is aging, and becoming arteriosclerotic. Like Britain which experienced a climacteric, or change of life, in the last quarter of the 19th century, the United States would appear to have slowed down, aged, lost some of the vitality it had in the 1940s, 1950s and early 1960s, accounting simultaneously for the decline in savings, the loss of productivity and risk-taking, and the attempts to resist change rather than accommodate to it.

This view has been attacked as "Spenglerian nonsense", and it would be unwise to make too much of it. But a deep-seated explanation reaching to sociological roots is in many ways more satisfactory than the superficial view of economists with an axe to grind for particular policies: that the troubles of the country would be remedied easily if it were to fix the money supply, allow the exchange rate to fluctuate, abolish the minimum wage, or lower unemployment rates through deficit spending. Most of these handicaps to work and adap-

tability are symptoms of the underlying malaise, not policies adopted arbitrarily or *in vacuo*. In particular, the argument that the United States suffers from economic aging underlines the emptiness of policies of neo-mercantilism—tariffs and quotas for keeping out imports, restrictions on the export of capital and technology, resistance to foreign investors on xenophobic grounds. It is true that imports don't always stimulate; as a Britisher once said on the issue of whether his country should join the Common Market: "like a kick in the pants, it may only hurt." But a return to isolation, halting the diffusion of those branches of technology where the United States remains ahead—if it were possible to do so in a world of easy communication—and fending off foreign goods is a certain prescription for senility. Competition may not rejuvenate, but it offers the only chance. The United States has not gone far down the road to neo-mercantilism as yet, but increasingly it—or at least some of the presidential candidates in 1980—are eyeing that option with increasing intensity.

The loss of United States leadership poses a danger for the world economy. The world is unstable without a stabilizer, some country or system which ensures that markets remain open, stocks are available to meet acute shortages, exchange rates are reasonably stable, macroeconomic policies are coordinated among the major countries, and a lender of last resort is in place to meet a crisis should it come. When one country ceases to be the stabilizer, as the United States appears to be doing, some other country must take its place. Transitions are prolonged and dangerous, as the interwar period of transition between British and United States leadership reveals. The world has functioned fairly well in the period since 1971, with no major developed country aggressively taking advantage of the vacuum posed by the lack of leadership, to advance its own interests blindly. But the possibility remains that trade war could break out between two or more countries, for example, the United States and Japan, or competitive exchange depreciation, between, say, the United States and Germany. We have seen sharp differences develop over the United States' insistence that Germany and Japan should speed up their locomotives to pull the world economy out of the recession of 1974–75; or over the United States policy of benign neglect of the dollar, that happily ended on October 31, 1978; or over Japanese reluctance to admit citrus fruit from the United States as imports. A demand for a New International Order on the part of developing countries reached a crescendo in 1978 and has ebbed to some degree since that time. The problems created for the LDCs by the new oil price increase and the difficulties facing the Euro-currency banks in recycling still further the deficits caused by oil produce another reason for a stabilizer, a country prepared to take responsibility, perhaps as a lender of last resort. Most major developed countries to be sure have held back, refrained from rocking the boat, and pursued a longer-run policy rather than struck out for immediate interests (as Secretary of the Treasury John Connally was accused of doing in 1971). The interests of the system have been borne in mind.

The question inevitably arises whether the time has not come to yield sovereignty to international organizations, and stabilize the world economy not through national efforts, but through international.

The IMF, World Bank, GATT, OECD, UN Center on the Transnational Corporation, Economic and Social Council of the United Nations, etc., etc. have been put in place to carry out the tasks of stabilization and development on an equitable basis. Give them their heads; let them do the job. Yield to them the sovereignty the several countries possess and that poses the danger of beggar-thy-neighbor policies in which each country acting in its own short-run interest harms the short-run interest of others and the long-run interest of all, including itself.

Economic sovereignty is waning, clearly enough, as the Euro-currency market, the multinational corporation, the offshore tax havens and similar institutions flourish in a world of fast and cheap communication. There is still a great deal left. Some economists have concluded that the only justification for the nation-state is the existence of different tastes in public goods.[3] Britain prefers full employment to price stability, Germany price stability to full employment, both because of community memories of events more than 50 years ago, unemployment in Britain connected with the restoration of the pound to par in 1925 and the German inflation of 1923. In these circumstances, each country is obliged to pursue separate policies in the fields of money, taxation, government spending, exchange rates and the like. Such policies can perhaps be supervised by international agencies, but sovereignty remains with the nation so long as national taste in these public goods is not harmonized.

With residual sovereignty inherent in national governments, moreover, as would appear to be necessary as a practical matter at this stage of development of world cooperation, the possibility remains continuously open that some country may resist coordination of its policies with the general interest. In 1971, the United States wanted lower interest rates and Germany wanted higher, even though the two capital markets were tied together through the Euro-currency markets. It was desirable that monetary policies in the two countries should be coordinated, the United States giving way some distance in lowering its rate, Germany some distance in reluctance to permit any decline. Where national public tastes differ, however, the task is difficult. It is easier to operate the world economy when one country dominates. Such domination, it should be remembered, calls for the responsibility of adopting policies in the overall interest rather than for the glory of first place in the parade of nations.

The suggestion is sometimes advanced that the European Common Market is likely to succeed the United States in world economic leadership. The outcome is a distinct possibility, but one that is hard to rate higher than a 50–50 chance. Within the Common Market, policy harmonization is still a long way off, and with it the readiness of the separate countries to adjust their action to an overall design. The European Currency Unit makes progress slowly; it may one day rival the dollar as an international unit of account, vehicle and intervention currency. That day does not seem close. The dollar has lost its eminence

[3] Marina v. N. Whitman, Sustaining the International Economic System, Essays in International Finance, No. 121, Princeton, New Jersey, Princeton University, 1977; and Richard N. Cooper, "Worldwide vs Regional Integration: Is There an Optimal Size of the Integrated Area?" in Fritz Machlup, ed., Economic Integration: Worldwide, Regional, Sectoral, New York, Halstead, 1977.

without a ready substitute appearing in the offing, just as the United States has lost its preeminent role in world peacekeeping, without the challenge of any rival for the task.

I see no way to hasten the day when the United States regains its leadership and acceptance of world responsibility, or when Germany or Japan, now good citizens but unwilling to occupy a role that is too exposed, move forward more confidently to fill the opening gap. Nor does it seem likely that the developing countries will become more assertive and insist, as the Committee of 77, the Unaligned Countries, or UNCTAD insisted for so long, that they should take over the management of the world economy under a New International Economic Order; their ranks are too divided, and are likely to remain so except on particular issues such as oil. The world economy is on what is called in the international monetary sphere, a "limping standard," with no clear principle of organization and direction. Gradual evolution to a more shapely system will require moderation and restraint. Responsible forces in every country have the task of keeping the "jingos", "nationalists", "know-nothings" and "neo-mercantilists" in restraint lest they do real damage to the delicate fabric of the world economy.

HOW HAS THE WORLD ECONOMY CHANGED SINCE 1929?

By Walter S. Salant*

The subject of this paper, changes in the *world* economy since 1929, is a broad one. It includes not only changes in the *international* economy—that is, in the extent and character of the economic links among countries—but internal changes common to many national economies. I make this distinction and choose the broader coverage because I think the most important changes in the world economy may be the internal changes common to the major national economies.

The paper first surveys some major changes in the importance of international transactions relative to total economic activity and in international finance and then internal changes common to the main national economies. Some of the more important policy implications are indicated, but only briefly because of lack of space.

The paper gives no more than an overview of the many changes that have occurred during the past 50 years. To provide and support a fuller analysis of these changes would require much time and effort. One important reason is that we know so much less about the world economy as it was 50 years ago than we do about its present state; the increase in economic information is one of the major changes that has occurred. The paper might be regarded as an agenda for future research regarding most of the points that it makes.

Changes in World Population and Organization

An observer from outer space, comparing the present world with that of 1929, would be bound to notice several things that few of us looking through one window on earth ordinarily think of. The first is that the population of the world has more than doubled, increasing from some 2 billion to about 4.3 billion. A disproportionate part of this increase has occurred in Africa, Asia, and Latin America, which now contain 76 percent of the world's population, as contrasted with only 66 percent 50 years ago. (See Table 1.)

This vastly larger number of people has been drawing at an increasing rate on resources that do not renew themselves, so that the ratio of population to the storehouse of depletable resources has risen even more than the population.

He would also notice that in 1929 only about 9 percent of the world's population lived in centrally planned economies and that this proportion increased to about 35 percent in the last 50 years, with the population in market economies having shrunk correspondingly from 91 percent to 65 percent.

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TABLE 1.—ESTIMATED WORLD POPULATION, 1930 AND 1978

	1930 (midyear)		1978 (midyear)		Increase	
	Millions	Percentage of total	Millions	Percentage of total	Millions	Percent
World total	2,013	100.0	4,327	100.0	2,314	115
Africa	155	7.7	441	10.2	286	185
United States and Canada	135	6.7	247	5.7	112	83
Central and South America [1]	109	5.4	340	7.9	231	212
Asia (excluding U.S.S.R.)	1,072	53.3	2,492	57.6	1,420	132
Europe (excluding U.S.S.R.)	356	17.7	524	12.1	168	47
Oceania (including Australia)	10	.5	22	.5	12	120
U.S.S.R.	176	8.7	261	6.0	85	48
Non-Communist	1,837	91.3	2,836	65.5	999	54
Communist	176	8.7	1,491	34.5	1,315	747

[1] Central America includes Mexico and Caribbean Islands.

Source: 1930 data from U.N. "Demographic Yearbook, 1960," table 2, p. 118. 1978 data from Department of State, "The Planetary Product," special report No. 58, prepared by Herbert Block, tables 6 and 10.

Besides having increased in number, the people of the world are now organized into a much larger number of self-governing national units. In 1929 there were only 68 independent sovereign states and countries; the number that were politically independent in 1979 had risen to 200.[1]

Increase in the Role of Developing Countries

The reason for the increase in the number of countries is almost entirely that the colonies or protectorates of 50 years ago have become politically independent states. Nearly all are countries of low income, most of them in Africa and Asia. The less economically developed countries that were independent then were, with a few exceptions, confined to Latin America. The increase in the number of politically independent low-income countries, combined with the postwar tension between the Soviet Union and the liberal democracies and the efforts of both sides to win the support or at least maintain the neutrality of the new countries, reinforced by a genuine concern for the poverty of their populations, have given the low-income countries a much greater voice in the world than they had 50 years ago.

One economic result of the increased concern for these countries is the emergence of intergovernmental aid, both bilateral and multilateral, in the forms both of outright gifts and of loans on more generous terms than those available in financial markets. This is an entirely new phenomenon. Before World War II intergovernmental aid, even to wartime allies, took the form of bilateral lending on commercial terms; there was then no precedent for the provision of public funds to independent states on less-than-commercial terms or of aid on the postwar scale.

The increase in the number of countries also has the potentiality for *reducing* world economic integration. The reason is that it has greatly

[1] The figure of 68 for 1929, which includes the Free City of Danzig, comes from the Office of the Geographer in the U.S. Department of State. The figure of 200, representing the number of countries with populations of at least 5,000 persons in 1977, comes from the Bureau of the Census, *World Population, 1977: Recent Demographic Estimates for the Countries and Regions of the World* (Washington, D.C., 1978), p. 1.

increased the number of centers of independent policy-making. As a result, it has increased the transactions subject to the imposition of barriers to trade and the flow of capital. It has also greatly increased the potentiality and probably the actuality of interferences with adjustments to market changes.

The increase in the number of countries has also widened the possible area of international conflict and the actual proportion of productive effort in the world that is devoted to military expenditure, thereby reducing the proportion available for civilian production, both for consumption and for investment to expand the capacity for such production.

International Economic Interdependence

One of the most common perceptions about long-period changes in the world economy is that economic interdependence among countries has greatly increased. There appears to be little doubt that this perception is correct if we compare the present world economy with that of the 1930s, when protectionism and the world depression cut international trade more than output and when international capital movements dried up almost completely. But if we compare the present world with that of the late 1920s, the correctness of that perception is harder to appraise, mainly, although not entirely, because we lack information about the relation between flows of international and domestic investment and between stocks of internationally mobile and immobile financial assets.

International Trade in Goods and Services

Perhaps the most frequently noted evidence of the increase in interdependence since before World War II is the growth of international trade in goods and services relative to that of total production. In most of the developed countries the value of such trade has risen more rapidly than the value of total output since 1938, owing in part to reductions in the barriers to the international movements of goods.[2] (See Table 2.) It should be recognized, however, that between 1929 and 1938 there was a shrinkage in this relationship, so it is less clear that international trade has increased in relation to output since 1929 than that it has increased since 1938. The reason it is difficult to be sure about this point for most countries is that data comparable over time on the value of total national output in current prices for 1929 consistent with those for later years are available for only a few countries. Estimates for the major industrial countries over a longer period indicate that trade was growing faster than output in many of them until World War I and the growth that has occurred since World War II is a resumption of a pre-1914 trend after an interruption of many

[2] In theory, an increase in international trade relative to world production might be the result of the increase in the number of countries, since the latter increase makes some trade that was formerly internal trade into international trade. To pursue that question far enough to see how much of the rise in the relative importance of international trade it explains is difficult, but cursory consideration suggests that it explains only a small, probably a trivial, part of the relative increase of international trade, so that this evidence of increased economic integration in the world economy is not a statistical illusion.

years.[3] (As we shall see later, the fact that estimates of national output in 1929 exist for so few countries but are available for all of them now is one of the important ways in which the world of 1929 differed from that of 1979.)

TABLE 2.—FOREIGN TRADE IN GOODS AND SERVICES AS A PERCENTAGE OF GNP, 19 OECD COUNTRIES, 1929, 1938, AND 1976–78[1]

Country	1929	1938	Average 1976–78
Australia[2]	19.3	18.3	17.1
Austria	NA	[3] 17.6	35.6
Belgium	NA	28.2	56.3
Canada	29.0	24.3	26.4
Denmark	NA	26.2	33.5
France	NA	13.1	21.9
Germany	NA	[4] 16.5	26.3
Greece	NA	17.8	21.2
Iceland	NA	46.8	42.1
Ireland	NA	25.5	57.7
Italy	NA	7.6	26.8
Japan	19.4	19.7	12.3
Netherlands	NA	28.1	49.0
Norway	33.6	[5] 29.2	48.6
Portugal	NA	13.0	26.6
Sweden	NA	[6] 20.1	30.2
Switzerland	NA	17.9	35.9
United Kingdom	NA	16.9	32.2
United States	6.3	4.3	10.1
All countries[7]	NA	20.6	32.1

[1] Percentages are based on data in current prices. Trade is defined as one-half of the sum of exports and imports of goods and services, including merchandise, nonmonetary gold, freight, other transportation, travel, investment income in gross amounts received and paid, and other current public and private services.
[2] Fiscal years ending June 30.
[3] 1937.
[4] 1936.
[5] 1939.
[6] Based on GNP for fiscal year.
[7] Unweighted averages of percentages for all countries.

NA-Not available.

Sources: Except as noted below for individual countries, data came form the following sources;
For 1938, trade data for several countries and GNP data are from Organization for European Economic Cooperation, "Statistics of National Product and Expenditure," No. 2:1938 and 1947 to 1955, (Paris: OEEC, 1957). Other 1938 trade data are from International Monetary Fund, "Balance of Payments Yearbook, 1938, 1946, 1947" (IMF, 1949). Trade data for 1976 to 1978 come from "Balance of Payments Yearbook," Vol. 30 (IMF, 1979); GNP data, 1976–78, are from IMF, "International Financial Statistics Yearbook 1979" (vol. 32) and IMF "International Financial Statistics," July 1980 (Vol. 33, No. 7).
Australia: For 1929 trade data, N. G. Butlin, "Australian Domestic Product, Investment and Foreign Borrowing, 1861–1938/39" (Cambridge: Cambridge University Press, 1962), pp. 442–434; E. A. Boehm, "20th Century Economic Development in Australia" (Melbourne: Longman Australia, 1971), p. 216. For 1929 GNP, Benjamin U. Ratchford, "Public Expenditures in Australia" (Duke University Press, 1959).
Japan: Kogushi Ohkawa and Henry Rosovsky, "Japanese Economic Growth: Trend Acceleration in the 20th Century" (Stanford University Press, 1973) pp. 278–279 for 1929 and 1938 GNP data, and pp. 298–301 for 1929 and 1938 trade data.
Norway: For 1929 data, Odd Aukrust, Central Bureau of Statistics of Norway, correspondence with author, (Apr. 7, 1976). For 1938 data, CBS of Norway, "National Accounts," 1865–1960 (Oslo: 1965) pp. 346–65.
United States: U.S. Department of Commerce, "The National Income and Product Accounts of the United States, 1929–1974, Statistical Tables." (GPO, 1977), for 1929.

For the OECD countries shown in Table 2, the ratios of foreign trade in goods and services to total national output in 1929 are shown for only five. For three of them these ratios were actually higher than in 1976–78. The lack of data makes it difficult to say with any great assurance that the relation of international transaction in goods and services to world output has increased since 1929.

It will come as a surprise to most people that Japan was one of the countries whose foreign trade was smaller, in relation to total output,

[3] See Robert Solomon with Anne Gault. *The Economic Interdependence of Nations: An Agenda for Research* (The Brookings Institution, June 1977, multilithed). The estimates for the period before 1929 underlying their conclusion are those of Simon Kuznets in "Quantitative Aspects of the Growth of Nations" in *Economic Development and Cultural Change*, Vol. 15, No. 2, Part II (January 1967).

in 1976–78 than in 1929, the recent ratio being only slightly higher than that of the United States. Most people think of the Japanese economy as much more dependent than the U.S. economy on foreign trade, especially in the light of its dependence on imports for almost all of its supplies of oil. This dependence points to a deficiency in trade-output ratios as indicators of international economic interdependence. That ratio may be high for a country that imports goods that it could produce at home at only slightly higher cost. If the foreign supply were cut off and it had to satisfy its demand from domestic production, it would suffer a possibly painful transitory adjustment and some continuing economic loss because of the higher cost, but the continuing loss would not be great. Contrast that country with one whose imports are much smaller in relation to its total output but consist mostly of essential raw materials that it cannot produce domestically at all, as in the case of oil imports by Japan. Loss of imports would be far more serious in the long run for the second country than for the first one, despite its lower trade-output ratio. Concentration on such ratios diverts attention from the lesson of the old saw that tells us that for want of a nail a kingdom may be lost.

The channels as well as the magnitudes of both trade and direct investment have also changed. Some of these changes have been the result of technological and market developments. Trade in manufactured goods is a larger portion of world trade than it was in the late 1920s. This may be partly the result of faster growth in Europe than in the United States, where trade in manufactured goods is a smaller part of total trade than in Europe, but it is also in part the result of the fact that manufactured goods are now exported in substantial quantities by countries that formerly had little or no capacity to produce them, such as Taiwan, South Korea, Mexico, Brazil, and others.

Similarly, the increase in trade between Middle Eastern countries and others compared to 1929 reflects partly market-induced and technological changes, and not only a rise in the price of oil relative to other goods since then. In fact, the price of oil relative to other industrial products has not risen spectacularly since 1929, although it has risen. But the quantity of oil imports and of oil consumption is much greater, relative to total output, throughout the world than it was fifty years ago because oil and its products have become much more deeply embedded in the structure of world production, both as final goods and as inputs into them, so any increase in its price is now much more important than it would have been in 1929.

Other changes in the structure of trade and direct investment have been the result of political and institutional changes. Fifty years ago there were very few politically independent countries in Asia and Africa; most of the now-independent countries in these two continents were colonies or protectorates. Along with some self-governing countries (e.g., Australia, Canada, the Union of South Africa), they were part of a system under which the mother country and its colonies received preferences over outsiders, both in trade with one another and in direct investment. For example, a firm resident in a country outside the British Empire, or that of France, was discriminated against in selling to or investing in a country or colony inside it. Such discrimination has now largely disappeared. Although remnants of it

persist because of relationships established in the past, international trade and direct investment are now freer of those political barriers than they were fifty years ago.

International Mobility of Labor and Capital

If we do not confine our attention to trade but consider also the mobility of labor and capital, the conclusion that economic integration has increased in the past 50 years is probably a safe one. Improvements in communication of knowledge about markets, in transportation, and in travel have increased the mobility (i.e., the *potentiality* of movement) not only of goods and services but of labor and of capital among countries. Reductions in the cost of communication have increased the spread of information in every country about economic conditions in other countries and have facilitated business and other international negotiations. Improved and increased knowledge of English in non-English speaking countries, which have made it a widely used common language, have furthered this spread. At the same time, air travel has revolutionized international transportation and this also must have contributed to an increase in the degree of economic integration.

Mobility of goods, capital, and people limits the degree to which prices and wages, when expressed in a common currency, and interest rates can differ in different countries, and it also limits the degree to which their changes may diverge. Insofar as both trade and international migration of labor are concerned, this mobility certainly appears to have increased in the case of the Western European countries that are members of the European Economic Community. It also appears to be true of international direct investment.

The volume of financial capital—stocks not involving control of enterprises, bonds, short-term securities, and bank deposits—that is internationally mobile has probably also increased, although data are lacking to support any confident statement about the relation of current flows of financial assets in the late 1920's to other relevant economic variables.

As to the stock of international mobile assets, as distinguished from their current flows, it may be recalled that relatively large amounts of funds owned in some countries were held in other countries in the late 1920s; the repatriation of those funds contributed to the financial collapse and the deepening of the depression in the early 1930s. Nevertheless, it can be said that in the postwar period, international financial investment has continued at a high level for a longer period than it had in the late 1920s. The cumulative effect of postwar international investment over time must have been to expand enormously the proportion of the total stock of financial capital that consists of internationally mobile financial assets, including but not confined to Euro-currency bank deposits estimated to amount to some 900 billion dollars at the end of 1978.[4] Despite the lack of data, it appears to be widely accepted that the stock of internationally mobile financial assets has increased greatly since fifty years ago, not only in dollar or other currency values but in relation to such other aggregates as

[4] This figure includes redeposits among reporting member banks. See Bank for International Settlements, *49th Annual Report* (1979), p. 104.

the value of total output, of international trade, of total wealth, or of total financial assets.

The effects of these changes in increasing the integration of the market economies has been offset to some degree, however, by decreased economic relationships between the market economies and the now-far-more-numerous centrally planned economies of the Communist countries.

The international mobility of financial assets has a number of important implications for the operation of the international financial system. First, for a given state of expectations about the stability or movement of exchange rates, the higher is the proportion of financial assets that are internationally mobile, the greater is the tendency for a deficit or surplus in a country's current account (implying a decrease or increase in its net wealth) to induce an offsetting flow of assets at any given change in the relation between its own and foreign interest rates. To put it the other way around, the larger is the proportion of such assets, the less is the change in relative interest rates needed to induce the movement of financial assets that offsets a given current-account deficit or surplus. Consequently, if financial assets are mobile the burden of adjustment falls less on the current account than if they are not, and the changes in income and price levels needed to restore equilibrium in the total balance of payments (the current and capital accounts combined) are less than they would otherwise be.

International mobility of financial assets, by tending to equalize interest rates among countries, also makes it difficult if not impossible for individual countries, especially small countries, to pursue independent aggregate demand policies. For example, an expansionary monetary policy raises the prices of financial assets (reduces interest rates) when such assets are not internationally mobile, but it raises them less when the volume of internationally mobile financial assets is large; instead, its effect then is to induce the sale of domestic and the purchase of foreign financial assets (an outflow of capital). The resulting outflow of money prevents or restrains the intended reduction of interest rates and the intended increase in the stock of privately held domestic money.

It is less clear whether this conclusion applies when exchange rates are flexible. The answer appears to depend largely on how much a change in exchange rates affects domestic prices and costs at given levels of domestic output and how much it affects output. Consider first the case of expansionary fiscal policy. The greater is the international mobility of capital, the more a given degree of fiscal expansion raises the price of domestic currency and reduces demand for exports and domestic goods that compete with imports, thereby offsetting the expansionary fiscal effect. But it is less certain how capital mobility under flexible exchange rates affects the power of monetary policy to influence aggregate demand. When exchange rates are flexible the monetary authority can control the stock of domestic *nominal* money in the hands of the public, but it has less control over the *real* value of that money stock, especially in a small open economy. A given expansion in the stock of domestic money will have a greater effect in depressing the foreign-exchange value of the country's currency the greater is the international mobility of capital. This means that it will have a greater effect

both in stimulating output of exports and domestic goods that compete with imports than it would if capital were less mobile, and to that extent it increases the effectiveness of monetary policy. But it will also have a greater effect in raising the prices of tradable goods and thereby the general level of domestic prices, and thus less effect in raising the *real* value of the domestic money stock. That influence reduces the effectiveness of monetary policy. We have no basis, either in theory or experience, for judging which of these opposing effects of international capital mobility is the greater, nor indeed for assuming that the answer would be the same for all countries.

In short, while the financial integration of the world economy increases the possibility of offsetting a disequilibrium in the current account of a country's balance of payments, it probably reduces the ability of any one country to pursue an aggregate demand policy independently of that of the rest of the world, except, perhaps, in the uncertain case of monetary policy under flexible exchange rates.

International capital flows can also seriously aggravate disequilibria in balances of payments. When, under fixed exchange rates, a deficit in a country's balance of payments develops and the financial markets doubt that it will be eliminated before that country's international reserves are seriously depleted, doubts may arise that the value of its currency will be maintained or that capital will be left free to move out. If such doubts develop, asset-holders, fearing depreciation of assets denominated in that currency, try to convert them into assets denominated in other currencies. Such actions tend to induce the very depreciation that is feared. Fears of political instability can also give rise to such movements. Similarly, under flexible exchange rates initial deficits or fears of political instability can also give rise to efforts to export capital. Under that system an initial disturbance affects the exchange rate immediately and can greatly aggravate its movement. Since the exchange rate is the most important single price in all economies (unless "the" wage rate is regarded as a single price), its volatility resulting from the international mobility of capital can be a potent cause of economic disturbance.

The recognition of increased international interdependence has led to a revival of attention to international effects in the determination of monetary and credit policy. It appears to be widely believed that such policies were formerly based solely on the perceived needs of the domestic economy and that the attention now being given to international factors is something new. This belief is completely incorrect. Indeed, it would be more nearly correct to say that under the operation of the international monetary system of fifty or more years ago, international considerations were dominant. Monetary policy was dominated by movements of international reserves. This practice was regarded as essential to balance-of-payments adjustment and the operation of the fixed-exchange-rate system. When, during the 1920s, the Federal Reserve System offset inflows of funds for domestic reasons, it was accused of violating the rules of the game. Then, in the late 1920s, the Federal Reserve System eased its monetary policy in order to facilitate European efforts to restore monetary stability after World War I, even though the domestic economic situation in the United States was not regarded as calling for that policy. Indeed, many

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economists attributed the wild stock market speculation of 1927–29 and the subsequent crash to what they regarded as the Federal Reserve's excessive concern in 1924 and 1927 for the international aspects of policy at the expense of domestic considerations.[5] Again, when the pound sterling cut its tie to gold in September 1931 the Federal Reserve raised discount rates sharply in the belief that a tighter policy was necessary to prevent a flight of capital from the United States, although the domestic economy of the United States was deeply depressed and domestic considerations alone would have called for monetary ease. Other episodes could also be cited to show that the present recognition of international factors is only a return to the past, and a partial one at that.

Interdependence Through External Effects

International interdependence has also increased in another way. Many activities of one nation yield benefits to others for which the nation engaged in the activity receives no remuneration or impose costs on them for which it does not reimburse them. These "external efferts" have always existed, of course. The damning by one country of a river that flows through another country is an old example. The change during the past fifty years is that the number of such activities has increased, owing in part to new technologies, and the magnitude of the external effects of some old activities has increased. That this is true appears evident if we recall some of the problems that have been forced on our attention in recent years that did not arise 50 years ago: oil spills and other pollution of the oceans, overfishing, air pollution, the spreading of communicable diseases as international travel has multiplied, and, as A. P. Lerner has said, inflation itself. Externalized benefits are illustrated by such "public goods" as the control of communicable diseases and the better communication of basic research and technological improvements that cross national boundaries without charge.

These externalities generate pressure for collective action by nations acting jointly. At the same time, they undermine the autonomy of national governments with respect to the activities that give rise to them.[6]

The Multiplication of Intergovernmental Organizations

The perception of increased interdependence of national economies, the great increase in the number of politically independent countries,

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[5] See for example, Lester V. Chandler, *Benjamin Strong, Central Banker* (The Brookings Institution, 1958), especially Chapter VII.

[6] On the general issue of "externalities", see Mancur Olson *The Logic of Collective Action* (Harvard University Press, 2nd ed., 1971) and his article. "The Principle of Fiscal Equivalence': The Division of Responsibilities among Different Levels of Government" in American Economic Review, May 1969. See also Fred Hirsch *The Social Limits to Growth* (New York: Twentieth Century Fund, 1976). The effect on the authority of national governments is discussed by Richard N. Cooper in "Worldwide Regional Integration: Is There an Optimal Size of the Integrated Area?" in *Economic Notes* (Siena: Monte dei Paschi di Siena, 1974). Vol. 3. The importance of this aspect of economic interdependence was brought to my attention by Ralph C. Bryant, who cites these references in his book *Money and Monetary Policy in Interdependent Nations* (Brookings Institution, forthcoming in 1980).

and a growth in awareness of and genuine concern for the poverty of the low-income countries have combined to lead to a multiplication of intergovernmental economic organizations and more informal intergovernmental contacts, both routine and occasional. One need only mention a few of the major new world and regional organizations that did not exist and whose present functions were not being performed 50 years ago: the International Bank for Reconstruction and Development (the World Bank) and its allied institutions, the International Monetary Fund, the General Agreement on Tariffs and Trade, the various regional development banks, the Economic and Social Council of the United Nations and the various regional Economic Commissions, the Organization for Economic Cooperation and Development, the European Economic Community, and the Council for Mutual Economic Assistance (COMECON).

The International Monetary System

Another important difference between the international economy of 50 years ago and the present one is the shift from a system in which exchange rates among currencies were fixed to one in which many currencies, especially those of the major countries, are free to fluctuate, although subject to stabilizing intervention at the discretion of the monetary authorities. This change has resulted from the effects of the increased international mobility of financial assets and the decrease in the flexibility of the national market economies, which will be discussed later in this paper. In combination, these changes increased the extent of balance-of-payments disequilibria and increased the resistance to eliminating them.

Growing balance-of-payments disequilibria and this increased resistance finally led to the breakdown of the system of fixed exchange-rates in the early 1970s. No longer do the major countries attempt to maintain the exchange rates of their currencies with those of all other major countries in a very narrow range around fixed parties. We now have a set of "mixed arrangements" rather than a system because, in contrast to the late 1920s when fixed rates were adhered to by practically all countries, there is now a great diversity of exchange-rate arrangements. Among 138 member countries of the International Monetary Fund (IMF) at the end of 1979, for which information about such arrangements was available, 42 peg their currencies to the U.S. dollar and 18 to the French franc, the pound sterling, or some other national currency; 34 members peg their currencies to the composite known as the SDR (Special Drawing Rights) or to some other composite of currencies; 8 are members of the European Monetary System, a cooperative exchange arrangement; 3 adjust their exchange rates to a set of indicators; and 33 members determine their exchange rates in other ways, most of them by letting their currencies float without reference to any par value. (See *IMF Survey*, January 21, 1980, p. 29). A good measure of the importance of flexible exchange rates is the IMF's estimate that about three-quarters of the world's international merchandise trade moves across floating rates. (See address by J. de

Larosière, Managing Director of the IMF in *IMF Survey*, October 29, 1979, page 337).

Disequilibria in the balances of payments of market economies are harder to eliminate under fixed rates than they were a half century ago. The basic reason is that economies have become less flexible. When exchange rates are fixed, adjustment requires a deficit country to reduce its aggregate income and prices relative to those of surplus countries and, if the general level of world prices is to be stable, that requires absolute contraction on the part of deficit countries and expansion on the part of surplus countries. Such adjustment has become increasingly painful for deficit countries as their price structures have become more resistant to decreases because such contractions now reduce output and employment more and prices less than they formerly did. The system of presumptively fixed exchange rates, which prevailed 50 years ago and until the early 1970s, called for adjustment of prices expressed in national currencies. Under flexible exchange rates, which are now so prevalent, a given degree of adjustment is easier for a deficit country because its price and cost level, measured in the currencies of other countries, can be reduced by a decrease in the foreign exchange value of its currency rather than through the more painful process of widespread decreases in its domestic prices and costs.

It is insufficiently recognized, however, that under flexible rates the difficulties that a deficit country had under fixed rates are to a considerable extent merely transferred to surplus countries. The reason is that a surplus causes a currency to appreciate, which tends to reduce the demand for the surplus country's exports below what it would be in the absence of the appreciation, and, by reducing the domestic price of its imports, also to reduce the demand for its domestic products that compete with imports, putting downward pressure on prices, output, and employment in these sectors. One would expect that this effect would increase the resistance in surplus countries to appreciation of their currencies, and the more so the larger are the export and import-competing sectors of their economies. There is some evidence that there has been resistance to appreciation for this reason and some reason to believe that it would be greater in a non-inflationary world, where the downward pressure of currency appreciation on the demand for domestic output would be less welcome.

Domestic Changes Common to Market and Nonmarket Economies

Many of the economic changes that have occurred in the world during the past 50 years have been internal changes that are common to both the market and the nonmarket economies. Aside from technological advances and the accompanying increases in output per worker, two deserve special mention: a shift in the employment of manpower out of agriculture and an increase in resources used for military purposes.

The Shift out of Agriculture into Industry and Services

One of the most dramatic changes during the past 50 years is the sharp fall in the proportion of the labor force engaged in agriculture.

This change has occurred in all parts of the world—in both nonmarket and market economies—with the apparent exception of India. The change is shown by the figures assembled from various sources in Table 3. This decrease in the proportion of the labor force engaged in agriculture has been offset in the countries that were not already industrialized by increases in both industry (defined as manfacturing, mining, construction, and electricity, water, and gas) and services (all sectors other than agriculture and industry), but in countries that were already industrialized it was offset by an almost equally great increase in the proportion engaged in service industries.

TABLE 3.—EMPLOYMENT IN AGRICULTURE [1] AS A PERCENTAGE OF TOTAL LABOR FORCE. VARIOUS YEARS 1929 TO 1977

	1929	1950	1960	1970	1977
United States [2]	21.1	11.2	7.6	4.0	3.3
Canada	[3] 32.9	20.3	10.4	6.0	4.4
Japan:					
A	50.0	48.3	32.5	19.3	
B			28.2	16.3	10.8
European Economic Community [4]		[5] 22.8	16.4	10.2	7.6
Soviet Union	81.2	55.7	[6] 41.3	29.9	[6] 24.1
Eastern Europe [7]			43.2	32.8	26.6
Yugoslavia			58.6	50.3	34.2
People's Republic of China			75		63
37 low income countries [8]		78	77	75	73
India		[9] 73	73	[10] 74	73
Indonesia			75		60
Other 35 countries			81		74

[1] Includes also forestry, hunting, and fishing, with exceptions noted.
[2] Excludes forestry and fisheries. Figure for 1929 includes persons 14 yr of age and older; figures for later years are for those 16 yr of age and over. Alaska and Hawaii are not included in 1929 and 1950.
[3] Does not include Newfoundland.
[4] Includes Belgium, Denmark, France, Federal Republic of Germany, Ireland, Italy, Netherlands, Luxembourg (except for 1950), and United Kingdom. The exclusion of Luxembourg from the 1950 figure does not affect the percentage for the whole EEC because its labor force is only about 1/10 of 1 percent of the total EEC labor force.
[5] The figure included for Ireland is for 1951.
[6] World Bank Development Report, 1979, annex table 19, gives 42 percent and 19 percent for the Soviet Union in 1960 and 1977, respectively.
[7] Includes Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania.
[8] "Low income countries" are the 37 countries with populations of 1,000,000 or more listed in the source as having had average per capita incomes of U.S. $300 or less in 1977. The figures shown are group averages, computed as the total numbers employed in agriculture in the 37 countries divided by the total of their forces. They are therefore dominated by the percentages for the 2 largest countries, India and, to a lesser extent, Indonesia.
[9] 1951.
[10] 1971.

Sources: For United States: Economic Report of the President, January 1980, table B–27, p. 234. For Canada: Figures for 1929, 1950, and 1960 from M.C. Urquhart (ed.) and K.A.H. Buckley (ass't ed.), Historical Statistics of Canada (Toronto: Macmillan Co., of Canada, Ltd., 1965), series C47–55, p. 61; for 1970 and 1977, from Bank of Canada Review, November 1979, table 57, p. S104. For Japan: Series A from Kazushi Ohkawa and Henry Rosovsky, Japanese Economic Growth: Trend Acceleration in the Twentieth Century (Stanford University Press, 1973), Basic Statistical table 15, pp. 310–11; series B from Central Intelligence Agency, Handbook of Economic Statistics, 1979, tables 31 and 32. For European Economic Community: Except for Denmark, France, and Italy in 1950, from Organisation of European Cooperation and Development: Manpower Statistics, 1950–1962, Labour Force Statistics, 1956–1966, and Labour Force Statistics, 1966–1977. For Denmark, France, and Italy in 1950: E. F. Denison, Why Growth Rates Differ (Brookings Institution, 1967), table 5–1A, p. 46. For Soviet Union: 1929 and 1950 figures from W. W. Eason, "Labor Force" in Abram Bergson and Simon Kuznets (eds.), Economic Trends in the Soviet Union (Harvard University Press, 1963), table II–10, p. 77. For Eastern Europe and Yugoslavia, and for Soviet Union in 1960, 1970, and 1977: Central Intelligence Agency, Handbook of Economic Statistics, 1979, tables 31 and 32. For China, 37 low income countries, India (1960 and 1977 only) and Indonesia: International Bank for Reconstruction and Development (World Bank), World Development Report, 1979, annex table 19, p. 162, and text table 26, p. 46. For India in 1951 and 1971 and other 35 low income countries: IBRD by private communication.

Estimated changes in the distribution of the labor force between 1960 and 1977 for 122 countries, classified into various groups represented by unweighted averages of the percentages for the countries in each group, are as follows:

	Low income countries	Middle income countries	Industrialized countries	Centrally planned economies
Agriculture:				
1960	77	59	17	44
1977	73	46	7	25
Industry:				
1960	9	17	38	29
1977	11	22	38	43
Services:				
1960	14	24	45	27
1977	16	32	55	32

SOURCE: International Bank for Reconstruction and Development, *World Development Report, 1979*, annex table 19, p. 162, and text table 26, p. 46.

The Increase in Resources Used for Military Purposes

The preceding table includes in "services"the manpower in the armed forces. Although that is a relatively small component of the increase shown in the table, the proportion of total resources devoted to military purposes, including the manpower and capital used in producing military goods, has increased substantially since 1929 in the United States and the Soviet Union.

In the United States, the percentage of the labor force in the armed forces was only 0.5 in 1929 and in 1979 it was 2.0 percent. In the Soviet Union, the percentage for 1926 was approximately 0.7 percent; for 1978 the range of estimates is wide but those apparently most generally accepted range between 2.6 and 3.0 percent.[7]

Defense expenditures also draw on labor and other resources used in private industry. The most dramatic changes in the world—the development of nuclear weapons, missiles, and other military equipment using technologies scarcely imagined 50 years ago—have led to a greatly increased demand, and a correspondingly increased supply, of highly skilled manpower. The changes over time in total resources used within a country are best indicated by the relation of military expenditures on goods and services to total output. In the United States, data on these expenditures are not available for 1929, but since the total federal government expenditures on goods and services in that year were less than 1.4 percent of GNP and defense expenditures were only a fraction of that total, it is clear that defense expenditures must have been less than one-half of 1 percent of GNP. In 1939 they

[7] U.S. data come from *The Economic Report of the President, January 1980*, Table B–27, p. 234. The labor force of the Soviet Union in 1926 is given by Warren W. Eason as 84.5 million (see his chapter "Labor Force" in A. Bergson and S. Kuznets, eds., *Economic Trends in the Soviet Union*, Harvard University Press, 1963, Table II.14, p. 84) and 82.5 million (in *Soviet Economic Growth: A Comparison with the United States*, prepared by the Legislative Reference Service of the Library of Congress for the Subcommittee on Foreign Economic Policy of the Joint Economic Committee, 85th U.S. Congress, 1st session, 1957, p. 85). With armed forces of 600,000, as given by Eason, the percentages of these two labor force figures are 0.71 and 0.73, respectively. For 1978, the difference in estimated percentages arises from differences in estimates of the numbers in the armed forces. The Institute of Strategic Studies gives 3.6 million (see *The Military Balance, 1979–80*, p. 80) excluding some 750,000 uniformed civilians, while the Central Intelligence Agency puts the figure at 4.6 million, excluding a half million railroad and construction troop units and internal security forces. (See *A Dollar Cost Comparison of Soviet and U.S. Defense Activities, 1968–1978*, C.I.A. National Foreign Assessment Center, Research Paper SR79–10004, January 1979, p. 9). For a full discussion of estimates of Soviet military manpower, including reference to a figure of 6 million or more, see Murray Feshbach and Stephen Rapawy, "Soviet Population and Manpower Trends and Policies" in *Soviet Economy in a New Perspective. A Compendium of Papers Submitted to the Joint Economic Committee*, Congress of the United States, 94th Congress, 2d Session (October 14, 1976), pp. 144–52. This paper says that since the late 1950s, the estimates by the Institute of Strategic Studies "of armed forces for all countries of the world have been considered to be the most authoritative available."

were 1.3 percent and in 1979 they were 4.6 percent of GNP. It is difficult if not impossible to obtain figures comparable over time for the Soviet Union; even for any given year there is a wide range of estimates, but they tend to range between 8 and 11 percent for the late 1960s and early 1970s.[8] It seems clear, however, that the proportion of current output devoted to the military in the Soviet Union has increased approximately in line with the increase in the military proportion of the labor force.

Whether the increases in the United States and the Soviet Union have been accompanied by increases in the aggregate of other countries or have been offset by decreases in them is a question that could not be pursued in the time available for the preparation of this paper. On the one hand, the increase in the number of independent countries, most of them with their own military establishments, suggests that the proportion of resources so used in the rest of the world may have risen. Against this, however, is the possibility that decreases in the United Kingdom and the countries defeated in World War II have been a substantial offset.

Changes Within Market Economies

It was pointed out earlier that the proportion of the world's population living in the "market economies" has shrunk from 91 to 65 percent. The role of the market in these economies has also been greatly reduced. The market, regarded as an institution in which supply and demand for goods and services, including labor services, are brought into balance mainly by adjustments of price, plays a much smaller role in these economies than it did 50 years ago, and this change has greatly affected how these economies function.

The change has taken several forms. Probably the most important, and certainly the most measurable one, is the increase in the role of government as a purchaser of currently produced goods and services and as a source of "transfer" incomes received by the public—that is, of incomes not paid in return for productive work—and, as a consequence, as a levier of taxes to finance these expenditures. This change, which has reduced the relative importance of the private sector of these economies, is explored more fully below. In addition, the private sector is subject to many more government rules and regulations that constrain its activities than it was 50 years ago, so that firms in the private sector are less free than they then were to make their own decisions about prices, output, hiring and firing employees, and similar matters. The third factor, although one can be less sure of this, is that price and wage competitiveness in the private sector is probably less than it was 50 years ago.

Price Competition in the Private Sector

Considering first the restrictions that emanate from the private sector itself, these increases have not taken the form of any concerted

[8] See the papers in Part II ("Resource Claim of Soviet Military Establishment") of *Soviet Economic Prospects for the Seventies: A Compendium of Papers Submitted to the Joint Economic Committee* (93rd U.S. Congress, 1st session, June 27, 1973), pp. 122–205.

action by the private sector as a whole but rather—to the extent that they have occurred, which is itself uncertain—of institutional changes within industries and on the part of sellers of goods and services and of labor. These changes appear to have increased the resistance to decreases of prices, except in the case of newly developed products, and of money wages. On this subject I can speak only tentatively, partly because I am not familiar with the facts that are available for any substantial number of countries and partly because, as I understand from those more expert on this subject, the information available is not very comprehensive. Nevertheless, several points that deserve further exploration may be suggested.

It appears likely, for one thing, that the degree of competitiveness in pricing has diminished as a result of a combination of increased concentration in industry and the intensification of advertising, which tends to attach customers to particular brands of products and thereby to make price a less important form of competition.

Furthermore, even if the data on concentration of industry, taken country by country, do not show any clear tendency for concentration to have increased, the increased internationalization of direct investment may have caused it to increase in the aggregate of market economies. For example, four firms in an industry may account for no greater share in the total production of that industry in one country than they did 50 years ago and this may be true also of four firms in another country in the same industry. But it may be that 50 years ago the four firms in the one country were independent of the four firms in the other country, while now it may be the same four firms in both countries that have this share of the industry's output. If so, the share of output that was formerly produced by eight firms is now produced by four. This result would not be revealed by statistics on the concentration of industry country by country. I have not seen any recognition of this possibility. We know that the degree of price competition among oil producers has changed in recent years, and this fact alone would probably dominate any conclusion about price competitiveness in the world of market economies as a whole.

On the side of labor, too, there is probably also less competition in the form of wages. In many European countries the percentage of the labor force organized in trade unions may have been as great in 1929 as it is now, but the percentage of the labor force in the United States that is organized now, although less than it was a few years ago, is much greater than it was in 1929. The membership of unions in the United States was approximately 7 percent of the civilian labor force in 1929 and 20 percent of it in 1978.[9]

Government Constraints on the Private Sector

In addition to the probable reduction in price-competitiveness in the market sector, both among firms and unions, are the constraints imposed on the private sector by governments, either through direct regulation or taxation. Much has been said in the past few years about the

[9] Data for 1929 from *Historical Statistics of the United States, Colonial Times to 1957*, series D–4 and D–746, and for 1978 from *Directory of National Unions and Employee Associations, 1979*, Bureau of Labor Statistics, 1978, Bulletin 2079 (forthcoming).

increase of direct regulation in the United States, but whether it is true of other countries or exaggerated in the United States are open questions. There appears to be no question, however, that there has been a general increase in welfare benefits and other requirements imposed by government for socially desired purposes that tend to restrain the freedom of action of enterprises in the market sector. These take the form of required participation of employees and trade union officials in decision-making at various levels in the enterprise and other measures (mainly in western Europe), referred to as "industrial democracy", pension requirements, very high levels of severance pay or actual prohibition of firing, measures to protect domestic firms against imports or to provide direct assistance for exports, restrictive arrangements such as those jointly adopted by members of the European Community, and output or acreage restrictions in agriculture in the United States and Western European countries.

Another change in the market economics that I suspect has an importance not generally recognized is a reduction in the proportion of economic decisions within the private sector that are made with primary reference to the economic self-interest of the decision maker. Some indication of this change in the United States is given by the increase in the percentage of national income that originates in nonprofit institutions and government enterprises. In 1929 this was 2.2 percent; in 1978 it had grown to 5.2 percent.[10] I suspect that this vastly understates the increase in the number and relative importance of economic decisions made in the private sector by people who are not spending their own money. Separation of ownership from control in corporate business is well known. Furthermore, the deductibility of business expenses in computing business income subject to tax, combined with the substantial increase in the rate of taxation of corporate income from 11 percent in 1929 to the present 46 percent (for corporate net income in excess of $100,000), now has made free spending, even for business purposes, quite conventional in corporations of substantial size. It has also enabled managerial personnel, and to some extent subordinate employees, to have corporate business pay for some things that are really personal consumption expenditure. The role of corporate business, in which such expenditure takes place, has probably increased in all developed countries during the past 50 years. In the United States, the proportion of national income originating in business that was accounted for by corporations has grown from 58 percent in 1929 to 75 percent in 1978. (See Table 1.14 of the National Income and Product Accounts.)

All these changes in the private sector have had the effect of making that sector less responsive to market forces than it was 50 years ago.

The Increase in Government Expenditure and Taxation

Apart from regulation of private business by the government is the shrinking in the relative size of the private sector itself as a result of

[10] National income originating in nonprofit institutions is derived by subtracting from national income originating in households and institutions (shown in Table 1.14 of the U.S. National Income and Product Accounts) the compensation of employees in private households (shown in Table 6.5 of those accounts). The data for this computation and the data for national income originating in government enterprises are in U.S. Department of Commerce. *The National Income and Product Accounts of the United States, 1929–74.* Statistical Tables for 1929 and *Survey of Current Business*, July 1979, for 1978.

the vast expansion in the role of governments through expenditure and taxation. In the United States, the proportion of gross national product purchased by all governmental units increased from nearly 9 percent in 1929 to 20 percent in 1979. (The percentage for state and local governments rose from 7.1 to 13.0 percent and that for the Federal government from 1.4 to 7.0 percent.) A similar expansion has occurred in nearly all countries. If we take into account not only government expenditures for goods and services but transfer expenditures, which are also income to the recipients, the increase in relation to the gross national product is even greater in nearly all countries. This increase is shown for selected OECD countries in Table 4.

As might be expected, similar increases have occurred in the proportion of total output going to governments in the form of taxes and other compulsory payments, such as social security contributions.

TABLE 4.—GOVERNMENT EXPENDITURE (ALL LEVELS) AS PERCENTAGE OF GNP

	1929	1938	1977
Australia	[1] 20.4	[1 2] 23.1	31.5
Canada	[1] 15.0	[1 2] 20.8	37.5
France	[3]	26.5	40.7
Germany	30.6	[3]	41.5
Japan	[4] 17.9	[5] 25.7	22.3
Netherlands	[3]	12.7	52.2
Norway	17.4	18.2	47.3
Sweden	[3]	[6] 13.6	55.9
United Kingdom	[3]	23.8	40.4
United States	9.9	19.8	33.0

[1] Excludes gross fixed capital formation.
[2] 1939.
[3] Not available.
[4] 1926–30 average.
[5] 1936–40 average.
[6] 1938/1939.

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United States: U.S. Department of Commerce, The National Income and Product Accounts of the United States, 1929–1974, pp. 324 and 339.

For 1977:

Data for the United States are taken from "U.S. National Income and Product Accounts: Revised Estimates, 1976–78", tables 1.1 and 3.1, U.S. Department of Commerce, Survey of Current Business, July 1979, pp. 26 and 33. For other countries GNP data are taken from IMF, International Financial Statistics Yearbook, 1979 (vol. 32, 197 9); Government expenditure data are from OECD, National Accounts of OECD Countries 1960–1977 vol. II (OECD, 1979).

This increase in the role of governments has had several important effects on the operation of modern economies. One is that the increase in government expenditures on goods and services, not being more than matched by increases in net tax receipts, has tended to keep aggregate demand at high levels and to keep it from fluctuating as much as it did, and especially to keep it from falling below high-employment

levels as much as it did when the economic role of governments was smaller. The increase in transfer expenditures has reduced the relative importance of the private sector as a source of personal income before taxes, although the effect of this on disposable personal income (i.e., personal income after taxes) is largely offset by increased taxation. Moreover, many of the transfer expenditures change with changes in business activity but in the opposite direction while the increase in the proportion of income taken in taxes consists largely of taxes whose total revenues vary in the same direction as business activity and in greater proportion. As a result, the increase in transfer expenditures and taxation has also reduced the degree of fluctuation in disposable personal income and thereby in consumers' expenditure that were formerly generated by given changes in the activity of private business. Thus, the increases in both types of government expenditure have tended to reduce the magnitude of decreases in aggregate demand and business activity that were common in all advanced countries even before the Great Depression.

The increase in the relative size of government expenditures has introduced an element of short-term stability into the aggregate market for goods and services. This greater stability has led to the expectation that severe downswings in economic activity can be and will be avoided. (In this connection, incidentally, it should be recognized that the recession of 1974–75, although widely referred to as the most severe since the Great Depression of the 1930s, did not begin to approach that depression in severity.)

The cushioning effect of income taxes, unemployment compensation, and other automatic stabilizers of income has also reduced the downward pressure on prices that formerly occurred when private business activity fell. In prewar times that pressure tended to offset the price rises that occurred during cyclical upswings; it thereby contributed to the long-run stability of the price level. The reduction of that downward pressure has undoubtedly been a factor imparting an inflationary bias to all the market economies in recent years.

The increase in the relative importance of government expenditure on goods and services is also relevant to the contemporary inflation problem in another way. The demand of government for goods and services is probably less responsive to price increases than that of the private sector, except for periods during which fixed budgets constrain increases in spending. Because an increase in the prices of goods and services purchased by governments induces less reduction in the quantity of real resources that governments absorb, it induces larger increases (or smaller decreases) in aggregate money demand than would result from a corresponding increase in the prices of goods bought by the private sector. This relative price-inelasticity of government demand also tends to cause smaller decreases in prices or permits larger increases than would occur if the role of governments were smaller.

A third aspect of the increase in the public sector that is relevant to inflation is that, apart from extreme situations, most central governments are relatively little influenced by the level of interest rates or the availability of credit. As a result, their demands on the economy are not greatly affected by credit controls invoked to restrain inflationary

demand pressure. Or, to state the point otherwise, the shrinkage of the private sector's share has reduced the area of the economy amenable to conventional monetary controls.

Moreover, both the ordinary methods of government contracting and the increase in income taxes associated with the enlarged role of government have reduced the incentives of all businesses to maximize their operating efficiency. The increase in taxes on net income of business has also reduced the responsiveness of business to increases in interest rates in countries where interest payments are deductible from taxable income. As a result, larger portions of any increases in interest costs paid by business are in the end borne by public treasuries. The rise of tax rates on individual incomes presumably has also reduced the responsiveness of individuals to changes in interest rates on mortgages and consumer credit in the United States and other countries in which interest payments are deductible from income in determining tax liability. Higher rates of individual income taxation may also have been a factor in causing business corporations in the United States and some other countries to pay out a small portion of earnings as dividends. Increases in retained earnings make business firms less dependent on external funds and thus make private expenditure less susceptible to a given degree of monetary and credit restraint.

All these changes within the market sector and in the relation between the market and the nonmarket sectors have had the effect of reducing the flexibility of national economies and thereby their capacity to adjust to change.[11] As Professor Scitovsky has recently said in appraising capitalism's chance of survival, "the joints of that once wondrously flexible structure are becoming more and more calcified and rigid".

Scitovsky sees the specific changes that have brought this increased rigidity as having two major effects. One is that, largely as a result of growing affluence, improved technology, the greater role of government, and the increased bureaucratization and expanding size of private firms, individuals and firms have become less responsive to the signals that the market gives in the form of price changes; they tend increasingly to ignore the gains and losses with which the market rewards adaptation and punishes failure to adapt. In addition, he notes that "the price signals themselves have their own rigidities, which are also on the increase due to oligopolistic and bureaucratic price fixing". And because these signals work by redistributing income, yielding large profits to some and imposing losses on others, they grate on our sense of distributive justice. For that reason and because the victims of losses protest in evermore vigorous and effective ways, there is an increasing tendency to prevent these signals from operating, so that prices increasingly fail to reflect changing conditions.

These changes have their benefits. They are a response to felt and vigorously expressed needs. That society responds to these needs more

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[11] This section on changes in the flexibility in the economy is based on the appendix to my paper, "International Transmission of Inflation" in Lawrence B. Krause and Walter S. Salant (eds.). *Worldwide Inflation: Theory and Recent Experience.* (Washington: The Brookings Institution, 1977). Most of the points made were independently stated and more broadly and further developed by Tibor Scitovsky in his Ely Lecture, 'Can Capitalism Survive?—An Old Question in a New Setting", in the Papers and Proceedings issue of the *American Economic Review*, May, 1980, from which the quotation in the next sentence was taken.

than it did 50 years ago is itself a change. Those who are well-off always had ways of protecting themselves; the big change is the greater concern for those who are not so well-off—the unemployed, members of minority groups, and others at the low end of the income scale. Their economic misfortunes are no longer accepted as inevitable consequences of changes in market conditions about which nothing can be done. It is a matter of individual judgment as to when the losses of total output and any unfavorable effects on the distribution of income outweigh these favorable effects.

Changes in Economic Information and Ideas

I have already noted a number of important internal changes common to all or nearly all the market economies: the decrease in the downward flexibility of prices and money wages and the increased role of governments, including not only expenditures for military purposes, for social welfare, and for subsidies but direct intervention to limit the unfettered operation of markets. In addition to these changes, there have been an explosion of economic information, changes in ideas about how the market economies work, an expansion of ambitions regarding policy objectives, and an increase in the policy instruments that governments use to carry out these more ambitious objectives. These changes are interrelated, being partly both cause and effect of one another.

The Explosion of Economic Information

One of the most dramatic changes during the past 50 years has been the vast expansion of information about virtually all the national economies. The omissions from the tables presented in this paper give only the barest indication of data we now take for granted that were not available in 1929. Only if one has tried to find the data pertaining to that time can one appreciate the change; even then, one must recognize that estimates that we now have about many economic variables in this earlier years were made only years later.

Consider the United States.[12] In 1929 we had monthly data on foreign trade, industrial production, wholesale prices, and retail food prices. But a comprehensive index of consumer prices was available only semi-annually. Estimates of employment and payrolls (but not hours worked) were available, but for manufacturing only. Inventory figures were available, but for department stores only; retail sales also, but only for department stores, chain stores, and mail order houses. Federal Government receipts and expenditures were known for short periods, but those of State and local governments were not. Commercial banking statistics for all banks were also collected and published, but regularly only for the ends of June and December, plus one or two other dates during a year if the appropriate authorities called for them. Weekly data for commercial banks were available, but only for banks that were members of the Federal Reserve System. The data that were available varied greatly in quality, and the more

[12] For a full account of the changes in U.S. statistics see Joseph W. Duncan and William C. Shelton, Revolution in United States Government Statistics, 1926–1976 (Washington, D.C.: U.S. Department of Commerce, Office of Federal Statistical Policy and Standards, October 1978).

comprehensive series were published too long after the dates to which they related to be useful for decisions about short-period policy.

There were no official data on unemployment. Private estimates were diverse and crude, and became available only long after the period to which they related. The figures we now use for unemployment during the Great Depression were not available at the time; they were estimated only much later. There were no comprehensive data on national income and product or on most of its components until 1934, when Simon Kuznets's estimates for 1929–32 were published. There were no comprehensive data on wholesale trade, services, or construction activity, except employment data at 10-year intervals.

In nearly all other countries even less information was available 50 years ago, with the possible exceptions of Germany, the Netherlands, and some of the Scandinavian countries. For some advanced countries it was not possible, even in the early postwar years, to get national income and product estimates for several preceding years. In 1929, official estimates of annual national income were provided in only 4 countries (Australia, Canada, the Soviet Union and Greece), and private estimates had appeared for 12 others.[13] Moreover, few if any of these estimates were current. By 1955, estimates were available for 80 or more countries. Now, for nearly all countries, the reporting is regular and frequent, and for most countries it includes estimates of both output and expenditure by sectors of the economy. Such estimates, once regarded by officials in most countries as of merely academic interest, have become central to the planning of fiscal and other policies.

The enormous increase in the sheer quantity of economic information has been accompanied by great improvements in the reliability of estimates and in the speed with which they have become available. This change in the quantity, quality, and timeliness of economic information has been an important change in the past 50 years. Perhaps policies are not wiser, but policy-makers are certainly better informed.

Macroeconomic Theory and Policy

Information is of course only one aspect of knowledge, and this is as true about economics as about any other field of knowledge. Facts without a theoretical framework in which to put them are useless, merely raw materials that cannot result in a product unless there is a means of fabrication, which, in the field of knowledge, we call theory. In the part of it that we call macroeconomic theory, which is concerned with what determines aggregate output, employment, and the general price level, the last 50 years have seen a revolution as important as the one in information.

This revolution has occurred, broadly speaking, in two stages. The first, associated with Keynes's 1936 book, *The General Theory of Employment, Interest and Money*, reached a certain point and then ceased to develop. The second, which took off some 15 years ago and is now still going on, is interpreted by some as refutation and rejection, by others as modification, and by still others as mere elaboration of his

[13] See Paul Studenski, *The Income of Nations* (New York University Press, 1958). Table 10–4, p. 151, and Table 10–5, p. 156.

theories. It is not necessary, for the purposes of this paper, to enter into a discussion of which view of the relation of current theoretical developments to Keynes's views is correct. It is largely the first of the two stages of the revolution in theory that during the past 50 years has influenced the thought of opinion leaders and the public about what can be done to avoid or remedy widespread depression and unemployment, and has thereby affected the operation of the world economy. About the second stage, it suffices to say that it modifies crude Keynesian views about policy in ways that are important.

To appreciate the extent of the first stage of change, one has to be old enough to remember—or to have read enough of the economic literature of the 1920s and early 1930s to know—that, although there were then some highly developed theories of the business cycle, there existed no theory of what determines aggregate output and employment that was consistent with prevailing long-run theories. The situation at that time was well summarized more than two decades ago by Professor Tibor Scitovsky:

> Let us bear in mind that before the *General Theory* unemployment was regarded as the result of friction, temporary disequilibrium, or the monopoly power of labor unions. This meant that the business cycle had to be explained within a theoretical framework that made no allowance for variations in employment and income. It also meant that business cycle policy had to be formulated without the benefit of a conceptually satisfactory measure of prosperity, such as the level of income or output or employment. . . .
>
> . . . The great majority of economists settled down to a kind of schizophrenia. They believed in and taught a logically elegant price theory; and at the same time they adhered to a monetary and business cycle theory that was sometimes good, sometimes bad, but always incompatible with their price theory.[14]

The combination of better information and better theory was probably only one of several factors that made economic performance in nearly all market economies after World War II better than that of the decades before the depression of the 1930s: less instability and more rapid rates of growth in output in most countries. I have no doubt that other factors—more obscure and, so far as I know, mainly not identified—have also played a role. But the quality of economic advice now given to policy-makers is, in most if not all countries, considerably more sophisticated than that given 50 years ago, although it is not always right and, whether right or wrong, is not always taken.

I hasten to make clear that in referring to better economic performance I am not ignoring the difficulties that nearly all nations are facing in the form of inflation. Its persistence in recent years, even when aggregate demand is not excessive or is actually declining, has made "stagflation" a household word. It has baffled the economics profession as well as policy-makers and has brought economists into disagreement and low repute. It may appear outrageous, therefore, for anyone to assert that we know more about macroeconomics than we did 50 years ago. Insofar as that assertion relates to our understanding of how the economy works rather than the success of policy, it might be defended on the ground that in many situations economists

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[14] Discussion by Tibor Scitovsky in *American Economic Review*, Papers and Proceedings of the Sixty-ninth Annual Meeting of the American Economic Association, vol. XLVII, No. 2 (May 1957), pp. 93–94.

are agreed as to what needs to be done but that their prescriptions are politically unacceptable. I do not press that proposition, however. Even if true, it is less relevant to the changes that have occurred over the past 50 years than another justification of the assertion: the present problem of stagflation is unprecedented and, insofar as it is not the result of the sharp oligopoly-created rise in the price of oil, it is, in my opinion, at bottom largely a reflection of the gradual development over the postwar years of a widespread public expectation of more or less constant, or at least only moderately interrupted, prosperity and continuing growth of real incomes, which political leaders in democratic countries are unwilling to disappoint.

Why have these expectations developed? The commitments of governments to maintain high employment would not, alone, have led to the expectations that have developed. I attribute those expectations to the experience of substantial stability over several decades. A generation has grown up that has had no other experience. It assumes, whether tacitly or explicitly, that it lives in an ever-expanding economy and that, whenever growth tends to be interrupted, governments will try and will succeed in preventing or minimizing the interruption.

This assumption is probably now in the process of being undermined, but its development over the postwar decades has led to greater demands on governments in nearly all countries. These demands, in turn, have led nearly all countries to build into their economies a greater number of devices to protect one or another social group and industry, as was noted earlier in the discussion of inflexibilities. The increased downward inflexibility of prices has prevented increases in some prices from being offset by decreases in other prices, giving an upward tilt to the general price level. The failure of price levels to fall, in turn, has led to widespread expectations of indefinitely continuing inflation, in contrast to the world of 50 years ago, when it was known that price levels could rise for several years at a time but when it was believed, correctly, that they could also fall. In that world there was no precedent in developed countries for continuing peacetime inflation at the rates nearly all of them have experienced in the past decade and a half. The point I wish to make is that, although the persistence of stagflation is a failure of recent and current economic policy, it does not imply that we have learned nothing about macroeconomic policy in market economies, or that most or all of what we thought we had learned is wrong.

True, much of what we thought we had learned needs to be modified. Some common beliefs that all economists once rejected out of hand as popular fallacies are now thought by many to have become justified by institutional changes, and others are at least suspected of having some validity in the conditions now prevailing. (One example is the idea that even an unchanging degree of monopoly can cause a continuing rise of prices. Another is that a rise in nominal interest rates is pro-inflationary. Economists now recognize that it may have less anti-inflationary effect and more pro-inflationary effect than they once thought, because any effect it has in constraining demand has less downward effect on the price level than it formerly did, while, at least in the United States, the weight given to interest rates in the consumer price index and the effect of changes in that index in raising money wages make it more inflationary than it once was, so that its

effect may, on balance, be inflationary.) But some ideas about macroeconomic policy that we had come to think wrong and best forgotten, including some that are now enjoying a revival, are still wrong. The foundation of the current stagflation problem is in large part the success in coping with a major earlier problem. Here, as in other fields of endeavor, success in solving one problem has bred another.

The development of stagflation has led to the second stage of change in the development of views about macroeconomic theory and policy. That stage is now far from completed and the process of change is accompanied by great diversity of opinion. The new developments in theory modify what came to be accepted theory by displacing its assumption that producers and consumers expect the general price level to fall, or at least not to rise, when substantial unemployment exists. Instead, expectations have been introduced explicitly into the theory of what determines aggregate demand for output. The other major new element is the consideration being given to factors that determine supply, which had previously been neglected. (By "supply" economists do not mean merely the quantity of output offered for sale, but the functional relation between the quantity and price of output. Thus, economists regard a rise in the price at which an unchanged quantity of goods or services is offered as a decrease in supply; this generally implies that a smaller quantity would be offered at the initial price.) This new attention to the factors determining supply takes into account the expectations of producers and consumers, and it also includes other factors that were neglected by the theory that was so widely held until recently. Examples of such supply factors are, in addition to expectations about future market conditions, the costs of transactions and the costs that buyers and sellers incur in searching for the best offers and bids.

Thus, there is now again much controversy and some confusion about macro theory and policy. This confusion is in some ways reminiscent of the situation that existed 50 years ago. But there are important differences. Aside from the fact that the number of professionally competent people trying to think their way through these problems is much larger and that, thanks to work done during the past 50 years, their general level of competence is much greater, they share a common framework of thought and, I believe, are coming to general agreement about what points are at issue. Thus, the intellectual debate is being conducted at a much higher level of sophistication. And, largely owing to the unprecedented growth and stability of the postwar years, the standards of economic performance that the people of the world expect their economies to attain are much higher. I believe that this fact and the better information, which makes us more aware of failures as well as successes, are responsible for most of our economic problems and frustrations.

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III. THE RELATIVE SIZE OF GOVERNMENT

THE PUBLIC SECTOR AND ECONOMIC STABILITY

By Morris Beck

I. Introduction

This paper is a study of public sector growth and its economic consequences. The primary emphasis will be on quantifying changes in the size and composition of public expenditures since 1929 and, where possible, relating those changes to the cyclical behavior of the American economy.

Dimensions of the U.S. public sector, at selected intervals since 1929, are set forth in section II. Among the major findings is the break in public sector growth which occurred about 1969. The section also considers some of the ways in which public sector behavior in the past decade differs from that of the preceding four decades. Emphasis in section II is given to the declining share of resources used for general public services.

Findings about the behavior of public expenditures in a group of thirteen developed countries will be reported in section III. Lessons which are currently applicable to the United States will be highlighted, and the distinctive effects of transfer outlays on the allocation of resources will be emphasized. Methods of deflating *total* government expenditure and expressing public sector size in real terms are key ingredients of this section.

The effects of transfer payments on the cyclical behavior of personal income are examined in section IV. Long regarded as an automatic stabilizer, transfer payments are shown to have been a moderating influence in postwar recessions and slowdowns of economic activity. In a few cases also they have had a mildly countercyclical effect during business expansions. Since transfer payments add to purchasing power without increasing national output, they may become a source of instability—contributing to the build-up of inflationary pressures—in late expansion.

The nationwide movement to arrest the growth of government spending has already produced cutbacks in public services in many cities. Numerous states have placed lids on their own spending and the ability of local governments to raise taxes for the support of public services. As yet, however, the campaign for fiscal restraint has failed to retard the growth of transfer outlays.

More than three fifths of (direct) Federal expenditure in calendar 1979 consisted of transfer outlays, which have been rising faster than GNP. Under the Humphrey-Hawkins Act of 1978 the Federal

government is explicitly challenged to reduce the share of national output represented by Federal expenditure. Movement towards the Humphrey-Hawkins goal will require scrutiny of existing transfer programs to identify ways of halting and possibly reversing the growth of transfer outlays.

II. Perspectives on Public Sector Growth

The oldest and best-known hypothesis of public sector growth is Wagner's "law" of expanding state activity (*das Gesetz der wachsenden Staatsausgaben*), promulgated more than a century ago by the Prussian economist, Adolph Wagner. In today's terms Wagner's law predicts that the public sector will grow in relative importance—that government spending, however defined, will absorb an increasing share of the nation's income and product.

An extensive literature has emerged on Wagner's law and related hypotheses regarding the behavior of public expenditures. Scholars disagree over the fine points, but the empirical evidence generally supports the 'rising share' hypothesis. Data for thirteen industrial countries for the period since 1950 will be examined later, with an eye toward distilling from their experience lessons of value to this country. Our immediate concern is with the behavior of the U.S. public sector over the past half-century.

Table 1 displays the key data for the initial and terminal years of the study. In addition to total spending, by all levels of government, the table includes four components that are crucial to the aims of the study. Data in the lower half of the table, most of which are not available in published sources, were derived in accordance with procedures outlined in appendix A.

TABLE 1.—GOVERNMENT SPENDING IN THE UNITED STATES, BY TYPE: 1929 AND 1978

[Dollar amounts in billions]

			Percent of total		Percent of GNP	
	1929	1978	1929	1978	1929	1978
	(1)	(2)	(3)	(4)	(5)	(6)
In current dollars:[1]						
Total Government expenditure	$10.3	$686.0	100	100	10.0	32.2
Government purchases	8.8	435.6	85	63	8.5	20.5
Of employee services[2]	4.3	229.6	42	34	4.2	10.8
From private firms	4.5	206.0	44	30	4.4	9.7
Transfer outlays	1.5	250.5	15	37	1.5	11.8
In 1972 dollars:[3]						
Total Government expenditure	44.9	440.2	100	100	14.3	31.5
Government purchases	40.7	273.3	91	62	13.0	19.5
Of employee services	26.1	149.9	58	34	8.3	10.7
From private firms	14.6	123.4	33	28	4.6	8.8
Transfer outlays	4.2	166.9	9	38	1.3	11.9

[1] Calendar years, NIA basis, all governments. Details may not add to totals because of rounding.
[2] Compensation of Government employees.
[3] Deflation procedures in app. A.

Source: U.S. Department of Commerce.

Prior to the 1930s, when government was primarily a provider of services to the general public, the bulk of its expenditure—85 percent in 1929—consisted of employee compensation and purchases from the

private sector. By 1978 this component of total government expenditure had fallen to 63 percent, and the relative importance of transfer outlays had risen sharply—from 15 percent in 1929 to 37 percent in 1978 (table 1, lines 2 and 5). In real terms the quantitative importance of transfer payments, which redistribute income to beneficiaries of transfer programs, had more than quadrupled (table 1, line 10).

Besides their influence on resource allocation, transfer payments to persons have had a moderating effect on the business cycle. Unemployment compensation and, to a lesser extent, public assistance programs have reduced the swings of personal income. Each has the characteristics of an automatic stabilizer. Social security benefits, however, which dominate total transfer payments, have had an asymmetrical effect on the cycle—moderating recession, but contributing to the build-up of inflationary pressures in late expansion.

Empirical evidence on the cyclical behavior of personal income, inclusive and exclusive of transfer payments, will be examined below along with other data on economic stabilization. Our concern here is mainly with the allocative effects of changes in public sector size and composition.

Between 1929 and 1978, when GNP increased at an annual rate of 6.4 percent, government spending in the United States rose at a compound annual rate of 8.9 percent—from $10.3 billion to $686 billion. Nominal size of the public sector, calculated without regard to changes in relative prices, therefore grew from a tenth to nearly a third of GNP (table 1, line 1).

In real terms the public sector in 1978 was somewhat more than twice as large as that of 1929. Calculated from data expressed in 1972 dollars, real size of the public sector expanded from 14.3 percent of GNP in 1929 to 31.5 percent in 1978 (table 1, line 6). Real size grew less than normal size because of relative price behavior. Over the period, when the GNP deflator grew at an annual rate of 3.2 percent, the deflator for total government expenditure rose at an annual rate of 4.0 percent (appendix table A–1).

The growth of transfer outlays since 1929 has resulted in a major re-allocation of resources. In constant dollars these outlays grew at an annual rate of 7.8 percent and now account for about 12 percent of GNP. Transfer recipients, whose claim on the nation's resources was negligible a half-century ago, now command a significant share of real GNP. Moreover, the share has continued to rise in recent years while that of real purchases by government has fallen.

Real purchases of goods and services rose over the half-century at an annual rate of 4.0 percent, about half that of real transfer outlays. The share of real GNP accounted for by government purchases has increased by exactly half—from 13.0 percent in 1929 to 19.5 percent in 1978. Of the two main components of total expenditure, only purchases involve the flow of resources to government. Transfer outlays put resources at the command of program recipients and cannot, therefore, be used for the provision of services to the general public.

The distinction becomes important when, as happened recently in several major cities, budget cuts took the form of reductions in essential services—police, fire, sanitation—while transfer expenditure, mandated by higher government, was largely free from cuts. Most trans-

fer programs fall under the heading of "uncontrollable"—budget items that are difficult, if not impossible, to cut in the short run. The long-term shift toward transfer outlays has been partly responsible for government's difficulties in supplying some essential public services.

Finally, a shift has occurred within the aggregate of government purchases. As a proportion of total GNP, compensation of government employees more than doubled over the half-century—from 4.2 percent in 1929 to 10.8 percent in 1978 (table 1, line 3). In real terms, however, the increase was more modest—from 8.3 percent in 1929 to 10.7 percent in 1978 (table 1, line 8). Meanwhile, the real share of government purchases from the private sector nearly doubled—from 4.6 percent in 1929 to 8.8 percent in 1978 (table 1, line 9).

In real as well as nominal terms, the latter comprised less than half of government purchases in 1978. While real GNP grew at an annual rate of 3.1 percent, real purchases from the private sector grew at an annual rate of 4.5 percent. Over the same period employee compensation in real terms grew at an annual rate of 3.6 percent. This change in the composition of government purchases is, however, minor compared with the dramatic growth of transfer outlays, which now account for a larger share of real GNP than either component of total purchases.

In summary, total government expenditure in constant (1972) dollars rose over the half-century at an annual rate of 4.8 percent—from $45 billion in 1929 to $440 billion in 1978. As a proportion of real GNP, the size of the public sector more than doubled. Real transfer outlays—a negligible fraction of real GNP in 1929—now represent 12 percent of real GNP and account for 38 percent of total government spending—up from 9 percent in 1929. The share of real GNP represented by government purchases increased by half—to nearly 20 percent in 1978. As a fraction of total expenditure, however, it declined by a third—from 91 percent in 1929 to 62 percent in 1978.

Government Spending Since 1969

Before adjustment for price changes, total government spending in the past decade increased at an annual rate of more than 10 percent—from $286 billion in 1969 to $686 billion in 1978. In real terms, however, the annual growth rate was only 2.8 percent, just under the 2.9 percent growth rate of real GNP. Moreover, as shown below, the growth rate of total expenditure was due largely to the continued expansion of transfer outlays:

[In percent]

	Total government expenditure (1)	Government purchases (2)	Transfer outlays (3)
1929–39	5.5	4.4	12.4
1939–49	5.7	4.3	10.8
1949–59	5.0	5.9	2.4
1959–69	4.7	4.2	6.4
1929–69	5.2	4.7	7.9
1969–78	2.8	.7	7.4
1929–78	4.8	4.0	7.8

The above rates were calculated from data in 1972 dollars. For total expenditure the 2.8 percent growth rate since 1969 is in sharp contrast to that of the preceding 40-year period when the growth rate averaged 5.2 percent. It is noteworthy also that none of the decade rates deviated from the long-term average by more than half a percentage point.

Of the two components of total expenditure, government purchases since 1969 grew at an annual rate of less than 1 percent—well below that of the preceding 40-year period. The growth of transfer outlays, however, nearly matched the long-term average. In constant (1972) dollars transfer outlays almost doubled—from $87.9 billion in 1969 to $166.9 billion in 1978. Real purchases, on the other hand, increased by a mere 6.5 percent over the period—from $256.7 billion in 1969 to $273.3 billion in 1978. Behavior of public sector size since 1969 reflects the divergent experience of these components. (See appendix table A–2).

As a proportion of real GNP, real purchases declined significantly over the decade—from 24 percent in 1969 to 20 percent in 1978. The proportion had risen from 13 percent in 1929 to 20 percent in 1939 and 1949, and to the 24 percent level in 1959. Since 1969 the proportion has drifted steadily downward (table A–2, column 2).

Real transfer outlays have absorbed an increasing share of real GNP over the period—from 8 percent in 1969 to 12 percent in 1978 (table A–2, column 3). As a result, real size of the total public sector remained at the level of 32 percent over the period. Real GNP grew at an annual rate (2.9 percent) that was only a shade higher than the growth rate of total government spending.

The behavior of government spending since 1969 is in marked contrast to earlier experience. This is the first decade in which the growth of transfer outlays has been accompanied by a matching decline in the share of resources used for general public services.

Federal Share of Public Expenditure

Public sector growth over the past half-century has been accompanied by a large increase in the Federal share, and a corresponding decline in the state-local share, of "direct" expenditure. Following Census Bureau practice, intergovernmental expenditure has been excluded from each sector's total outlay and shares calculated from the residual amounts of direct expenditure. In the NIA tables of government finance Federal grants to state and local government are included in the Federal spending total, and again as part of the state-local total. Shares of the two sectors are shown below for the total and main components of direct expenditure:

	Government purchases		Transfer outlays		Total expenditure	
	1929	1978	1929	1978	1929	1978
	(1)	(2)	(3)	(4)	(5)	(6)
Billions of current dollars:						
Federal	1.4	152.6	1.1	229.9	2.5	382.5
State and local	7.4	283.0	.4	20.6	7.8	303.6
All governments	8.8	435.6	1.5	250.5	10.3	686.0
Percent of all governments:						
Federal	15.9	35.0	73.3	91.8	24.3	55.8
State and local	84.1	65.0	26.7	8.2	75.7	44.3

In 1929 Federal grants to subnational governments amounted to $117 million, less than 1 percent of the Federal total (line 1, column 5). By 1978 the volume of Federal grants had grown to $77.3 billion, about one fifth of the Federal total and a quarter of the state-local aggregate of direct expenditure (column 6, lines 1 and 2).

Imputation of grants to the two components, a task which has been made more difficult by the advent of general revenue sharing (GRS), is beyond the scope of this paper. GRS funds amounted to $7.7 billion in 1978. Federal grants for public assistance—$21.3 billion in 1978—financed more than half of state-local welfare expenditures, but the allocation of grant money between purchases and transfer outlays cannot be undertaken here. The present analysis of governmental shares of expenditure is based on recorded outlays, without regard to source of financing.

Shares of the two sectors are shown at the bottom of the table. The Federal share of government purchases more than doubled over the period—from 16 percent in 1929 to 35 percent in 1978. Its share of transfer outlays also rose substantially—from 73 percent in 1929 to 92 percent in 1978. With grants excluded, the Federal share of total expenditure rose from 24 percent in 1929 to 56 percent in 1978.

These shares were obtained from data in current dollars. Calculated from real expenditure (1972 dollars), the Federal share of total expenditure in 1978 was 57.3 percent—up from 22.0 percent in 1929. By either measure the Federal government, which accounted for less than a quarter of direct expenditure in 1929, now accounts for more than half; and, inclusive of grants, the Federal share is now about two thirds of total government expenditure.

III. Comparison With Other Countries

This section compares the public sector of the United States with that of 12 other countries. The analysis is based on a uniform set of definitions for government spending, and the countries selected for study were drawn from a list of "developed market economies" (classification by the United Nations Statistical Office). Text discussion is limited to those countries with a full run of data back to 1950, the earliest year for which comparative analysis is possible, and underlying data are shown in appendix B.

Measures of Public Sector Size

Size of the total public sector, for the initial and terminal years of the study, is displayed in table 2. Total spending here refers to the UN category "current disbursements of general government", a concept that closely approximates the "total expenditure" category of section II. Gross domestic product (GDP), which excludes net factor income from abroad, is the standard base in cross-national studies for measures of public sector size.

Median size of the public sector, calculated from data in current prices, almost doubled over the study period—from 21.2 percent in 1950 to 39.8 percent in 1977. Nominal size of the US public sector, close to the median in 1950, expanded by nearly two thirds over the

period. Among the 13 countries, however, the US public sector in 1977 was third smallest—only Greece and Switzerland had smaller public sectors.

TABLE 2.—TOTAL GOVERNMENT SPENDING AS PERCENTAGE OF GROSS DOMESTIC PRODUCT

	From data in current prices			From data in 1950 prices	
	1950	1976	1977	1976	1977
Austria	21.2	39.4	39.8	32.9	33.7
Canada	19.0	36.3	36.9	31.9	32.2
Denmark	18.1	40.0	(1)	31.9	(1)
Finland	20.4	34.5	35.6	30.0	30.4
France	26.7	40.8	41.8	37.6	38.5
Germany	28.3	40.9	41.3	37.9	38.3
Greece	19.6	27.4	29.0	22.4	24.0
Ireland	23.0	43.3	(1)	44.1	(1)
Netherlands	23.9	51.6	52.3	47.2	48.3
Sweden	23.7	50.1	55.6	43.9	48.1
Switzerland	19.3	30.3	30.4	29.8	29.8
United Kingdom	30.2	41.4	40.8	35.8	35.8
United States	20.0	33.1	32.6	29.4	28.8
Median	21.2	40.0	39.8	32.9	33.7

(1) Not available.

Source: United Nations Statistical Office, Yearbook of National Accounts Statistics, 1964 and 1977; also, unpublished replies to questionnaire for 1978 yearbook.

In real terms, also, public sector growth was substantial in each of the countries. The deflator for government spending, however, rose by a greater margin than the GDP deflator. Hence, the expansion in real size of the public sector was less than the increase in nominal size. By 1977 only Greece had a smaller public sector, in real terms, than the United States.

By making the initial year the base period for deflation, we eliminate the need for restating 1950 data in constant prices. For a given country the change in real size of the public sector is found by comparing the first and last columns of table 2. Comparison between countries, however, is rendered difficult by the wide range of values in the initial year. To overcome this problem, we will later use the income elasticity of government expenditure, a measure which is independent of absolute size.

We examine next the growth of government spending, in real terms and without regard to its relationship with the changing value of GDP. The object is to determine whether a slowdown has occurred in recent years, especially in the United States. Emphasis is on the growth of real expenditure, but occasional reference may be had to the behavior of nominal expenditure (table B–1), government expenditure deflators (table B–3), and GDP at current and constant prices (table B–4).

Growth of Government Spending Since 1950

Table 3 displays growth rates of real expenditure over the full period (column 4), several subperiods (columns 1–3), and the final two years of the period studied (columns 6 and 7). The median growth rate advanced from 5.0 percent in the Fifties to 6.9 percent in the Sixties, then declined to 6.6 percent in the period 1970–1977. There were some exceptions to this pattern; but, beginning in 1970, the annual growth rate of real expenditure underwent a significant decline.

TABLE 3.—ANNUAL GROWTH RATES OF TOTAL GOVERNMENT EXPENDITURE IN CONSTANT PRICES

[In percent]

	Compound rates of change				Change from preceding year	
	1950–60	1960–70	1970–77	1950–77	1976	1977
	(1)	(2)	(3)	(4)	(5)	(6)
Austria	6.8	7.1	6.6	6.8	8.1	6.2
Canada	6.7	6.8	7.3	6.9	2.5	3.9
Denmark	4.6	8.3	[1] 5.5	[1] 6.2	3.3	[2]
Finland	5.0	6.9	6.7	6.1	5.9	1.9
France	5.6	6.6	6.6	6.2	5.9	5.3
Germany	8.4	5.5	6.3	6.8	5.5	3.8
Greece	2.5	10.4	9.1	7.1	11.0	9.6
Ireland	2.0	8.2	[1] 7.3	[1] 5.2	6.4	[2]
Netherlands	5.8	8.6	7.5	7.3	7.4	2.7
Sweden	5.0	6.8	7.1	6.2	9.0	6.8
Switzerland	3.0	7.1	5.8	5.2	3.5	2.0
United Kingdom	1.9	3.6	4.6	3.2	3.4	1.1
United States	5.1	5.8	3.1	4.8	2.0	2.5
Median	5.0	6.9	6.6	6.2	5.9	3.8

[1] 1976 data substituted for 1977.
[2] Not available.

Source: Same as table 2.

The sharpest drop occurred in the United States—from 5.8 percent in the Sixties to 3.1 percent in 1970–1977. The latter was the lowest growth rate among the 13 countries. For the full period (column 4) only the United Kingdom had a lower growth rate than the United States. Additional comparisons of government spending in the US and the UK appear later in this section.

Over the full period the behavior of real expenditure contrasts sharply with that of nominal expenditure which, in the median case, rose twice as fast as real expenditure. For 1970–1977 the difference was even more pronounced: 16.3 percent for nominal, and 6.6 percent for real, expenditure.

Price increases, especially since 1970, have been responsible for a large part of the growth in government spending since 1950. Nearly three quarters of the increase between 1950 and 1977 of government spending in the United States is due to higher prices. (See tables B–1 and B–2.) Further analysis of price behavior in the comparison of British and American experience is provided at the end of section III.

Elasticity of Government Expenditure: Total and Components

Up to this point the comparative analysis of public sector size has been limited to measures of total expenditure. As was noted in section II, however, overall size of the public sector can remain unchanged while shifts occur within the aggregate. Between 1969 and 1978, for example, when the total public sector of the United States leveled off at 32 percent of real GNP, the real share of transfer recipients rose from 8 to 12 percent, while that of real purchases declined from 24 to 20 percent.

A similar shift occurred between 1950 and 1977 in 7 of the 13 countries examined in section III. Table 4 displays the evidence in the form

of elasticity coefficients—abstract measures of the change in government spending relative to the change in GDP. Once again, the coefficient of income elasticity is independent of absolute magnitude and therefore simplifies the task of comparing countries or different measures of government spending. The analysis is confined to real expenditure, that is, only coefficients derived from constant-price data are used here.

The median behavior of the thirteen countries is shown at the bottom of table 4. For total government spending the percentage increase in expenditure exceeded that of GDP by 80 percent. Values of the "total" coefficient exceed unity in all cases, and range from 1.27 (Greece) to 2.70 (Sweden). For the United States the coefficient of 1.74 means that the behavior of total government expenditure was close to the median experience.

TABLE 4.—INCOME ELASTICITY OF GOVERNMENT SPENDING IN CONSTANT PRICES: 1950–77

	Total [1]	Consumption [2]	Transfers [3]
Austria	1.80	0.54	3.23
Canada	1.96	1.17	2.90
Denmark	2.25	1.54	3.09
Finland	1.70	1.20	2.30
France	1.61	.60	2.54
Germany	1.46	.92	2.06
Greece	1.27	.68	2.11
Ireland	2.47	1.21	4.33
Netherlands	2.46	.63	4.38
Sweden	2.70	1.42	4.43
Switzerland	1.89	.79	3.41
United Kingdom	1.37	.77	2.07
United States	1.74	1.18	2.59
Median	1.80	.92	2.90

[1] Total current disbursements of general Government.
[2] Government final consumption expenditure.
[3] Transfer outlays of general Government.

Source: United Nations, Yearbook of National Accounts Statistics, 1977 and 1964; also, replies to questionnaire for 1978 yearbook (unpublished).

The behavior of government consumption expenditure (column 2) differs from that of total spending. In seven countries—those with "consumption" coefficients below unity—the percentage increase in G_c was less than that of real GDP. The United States, with a coefficient of 1.18, is one of the six countries in which the "consumption" coefficient is greater than unity. Over the study period, in which GDP rose by 149 percent, real expenditure for government consumption increased by 176 percent. Only Denmark, Finland, and Sweden had higher coefficients than the United States.

Column 3 confirms our previous observation about the dramatic growth of transfer outlays (G_t). In the median case the percentage increase of real transfer outlays was nearly three times that of real GDP. The "transfer" coefficients range from a low of 2.06 (Germany) to a high of 4.43 (Sweden). In the United States the relative increase of transfer outlays exceeds that of real GDP by 159 percent.

As was the case with total expenditure, the elasticity of transfer outlays in the United States was somewhat below the median elasticity. This may seem surprising in view of the great expansion of the social security system and the adoption of new transfer programs since 1950

in the United States. By 1950 many of the European countries already had elaborate programs of income maintenance. The answer may be that, once in place, these programs take on a life of their own. A comparative analysis of specific transfer programs might provide some clues, but that task cannot be undertaken here.

Patterns of Growth: US and UK

In both countries total government expenditure rose sharply over the study period, in absolute terms and as a proportion of GDP (table 5, lines 1 and 2). In real terms, however, the public sector of Great Britain expanded by a smaller margin than that of the United States (lines 3 and 4). The explanation lies in relative price behavior: the UK deflator rose at a higher annual rate (7.0 percent) than the US deflator (4.1 percent) for total spending (line 5).

TABLE 5.—MEASURES OF GROWTH IN GOVERNMENT SPENDING, 1950–77: UNITED STATES AND UNITED KINGDOM

	United States		United Kingdom	
	1950	1977	1950	1977
	(1)	(2)	(3)	(4)
Total Government expenditure:				
In current prices:				
Index of amount	100	1,067	100	1,464
As percent of gross domestic product	20.0	32.6	30.2	40.8
In constant prices:				
Index of volume	100	359	100	236
As percent of gross domestic product	20.0	28.8	30.2	35.8
Deflator	100	297	100	621
Government consumption expenditure:				
In current prices:				
Index of amount	100	999	100	1,390
As percent of gross domestic product	12.1	18.5	16.3	20.8
In constant prices:				
Index of volume	100	276	100	176
As percent of gross domestic product	12.1	13.4	16.3	14.4
Deflator	100	361	100	794
Government transfer expenditure:				
In current prices:				
Index of amount	100	1,171	100	1,550
As percent of gross domestic product	7.9	14.2	13.9	19.9
In constant prices:				
Index of volume	100	486	100	306
As percent of gross domestic product	7.9	15.4	13.9	21.4
Deflator	100	241	100	510
Exhibit: Gross domestic product:				
In current prices—index	100	654	100	1,086
In constant prices—index	100	249	100	199
Deflator	100	263	100	546

Source: Same as table 2.

Of the $550 billion increase in US expenditure, about 27 percent represents larger volume and the rest is due to higher prices. In the UK, where total expenditure rose from £3.9 billion in 1950 to £57.1 billion in 1977, only about 10 percent of the increase consists of larger volume (tables B–1 and B–2).

As noted before, the UK was one of seven countries in this survey that experienced an actual decline in the share of resources used for government consumption (line 9). Only about 6 percent of the £27 billion increase of government consumption expenditure represents larger volume; the rest reflects higher pay for government employees and higher prices paid to private suppliers of goods and services.

In the United States about 20 percent of the increase in government consumption expenditure consists of a larger volume of services to the public at large. Real expenditure rose at an annual rate of 3.8 percent, slightly higher than the 3.6 percent growth rate of real GDP. Hence, the share of resources used for government consumption rose slightly—from 12.1 percent in 1950 to 13.4 percent in 1977.

Transfer outlays at current and constant prices rose sharply over the study period. In real terms, however, the growth in the UK was less than in the US (line 13) because the price index rose by a greater margin in the UK (line 15). By 1977 real transfer outlays in the UK accounted for three fifths of total government expenditure and more than a fifth of GDP.

In the US the real share of transfer outlays in 1977 was 15.4 percent, nearly double the 1950 share (line 14). Although the corresponding UK percentage was larger, the annual growth rate of real transfer outlays in the UK (4.2 percent) was well below that of the US (6.0 percent) for the period covered by this comparative study.

These trends suggest that, in spending for transfer programs, the gap between these countries may be closing. In the last few years, however, real transfer outlays in the US have risen at about the same rate as real GNP (table A–2, column 6). It remains to be seen whether the campaign to limit government spending will end the long-term shift of resources toward recipients of transfer expenditure.

IV. Transfer Payments and the Cyclical Behavior of Personal Income

Preceding sections have emphasized the allocative effects of transfer outlays, which now account for nearly two fifths of total government expenditure in the United States. Claims of transfer recipients against real GNP, to which they do not contribute currently, have risen from 1.3 percent in 1929 to about 12 percent in recent years. In section IV we examine the influence of transfer payments on the business cycle. Specifically, our aim is to determine whether these payments have had a stabilizing effect on personal income. The total and main components of transfer payments to persons in calendar 1978 are displayed below:

	Amount (billions)	Percent of total
Old-age, survivors, disability, and health insurance (OASDHI) benefits	$116.3	51.9
Government employee retirement benefits	32.9	14.7
Veterans benefits	13.9	6.2
Aid to families with dependent children	10.7	4.8
Government unemployment insurance benefits	9.2	4.1
Other	41.1	18.3
Total transfer payments to persons	224.1	100.0

Over the past half-century transfer payments have become an increasingly important source of personal income. From 1.8 percent of the total in 1929 these payments rose to 4.1 percent in 1939; 6.1 percent in 1949; 7.1 percent in 1959; 8.9 percent in 1969; and to 13.0 percent in 1978. About 97.5 percent of total transfer payments in

1978 come from government, the remainder consisting of corporate gifts to nonprofit institutions and bad debts incurred by consumers.

TABLE 6.—BEHAVIOR OF PERSONAL INCOME IN POSTWAR RECESSIONS

[From data in 1972 dollars, seasonally adjusted at annual rates]

Business cycle contractions		Percent change, P to T, in personal income		Exhibit: Percent increase, P to T, in transfer payments
Peak (P)	Trough (T)	Excluding transfers	Including transfers	
(1)	(2)	(3)	(4)	(5)
November 1948	October 1949	−3.8	−2.5	22.3
July 1953	May 1954	−2.5	−2.0	13.6
August 1957	April 1958	−3.5	−2.2	17.4
April 1960	February 1961	−.1	+1.0	15.5
December 1969	November 1970	−.5	+1.2	17.5
November 1973	March 1975	−5.8	−2.9	20.0

Source: Center for International Business Cycle Research, Rutgers University; National Bureau of Economic Research, Inc.; and U.S. Department of Commerce.

The peaks and troughs of table 6 mark the beginning and end of all recessions since 1948. In addition, the National Bureau of Economic Research has identified three instances of slowdown in aggregate economic activity that did not develop into recession. The behavior of personal income during "growth cycle slowdowns" is examined separately below.

In each of the six recessions real factor income declined (column 3). The relative severity of the most recent recession shows up on the bottom line of that column. These percentages were calculated from data in series 51, "personal income less transfer payments in 1972 dollars," reported in *Business Conditions Digest*, September 1978. With transfer payments excluded, the series depicts the monthly course of real income received by persons in the form of wages, rent, interest, dividends, and profits of unincorporated enterprise, less personal contributions for social insurance.

Column 4 shows the behavior of personal income including transfers (BCD series 52). Comparison with column 3 reveals the countercyclical effect of transfer payments in each recession. In four cases transfer payments moderated the decline of factor income and, in the other two, converted the decline into a modest increase.

A useful follow-up to table 6 would be an analysis of major types of transfer payments. Some of the smaller components, such as unemployment insurance, may exhibit greater contracyclical power than the aggregates suggest. That task requires the study of monthly data not available to this writer.

Between the first peak and last trough of table 6 real transfer payments grew from $18.8 to $136 billion (annualized amounts of seasonally adjusted monthly data). About two thirds of the total now consists of social security (OASDHI) benefits and government employee pensions, neither of which is designed to compensate for swings in business activity. These benefits, along with other transfer programs, have nevertheless helped to sustain personal income and consumer spending in each of the postwar recessions.

TABLE 7.—BEHAVIOR OF PERSONAL INCOME IN POSTWAR SLOWDOWNS

[From data in 1972 dollars, seasonally adjusted at annual rates]

Growth cycle slowdowns		Percent change, P to T, in personal income		Exhibit: percent increase, P to T, in transfer payments
Peak (P)	Trough (T)	Excluding transfers	Including transfers	
(1)	(2)	(3)	(4)	(5)
July 1948	October 1949	−2.5	−1.4	16.8
March 1951	July 1952 [1]	5.3	5.3	5.1
March 1953	August 1954	−1.0	−.1	16.4
February 1957	April 1958	−2.7	−1.1	24.8
February 1960	February 1961	.1	1.3	17.3
May 1962	October 1964 [1]	11.1	11.3	9.3
June 1966	October 1967 [1]	3.9	5.1	21.5
March 1969	November 1970	1.9	3.7	21.5
March 1973	March 1975	−3.9	−1.1	21.4

[1] Slowdown did not encompass a recession.

Source: Same as table 6. Growth cycle chronology from G. H. Moore, "The Current State of the International Business Cycle: a New Measurement System," in William Fellner (ed.), Contemporary Economic Problems: 1978 (Washington, D.C., American Enterprise Institute, 1978), pp. 74–75.

Table 7 shows the influence of transfer payments on personal income during slowdowns in economic growth between 1948 and 1975. A slowdown is the low-growth phase of a growth cycle and, in six of the nine slowdowns since 1948, it encompassed a business cycle recession. With one exception (trough of 1954) the slowdown ended in the same month as the recession; and in all six cases the slowdown began several months before the business cycle peak. In the other three cases the slowdown gave way to rapid growth without the interruption of a recession.

The essence of the growth cycle methodology, an adaptation of the method long used by the National Bureau to analyze business cycles, is the elimination of trend from cyclical phases. Residual deviations from the intra-cycle trend constitute the growth cycle, and the turning points shown in table 7 mark the chronology of completed growth cycles since 1948. The method is used at the Center for International Business Cycle Research, Rutgers University, to monitor economic development in industrial countries.

The growth cycle approach has been particularly useful in analyzing the sequence of changes preceding business cycle peaks. Recent analysis has all but confirmed the emergence of a growth cycle peak in late 1978. As this is being written (February 1980) the NBER has not, however, identified a peak for the cyclical expansion which began in March 1975.

During the slowdowns that began in 1948, 1953, 1957, and 1973 the behavior of personal income followed the same pattern as in the corresponding recessions: personal income including transfers fell by a smaller percentage than factor income. In four others—those with peaks in 1960, 1962, 1966, and 1969—factor income rose, but total personal income rose by a greater percentage.

Hence, in eight of the nine slowdowns that have been delineated by the National Bureau transfer payments behaved countercyclically—either moderating a decline, or reinforcing the growth, of factor income. The exception is the slowdown that began in March 1951,

during which a relatively small gain in transfer payments raised total personal income by the same percentage as factor income.

Growth cycle peaks are selected with reference to the behavior of many economic series. For a particular series the growth rate may decline during a slowdown, but there is no reason for the series itself to contract. Table 7 shows that factor income (column 3) continued to rise in the three slowdowns that did not encompass a recession, and in two that did—those with peaks in 1960 and 1969. The behavior of personal income, including and excluding transfers, in growth cycle slowdowns is generally consistent with its behavior in business cycle recessions.

Cyclical expansions and high-growth periods

Table 8 shows the effect of transfer payments on personal income during cyclical expansions (upper part) and the high-growth phase of growth cycles (lower part). The latter usually starts in the same month as the expansion, but ends several months before the business cycle peak. In half of the expansions transfer payments moderated, and in the other three, reinforced the rise of factor income.

Between October 1949 and July 1953 transfer payments fell—from $23 to $22 billion at an annual rate. As a result, the 25.3 percent rise in total personal income was 2 percentage points less than the rise in factor income. Between April 1958 and April 1960 transfer payments rose only 4.2 percent—less than half the percentage rise of factor income; hence, in this expansion also the rise of total personal income was less than that of factor income. The same pattern seems to be shaping up for the current expansion, which began March 1975 and is not yet over—November 1979 is the latest month for which data were available.

TABLE 8.—PERCENT CHANGE, TROUGH TO PEAK, OF PERSONAL INCOME AND TRANSFER PAYMENTS IN CYCLICAL EXPANSIONS AND HIGH-GROWTH PHASES

[From data in 1972 dollars, seasonally adjusted at annual rates]

Trough	Peak	Personal income		Transfer payments
		Excluding transfers	Including transfers	
(1)	(2)	(3)	(4)	(5)
Business cycle expansions:				
October 1949	July 1953	27.3	25.3	−4.3
May 1954	August 1957	16.1	16.8	28.4
April 1958	April 1960	9.7	9.2	4.2
February 1961	December 1969	50.1	51.6	68.7
November 1970	November 1973	15.8	16.9	25.9
March 1975	November 1979[1]	21.9	21.0	15.7
High-growth phases:				
October 1949	March 1951	13.6	11.9	−13.9
July 1952	March 1953	5.8	5.8	5.8
August 1954	February 1957	13.9	14.1	18.0
April 1958	February 1960	9.4	8.9	2.7
February 1961	May 1962	6.8	5.9	−.2
October 1964	June 1966	11.1	11.0	8.9
October 1967	March 1969	6.8	7.4	13.1
November 1970	March 1973	13.6	14.7	24.4
March 1975	December 1978	22.6	21.0	11.3

[1] Not a business cycle peak.

Source: Same as table 7. December 1978 not necessarily a growth cycle peak.

In the other three cyclical expansions (those beginning in 1954, 1961, and 1970) the percent increase of transfer payments exceeded the percentage rise of factor income. Hence, in these instances transfer payments reinforced the growth of factor income. The additional spending power probably added to the pressure on prices in late expansion, but the data available for the present study do not permit isolation of this effect.

Diversity also characterizes the behavior of personal income during the nine periods of rapid economic growth. In one case—that beginning July 1952—transfer payments rose at the same rate as factor income; hence, the rise in total personal income equalled the rise of factor income. In three other instances—those starting in 1954, 1967, and 1970—the percent rise in total income exceeded the percent rise of factor income, because of the relatively large increase in transfer payments.

In the other five periods, during which transfer payments either declined or rose less rapidly than factor income, total personal income increased by a (slightly) smaller percentage than factor income. In view of the dominant role of social security and related benefits, it is surprising to learn that in most periods of rapid economic growth, and in half of the business cycle expansions, transfer payments had even a slightly moderating effect on personal income.

V. Summary

Since 1929 the public sector of the United States has expanded greatly in size and influence. From a tenth of GNP in 1929, total government spending now represents about a third of expenditure for GNP, before adjustment for relative prices. Over the half century, when real GNP grew at an annual rate of 3.1 percent, real expenditure of government (at all levels) rose at an annual rate of 4.8 percent. As a result, real size of the public sector more than doubled—from 14.3 percent of GNP in 1929 to 31.2 percent in 1979 (calculations from data in 1972 dollars).

Within the public sector the most conspicuous change has been the dramatic growth of transfer payments. These payments now exceed the combined total of dividends and interest, and account for more than an eighth of total personal income. In all six postwar recessions they have moderated the decline of factor income and, in half of the subsequent business expansions, they have dampened the rise of factor income. The amplitude of cyclical swings in personal income has been significantly lessened by transfer programs.

Transfer outlays by government, a negligible fraction of GNP in 1929, have also been responsible for a major re-allocation of resources. Receivers of transfer income now claim nearly an eighth of real GNP—up from 8.1 percent a decade ago (1972 dollars). The share of real GNP represented by government purchases of goods and services has fallen by nearly a fifth since 1969. In fiscally distressed cities the smaller share of resources available for general services has meant cutbacks in police and fire protection, sanitation, education, and other local services.

Adjusted for inflation, total government expenditure grew at an annual rate of 5.2 percent between 1929 and 1969. Since 1969 the

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compound annual growth rate of real expenditure has been 2.6 percent, and real size of the public sector has been approximately stable. Pressures to limit or reverse the growth of government spending may accelerate the decline of public sector size which began about 1975.

Fundamental shifts in the composition of government expenditure have taken place since 1929. In real terms transfer outlays have more than quadrupled in importance—from 9 percent of the total to 38 percent—and real purchases have declined correspondingly from 91 to 62 percent of total spending. The decline in relative importance of government purchases has affected both types of purchases. Compensation of government employees, which accounted for 58 percent of total government expenditure in 1929, fell to 34 percent in 1978; and government purchases from the private sector—33 percent of the total in 1929—have fallen to 28 percent of the total. (All percentages from data in 1972 dollars).

Compared with the quantum leap in size of government, these internal shifts have received little attention. Theory and policy have focused on the *level* of government spending as the chief fiscal instrument for promoting stable economic growth. The effects of structural changes in the public sector deserve at least as much emphasis as its overall size.

Appendix A. Deflation of Government Expenditures

The only government spending deflators in the standard sources are those applicable to the resource-absorbing outlays of government, less than half the total in most industrial countries. Procedures used in this paper yield a deflator for *total* government spending which is a weighted average of the deflators for principal components. The method was worked out as part of an effort over several years to measure changes in real size of the public sector.

The simplest measure of public sector size is a ratio of government spending to GNP, unadjusted for relative prices. For the United States this measure is displayed in table A–2, for the total (column 1) and main components (columns 3 and 5). These percentages, derived from national income and product account (NIPA) data, served in section II as a point of departure for analyzing public sector growth in the U.S. since 1929.

For the cross-national survey (section III) the data base consisted of country submissions to the U.N. Statistical Office. Raw data for selected years since 1950 are displayed in table B–1 and nominal size of the public sector is shown in table B–5. The UN definitions of government expenditure promote uniform reporting and facilitate comparison between countries.

Corresponding measures of *real* size are shown in table B–6, for the cross-national study; and in columns 2, 4, and 6 of table A–2 for the U.S. public sector.

A deflator for total government spending in the U.S. (table A–1, column 1) was obtained by (*a*) adding the constant-dollar amounts of government purchases and transfer outlays, and (*b*) dividing the sum into the current-dollar total of government spending. The deflator for government purchases from firms (column 4) was obtained by (*a*) subtracting government product from total purchases, both in constant dollars, and (*b*) dividing the residual into the current-dollar amount of government purchases from firms. Neither deflator appears in the NIPA tables of implicit price deflators.

A parallel procedure was used to obtain the deflators for government spending in the cross-national survey (table B–3). The U.N. data, however, do not lend themselves to a division of government consumption into government product and purchases from firms.

The key decision in both studies involved the deflation of transfer outlays, which with minor exceptions become a source of personal income. For the U.S. the problem boiled down to a choice between the consumer price index (CPI), a Laspeyres index tied to 1967 weights, and the deflator for personal consumption

expenditures (PCE), a Paasche index which uses current year weights. Unlike the CPI, the PCE index is consistent with the other deflators for government expenditure and with the GNP deflator. The issue was resolved in favor of the PCE deflator. By the same logic, the UN's price index for private final consumption expenditure was chosen to deflate transfer outlays in the cross-national study.

In the new edition of their text, *Public Finance in Theory and Practice* (McGraw-Hill, 1980), R. A. and P. B. Musgrave present a table of "inflation-adjusted expenditure—GNP ratios" (p. 147). Transfer ratios are not shown separately; but the authors state, without benefit of explanation, that transfer outlays were deflated by the consumer price index.

Further discussion of methodological issues can be found in the writer's note. "Estimating Changes in Real Size of the Public Sector," *Economics Letters*, vol. 2. no. 3/1979, and in his article, "Public Sector Growth: a Real Perspective," *Public Finance/Finances Publiques*, vol. XXXIV, No. 3/1979. Preliminary data for 1979, released after the text of this paper was completed, are displayed in table A–3.

TABLE A–1.—DEFLATORS FOR TOTAL AND MAIN COMPONENTS OF GOVERNMENT EXPENDITURE: ALL GOVERNMENTS IN THE UNITED STATES

[Calendar years; 1972=100]

	Total Government expenditure	Government purchases			Transfer outlays
		Total	From employees	From firms	
	(1)	(2)	(3)	(4)	(5)
1929	22.9	21.6	16.6	30.8	35.8
1939	23.0	21.2	18.1	28.2	30.4
1949	44.4	39.9	34.3	55.6	55.7
1959	60.1	57.2	47.9	67.9	70.4
1969	82.9	81.0	76.8	85.6	88.5
1970	88.9	87.5	84.8	90.6	92.5
1971	94.6	93.7	92.1	95.7	96.6
1972	100.0	100.0	100.0	100.0	100.0
1973	106.3	106.7	107.3	106.0	105.5
1974	117.3	117.5	113.7	122.0	116.9
1975	128.0	128.9	123.7	135.2	126.4
1976	135.5	137.2	132.7	142.8	132.8
1977	144.9	147.6	142.9	153.2	140.4
1978	155.8	159.4	153.2	166.9	150.0
1979 estimate	169.7	173.7	165.0	184.2	163.3

Source: U.S. Department of Commerce, The National Income and Product Accounts of the United States, 1929–74; Survey of Current Business, July 1979 and February 1980.

TABLE A–2.—GOVERNMENT SPENDING AS PERCENTAGE OF GNP: ALL GOVERNMENTS IN THE UNITED STATES, SELECTED YEARS SINCE 1929

	Total		Purchases		Transfers	
	Current dollars	1972 dollars	Current dollars	1972 dollars	Current dollars	1972 dollars
	(1)	(2)	(3)	(4)	(5)	(6)
1929	10.0	14.3	8.5	13.0	1.5	1.3
1939	19.4	24.0	14.9	19.7	4.5	4.2
1949	23.0	27.2	14.9	19.6	8.1	7.6
1959	26.9	30.3	20.1	23.7	6.8	6.6
1969	30.5	31.9	22.2	23.8	8.3	8.1
1970	31.7	32.6	22.3	23.3	9.4	9.3
1971	32.0	32.5	22.0	22.5	10.0	10.0
1972	31.7	31.7	21.6	21.6	10.1	10.1
1973	31.0	30.8	20.7	20.4	10.3	10.4
1974	32.4	32.1	21.4	21.2	11.0	10.9
1975	34.9	34.6	22.1	21.8	12.7	12.8
1976	33.7	33.3	21.2	20.7	12.5	12.6
1977	32.9	32.2	20.9	20.0	12.0	12.2
1978	32.2	31.5	20.5	19.5	11.7	11.9
1979 (estimate)	32.0	31.2	20.1	19.2	11.9	12.1

Note: Current dollar percentages from calendar year data, NIA basis. See app. A for deflation procedures.

Source: U.S. Department of Commerce.

TABLE A-3.—GOVERNMENT SPENDING IN THE UNITED STATES IN CURRENT AND CONSTANT DOLLARS: ALL LEVELS, CALENDAR 1979

[Dollar amounts in billions]

	Amount (1)	Percent of total (2)	Percent of GNP (3)
Current dollars:			
Total	$757.8	100.0	32.0
Purchases	476.1	62.8	20.1
Of employee services	(248.4)	(32.8)	(10.5)
From private firms	(227.7)	(30.0)	(9.6)
Transfers	281.7	37.2	11.9
1972 dollars:			
Total	446.6	100.0	31.2
Purchases	274.1	61.4	19.2
Of employee services	(150.5)	(33.7)	(10.5)
From private firms	(123.6)	(27.7)	(8.6)
Transfers	172.5	38.6	12.1
			Index
Exhibit: Deflators (1972=100):			
Total			$169.7
Purchases			173.7
Of employee services			(165.0)
From private firms			(184.2)
Transfers			163.3

Source: U.S. Department of Commerce, NIPA tables, February 1980.

TABLE B-1.—GOVERNMENT EXPENDITURES IN NATIONAL CURRENCY AT CURRENT PRICES: 13 DEVELOPED COUNTRIES, 1950-77

	(1) Total (G)[1]	(2) Consumption (G_c)[2]	(3) Transfer (G_t)
Austria (billion schillings):			
1950	11.1	5.9	5.2
1960	41.7	20.7	21.0
1970	124.2	55.2	69.0
1975	249.1	113.3	135.8
1976	286.6	128.3	158.3
1977	315.6	137.5	178.1
Canada (billion Canadian dollars):			
1950	3.5	1.9	1.6
1960	9.8	5.3	4.5
1970	27.8	16.6	11.2
1975	61.5	33.2	28.3
1976	70.2	38.8	31.4
1977	78.7	43.3	35.4
Denmark (billion kroner):			
1950	3.9	2.2	1.7
1960	8.9	5.2	3.7
1970	40.4	23.9	16.5
1975	87.5	53.3	34.2
1976	99.7	59.8	39.9
1977		66.4	
Finland (billion markka):			
1950	1.1	.6	.5
1960	3.5	2.0	1.5
1970	12.0	6.9	5.1
1975	32.1	18.3	13.8
1976	38.0	21.8	16.2
1977	43.3	24.7	18.6
France (billion francs):			
1950	26.9	12.9	14.0
1960	91.1	38.9	52.2
1970	271.6	105.1	166.5
1975	584.2	209.2	375.0
1976	682.0	243.7	438.3
1977	781.9	278.2	503.7

See footnotes at end of table.

TABLE B–1.—GOVERNMENT EXPENDITURES IN NATIONAL CURRENCY AT CURRENT PRICES: 13 DEVELOPED COUNTRIES, 1950–77—Continued

	(1) Total (G)[1]	(2) Consumption (G_c)[2]	(3) Transfer (G_t)
Germany (billion deutsche marks):			
1950	27.7	14.0	13.7
1960	85.4	41.1	44.3
1970	214.5	108.1	106.4
1975	423.5	215.3	208.2
1976	460.4	227.4	233.0
1977	494.9	240.1	254.8
Greece (billion drachmas):			
1950	6.3	3.7	2.6
1960	18.3	12.3	6.0
1970	67.0	37.7	29.3
1975	179.6	102.0	77.6
1976	225.7	124.3	101.4
1977	279.9	153.8	126.1
Ireland (million Irish pounds):			
1950	90.2	53.7	36.5
1960	158.7	78.6	80.1
1970	555.8	239.6	315.7
1975	1,564.4	696.2	868.2
1976	1,945.9	855.0	1,090.9
1977		998.0	
Netherlands (billion guilder):			
1950	4.5	2.3	2.2
1960	11.8	5.7	6.1
1970	45.4	18.7	26.7
1975	105.9	38.4	67.5
1976	122.8	43.4	79.4
1977	136.6	47.8	88.8
Sweden (billion kronor):			
1950	7.1	4.1	3.0
1960	19.4	11.3	8.1
1970	63.3	36.5	36.8
1975	134.2	70.7	63.5
1976	161.5	83.2	78.3
1977	195.0	99.9	95.1
Switzerland (billion Swiss francs):			
1950	3.8	2.2	1.6
1960	6.4	3.7	2.7
1970	19.3	9.5	9.8
1975	40.5	17.7	22.8
1976	43.0	18.7	24.3
1977	44.2	18.8	25.4
United Kingdom (billion pounds):			
1950	3.9	2.1	1.8
1960	7.4	4.2	3.2
1970	16.9	9.0	7.9
1975	42.7	22.8	19.9
1976	50.6	26.6	24.0
1977	57.1	29.2	27.9
United States (billion U.S. dollars):			
1950	57.4	34.7	22.7
1960	130.9	91.2	39.7
1970	297.3	187.7	109.6
1975	515.5	291.0	224.5
1976	560.9	315.3	245.6
1977	612.4	346.5	265.9

[1] G=all current disbursements of general government.
[2] G_c=government final consumption expenditure.
[3] G_t=transfer outlays (all current disbursements other than government consumption).

TABLE B–2.—GOVERNMENT EXPENDITURES IN NATIONAL CURRENCY AT 1950 PRICES: 13 DEVELOPED COUNTRIES

	Total (G)[1] (1)	Consumption (G_c)[2] (2)	Transfer (G_t)[3] (3)
Austria (billion schillings):			
1950	11.1	5.9	5.2
1960	21.4	8.0	13.4
1970	42.5	11.1	31.4
1975	57.8	13.9	43.9
1976	62.5	14.4	48.1
1977	66.4	14.7	51.7

See footnotes at end of table.

TABLE B-2.—GOVERNMENT EXPENDITURES IN NATIONAL CURRENCY AT 1950 PRICES: 13 DEVELOPED COUNTRIES—Continued

	Total (G)[1]	Consumption (G_c)[2]	Transfer (G_t)[3]
	(1)	(2)	(3)
Canada (billion Canadian dollars):			
1950	3.5	1.9	1.6
1960	6.7	3.2	3.5
1970	12.9	6.0	6.9
1975	19.8	7.3	12.5
1976	20.3	7.3	13.0
1977	21.1	7.6	13.5
Denmark (billion kroner):			
1950	3.9	2.2	1.7
1960	6.1	3.3	2.8
1970	13.6	6.4	7.2
1975	18.1	8.1	10.0
1976	18.7	8.0	10.7
1977		8.5	
Finland (billion markka):			
1950	1.1	.6	.5
1960	1.8	.9	.9
1970	3.5	1.6	1.9
1975	5.1	2.1	3.0
1976	5.4	2.2	3.2
1977	5.5	2.3	3.2
France (billion francs):			
1950	26.9	12.9	14.0
1960	46.4	17.5	28.9
1970	87.7	25.9	61.8
1975	122.7	30.4	92.3
1976	129.9	31.4	98.5
1977	136.8	32.6	104.2
Germany (billion deutsche marks):			
1950	27.7	14.0	13.7
1960	62.2	26.0	36.2
1970	106.2	39.9	66.3
1975	148.9	52.8	96.1
1976	157.1	54.1	103.1
1977	163.0	54.6	108.4
Greece (billion drachmas):			
1950	6.3	3.7	2.6
1960	8.1	4.8	3.3
1970	21.7	8.6	13.1
1975	32.9	12.8	20.1
1976	36.5	13.4	23.1
1977	40.0	14.3	25.7
Ireland (million Irish pounds):			
1950	90.2	53.7	36.5
1960	109.9	53.6	56.3
1970	239.8	89.8	150.0
1975	345.0	126.1	218.9
1976	366.9	134.3	232.6
1977		136.5	
Netherlands (billion guilder):			
1950	4.5	2.3	2.2
1960	7.9	3.3	4.6
1970	18.0	4.6	13.4
1975	27.1	5.2	21.9
1976	29.1	5.5	23.6
1977	29.9	5.6	24.3
Sweden (billion kronor):			
1950	7.1	4.1	3.0
1960	11.6	6.3	5.3
1970	22.5	10.6	11.9
1975	31.2	12.1	19.1
1976	34.0	12.7	21.3
1977	36.3	13.0	23.3
Switzerland (billion Swiss francs):			
1950	3.8	2.2	1.6
1960	5.1	2.8	2.3
1970	10.1	4.2	5.9
1975	14.2	4.8	9.4
1976	14.7	4.9	9.8
1977	15.0	4.9	10.1
United Kingdom (billion pounds):			
1950	3.9	2.1	1.8
1960	4.7	2.4	2.3
1970	6.7	3.0	3.7
1975	8.8	3.6	5.2
1976	9.1	3.7	5.4
1977	9.2	3.7	5.5

See footnotes at end of table.

TABLE B-2.—GOVERNMENT EXPENDITURES IN NATIONAL CURRENCY AT 1950 PRICES: 13 DEVELOPED COUNTRIES—Continued

	Total (G)[1]	Consumption (G_c)[2]	Transfer (G_t)[3]
	(1)	(2)	(3)
United States (billion U.S. dollars):			
1950	57.4	34.7	22.7
1960	94.4	62.5	31.9
1970	166.0	96.7	69.3
1975	196.9	91.5	105.4
1976	200.9	93.1	107.8
1977	205.9	95.7	110.2

[1] G=all current disbursements of general government.
[2] G_c=government final consumption expenditure.
[3] G_t=transfer outlays (all current disbursements other than government consumption).

TABLE B-3.—DEFLATORS FOR GOVERNMENT EXPENDITURE

[1950=100]

	Total (G)[1]	Consumption (G_c)[2]	Transfer (G_t)[3]
	(1)	(2)	(3)
Austria:			
1960	194.0	259.4	157.1
1970	292.2	497.8	220.0
1975	431.0	817.5	309.0
1976	458.6	892.7	329.0
1977	475.3	938.5	344.4
Canada:			
1960	146.3	163.1	126.9
1970	215.5	278.0	162.3
1975	310.6	457.9	226.4
1976	345.8	528.7	242.3
1977	373.0	572.8	261.3
Denmark:			
1960	145.9	157.3	133.3
1970	297.1	375.0	227.7
1975	483.4	655.0	340.6
1976	533.2	746.4	371.9
1977		781.0	430.9
Finland:			
1960	194.4	212.2	176.2
1970	342.9	428.7	266.1
1975	629.4	851.3	453.6
1976	703.7	973.6	507.1
1977	787.3	1,060.7	585.1
France:			
1960	196.0	888.6	180.6
1970	309.7	406.1	269.6
1975	476.1	688.4	406.5
1976	525.0	774.9	444.8
1977	571.6	852.4	483.6
Germany:			
1960	137.3	158.0	122.3
1970	202.0	271.1	160.6
1975	284.4	407.9	216.7
1976	293.1	420.5	226.3
1977	303.6	439.6	235.0
Greece:			
1960	221.7	254.6	179.6
1970	308.8	439.0	223.8
1975	545.9	797.7	385.8
1976	618.4	925.9	438.4
1977	699.8	1,075.6	489.9
Ireland:			
1960	144.4	146.7	142.4
1970	231.8	266.7	210.5
1975	453.4	552.0	396.6
1976	530.4	636.8	469.0
1977		731.2	534.1
Netherlands:			
1960	149.4	172.1	132.9
1970	252.2	404.1	199.3
1975	390.8	732.6	308.0
1976	422.0	793.6	336.3
1977	456.9	853.0	364.9

See footnotes at end of table.

TABLE B-3.—DEFLATORS FOR GOVERNMENT EXPENDITURE—Continued

[1950=100]

	Total (G)[1] (1)	Consumption (G_c)[2] (2)	Transfer (G_t)[3] (3)
Sweden:			
1960	167.2	180.2	153.6
1970	281.3	343.3	225.3
1975	430.1	582.0	333.2
1976	475.0	656.2	367.7
1977	537.2	768.8	407.9
Switzerland:			
1960	125.5	131.6	118.0
1970	191.1	226.1	164.9
1975	285.2	368.1	242.9
1976	292.5	378.3	248.3
1977	294.7	380.8	251.1
United Kingdom:			
1960	157.4	172.0	141.5
1970	252.2	298.8	211.4
1975	485.2	636.9	383.0
1976	556.0	722.3	445.0
1977	620.7	794.2	510.1
United States:			
1960	138.7	146.0	124.4
1970	179.1	216.6	168.1
1975	261.8	318.0	212.9
1976	279.2	338.5	227.9
1977	297.4	361.9	241.2
Median:			
1960	149.4	172.0	141.5
1970	252.2	343.3	211.4
1975	431.0	636.9	333.2
1976	475.0	722.3	367.7
1977	475.3	781.0	407.9

[1] G=all current disbursements of general government.
[2] G_c=government final consumption expenditure.
[3] G_t=transfer outlays (all current disbursements other than government consumption).

TABLE B-4.—GROSS DOMESTIC PRODUCT IN NATIONAL CURRENCY AT CURRENT AND 1950 PRICES

	At current prices (1)	At 1950 prices (2)	Exhibit: Index of GDP volume (3)	Exhibit: GDP deflator (4)
Austria (billion schillings):				
1950	52.3	52.3	100.0	100.0
1960	163.2	91.7	175.3	178.0
1970	375.7	147.7	282.4	254.3
1975	656.3	178.9	342.1	366.9
1976	727.6	190.0	363.3	382.9
1977	792.5	197.0	376.7	402.2
Canada (billion Canadian dollars):				
1950	18.4	18.4	100.0	100.0
1960	38.1	28.1	152.7	135.8
1970	86.5	47.3	257.1	183.0
1975	166.8	60.3	327.7	276.8
1976	193.4	63.7	246.2	303.4
1977	213.0	65.6	356.5	324.9
Denmark (billion kroner):				
1950	21.6	21.6	100.0	100.0
1960	41.1	29.8	138.0	138.0
1970	119.1	48.2	223.1	247.1
1975	215.7	55.1	255.1	391.7
1976	249.0	58.6	271.3	425.0
1977	276.2	58.9	272.7	469.0
Finland (billion markka):				
1950	5.4	5.4	100.0	100.0
1960	15.8	8.8	163.0	180.1
1970	43.6	14.6	270.4	298.1
1975	98.0	17.9	331.5	548.8
1976	110.1	18.0	333.3	611.2
1977	121.6	18.1	335.2	672.6

TABLE B–4.—GROSS DOMESTIC PRODUCT IN NATIONAL CURRENCY AT CURRENT AND 1950 PRICES—Continued

	At current prices	At 1950 prices	Exhibit: Index of GDP volume	Exhibit: GDP deflator
	(1)	(2)	(3)	(4)
France (billion francs):				
1950	100.7	100.7	100.0	100.0
1960	301.4	160.6	159.5	187.7
1970	782.6	270.9	269.0	288.9
1975	1,450.9	329.5	327.2	440.3
1976	1,669.3	345.3	342.9	483.5
1977	1,870.3	355.7	353.2	525.8
Germany (billion deutsche marks):				
1950	97.8	97.8	100.0	100.0
1960	302.6	225.1	230.2	134.4
1970	678.8	358.8	366.9	189.2
1975	1,031.8	393.1	401.9	262.5
1976	1,125.6	414.7	424.0	271.4
1977	1,198.5	425.0	434.6	282.0
Greece (billion drachmas):				
1950	32.1	32.1	100.0	100.0
1960	105.2	56.9	177.3	184.9
1960	298.9	118.8	370.1	251.7
1975	672.2	151.8	472.9	442.7
1976	823.4	162.9	507.5	505.6
1977	965.6	167.0	520.2	578.3
Ireland (million Irish pounds):				
1950	391.9	391.9	110.0	100.0
1960	631.3	435.7	111.2	144.9
1970	1,620.2	680.5	173.6	238.1
1975	3,663.6	803.9	205.1	455.7
1976	4,492.0	832.6	212.5	539.5
1977	5,380.0	878.2	224.1	612.6
Netherlands (billion guilder):				
1950	18.8	18.8	100.0	100.0
1960	42.4	29.7	158.2	143.0
1970	114.6	49.5	263.3	231.4
1975	209.6	58.7	312.2	356.8
1976	238.0	61.6	327.7	386.2
1977	261.1	61.9	329.3	421.6
Sweden (billion kroner):				
1950	29.9	29.9	100.0	100.0
1960	72.2	44.9	150.2	160.7
1970	170.8	69.5	232.4	245.8
1975	287.4	76.5	255.9	375.9
1976	322.6	77.4	258.9	416.9
1977	350.8	75.5	252.5	464.9
Switzerland (billion Swiss francs):				
1950	19.7	19.7	100.0	100.0
1960	36.6	30.2	153.3	121.1
1970	90.7	48.2	244.7	188.1
1975	139.9	49.9	253.3	280.2
1976	142.0	49.3	250.3	287.8
1977	145.6	50.4	255.8	288.8
United Kingdom (billion pounds):				
1950	12.9	12.9	100.0	100.0
1960	25.5	17.0	131.8	149.9
1970	50.8	22.5	174.4	226.1
1975	102.7	24.5	189.9	419.3
1976	122.3	25.4	196.9	481.8
1977	140.1	25.7	199.2	545.9
United States (billion U.S. dollars):				
1950	287.1	287.1	100.0	100.0
1960	509.0	394.9	137.5	128.9
1970	981.2	576.8	200.9	170.1
1975	1,526.5	652.6	227.3	233.9
1976	1,695.0	682.6	237.8	248.3
1977	1,878.0	714.6	248.9	262.8
Median:				
1950			100.0	100.0
1960			153.3	144.9
1970			257.1	245.8
1975			312.2	356.8
1976			327.7	
1977			329.3	469.0

TABLE B-5.—GOVERNMENT SPENDING AS PERCENTAGE OF GROSS DOMESTIC PRODUCT

[Percentages from data in current prices]

	1950	1960	1970	1975	1976	1977
Austria:						
G/Y	21.2	25.6	33.1	38.0	39.4	39.8
G_c/Y	11.3	12.7	14.6	17.3	17.6	17.4
G_t/Y	9.9	12.9	18.5	20.7	21.8	22.4
Canada:						
G/Y	19.0	25.7	32.2	36.9	36.3	36.9
G_c/Y	10.3	13.9	19.2	19.9	20.1	20.3
G_t/Y	8.7	11.8	13.0	17.0	16.2	16.6
Denmark:						
G/Y	18.1	21.7	34.6	40.6	40.0	----
G_c/Y	10.2	12.7	19.8	24.7	24.0	24.0
G_t/Y	7.9	9.0	14.8	15.9	16.0	----
Finland:						
G/Y	20.4	22.2	27.6	32.8	34.5	35.6
G_c/Y	11.1	12.7	15.9	18.7	19.8	20.3
G_t/Y	9.3	9.5	11.7	14.1	14.7	15.3
France:						
G/Y	26.7	30.2	34.7	40.3	40.9	41.8
G_c/Y	12.8	12.9	13.4	14.5	14.6	14.9
G_t/Y	13.9	17.3	21.3	25.8	26.3	26.9
Germany:						
G/Y	28.3	28.2	31.6	41.0	40.9	41.3
G_c/Y	14.3	13.6	15.9	20.9	20.2	20.0
G_t/Y	14.0	14.6	15.7	20.2	20.7	21.3
Greece:						
G/Y	19.6	17.8	22.4	26.7	27.4	29.0
G_c/Y	11.5	11.2	12.6	15.2	14.1	15.9
G_t/Y	8.1	6.6	9.8	11.5	12.3	13.1
Ireland:						
G/Y	23.0	25.0	34.3	42.7	43.3	----
G_c/Y	13.7	12.4	14.8	19.0	19.0	18.6
G_t/Y	9.3	12.6	19.5	23.7	24.3	----
Netherlands:						
G/Y	23.9	27.8	39.6	50.5	51.6	52.3
G_c/Y	12.2	13.4	16.3	18.3	18.2	18.3
G_t/Y	11.7	14.4	23.3	32.2	33.4	34.0
Sweden:						
G/Y	23.7	26.9	37.1	46.7	50.1	55.6
G_c/Y	13.7	15.8	21.4	24.6	25.8	28.5
G_t/Y	10.0	11.1	15.7	22.1	24.3	27.1
Switzerland:						
G/Y	19.3	17.5	21.3	28.9	30.3	30.4
G_c/Y	11.2	10.1	10.5	12.7	13.2	12.9
G_t/Y	8.1	7.4	10.8	16.2	17.1	17.5
United Kingdom:						
G/Y	30.2	29.0	33.3	41.6	41.4	40.8
G_c/Y	16.3	16.5	17.7	22.2	21.7	20.8
G_t/Y	13.9	12.5	15.6	19.4	19.6	19.9
United States:						
G/Y	20.0	25.7	30.3	33.8	33.1	32.6
G_c/Y	12.1	17.9	19.1	19.1	18.6	18.5
G_t/Y	7.9	7.8	11.2	14.7	14.5	14.2

LEGEND

Y=gross domestic product.
G=all current disbursements of general government.
G_c=government final consumption expenditure.
G_t=transfer outlays (all current disbursements other than government consumption).

TABLE B-6.—GOVERNMENT SPENDING AS PERCENTAGE OF GROSS DOMESTIC PRODUCT

[Percentages from data in constant prices]

	1950	1960	1970	1975	1976	1977
Austria:						
G/Y	21.2	23.3	28.7	32.4	32.9	33.7
G_c/Y	11.3	8.7	7.5	7.8	7.6	7.5
G_t/Y	9.3	14.6	21.3	24.6	25.3	26.2
Canada:						
G/Y	19.0	23.8	27.3	32.8	31.9	32.3
G_c/Y	10.3	11.4	12.7	12.1	11.5	11.6
G_t/Y	8.7	12.4	14.6	20.7	20.4	20.6
Denmark:						
G/Y	18.1	20.5	29.2	32.8	31.9	NA
G_c/Y	10.2	11.1	13.1	14.7	13.7	14.4
G_t/Y	7.9	9.4	16.1	18.1	18.2	NA
Finland:						
G/Y	20.4	20.5	24.0	28.5	30.0	30.4
G_c/Y	11.1	10.2	11.0	11.7	12.2	12.7
G_t/Y	9.3	10.2	13.0	16.8	17.8	17.7
France:						
G/Y	26.7	28.9	32.3	37.2	37.6	38.5
G_c/Y	12.8	10.9	9.6	9.2	9.1	9.2
G_t/Y	13.9	18.0	22.8	28.0	28.5	29.3
Germany:						
G/Y	28.3	27.6	29.6	37.9	37.9	38.3
G_c/Y	14.3	11.6	11.1	13.4	13.0	12.8
G_t/Y	14.0	16.1	18.5	24.4	24.8	25.5
Greece:						
G/Y	19.6	14.2	18.3	21.7	22.4	24.0
G_c/Y	11.5	8.4	7.2	8.4	8.2	8.6
G_t/Y	8.1	5.8	11.0	13.2	14.2	15.4
Ireland:						
G/Y	23.0	25.2	35.2	42.9	44.1	NA
G_c/Y	13.7	12.3	13.2	15.7	16.1	15.5
G_t/Y	9.3	12.9	22.0	27.2	27.9	NA
Netherlands:						
G/Y	23.9	26.6	36.4	46.2	47.2	48.3
G_c/Y	12.2	11.7	9.3	8.6	8.9	9.0
G_t/Y	11.7	14.9	27.1	37.3	38.3	39.3
Sweden:						
G/Y	23.7	25.8	32.4	40.8	43.9	48.1
G_c/Y	13.7	14.1	15.3	15.8	16.4	17.2
G_t/Y	10.0	11.8	17.1	25.0	27.5	30.9
Switzerland:						
G/Y	19.3	16.9	21.0	28.4	29.8	29.8
G_c/Y	11.2	9.3	8.7	9.6	9.9	9.7
G_t/Y	8.1	7.6	12.2	18.8	19.9	20.0
United Kingdom:						
G/Y	30.2	27.8	29.8	35.9	35.8	35.8
G_c/Y	16.3	14.2	13.3	14.7	14.6	14.4
G_t/Y	13.9	13.6	16.4	21.2	21.3	21.4
United States:						
G/Y	20.0	23.9	28.8	30.2	29.4	28.8
G_c/Y	12.1	15.8	16.8	14.0	13.6	13.4
G_t/Y	7.9	8.1	12.0	16.2	15.8	15.4
Median:						
G/Y	21.2	23.9	29.2	32.8	32.9	33.7
G_c/Y	12.1	11.4	11.1	12.1	12.2	12.7
G_t/Y	9.3	12.4	16.4	21.2	21.3	20.6

LEGEND

Y=gross domestic product.
G=all current disbursements of general government.
G_e=government final consumption expenditure.
G_t=transfer outlays (all current disbursements other than government consumption).

THE SENSITIVITY OF THE STATE-LOCAL TAX SYSTEM TO ECONOMIC ACTIVITY: EXPERIENCE FROM THE GREAT DEPRESSION TO THE 1970S

By Dennis Zimmerman

I. Introduction

The relationship between the cyclical behavior of the national economy and the cyclical behavior of the State-local sector is important from both the Federal and the State-local perspective. The Federal responsibility for stabilization policy is most effectively exercised when fiscal and monetary policymakers anticipate the expected response of the State-local sector. The State-local sector's ability to meet its responsibility for providing many public goods and services essential to the welfare of the population is affected by the sensitivity of its tax receipts and expenditure requirements to cyclical changes in the economy. The latter problem is the focus of this study, which attempts to determine whether the State-local tax system has become, subsequent to the Great Depression, more or less sensitive to the cyclical behavior of the national economy.[1]

The State-local sector's sensitivity to the business cycle is very important to those charged with managing the sector's public service responsibilities. In times of recession, tax receipts can be expected to decline and some transfer expenditure responsibilities to increase. The more sensitive is the sector, the greater is the shortfall of receipts, and the greater is the pressure to enact legislative and administrative decisions to raise revenues and reduce expenditure responsibilities. In times of economic growth, tax receipts can be expected to increase and some transfer expenditure responsibilities to decrease. The more sensitive is the sector, the greater is the surplus of receipts, and the smaller is the pressure to enact legislative and administrative decisions to cope with the increased demand for public goods and services.

From the perspective of controlling the size and growth of the State-local sector, a low degree of sensitivity would be desirable during periods of growth but undesirable during periods of recession. The important point to be made is that the sector's automatic response does matter to policymakers. In a sense, the sector's automatic response to the economy plays a major role in setting the bounds for the legislative and administrative decisions to be enacted or avoided.

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[1] A substantial amount of effort has been devoted to the stabilization aspects of State-local behavior, beginning with: Alvin Hansen and Harvey Perloff. State and Local Finance in the National Economy. W. W. Norton & Co., New York, 1944, which promulgated the "perversity hypothesis"—that, during a recession, State-local governments reduce expenditures, increase tax rates, or both; and during an expansion, they increase expenditures, reduce tax rates, or both. This literature is extensively reviewed in Advisory Commission on Intergovernmental Relations. State-Local Finances in Recession and Inflation: An Economic Analysis, Report A–70, May 1979, pp. 39–56.

Observable budget data measure the effect of both automatic and discretionary changes in revenue sources and expenditures. Automatic changes in the budget are determined by the structure of the sector—its revenue sources, expenditure responsibilities, and institutional characteristics. This structure is previously set by law. At any point in time it predetermines the sector's tax and expenditure response to changes in such economic measures as personal income, employment, and industrial output. Discretionary changes in the current budget are determined by legislative and administrative decisions which alter both the structure of the sector and its future automatic response. For tax revenues, this can include changes in tax rates, definition of the tax base, and the introduction of new revenue sources or the elimination of old ones.

The problem is to separate the two components of the observed change in tax revenue. Chapter II discusses the merits of the traditional approach to measuring change which appears in the literature—income elasticity measures. Practical difficulties suggest the analysis eschew an attempt to assess the changing sensitivity of the State-local tax system with elasticity estimates for each tax source at different points in time. Instead, several factors that contribute to the sector's sensitivity are tracked over time. Chapter II tracks from 1936 to 1978 the contribution of four major State-local tax sources—individual and corporate income, sales, and property—to total tax receipts. Existing income elasticity estimates for these four major tax sources are then presented, and a weighted elasticity estimate is calculated for years 1936 through 1978 by assuming the elasticity of each tax source has not varied over the time period. Chapter IV then tracks some of the structural characteristics of three State-local tax sources (individual income, sales, and property) which may have changed their sensitivity to economic activity over the time period—the comprehensiveness of the tax base for the two flat-rate taxes (sales and property), and the rate and income class structures for the progressive income tax. Chapter V discusses the policy implications of these results, and the possible influence which may be exerted by several topics not explicitly considered in this paper—the growth of Federal grants-in-aid and its influence on the sensitivity of the State-local revenue system, inflation, the changed fiscal climate represented by Proposition 13, and a public choice perspective suggesting the possible predictable nature of discretionary changes.

This analysis indicates that the sensitivity of the State-local tax system has increased largely due to a change in the composition of tax sources toward the more income-sensitive personal income, corporate income, and sales taxes and away from the less income-sensitive property tax. In addition, structural changes in the sales tax base and in the rate and income brackets of the individual income tax may have increased the built-in flexibility of these taxes, while structural changes in the property tax base may have reduced its built-in flexibility. This increased sensitivity to changes in economic activity exhibited by the State-local tax system has the effect of placing a greater burden on legislative and administrative decisions to maintain public services during a recession, while reducing the necessity of making such decisions in order to expand the public sector during periods of growth.

II. Income Elasticity and Adjusted Tax Series

Most work on the State-local sector's cyclical sensitivity has been directed toward the revenue side of the budget, and more specifically toward tax receipts. Early efforts at estimating the sensitivity of State-local tax receipts to income changes related observed percentage changes in tax revenues to observed percentage changes in income. The suitability of these income elasticity estimates as predictors of cyclical response has been questioned, with many observers feeling these estimates may better reflect responsiveness to the longer run phenomenon of economic growth.[2] It seems clear that the problem is not with the concept of income elasticity, but rather with the estimation procedures, lag specification, and data problems that result from trying to measure changes over a short time period. Though these problems are not to be minimized, no suitable substitute has been devised. This paper utilizes the income elasticity framework, supplemented with additional information on various structural characteristics of each major State-local tax source.

While using observed changes in revenues and incomes is a convenient method for estimating revenue sensitivity, it ignores the fact that revenues are a function of both the tax base and the tax rate. Furthermore, the tax rate and the tax base are set by legislative and administrative action. It is therefore probable that some portion of the observed revenue change is not an automatic response to income change but rather is a discretionary response attributable to legislative and administrative decisions affecting the tax base and tax rate.

The approach commonly utilized to eliminate revenue changes attributable to legislative and administrative factors is to estimate an adjusted tax revenue series by assuming a constant tax rate and tax base from some base period.[3] The effect of such adjustments is usually to lower estimates of income sensitivity because tax rates and tax bases have increased over time.[4]

For our purpose, this approach has three deficiencies. First, the usual adjustment procedure is to assume that a one percent change in tax rate or tax base generates a one percent change in revenues. The estimated revenue change is then deducted from observed revenues if a consistent series is being constructed from a base period at the earliest date of the time period. The estimated revenue change is added to observed revenues if a consistent series is being constructed from a base period at the most recent date of the time period. In either case, the accuracy of the adjusted tax-revenue series is dependent upon the unitary elasticity assumption concerning revenue sensitivity to rate

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[2] This is discussed in several sources: Robert E. Berney and Bernard H. Frerichs. Income Elasticities for State Tax Revenues: Techniques of Estimation and Their Usefulness for Forecasting. Public Finance Quarterly, October 1973: 409–425; Neil M. Singer. Estimating State Income-Tax Revenues: A New Approach. Review of Economics and Statistics, November 1970: 427–433; and ACIR. Report A–70, May 1979.

[3] For example, see H. M. Groves and C. H. Kahn. The Stability of State and Local Tax Yields. American Economic Review, March 1952: 87–102; and Berney and Frerichs. Public Finance Quarterly, October 1973: 409–425.

[4] An alternative approach is to use observed revenues but account for rate and base changes with dummy variables or the construction of rate and base indexes. This approach is very expensive in terms of statistical precision when many rate and base changes have occurred during the estimating period (as is true for the 50 States and thousands of local jurisdictions). See Neil M. Singer. The Use of Dummy Variables in Estimating the Income Elasticity of State Income Tax Revenues. National Tax Journal, June 1968: 200–204.

and base change. Some evidence exists to suggest that one-for-one may not be an accurate estimate of this revenue sensitivity.[5]

The second problem with this approach is that it really does not measure what is needed to assess the changing income sensitivity of the State-local sector. If the revenue series is constructed from a base period at the earliest date of the time period, the result is an estimate of what the sector's automatic response would be today if the tax rates and tax bases prevailing at the time of the base period were still in existence. If the revenue series is constructed using today as the base period, the result is an estimate of what the sector's automatic response would have been previously if tax rates and tax bases prevailing today had been in existence over the entire time period. Having an estimate at both ends of the time period would provide some idea of the changing income sensitivity of the structure, if the assumptions concerning revenue sensitivity to rate and base changes were correct.[6]

This raises the third deficiency of the adjusted tax revenue approach. The State-local sector encompasses 50 State governments and thousands of local governments. Though room always exists for some simplifying assumptions in any empirical endeavor, in theory the adjusted tax revenue approach requires the adjustment of revenues for many thousands of legislative and administrative decisions which altered tax rates and tax bases from the Great Depression through the 1970s. Such an effort is simply not practical.

A compromise solution is adopted here. Adjusted tax revenue estimates are accepted as indicators of the relative magnitude of income sensitivity for four major State-local revenue sources. The contribution of these alternative tax sources to total tax receipts is tracked through time. An increase in the relative utilization of the more (less) income-sensitive tax source is viewed as evidence of a more (less) income-sensitive tax structure.

In addition, some effort is made to assess whether the structure of any given tax source has become more income-sensitive. Has its base been broadened so that any change in national economic activity will necessarily affect it? Have the rate and income bracket structures become more progressive? Have administrative improvements accelerated the response of the base to economic change?

III. Indicators of State-Local Tax Sensitivity—Composition

This section first presents some information on existing estimates of the relative sensitivity of four major State-local tax sources—property, general sales, personal income, and corporate net income. These four sources have accounted for a remarkably constant 87 to 90 percent of total State-local tax revenue from the 1930s through the 1970s. These

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[5] The assumption is only true in special cases. For example, only when the demand for taxable goods is perfectly inelastic with respect to price will a percentage change in the sales tax rate generate an equal percentage change in sales tax revenues. Also, if the yields of two tax sources are interdependent, such as sales and income, an increased sales tax yield which is deductible from taxable income would cause income tax yields to fall, even with no change in income tax rates. See John B. Legler and Perry Shapiro. The Responsiveness of State Tax Revenue to Economic Growth. National Tax Journal, March 1968: 41–56; and Berney and Frerichs. Public Finance Quarterly, October 1973: 409–425.

[6] Two representative efforts to create adjusted tax revenues series are: Robert W. Rafuse. Cyclical Behavior of State-Local Finances. In R. Musgrave, ed. Essays in Fiscal Federalism. The Brookings Institution, 1965. pp. 63–121; and the continuing series of estimates by the Advisory Commission on Intergovernmental Relations, which last appeared in Significant Features of Fiscal Federalism, 1976–77, vol. II, Report No. M–110.

estimates of relative sensitivity are then combined with estimates of the four tax sources' relative shares to provide one indicator of the changing sensitivity of State-local revenues to economic activity.

The sensitivity of the revenue source to the national economy is measured by the concept of income elasticity. An elasticity value of 1.8 for the personal income tax means that a one percent income increase generates a 1.8 percent revenue increase. The higher the elasticity, the more sensitive are tax revenues to changes in economic activity. A fairly broad range of estimates is available for every tax source. The range of estimated income elasticities available is presented in Table 1. These differences are attributable to the variety of estimating methods used, the time periods covered by the estimates, and the differing geographic coverage.

TABLE 1.—RANGE OF ESTIMATED INCOME ELASTICITIES OF MAJOR STATE AND LOCAL TAXES

Investigator (year)	Area	Elasticity
Personal income tax:		
Harris (1966)	Arkansas	2.40
ACIR (1971)	Kentucky	1.94
ACIR (1971)	New York	1.80
Harris (1966)	United States	1.80
Groves and Kahn (1952)	United States	1.75
Netzer (1961)	United States	1.70
ACIR (1971)	Hawaii	1.47
Planning Division (1971)	Arizona	1.30
Harris (1966)	New Mexico	1.30
General Sales tax:		
Davies (1962)	Arkansas	1.27
Rafuse (1965)	United States	1.27
ACIR (1971)	Maryland	1.08
Peck (1969)	Indiana	1.04
Netzer (1961)	United States	1.00
Harris (1966)	United States	1.00
Davies (1962)	United States	1.00
ACIR (1971)	Kentucky	.92
Planning Division (1971)	Arizona	.87
Davies (1962)	Tennessee	.80
General property tax:		
ACIR (1971)	New York City, N.Y	1.41
Mushkin (1965)	United States	1.30
ACIR (1971)	Baltimore City, Md	1.25
Netzer (1961)	United States	1.00
Bridges (1964)	United States	.98
ACIR (1971)	Honolulu County, Hawaii	.89
ACIR (1971)	Multnomah County, Oregon	.84
McLoone (1961)	United States	.80
Rafuse (1965)	United States	.80
ACIR (1971)	Jefferson County, Ky	.50
ACIR (1971)	Newark, N.J	.38
ACIR (1971)	Albany City, N.Y	.34
Corporate income tax:		
Peck (1969)	Indiana	1.44
ACIR (1971)	Kentucky	1.19
Harris (1966)	United States	1.16
ACIR (1971)	New York	1.13
Netzer (1961)	United States	1.10
ACIR (1971)	Hawaii	.98
Planning Division (1971)	Arizona	.97
ACIR (1971)	Oregon	.93
ACIR (1971)	New Jersey	.72

Sources: These estimates appear in Advisory Commission on Intergovernmental Relations, State-Local Finance in Recession and Inflation: An Economic Analysis, report A–70, table 11, p. 24. The original sources are: Advisory Commission on Intergovernmental Relations, State-Local Revenue Systems and Educational Finance, unpublished report to the President's Commission on School Finance, Nov. 12, 1971; Arizona, Department of Economic Planning and Development, Planning Division, Arizona Intergovernmental Structure: A Financial View to 1980, Pheonix, 1971; Benjamin Bridges, Jr., The Elasticity of the Property Tax Base: Some Cross Section Estimates, Land Economics, 40: 449–451, November 1964; David G. Davies, The Sensitivity of Consumption Taxes to Fluctuations in Income, National Tax Journal, 15: 281–290, September 1962; Harold M. Groves, and C. Harry Kahn, The Stability of State and Local Tax Yields, American Economic Review, 42: 87–102, March 1952; Robert Harris, Income and Sales Taxes: The 1970 Outlook for States and Localities, Chicago, Council of State Governments, 1966; Eugene P. McLoone, Effects of Tax Elasticities on the Financial Support of Education, unpublished Ph.D. dissertation, College of Education, University of Illinois, 1961; Selma Mushkin, Property Taxes: The 1970 Outlook, Chicago, Council of State Governments, 1965; Dick Netzer, Financial Needs and Resources Over the Next Decade, in Public Finances: Needs, Sources, and Utilization, Princeton, Princeton University Press, 1961; John E. Peck, Financing State Expenditures in a Prospering Economy, Indiana Business Review, 44: 7–15, July 1959; Robert W. Rafuse, Cyclical Behavior of State-Local Finances, in Richard A. Musgrave (ed.), Essays in Fiscal Federalism, Washington, Brookings Institution, 1965.

Table 1 illustrates two points of particular interest. First, the personal income tax is by far the most sensitive to changes in the economy. Second, the estimates for the entire State-local sector are fairly consistent. Netzer provides the only estimates that cover the four taxes being discussed here—1.7 for the personal income tax, 1.1 for the corporate income tax, and 1.0 for both general sales and general property taxes. These estimates are quite consistent with the three estimates provided by Harris—1.8 for the personal income tax, 1.16 for the corporate income tax, and 1.0 for the general sales tax. Rafuse's estimates are considerably higher for the general sales tax (1.27) but considerably lower for the general property tax (0.80). Because of their comprehensiveness, Netzer's estimates are used to illustrate the influence which a change in composition of tax sources can have upon the State-local sector's sensitivity to changes in economic activity.

Table 2 presents data on the composition of State-local tax revenues for selected years from 1936 to 1978. The fiscal years chosen are the expansion years closest to the peaks of business cycles (NBER reference cycles). Several points are noteworthy. First, these four major tax sources taken together have represented a relatively constant proportion of total tax revenues for 42 years. Second, the relative importance of the individual taxes has changed markedly.

TABLE 2.—COMPOSITION OF STATE-LOCAL TAX REVENUES, 1936-78

[In percent]

	Personal income	Corporate net income	Sales and gross receipts	Property	Total
Fiscal year:					
1936	2.28	1.69	22.15	61.08	87.2
1944	3.90	5.14	26.09	52.47	87.6
1948	4.07	4.44	33.29	45.92	87.7
1952	5.16	4.38	32.90	44.78	87.2
1957	6.09	3.41	32.85	44.64	87.0
1960	6.82	3.27	32.81	45.42	88.3
1965	7.98	3.76	33.41	44.07	89.2
1969	11.61	4.15	34.57	39.98	90.3
1973	14.86	4.48	34.72	37.39	91.5
1978 [1]	17.27	5.57	29.73	34.33	86.9
Change in share, 1936-78	+14.99	+3.88	+7.58	−26.75	

[1] 12 mo ending June 1978.

Source: U.S. Bureau of the Census, Census of Government, 1972, vol. 6, Topical Studies, No. 4: Historical Statistics on Government Finances and Employment; and Quarterly Summary of State and Local Tax Revenue, October 1979, GT 79, No. 2.

The use of the most income-sensitive tax source, personal income taxes, has increased substantially so that it now constitutes 17 percent of tax revenues. This represents a growth of its share of approximately 750 percent. Sales and gross receipts have also experienced an increase in their share of 7.5 percent. They increased by 12 percentage points from 1936 to 1973 but declined by 4 percent from 1973 to 1978, as States substituted income tax revenues for some of the less desirable provisions of sales tax laws. The relatively large share of revenues represented by sales and gross receipts taxes in 1936 causes this substantial absolute increase in share to represent only a 33 percent growth over the four decades. Third, these increases in share have come at the expense of the property tax, which experienced a decrease in

share of almost 27 percent. This represents almost a 45 percent loss of its 1936 share of 61 percent.

These data indicate that the composition of own-financed State-local tax sources has changed substantially in the four post-Depression decades. These results can be combined with Netzer's estimates of income elasticity to provide a rough estimate of the changing sensitivity of State-local tax revenues to economic activity. For each year, the elasticity estimate for each tax source is weighted by its proportionate share of tax revenues and summed across tax sources to produce a weighted elasticity estimate. The results are presented in Table 3 and show a gradual increase in the tax system's responsiveness to changes in economic activity. The 1936 weighted elasticity is 0.89, rises steadily to a 1973 high of 1.02, and ends at 1.00 in 1978. Using 1936 as the base year, the income sensitivity of revenues from these four sources increased 12.4 percent through 1978.

TABLE 3.—CHANGES IN THE INCOME ELASTICITY OF THE STATE-LOCAL TAX SYSTEM: 1936–78

Fiscal year	Income elasticity	Fiscal year	Income elasticity
1936	0.89	1960	0.93
1944	.91	1965	.95
1948	.91	1969	.99
1952	.91	1973	1.02
1957	.92	1978	1.00

Source: Congressional Research Service calculations from data in Tables 1 and 2.

This measure of the increased sensitivity of tax revenues is attributable solely to changes in the composition of tax sources. The use of Netzer's estimates influences the level of the weighted elasticities overall. This finding of increased sensitivity over time would result from other available estimates which indicate that the personal income tax is more responsive than the property tax to changes in economic activity.

IV. Indicators of State-Local Tax Sensitivity—Structural Characteristics of Each Tax Source

It may be that alterations in the structural characteristics of the four taxes over time have made them more or less sensitive to changes in economic activity. If structural changes have in fact occurred, the estimates presented in Table 3, calculated on the assumption of a constant structure, are biased. The estimated change in elasticity is underestimated if structural changes have caused any of these tax sources to become more sensitive, and overestimated if any have become less sensitive.

Unfortunately, consistent estimates of State-local income elasticities for different segments of the four-decade period are not available. As noted in sections I and II, the elasticity estimation technique generally requires that many observations be used to generate a single elasticity estimate. Though a four-decade period provides ample observations to segment the sample, the construction of adjusted tax series for the State-local sector places a heavy burden on data development.

As an alternative, this section tracks some of the structural characteristics that may influence the sensitivity of three of the four major

State-local tax sources included in section III (sales, property, and individual income). The three primary characteristics of concern are the comprehensiveness of the tax base (the relationship between the actual and potential tax base), the rate and income bracket structures, and the quality of administration. For the two flat-rate taxes, general property and sales, the responsiveness of revenue is primarily determined by the responsiveness of the tax base to changes in economic activity. Other things equal (in particular, rates), the closer is the actual tax base to the potential tax base, the greater will be the built-in flexibility (the marginal change) of the tax base for any given change in economic activity (the potential tax base), and, thus, the greater will be the marginal change in revenues.[7] To approximate the potential change in revenues from a given change in the potential tax base, information is presented on the relationship between the actual and potential tax bases for the property and sales taxes.

Information on the actual versus potential tax base is not readily available for State-local personal income taxes. But the sensitivity of this tax is also influenced by progressive rate structures and the range of income over which the rates apply. Information is presented on these two factors for personal income taxes.

A. General Sales and Gross Receipts

Rough estimates of the relationship between taxable sales and total sales for 1933, 1958, and 1977 are made in table 4 with data for retail trade, tax collections, and tax rates.[8] Though 19 States are listed as having a sales tax in 1933, this estimate includes only the 3 States having full fiscal-year coverage—Mississippi, Pennsylvania, and West Virginia.[9] Indiana is eliminated from the 1958 totals because prior to 1964 it had a gross-receipts tax applied to all levels of the production process, not a general sales tax (its ratio of taxable sales to total sales in 1958 was almost nine). The data show that coverage has been substantially broadened, rising from 33 percent in 1933 to 99 percent in 1958. This reflects the tendency of States to move away from complex sales tax structures with varied rates for numerous categories of goods toward general sales taxes with a uniform rate. The ratio continues to rise after 1958 to 1.09 in 1977, through at a much slower rate than in the preceding 25 years.[10]

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[7] If State-local tax decisions are made in a constant yield framework, a base expansion would be balanced by a rate decrease so that revenues remained the same. However, for years subsequent to the rate and base changes, the base will be more responsive to changes in economic activity.

[8] The national ratio of taxable retail sales to total retail sales is calculated for 1933, 1958, and 1977. Taxable sales in each State are calculated residually by dividing each State's tax collections by its tax rate. These are then summed across States to approximate national taxable sales. Total retail sales are obtained from the Census of Retail Trade and summed only for those States levying sales taxes. The sum of taxable sales is divided by the sum of total sales to obtain a rough estimate of the actual to potential tax base.

[9] Robert Murray Haig and Carl Shoup. The Sales Tax in American States. New York, Columbia University Press, 1934. pp. 46–60.

[10] The ratio rises above one primarily because the Census of Retail Trade does not include retail sales at manufacturing and wholesale establishments, whereas tax collections include these sources, and because the gross-receipts portion of tax collections is not always restricted solely to retail trade. Using a different source for retail sales data, Clinton V. Oster also found the ratio to rise above one in selected states through the 1930s-1950s. Though finding a ratio above one is not unusual, it does suggest the ratio lacks precision. However, it is the substantial change in the ratio over the forty year period, a magnitude far in excess of errors possibly attributable to data deficiencies, which is of primary interest.

TABLE 4.—THE RATIO OF TAXABLE RETAIL SALES TO TOTAL RETAIL SALES: 1933, 1958, 1977

	1933	1958	1977
Number of States with sales tax	3	33	46
Taxable sales and total sales	0.33	0.99	1.09

Source: Total sales from Census of Retail Trade, 1933, 1958, 1977. Taxable sales derived residually from several sources, including Census of Government, State Tax Collections; Robert Murray Haig and Carl Shoup. The Sales Tax in the American States. New York, Columbia University Press, 1934; Clinton V. Oster. State Retail Sales Taxation. Ohio State University, 1957; and Advisory Commission on Intergovernmental Relations. Significant Features of Fiscal Federalism. vol. II, report No. M-110, March 1977.

Though the built-in flexibility of sales tax revenues is increased as the ratio of taxable to potential sales increases, the sensitivity of revenues can also be increased if relatively variable components of sales are substituted for relatively stable components of sales as part of the tax base. Food is one of the most stable elements of private consumption, so any tendency over time to eliminate food from the tax base would tend (other things equal) to make the sales tax base more sensitive to changes in economic activity. Table 5 presents information on the number of States which exempted food in 1933, 1956, and 1977. The data show that the trend has been toward a greater percentage of taxing States to exempt food. Two of 19 States exempted food in 1933, 10 of 35 in 1958, and 22 of 46 in 1977. In addition, this trend includes many of the larger States which have correspondingly large shares of the sector's taxable sales—California, Michigan, and Pennsylvania. Other large States which adopted the tax during the period also tended to exempt food—among them, Massachusetts, New Jersey, Ohio, and Texas.

Thus, it appears that the built-in flexibility of the sales tax base has increased since the 1930s. In addition, even as the comprehensiveness of the sales tax base has been increasing, one of the more stable elements of consumption—food—has been steadily eliminated from the tax base of an increasing percentage of States levying sales taxes. Both of these structural changes tend to make State-local revenues more sensitive to changes in economic activity.

B. General Property Tax

Rough estimates can also be made of whether the marginal change in the property tax base has, over time, become more sensitive to changes in economic activity—that is, whether the ratio of the actual property tax base (assessed value) to the potential property tax base has changed. Changes in the ratio appear to depend partially upon whether legally mandated assessment-to-market value ratios have changed and partially upon whether there has been a change in the historical pattern whereby assessments lag behind changes in market value to a major extent. It is to be expected that changes in the legal ratio would be balanced by changes in tax rates, so that the ratio of revenues to the potential tax base remains constant.

With regard to lags in the assessment process, the consensus seems to be that:

> Assessment practices *are* improving, albeit more slowly than reasonable men can abide, in part through the adoption of just passably good practices by the

TABLE 5.—TAX TREATMENT OF FOOD: STATE SALES TAXES, 1933, 1956, 1977

[Key to symbols: T—Food taxable; X—Food exempt]

	1933[1]	1956[2]	1977[2]
Alabama		T	T
Alaska			
Arizona	T	T	T
Arkansas	T	T	T
California	T	X	X
Colorado		T	T[3]
Connecticut		X	X
Delaware			
District of Columbia		X	X
Florida		X	X
Georgia	T	T	T
Hawaii		T	T[3]
Idaho			T[3]
Illinois	T	T	T
Indiana	T	T	X
Iowa		T	X
Kansas		T	T
Kentucky	T		X
Louisiana		T	X
Maine		X	X
Maryland		X	X
Massachusetts			X[3]
Michigan	T	T	X
Minnesota			X
Mississippi	T	T	T
Missouri		T	T
Montana			
Nebraska			T[3]
Nevada		T	T
New Hampshire			
New Jersey			X
New Mexico		T	T
New York	X		X
North Carolina	X	X	T
North Dakota	T	T	X
Ohio		X	X
Oklahoma	T	T	T
Oregon	T		
Pennsylvania	T	X	X
Rhode Island		X	X
South Carolina		T	T
South Dakota	T	T	T
Tennessee		T	T
Texas			X
Utah	T	T	T
Vermont			X[3]
Virginia			T
Washington	T	T	T
West Virginia	T	T	T
Wisconsin			X
Wyoming		T	T
States exempt/all States	2/19	10/35	22/46

[1] Robert Murray Haig and Carl Shoup, The Sales Tax in the American States, New York, Columbia University Press, 1934, pp. 46–50.
[2] Advisory Commission on Intergovernmental Relations, Significant Features of Fiscal Federalism, vol. II, March 1977, pp. 172–175.
[3] Allows income tax credit for sales tax.

more primitive jurisdictions and in part through continual improvements in all sorts of procedures, techniques, and assessment aids and equipment of a mundane sort, on the part of more advanced assessment offices and officers.[11]

If this is so, the lag between growth and improvements in the property-tax base and their incorporation into assessed values should be shortened, and (assuming a constant rate of growth and improve-

[11] Dick Netzer, Financial Needs and Resources the Next Decade: State and Local Governments. In National Bureau of Economic Research, Public Finances: Needs, Sources, and Utilization. 1961. p. 34. For a more complete discussion of the improvements in property tax administration, see Ronald B. Welch, The Way We Were: Four Decades of Change in the Property Tax. The Property Tax in a Changing Environment. Advisory Commission on Intergovernmental Relations, Report M–83, March 1974.

ments) the actual-to-potential tax base ratio should increase. The response of the tax base (assessed value) to any cyclical change in the potential base would therefore be greater.

Table 6 presents assessment-to-sales ratios for the United States from 1956 to 1976 separately for all general property and nonfarm residential property.[12] Neither category has had a substantial increase. The ratio for all general property has risen from 30.0 to 31.3, and for nonfarm residential from 29.8 to 32.4. These represent increases in the ratios of 4.3 and 8.7 percent.

TABLE 6.—ASSESSMENTS-TO-SALES RATIOS, 1956–76

	United States		Wisconsin	
	All general property	Nonfarm residential	All general property	Nonfarm residential
1956	30.0	29.8	45.6	45.4
1961	29.5	30.6	48.1	49.6
1966	32.6	34.9	52.9	54.9
1971	32.7	34.0	45.2	46.4
1976	31.3	32.4	51.4	52.1
Percent change in ratio	4.3	8.7	12.7	14.8

Source: U.S. Bureau of the Census, Census of Governments: 1957, vol. V, Taxable Property Values in the United States; Census of Governments: 1962, vol. II, Taxable Property Values; Census of Governments: 1967, vol. 2, Taxable Property Values; Census of Governments: 1972, vol. 2, Taxable Property Values and Assessment-Sales Price Ratios; Census of Governments: 1977, vol. 2, Taxable Property Values and Assessment/Sales Price Ratios.

These U.S. averages may mask substantial variability. Table 6 also includes similar data for the State of Wisconsin, which began ratio studies in 1932. Its ratios have increased much more substantially—12.7 percent for all property and 14.8 percent for nonfarm residential property.

The absence of census data prior to 1956 makes it difficult to tell whether the assessment ratio for the United States increased substantially from the 1930s to the 1950s. However, some information from selected States is available for the late 1920s. Table 7 presents assessment-to-sales ratios for selected cities and counties (rural property) in five States in 1926–1928. In general, these 1920s ratios for these selected cities and counties are higher than are the U.S. ratios in 1956–1976, and the 1920s ratios for Wisconsin are higher than are the State's ratio in 1956–1976.

Extreme caution is called for in comparing the data in Tables 6 and 7. The data in Table 7 are derived from relatively few cities or counties in the States, and are therefore not statewide averages. No effort was made to make the sample of observations representative of the population of housing—some may be dominated by sales of low-value housing, others by high-value housing. The ratios simply reflect unweighted assessment ratios—total assessed value divided by total sales value. However, these figures do provide an interesting contrast to the census figures. The implied decline in average assessment ratios from the 1920s to the 1950s suggests that the sensitivity of the residential base may have declined.

[12] For a discussion of this series, see U.S. Bureau of the Census. State and Local Government Special Studies No. 54. Trends in Assessed Valuations and Sales Ratios, 1956–1966. Washington, D.C., 1970. If the legally required ratio has secularly increased, an increased assessment-to-sales ratio overstates the effect of administrative improvements; if the required ratio has decreased, an increased assessment-to-sales ratio understates the effect of administrative improvements.

TABLE 7.—ASSESSMENT-TO-SALES RATIOS IN 5 STATES: SELECTED CITIES AND COUNTIES, 1926–28

	Counties (rural property)	Cities and villages
Indiana	(1)	73.03 [2](12)
Iowa	46.62 [2](41)	47.53 [2](8)
Minnesota	82.03 [2](6)	79.85 [2](6)
Nebraska	48.23 [2](12)	52.52 [2](7)
Wisconsin	89.71 [2](12)	67.37 [2](3)

[1] Not available.
[2] Number of counties or cities included.

Source: Richard W. Nelson and George W. Mitchell, Assessment of Real Estate in Iowa and Other Mid-Western States, Iowa Studies in Business, No. 10, Bureau of Business Research, State University of Iowa, pp. 150–151.

Rafuse presents information consistent with this observation. His estimates of assessed value of all U.S. taxable property as a percentage of the potential property tax base from 1945 to 1958 are presented in Table 8. His potential tax base estimates are derived from Goldsmith's estimates of national wealth. This ratio declined from 29.8 in 1945 to 21.3 in 1958, a decrease of 28.5 percent. It appears that a declining proportion of the potential tax base was included in the actual tax base.[18]

Thus, the evidence on the built-in flexibility of the property tax base is somewhat mixed. Data utilizing wealth estimates for the potential tax base and a comparison of all assessment-to-sales ratios suggest that the ratio of the actual tax base to the potential tax base has been declining. Census estimates of assessment to sales ratios considered alone suggest a moderate increase from 1956 through 1976.

C. Individual Income Tax

As discussed in section II, the responsiveness of tax revenues depends upon the responsiveness of both the rate and base structure to income changes. Information on the comprehensiveness of State income-tax bases is not readily available. Since States do have the option of enacting progressive (graduated) rates for income taxation, it is desirable to look at changes in this characteristic over time as an indicator of the changing sensitivity of income taxation to economic activity.

TABLE 8.—ASSESSED VALUE OF ALL U.S. TAXABLE PROPERTY AS A PERCENTAGE OF THE POTENTIAL PROPERTY TAX BASE: 1945–58

	Total assessed value property tax base		Total assessed value property tax base
1945	29.8	1952	21.2
1946	24.5	1953	21.5
1947	22.5	1954	21.6
1948	22.0	1955	21.4
1949	23.6	1956	21.2
1950	21.1	1957	21.2
1951	20.7	1958	21.3

Source: Robert Rafuse. In R. Musgrave, ed., Essays in Fiscal Federalism, The Brookings Institution, 1965. Table 13 col. 4, p 98.

[18] In terms of revenues, this base decrease was fairly well balanced by increases in nominal rates, so that the ratio of revenues to the potential tax base remained relatively constant over the period (it was 1.0 in 1945 and 1958).

As noted by Singer, the sensitivity of income tax revenues depends on both total income and its distribution. The relationship between the effective marginal tax rate and income changes contributes to revenue sensitivity and is called the "rate effect."

The rapidity with which the rate effect approaches zero will depend on the progressivity of a state's income tax: the lower the income at which the maximum marginal rate is levied, and the lower the maximum rate, the faster will the "rate effect" become insignificant.[14]

An income tax system with a narrow rate structure and a small range of income brackets can be expected, other things equal, to be less responsive to changes in economic activity. The data presented in Table 9 are designed to track State individual income tax rate and bracket structures over time. Prior to 1933, 17 States had individual income taxes, 15 with progressive rate structures. By 1976, 45 States had individual income taxes, 37 with progressive rate structures.

TABLE 9.—CHARACTERISTICS OF STATE INDIVIDUAL INCOME TAXES PRE-1933 TO 1976: AVERAGE RANGE OF RATES AND BASES

	Pre-1933	1958	1976	Percent change
Income tax States [1]	17	33	45	
Graduated rates	15	28	37	
Flat or classified rates	2	5	8	
Average rate range: [2]				
All income tax States		4.09	5.82	42.3
Graduated rate States		4.82	7.08	46.9
Average income range, nominal: [2]				
All income tax States		$15,950	$41,100	157.7
Graduated rate States		$18,800	$49,990	165.9
Average income range, real: [2]				
All income tax States		$18,410	$24,110	31.0
Graduated rate States		$21,710	$29,320	35.1

[1] Source: Pre-1933 from Walter W. Heller, State Income Tax Administration, unpublished Ph.D. dissertation, University of Wisconsin, 1941, table 1, p. 10; 1958 from Clara Penniman and Walter W. Heller, State Income Tax Administration. Public Administration Service, 1959, table 3, pp. 14–21; 1976 from Advisory Commission on Intergovernmental Relations, Significant Features of Fiscal Federalism, 1976–77, vol. II, report M–110, table 106, pp. 194–201.
[2] Congressional Research Service calculations. Income range is deflated using the Consumer Price Index, 1967=100, 1958=0.866, and 1976=1.705.

Far more interesting is what has happened to two of the three determinants of the "rate effect"—the ranges (highest minus lowest) of rates and income brackets. (The third determinant, on which no data are presented, is the actual distribution of taxable income by income bracket.) The estimates in Table 9 are calculated by summing the range for each State and dividing by the number of States. Though the ranges for the tax structures prior to 1933 are not readily available, a significant increase has occurred in the average rate and income ranges from 1958 to 1976. The rate range for all States with income taxes increased from 4.09 to 5.82, an increase of 42.3 percent. At the same time, the nominal income range to which these rates applied increased from $15,950 to $41,100, an increase of 157.7 percent.

This latter figure is somewhat misleading because of inflation. It is probably more informative to calculate the change in income range in real terms, that is, to deflate the estimates for changes in the price level. When this is done, the income range to which the expanded rate range applies is seen to increase (in 1967 prices) from $18,410 to $24,110,

[14] Neil M. Singer. Review of Economics and Statistics, Nov. 1970: p. 428.

an increase of 31.0 percent—a smaller but still substantial growth in the income range.

Thus, both the rate and income bracket structures appear to have changed in a manner designed to make income tax revenues more sensitive to changes in economic activity. This is a particularly important result, since the individual income tax has been the fastest-growing State-local tax source.

V. Summary and Qualifications

The attempt to separate the automatic from the discretionary part of budget changes and to track the automatic component for purposes of comparison over time is an effort to isolate the systematic and predictable response of State-local tax revenues to changes in economic activity. The automatic response is considered systematic and predictable, whereas the legislative and administrative decisions which produce these discretionary responses are not. Thus, the automatic response is an indicator of the expected response of State-local tax revenues in the future if no discretionary changes are made in the system. The measure of the automatic response provides an indication of the magnitude of the discretionary actions and political decisions that will be required to adjust revenue collections or the provision of public services to changing economic conditions.

The analysis in the preceding sections suggests that the State-local tax system has become more sensitive to changes in economic activity since the Great Depression. This change in sensitivity is largely due to a change in the composition of tax sources toward the more income-sensitive personal income, corporate income, and sales taxes, and away from the less income-sensitive property tax. In addition, structural changes in the sales tax base and in the rate and income brackets of the individual income tax may have increased the built-in flexibility of these taxes, while structural changes in the property tax base may have reduced its built-in flexibility. Viewed in isolation, this increased sensitivity of the tax system suggests that the State-local sector's ability to maintain public services in a recession has deteriorated relative to the 1930s, and its capacity to cope with increased demands for services during expansions has improved. More reliance is placed upon legislative and administrative decisions during recessions, but less during periods of growth. These changes are certainly consistent with the Federal Government's mid-1970s interest in experimentation with countercyclical revenue sharing, a program designed at least partially to cushion the adverse fiscal impact of recession on the State-local sector.

These changes in the tax system represent only a part of the post-1930s structural changes in the State-local fiscal system. A complete assessment of the State-local sector's responsiveness to changes in economic activity would require that all these structural changes be considered. Though such an assessment is beyond the scope of this study, it is useful to temper the conclusions on the tax system with a discussion of possible qualifications introduced by some of the structural changes not previously considered. Table 10 shows that tax revenue as a share of general revenue has declined steadily from a high

of 84.8 percent in 1932 to 61.7 percent in 1977. It is necessary to consider the revenue source that has replaced these tax revenues, for it is possible that the increased sensitivity of the State-local tax system could be offset by the substitution of a revenue source less sensitive than the 1930s State-local tax system.

TABLE 10.—TAXES AND INTERGOVERNMENTAL REVENUES AS A PERCENTAGE OF ALL GENERAL REVENUES, 1932–77

[In percent]

	1932	1950	1965	1977
Taxes/all general revenues	84.8	76.1	69.2	61.7
Intergovernmental revenues/all general revenues	3.2	11.9	14.9	21.9

Source: U.S. Bureau of the Census; 1977 Census of Governments; Historical Statistics on Governmental Finances and Employment, v. 6, Topical Studies No. 4, GC77(6)–4.

The primary replacement for State-local tax revenues has been Federal intergovernmental revenue, which has increased from 3.2 percent of general revenue in 1932 to 21.9 percent in 1977. One noteworthy aspect of this substitution is that most Federal grant programs are motivated by policy objectives other than stabilization policy. This suggests that most grants are not likely to be very sensitive to changes in economic activity. However, grants for transfer programs, which represent a significant proportion of all intergovernmental aid, are cyclically sensitive.[15] In addition, several programs explicitly designed as built-in stabilizers for the State-local sector were introduced in the 1970s—programs such as Anti-Recession Fiscal Assistance and Public Service Employment (Title VI of CETA). Thus, it is not clear whether the substitution of intergovernmental revenue for own-source tax revenue may have moderated the increased sensitivity of State-local tax revenues to changes in economic activity. Though most grant programs are not sensitive to Federal stabilization concerns, programs representing a significant dollar value are.

A final determination of the sector's responsiveness to changes in economic activity also depends upon the sensitivity of the expenditure side of State-local budgets. Even less is known about historical changes in the sensitivity of expenditure than is known about taxes. Most analyses simply assume that State-local expenditures are not sensitive to changes in economic activity.[16] Even those which do make the attempt usually choose to look at the sensitivity of only a few of the hundreds of State-local expenditure programs, particularly transfer programs.[17] Any increase in expenditure sensitivity is probably attributable to the increased importance of intergovernmental aid for transfer programs. These programs frequently establish criteria for State-local matching payments, eligibility, and benefit levels

[15] Nancy H. Teeters. Built-in Flexibility of Federal Expenditures. Brookings Papers on Economic Activity, 1971 (3), pp. 615–648.

[16] For example, see U.S. Congress. Joint Economic Committee. The Responsiveness of State and Local Receipts to Changes in Economic Activity; Extending the Concept of the Full Employment Budget [by Robert Vogel] Studies in Price Stability and Growth, Papers Nos. 6 and 7. [Washington, U.S. Govt. Print. Off.] 1975. (94th Congress, 1st session.)

[17] For example, see U.S. General Accounting Office. Antirecession Assistance—An Evaluation. PAD 78–20, 1977.

which have the effect of increasing the sensitivity of State-local expenditures financed from their own revenues. What may primarily have been a discretionary decision to accommodate the poor in the 1930s is today part of the sector's automatic response to decreased economic activity.

The sensitivity of both sides of the budget to a major structural change in the economy—inflation—is also a critical factor. Though income and sales tax revenue (but not necessarily property tax revenue if assessments lag) clearly respond automatically to changes in both nominal and real income, this is less true of the expenditure side of the budget. Most nontransfer programs are not expected to vary automatically with either real or nominal changes—alterations are usually at the discretion of the legislature and executive. Thus, it is not surprising that the State-local sector has run a surplus with the onset of inflation, for tax revenues grow automatically, while most expenditure programs are subject to discretionary control.

As inflation progresses, however, adjustments must clearly be made. Expenditures respond to inflation with a time lag that depends upon the terms of existing labor and supply contracts, the extent to which agencies and departments include past and anticipated price changes in their budget requests, and Federal adjustment of grants-in-aid.[18] Additional pressure is placed upon expenditures because of transfer payments—though increases in real income can be expected to reduce transfer payments, increases in nominal income may not.

Two additional issues should be raised in considering the changing sensitivity of the State-local sector. The combined influence of inflation and rapid growth of the State-local sector has sharpened taxpayers' vigilance and contributed to attempts to place restraints on the sector, efforts exemplified best by Proposition 13. The increased popularity of spending and taxing limitations tied to the growth of the economy adds another layer of institutional restraints, and necessarily complicates any effort to assess changes in the sector's automatic response to economic activity. These limitations may provide a substantial incentive for State and local governments to substitute user charges for tax financing. Should this occur, the sensitivity of the revenue system will change if the income sensitivities of user charges and taxes are different. But a fall in user charge receipts is accompanied by a decline in demand for the public good, so public officials at least have a clear guide for paring expenditures.

The second and final issue is to question whether the distinction in this study between automatic and discretionary budget changes is more apparent than real. This dichotomy is viewed with increasing skepticism by many observers. The behavioral relationships between economic phenomena and legislative/administrative decision-making have become a subject of great research interest. Should these efforts provide evidence of systematic and predictable discretionary changes (such as tax rates and bases, benefit levels and eligibility requirements) which occur with the same timing as automatic changes, separating automatic and discretionary changes becomes less important. Atten-

[18] See ACIR, Report A-70, May 1979, pp. 32–34, 75–81.

tion would then focus on the net effect of automatic and discretionary changes, for the two policy responses become in some sense substitutes.[19] In effect, Federal fiscal and monetary policy could proceed on the assumption that State-local behavioral response will encompass legislative and administrative decisions similar to those undertaken in the past, such as accommodating revenue shortfalls by increasing revenue-raising ability via tax rate increases or tax base expansions.

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[19] For an effort at converting what this paper calls discretionary changes into an automatic component of State-local fiscal behavior, see U.S. Congress. Joint Economic Committee. [Robert Vogel] Studies in Price Stability and Growth, Papers Nos. 6 and 7, 1975. Vogel argues that discretionary tax rate increases during recessions are a systematic. predictable part of State-local behavior, in effect converting them to automatic changes in his estimating procedure.

For a more general discussion of the political decision-making/economic phenomena, see Dennis Mueller. Public Choice. Cambridge University Press, 1979.

IV. FISCAL ACTIVISM

LIMITATIONS AND POTENTIALS OF COUNTERCYCLICAL FISCAL AND MONETARY POLICIES

By Robert Eisner*

Thirty years ago Milton Friedman warned that countercyclical policies have to be quite good. Otherwise, they make matters worse. That warning is apt, today as ever. But I will not take it to the point of eschewing advocacy of appropriate fiscal and monetary policies.

In the years before 1929, and even well into the thirties, there was a dominant view among economists that economies were inherently stable and would, left to themselves, gravitate to an optimal, full employment position. That the optima were not that clearly and universally visible in the real world was taken as evidence that economies were not left to themselves. Aside from intervention by trade unions which restrained the free play of market forces, government itself was considered the culprit, introducing shocks or compounding the effects of natural shocks by its own faulty policies.

It was against that view that John Maynard Keynes reacted; hence he wrote the theme and text that animated macroeconomic policy and most macroeconomic research for more than a generation. The market economy was not without successes and government intervention was not without failures. But even in its pristine, perfectly competitive, price-flexible ideal state, the economy might go for long stretches, if not indefinitely, without attaining full employment. In the economy of blemishes which we know, unemployment was clearly more the rule than the exception.

The kind of unemployment with which we were concerned in the thirties, and which all have recognized as at least cyclical for perhaps two centuries, relates to inadequate demand or spending for the goods and services which the economy and its people are capable of producing. It is not the non-employment of those unable or unwilling to work.

Economics, like economies, has its cycles. Economics is practiced by economists who themselves are not indifferent to political whims. The Great Depression forced many economists to see the level of unemployment engendered in the economy as intolerable and to be receptive to analysis that refused to view it as a temporary aberration which would disappear if only ignored. And economists built upon their analysis of the causes of unemployment sets of policies aimed at its mitigation.

*Robert J. Gordon and Mary Alice Shulman have offered helpful comments on a draft of this paper. The author alone is of course solely responsible for its final contents.

We have come full cycle and a considerable number of economists, in academia as well as in the business world and government, now again view the current rate of unemployment, some 6 or 7 percent, as "natural." What is natural is to some unchangeable, at least in the long run, and altered in the short run only at considerable peril and cost. Governmental stimuli of demand to reduce unemployment below its "natural" rate are viewed as contributing to inflation. Persistent efforts to keep unemployment below its natural rate are seen as bringing not merely persistent but accelerating inflation.

With the assumption that existing unemployment is "natural," there has been a developing view among some economists that policies directed at affecting aggregate demand will have no effect, or no lasting effect upon output but will merely influence the level of prices and the rate of inflation. These views seem to stem from one or the other or both of two sets of hypotheses. The strict monetarist insists that only "the quantity of money" affects aggregate demand. Government spending and taxing, in his thinking, influence the composition of national output but not its total. If government buys more tanks or builds more schools there must be less private investment or private consumption. If government taxes those that would save and gives the proceeds to those that would consume, there will be more consumption and less investment but again total output will be unaffected, except as over the longer run different amounts of capital affect productivity.

Altering the quantity of money, according to monetarists, may alter the rate of output in the short run but will lead only to changes in prices over the long run. This view has been given a more short run focus in very recent years by economists invoking the concept of "rational expectations." If increasing the quantity of money will in the long run only increase prices and if (1) everybody knows this and (2) everybody knows that government policy is to increase the quantity of money, then prices will go up virtually immediately and output will not change.

I consider both these approaches essentially irrelevant to the economic world which we know and to the policies which we should devise and evaluate. They stem, implicitly or explicitly, from the old pre-depression view of economic theorists that economies were normally in a state of full employment. Prices, left to themselves, could be expected to adjust sufficiently rapidly, without unacceptable deflation or inflation, to restore full employment quickly enough if there were any significant departure from it. Clearly if we always have full employment, manipulating demand can only change either the mix of output or the level of prices or both. If the economy is promptly self-equilibrating in the face of shocks, from the outside or endemic, government policies to mitigate these shocks can only be counterproductive. And if our theory tells us that the quantity of money unambiguously determines total spending, any alteration of that quantity of money, other than in accordance with the growth of full employment output, will affect prices. The necessary and sufficient condition for price stability is a constant quantity of money or, more precisely, a quantity of money growing at the same rate as full employment output.

Aside from political currents and the changing state of the economy itself, we have perhaps seen some of the economics profession and much of the public (that follows this sort of thing) come to this view because of a perception of failures, as well as accomplishments, of fiscal and monetary policies that have been pursued over past decades. I do believe that there have been serious failures, both because of misapplications of underlying principles and false expectations of what general fiscal and monetary policy can accomplish.

Concepts and Limitations of Countercyclical Fiscal Policy

There are simple answers to the "Ec-1" exam questions on countercyclical fiscal policy. To fight recession, spend more and tax less. To fight inflation, spend less and tax more. Yet there is much more to it than that.

First, there is the very critical question of timing, which expands into knowing where you are and where you will be as well as how long it takes to get there. These issues relate to monetary as well as fiscal policy, but we shall begin their consideration with fiscal policy.

We have some recent and painful evidence. In the fall of 1974, President Ford called a conference and developed a WIN program to "whip inflation now." As administration officials, prominent economists and other presumably knowledgeable citizens formulated and argued programs to cut aggregate demand and spending which was thought to be fueling inflation, the developing recession was gathering momentum beneath their feet and beyond their view. Within six months we had sunk to the bottom of the worst recession since the Great Depression of the Thirties, with unemployment surpassing 9 percent and hundreds of billions of dollars of output lost. Business investment in plant and equipment, on which future growth was believed by so many to depend, plummeted 16 percent.

In January of 1980, the Carter Administration presented a federal budget hailed as tight. It called for a deficit in the 1981 fiscal year of only $16 billion, little more than half of 1 percent of projected gross national product, a major reduction from the actual deficit of 4 percent in the 1976 calendar year before President Carter took office. Yet less than two months later the Administration was presenting a revised budget, presumably calling for greater tightness, and the Congress labored all through the rest of the winter and spring of 1980 trying to agree on a balanced budget to reduce demand further and hence curb inflation. In early May of 1980, the Bureau of Labor Statistics (BLS) indicated that unemployment had increased from 6.2 percent in March to 7 percent in April, one of the largest 1-month jumps on record. And in early June the BLS reported that the unemployment rate in May had risen sharply again, to 7.8 percent.

The problem of not knowing where we are is compounded by the problem of lags. The tight fiscal policies of 1974 and 1980, involving huge swings to surplus in the high employment budget, will only have their effects after many months if not years. Indeed, frequently many months elapse before the policies are even implemented. Current (June 1980) debate focuses on a fiscal 1981 budget which does not come into effect until October 1, 1980, and for which much of the

initial impact may be a year or more off. But once the decreased government spending and higher (inflation-induced) bite of taxes begin to manifest themselves, their effects on the economy are tantalizingly spread out. Their greatest impact in cooling off the economy may come just when stimulus is most called for to pull us from the trough of the recession.

It is frequently objected that discretionary changes in government spending are a particularly ineffective countercyclical tool because government spending cannot be quickly turned on and off. Aside from delays in the legislative process, plans must be prepared and then implemented, contracts let (or cancelled) and actual expenditures incurred (or reduced) before any impact upon the economy can begin to be felt. It is argued that tax changes can be accomplished much more readily.

One immediate counter to this argument is that if we view government transfer payments as government spending, they may as well be seen as negative taxes and legislated or automatically varied as rapidly as positive taxes. The government can and does reduce its payout in unemployment benefits as fast as it increases its tax take in periods of boom. Payout of transfers and take-in of taxes are, respectively, increased and decreased equally rapidly in a recession.

There are, however, further limitations in the efficacy of varying tax and transfer payments. In terms of effects upon the economy, these are intermediate to the goals of stabilizing output and employment. Government expenditures for goods and services, when finally incurred, do involve output (or purchase out of inventories which can be expected to be replaced shortly with additional output) and employment. When the population has more after-tax income, either because of increased transfer payments or lower taxes, impact on output and employment still await the changes in spending expected to result from the changes in income. These may take time and, as we have learned, are more difficult to predict in the short run than we have liked to believe. As recent experience has confirmed, the consumer can persist in high spending for month after month despite the increasing tax bite on his income.

The connection between taxes and private spending becomes all the more treacherous in a countercyclical context. Modern economic theory of private consumption spending, associated particularly with the names of Milton Friedman and his "permanent income theory" and Franco Modigliani and his "life cycle hypothesis," stress that current consumption is likely to be only very partially influenced by current income. For most of us with any past savings or ability to borrow, consumption of the moment is hardly decided by income of the moment. If income increases and is expected to stay higher, we will consume more. If the increase in income is viewed as largely temporary or transitory, consumption spending may be very little affected. Analogously, stability in consumption would also be expected for transitory reductions in income.

This suggests that if fiscal policy were to imply repeated reductions in taxes to fight recessions and increases in taxes to curb booms and inflation, the public would come to expect that in the long run after-tax income would be little affected by tax policy. But then, with

long-run income little affected, consumption should be little affected as well. The public would as far as possible continue to spend the same amount, reducing saving as taxes were increased, and increasing saving as taxes were reduced.

A striking confirmation of this analysis is offered by the 10 percent surcharge on individual income taxes instituted in 1968 in an attempt to reduce private spending in order to curb the Vietnam War-induced inflation. The confirmation was particularly striking because while tax changes may frequently be viewed by the public as temporary until, after time, the persistence of new tax rates brings recognition of their relative permanence, the 1968 tax surcharge was explicitly and avowedly temporary. It was a tax for 1 or at most 2 years, to be phased out automatically without further legislation. One might have expected that with such a temporary tax, after-tax income would of course be reduced but consumers would continue pretty much on their previous path of spending, making up the shortfall out of saving. And that is virtually precisely what happened!

The 1968 tax surcharge of 10 percent was applied as well to corporate income, ostensibly to damp down business spending. Here too, the results were contrary to what was intended. And here too one might have anticipated these contrary results from a more careful application of apparently sound economic principles.

Spending for business investment should be affected primarily by its expected profitability and not by the amount of current profits taxed away. Since the expenses incurred in expectation of profit are generally tax-deductible, increases in taxation of expected profits are, as a first approximation, a wash. It is not rational to reduce profitable investment spending merely because Uncle Sam is taking a bigger bite of the profits *and losses.*

What made the corporate profits surcharge of 1968 particularly counterproductive was again its countercyclical nature. Business firms were told in effect that the tax savings from larger current deductions would be greater, by that 10 percent surcharge, while the ultimate future profits from current investment would not be correspondingly taxed. More investment now would mean that the Treasury would give the firm a bigger current tax deduction. But investment pays off in the future and since the tax surcharge was temporary, that future income would not suffer. Is it any wonder that business spending boomed all the more?

The lesson of this experience is not that increased tax rates cannot curb the economy or that cuts in tax rates cannot stimulate it. The difficulty lies in the application of general changes in tax rates as a countercyclical tool. To the extent that such changes are seen as part of countercyclical efforts, and thus by their nature temporary, their effects are partly if not largely vitiated and in some instances are perverse. Cuts in tax rates—or increases in government spending—can still be a potent long-run medicine for an economy sluggish because of insufficient aggregate demand or purchasing power.

A long-run fiscal policy designed to sustain and increase aggregate demand is likely to increase both consumption and investment to acquire the capital goods necessary to sustain increased output. But it may imply a federal budget in deficit all or most of the time. The

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persistent deficit raises some political problems, but also, contrary to widespread public belief, offers some advantages. For as deficits continue, the federal debt grows. If this debt in the hands of the public increases more than in proportion to national income or gross national product, the public finds itself with relatively more and more accumulated wealth. It is of course true that wealth in the form of government bonds is not in itself real wealth for the economy. Nevertheless, to the individual and business holders, the bonds are wealth and a cushion which permits more freedom to spend, thus over the long run reducing the need for further deficits to stimulate demand.

It has been argued that there will not be increased private spending if people perceive government debt as a burden to be repaid in the future. Then it would be necessary to save in order to be able to pay off that debt, or to bequeath to one's children and grandchildren so that they can pay it off.

The applicability of this reasoning would seem doubtful. Economists cannot agree that the national income will be less in the future because of the existence of a federal debt. To the extent that the federal debt is domestically held, any paying off of the debt in the future, unless it were done under such circumstances as to reduce future national income and output, would still leave the population as a whole no worse off. Furthermore, of course, there is hardly any need to pay off debt in the future. With government, as with private business, but even more easily, debt is usually refinanced and increased with growth (and inflation). If for this reason economists do not agree that national income will be less as a result of the existence of a larger debt, or that it must be paid off, it is difficult to see why the lay public should both entertain and act upon such concerns. Each individual and business might rather be expected to count its own wealth in the form of deficit-created government bonds as wealth to it, ignoring uncertain future consequences and their all the more uncertain individual impact.

The preceding discussion relates to the use of fiscal policy to increase aggregate demand in the interest of combating recessions and reducing unemployment. If fiscal policy is mistakenly expansionary under conditions of adequate or excess aggregate demand, the consequences are indeed different. The additions to demand will prove inflationary, as the public and private sectors together endeavor to buy more than can be produced. If the deficits involve increased government demand for real resources, as in the production of goods and services for national defense, roads, schools or airline terminals, then on the assumption of full employment, there must be fewer resources available for other output. There would hence be less private investment or less private consumption or both, depending upon the tax, price and interest rate effects associated with the expansionary government spending.

It is important to note, however, that it is not the budget deficit, per se, that brings on this reduction in output for private use or accumulation. It is rather that the government by its own expenditures is diverting resources to public use. It is not even necessarily true that such increased government spending must result in less investment or capital accumulation. Aside from the possibility that the reduction in private output will relate only to consumption, the government spending itself may involve investment, in the sense of the construction or accumulation of capital which will render services for the future.

Construction of public roads and airline terminals is as much investment as the production of trucks, planes and roadbeds or rolling stock for private railroads. Government expenditures for schools may represent both investment in buildings, and over the longer run, in the human capital of education, training and know-how on which output so heavily rests.

A deficit created by increased transfer payments, as for social security, or by lower taxes, as on personal income, has no direct effect, however, on the consumption-investment mix. It may, of course, have such effects as a consequence of the interaction of inflation and higher interest rates. It is not even clear though which way these effects will necessarily go. Higher interest rates would in general be expected to discourage investment. But if inflation engenders expectations of further inflation, businesses and households will be encouraged in the acquisition of long-lasting goods, such as factories, machinery and houses, thus stimulating investment. And there are indeed still further consequences involving effects of higher interest rates and inflation on the value of all kinds of assets, including holdings of government and private debt and equity.

Government fiscal policy can well be expansionary with a balanced budget or even one in surplus. For what matters is not only the balance of the budget but its total weight or size. Since increases in taxes are generally believed to reduce private expenditures by less than dollar for dollar, with some leakage into reduced saving, increases in government expenditures matched by equal increases in tax receipts are believed under reasonable assumptions or relevant conditions in the economy to add to aggregate demand. Conversely, under similar assumptions, equal reductions in government spending and in taxes will reduce aggregate demand.

Many have judged the Vietnam War as inflationary because taxes were not increased sufficiently to finance increased military expenditures. That is questionable in both fact and theory. The federal budget deficit was nonexistent or modest, except for fiscal year 1968 through the Vietnam War. But economic analysis suggests as well that a sudden and substantial surge in military spending is likely to be inflationary even if taxes do increase in equivalent amount. For the increased spending represents a demand for real resources which, to be realized in a relatively full-employment economy, entails a bidding up of their prices. Equivalent increases in taxes are unlikely to entail a commensurate reduction in demand or a lowering of prices elsewhere in the economy.

Thus we are left with the conclusion that fiscal policy can be countercyclical (or procyclical) even if conducted within the framework of a balanced budget. Increases in government expenditures for goods and services can be expansionary, no matter how financed, although more expansionary with some kinds of financing than with others. And reductions in government expenditures for goods and services will tend to contract the economy, in real terms or in prices or both.

We have considered fiscal policy thus far in the context of its use to add to or stimulate private demand. It would appear doubtful in terms of both theory and historical evidence that private demand is likely in itself to be excessive. Excess demand has generally related to

excess government stimulation, either through military spending particularly in war time or, chiefly in countries other than the United States, to uncontrolled expansion of money and credit to finance uncontrolled government spending.

In the event that inflation is due to excess government spending, the appropriate stabilization policy generally involves a reduction of government spending and increases in taxes. In the event of excess private spending, which I perceive as highly unlikely, a tight fiscal policy with lower government spending and higher taxes would still be generally needed in order to depress demand. In both cases there may be at least short run problems in reductions of purchasing power which cause in the first instance reductions in output and employment and only eventually, after the development and persistence of considerable slack in the economy, a curbing of prices.

Concepts and Limitations of Monetary Policy

We have noted limitations of countercyclical fiscal policy. On the tax and transfer side cyclical policies are to some extent self-cancelling, particularly where they are perceived as cyclical. Counter-cyclical variation in government expenditures for goods and services can get particularly tangled in questions of timing, planning and implementation. In addition, they may meet considerable political objection. With the perhaps conspicuous exception of defense, it is not always easy to secure public acceptance of additional public projects when the economy is slack. In combatting inflation, resistence to reductions in public purchases of goods and services may be particularly great from those directly affected. These factors, along with others relating to the model of the economy preferred by some economists, lead to a preference in many quarters for the application of counter-cylical monetary policy. The views of monetarists that "the quantity of money" is the dominant if not sole determinant of aggregate demand in one sense offers support to advocates of concentration on monetary policy as an active stabilizing tool. In another sense, however, it supports the non-interventionist advocacy of stability in "the money supply" or its rate of growth as the key to stabilization policy.

I have repeatedly written "the money supply" in quotation marks because in a sophisticated financial system such as ours it can indeed mean many things. It is rarely if ever clear how the variously defined "money supply" of everyday economic and political discussion relates to the abstract concept of money which in some highly theoretical models proves the sole determinant of aggregate demand and prices.

In a perfectly competitive economy with perfect information, prices free to move instantaneously to clear all markets, and fiat money provided by government, the role of money is simple. As long as all markets do clear, there is by definition full employment. For in the labor market the price of labor—the real wage—is such as to equate the quantity of labor supplied to the quantity of labor demanded. If the government kept the quantity of money fixed, cycles could hardly develop or, depending upon assumptions about lags of response, would be more or less quickly self-correcting. If for some reason aggregate demand were to fall and threaten to create, or momentarily actually

create unemployment, prices would fall. This would raise the real value of the public's wealth in the form of money holdings, and consequently the demand for goods, to the point where full employment demand would be restored.

In the event of some excess demand from whatever source, prices would rise to the point where the decline in real value of cash balances would be sufficient to reduce demand enough to wipe out the initial excess. These corrective effects of changing values of real cash balances would be fundamental but they could be reinforced by similar automatic movements of interest rates. Thus a decrease in demand for goods which would lower prices and the demand for money, while increasing the real value of money holdings, would bring some of the excess supply of money into bond markets, thus raising prices of bonds and lowering interest rates. The lower interest rates would in turn bring about more investment spending.

Conversely, excess demand would raise interest rates as well as prices and thus lower investment spending. Both deflation and inflation would hence be self-correcting as long as the quantity of money is kept constant.

It is a long way from that abstract model to the economy we know. We do not have perfect competition. Prices do not adjust instantaneously to clear all markets. Information about current markets is far from perfect and we contemplate a future with risk and uncertainty which seem generally to increase geometrically with distance from the present. And of immediate relevance for this discussion, the great bulk of "money" that we know is not fiat money created by government and is not in itself a significant item of net wealth.

What has come to be money in our society is obligations of banks in the form of deposit liabilities and, to a much lesser extent, the obligations of Federal Reserve Banks in the form of Federal Reserve notes held by the public.

These do not come to the public as manna from heaven. The public as a whole only acquires money, the liability of banks, to the extent that it offers other liabilities or assets in exchange. Either the public incurs new liabilities, its own I.O.U.'s or bonds as it borrows from banks, or it sells to the banks (the banks buy from the public) existing debt. In either event increases and decreases in the quantity of money do not affect directly the wealth held by the public. To the extent the public is wealthier for having more money it is poorer for having more debt.

The one apparently confusing complication is the existence of government debt and the role of the Federal Reserve in affecting the quantity of money by its purchase and sale of government debt. Thus, if the federal government runs a budget deficit financed by borrowing, that is, by selling Treasury bills and bonds to the public, and if the Federal Reserve buys equivalent amounts of Treasury bills or bonds from the public, the public wealth in the form of money will rise. But that wealth will rise not because of the increase in the quantity of money but because of the increase in government debt.

This may be seen clearly if we consider the case of the Federal Reserve increasing the quantity of money by buying government bonds when the Treasury budget is in balance and there are no net new issues

of government debt. In this instance, the Federal Reserve purchases of government securities will directly increase public wealth in the form of money but will decrease by an equal amount the public wealth in the form of government bonds. Thus, unlike in the simple model of the economy introduced above, changes in the quantity of money do not have direct wealth effects. And strikingly, aside from the role of government debt, there are no stabilizing effects from a constant wealth in the form of money. Since aside from government debt (and Treasury gold stock), for every dollar of money holdings there is a corresponding dollar of debt liability, lower prices resulting from a fall in demand will increase the real value of private liabilities just as much as they increase the real value of cash balances. And similarly, higher prices stemming from excess demand for goods and services will lower the value of private liabilities by as much as they lower the value of real cash balances, again bringing no change in the net worth or real wealth position of the public.

There is no constant or stable "velocity of circulation" which can be applied to "the supply of money" to project even the nominal, let alone the real value of gross national product. Indeed we have as many velocities as measures of money—for M1–A, M1–B, M2, M3, L and all those in between and old and new. Each velocity changes week-to-week, month-to-month, cyclically, secularly, with technological and financial "innovations" and changes in the monetary base, member bank reserves, reserve requirements, interest rates and the various quantities of money themselves.

What all of this means is that effects of monetary policy must be found in changes in the distribution and availability of liquidity, in changes in economic activity associated with changes in interest rates, in changes in the distribution of wealth and in changes in the value of government debt. Monetary policy does indeed affect interest rates, short rates more than long, and more directly in the short run than in the long run, as feedback effects of output and actual and expected inflation quite complicate its initial thrust. As it affects interest rates monetary policy does affect, indirectly but sometimes powerfully, the market value of assets. The effects on wealth in private bonds are self-cancelling, as assets to private creditors are liabilities to private debtors. There does remain, however, wealth in private holdings of government bonds, the market value of which moves inversely with interest rates. The effects of monetary policy on the value of equity are potentially substantial but here interest rate effects are intertwined with those of expected inflation, the expected path of the economy and all the other imponderables which determine the stock market averages. The power of our monetary authority, the Federal Reserve, and hence of monetary policy to influence economic activity turns out finally to be frequently indirect, devious and uncertain.

In our "Ec–1" course, countercyclical monetary policy is indeed quite simple. To combat a recession, we teach in elementary economics, the Fed should buy securities, cut reserve requirements and lower discount rates. To combat inflation, the Fed should sell securities, raise reserve requirements and increase discount rates. Each of these measures, singly or in combination, will affect "the quantity of money" and hence interest rates in desired directions. But alas, the complications are serious.

The original Keynesian complaint against monetary policy was that while it was probably not sufficiently bold in combating recessions and unemployment its potential was in the last analysis limited. The monetary authority by expanding the money supply could lower rates of interest but only so far. As short-term rates get lower, pulling long-term rates down to some extent, more and more prospective lenders come to believe that long-term rates have gotten about as low as they can get and have no place to go but up. But a long-term lender, that is, a purchaser of long-term bonds, will not be willing to lend or buy bonds if he expects interest rates to rise. For then he will suffer a capital loss as bond prices fall or, even looking at it in terms of income, he will have lost the opportunity to receive the higher interest payments he would have gotten if he had waited.

We have thus the famed "liquidity trap," in which efforts by the monetary authority to lower interest rates in order to combat recession will involve people holding more money but being unwilling either to spend it or lend it. Business investment spending will only be stimulated by lower rates of interest to the point of this lower bound beyond which the relevant long-term rate will not fall. And it may be added that even if one rejects the notion that the "speculative demand" for money will prevent bond prices from rising and hence interest rates from falling beyond some positive lower bound, the nominal interest rates can hardly fall below zero. Hence monetary policy is limited in its efforts to stimulate investment by the fact that it can only bring about such investment as would be forthcoming with a return or "marginal efficiency" which is positive after full discounting for risk and uncertainty.

This issue of the limited downward adjustability of long-term rates of interest shades into another, somehow not as readily considered, which is very relevant to attempts to apply countercyclical monetary policy. For here, as with fiscal policy, we are bedevilled by longer run expectations. The rate of interest or rate of return on a long term security must, after all, be closely related to expectations of future short-term returns. If current short-term rates of interest are 8 percent because the Fed is allowing money and credit conditions to ease as a recession develops, an investor would move into longer-term bonds at 9 percent if he expected the 8 percent short-term rate to continue.

But if investors are aware that the Federal Reserve attempts to apply countercyclical monetary policy, as they must be if they recall the rates of interest of 15 percent and higher within the past few months, they must anticipate that short-term rates will again move higher when the Fed attempts once more to apply a contractionary monetary policy. Thus each move by the Fed to lower short-term rates will be viewed as only a temporary phenomenon soon to pass and, by the very nature of countercyclical policy, to be succeeded by higher rates in the future. The more that the Fed attempts to apply countercyclical monetary policy the less the public will expect variations in current short-term rates to be positively correlated with future short-term rates. But then long-term rates, critical to investment spending, will be the more impervious to monetary policy the more that monetary policy is perceived to be used as a countercyclical tool.

Difficulties in fashioning potent monetary policies to combat recessions have generally been acknowledged. The common aphorism has been, "You can lead a horse to water but you cannot make it drink," and "You cannot push on a string." These statements have expressed the view that easing money and credit may not stimulate much additional investment (or other spending) if profit expectations on investment are low, investment demand is inelastic with respect to rates of interest and relevant long term rates of interest are limited in their downward movement. Analogous limitations on the ability of general monetary policy to contain and limit excessive spending and inflation have not been so widely perceived. Yet they too are serious.

In the face of inflationary excess demand, the Federal Reserve is expected to make money "tight." It does so by reducing or restricting the growth of bank reserves (by selling securities in the open market and raising the discount rate to prevent banks from cheaply borrowing reserves) and possibly by raising reserve requirements. But again, for one thing, the problem of expected future credit conditions emerges. If tight money and resultant high short-term interest rates are considered to be in considerable part a temporary phenomenon the effects on long term lending and interest rates will be reduced. If money is made sufficiently tight, short term rates can rise to seemingly astronomical heights, as the recent though short-lived prime rate of 20 percent indicated. But long-term rates rise far less, as high short-term rates are not expected to continue.

Further, as the Fed reduces the availability of bank reserves against the bank deposit liabilities which constitute money, banks and financial institutions and the borrowing and lending public increasingly "innovate." To the extent that there are different reserve requirements against different kinds of bank liabilities, more "money" takes the form of liabilities requiring lower reserves. Hence the same or reduced reserves go to finance larger quantities of money. One way in which this was manifested, to the dismay of the Fed, was the increasing share of deposits in banks which were not members of the Federal Reserve system, a trend sharply accelerated by increasing withdrawals of banks from the system. In addition, more and more deposits flowed into savings and loan associations and credit unions with little or no reserve requirements. The "shares" or liabilities of these institutions are considered money in some definitions and not in others. (Currently they are included in the new definition of M2 but not in the narrower and widely regarded M1–B or in M1–A, the former M1.) But in whatever definition of the money supply they are included, these liabilities of financial institutions constitute both very liquid and spendable funds for their holders and the source of spending by their borrowers.

Within the commercial banks themselves, limited reserves and tight money have generated substantial movements into savings and small time deposits as well as into large certificates of deposit utilized by business. Further, there has been a vast expansion of "Eurodollars," which are dollar liabilities of foreign banks and foreign branches of American banks, largely if not entirely free of Federal Reserve requirements and controls. The magnitude of these Eurodollars is enormous, with recent estimates of its total of $400 billion equivalent to if not larger than all of the conventionally measured narrow money sup-

ply, M1–B. Yet all this hardly comes close to exhausting the story. In the last year or two there has been a huge growth of money market mutual fund shares, which are checkable interest bearing accounts. Further, corporations and banks have become ingenious in keeping idle balances at or near zero, with sales of securities under repurchase agreements and careful coordination of bank deposits and payments.

Beyond all this, there has been a vast growth of non-bank markets for funds. This involves not only widely and publicly traded commercial paper and listed corporate bonds but huge private placements and lending by insurance companies and pension funds which have become major sources of investment capital in the United States. The supply of money, M1–B, grew by 34.2 percent, from $289 billion to $387.7 billion, between December 1975 and December 1979, an annual growth rate of 7.6 percent. The Fed measure of "L," including more broadly defined measures of money and other liquid assets, grew 56.2 percent, from $1,369.6 billion to $2,139 billion, an annual rate of growth of 11.8 percent. And the total sources of funds for nonfarm nonfinancial corporate business grew by no less than 128 percent, an annual rate of growth of 22.9 percent!

What this has meant is that while the Fed has, contrary to some views, been holding back on the reins of money and credit, expansion has continued until recently with relatively little hindrance. Nominal interest rates have indeed risen, but they have risen less than at least some measures of the rate of inflation. If expected inflation has risen as much as those measures of current inflation, the real rate of interest, that is, the difference between nominal rates of interest and expected rates of inflation, has actually been falling and in some instances has indeed appeared to be negative. Many have blamed the Fed for misguided policy or poor execution of policy in not showing more consistent restraint in combatting the growing inflation of the late 1970s. But the problems may rather be endemic to the nature of our monetary system, not solvable without a radical redefinition of the monetary authority and more fundamental changes in our monetary institutions than most of us have been willing to contemplate.

These difficulties and others have led many to advocate as the most stabilizing monetary policy one which would merely provide for a constant supply of money, or a constant rate of growth of the money supply, or perhaps a gradually but constantly decelerating growth of the money supply in an effort to reduce the current rate of inflation. These policies are more easily advocated than implemented.

In fact, the Federal Reserve has no absolute, direct control over "the money supply," by any of our measures. What the Fed can essentially control is the monetary base, which includes member bank Federal Reserve balances and vault cash plus cash held by the public and vault cash of nonmember banks. Since vault cash of member banks counts as reserves but cash held elsewhere does not, the Fed cannot even control entirely the reserves of the member banks. If more cash goes into the hands of the public or nonmember banks, the reserves of member banks decline. If cash is deposited in member banks, their reserves rise. What is more, the reserves of the member banks are affected by Treasury financing and movement of deposits as well as by holdings of foreign central banks. Thus the Fed must be engaged

in repeated, day-to-day and week-to-week "defensive" operations merely to keep member bank reserves constant or on target. This task is further complicated by variation in "float," the amount of credit extended by the Fed in the process of interbank clearing of checks, and the borrowings of banks from the Fed at whatever discount rate has been set.

Even holding reserves constant or on target is an ambiguous matter when we take into account seasonal variations. Should the Fed aim to keep reserves on a target that ignores seasonal variations or should it move with them? If the latter, how adjust for changes in seasonal patterns, whether due to differences in weather conditions or cyclical or secular factors? We have more than once observed sharp variations in seasonally adjusted measures of the money supply which have appeared to reflect more errors in our seasonal adjustment than failures by the Fed to meet its underlying targets. But how are we to know? Shall we wait a year, or two?

The path from monetary base and reserves on to measures of the money supply more directly relevant to the quantity of credit and the rate of economic activity is a particularly uncertain one. Different measures of money can move in different directions and there has been, as we have observed, a substantial secular shift in the direction of faster and accelerating growth of those measures of money and liquidity over which Federal Reserve requirements are least relevant. In recent years the Fed has been stating in advance sets of targets for growth in certain monetary aggregates. It has appeared to miss these targets more often than it has met them. To some this has been explained by faulty procedures in attempting to control the money supply, particularly focusing on the federal funds rate, that is the rate of interest which banks must pay in their open market borrowings of reserves. This, however, is a market rate which the Fed can observe and adjust to on a day-to-day basis. Accurate measures of the money supply or of reserves are not even available without some lag. It is not clear, in view of the rich and varied nature of our banking system and financial markets as a whole that the Fed really can do better in meeting monetary targets, let alone smoothly influencing the total quantity of credit. To a considerable extent, Fed efforts to control money and credit may be like pushing in on a balloon in one place only to find it expanding in another.

The ability of monetary policy to affect the part more easily than the whole of the supply of credit gives it increased potency in some areas. This, to many, is seen as a capacity for inappropriate damage. Credit markets are varied, and far from perfect. Interest rate ceilings, restrictions on the kind of credit that can be extended by various lending institutions, varying needs for liquidity and ability to meet risk on the part of lenders and varying degrees of risk and liquidity on the part of borrowers all cause quite varying incidence of monetary policies. Thus tight money, or a curb or ceiling to the rate of money growth in the face of high credit demand, has had the effect generally of raising interest costs, which have been passed on in higher prices. But beyond the aggregates it has choked off credit in some areas while leaving it booming elsewhere. In particular, monetary restraint has repeatedly had relatively devastating effects in housing markets, heavi-

ly dependent on saving and loan associations. It has had very painful effects on small business, whose sources of credit are largely restricted to commercial banks. In some instances, consumer credit for financing purchases of automobiles and other durable goods has become largely unavailable. Where monetary restraint is intended to curb aggregate demand and spending in order to reduce the rate of inflation, it is not clear how these selective impacts contribute to that ultimate goal.

Currently, for example, new housing construction has been cut in half by recent tight money policies. The high mortgage rates engendered by these policies not only choked off borrowing but, partly by the peculiarities of our Consumer Price Index, themselves brought on a surge of several percentage points in the most commonly regarded measure of inflation. Hundreds of thousands of construction workers have lost jobs but there is no evidence of corresponding reductions in construction costs to lower the underlying rate of inflation.

Similarly, sharp declines in purchases of new automobiles have caused masses of layoffs in the automobile industry and increased the danger of bankruptcy of Chrysler, despite federal guarantees, while automobile prices continue to rise. And small business desperately seeks to pass on its higher costs of money in order to survive.

In principle, one might expect reductions in demand in particular markets to force prices down in those markets. If for one reason or another these prices are fairly inflexible, at least in a downward direction, the resultant losses in income, output and employment offer at best only remote and indirect hope of price moderation elsewhere.

The Special Case of Supply Shocks

The difficulties in employing both conventional monetary policy and conventional fiscal policy to counter the inflation of much of the past decade relates to what to many observers is its essentially novel character. We have been accustomed to thinking of inflation as due to the excess demand stemming from a cyclical boom or, more likely, from excessive government spending associated with military preparation and war, particularly when financed by borrowing and/or money creation. Many in the business, financial and political worlds, as well as some economists, have viewed recent and current inflation as of this usual demand-pull variety. But the underlying facts indicate that it is much more clearly a cost-push inflation, related to major "supply shocks."

Various analyses have shown the acceleration of inflation since 1973 to be due very largely to the direct impact of higher energy prices stemming from the manyfold increase in petroleum prices, and to higher food prices resulting from relative shortages of supply in world markets. To these direct effects have been compounded further increases in prices as firms and households in more or less competitive markets, not infrequently with the aid of government, have sought to protect themselves against the real losses which are inevitable when supply is less or we have to pay more for imports from abroad. And a major element in the most recent burst of inflation in the winter and early spring of 1980 has been the higher interest costs themselves, particularly as reflected in the Consumer Price Index.

A serious question arises as to whether monetary and fiscal policies to combat a cost-push, supply-shock inflation can and should be the same as those designed to combat an inflation originating in excess demand.

To some, the answer is that the policies should indeed be the same. The argument runs that a cost-push or supply-shock inflation cannot long continue unless it is "validated" by government action to increase aggregate demand in nominal terms or to maintain it in real terms. The at least implicit argument, infrequently spelled out in any explicit precision, is that if the purchasing power of the public is not allowed to expand by inflationary fiscal and monetary policy, the increased expenditure for foreign oil, imports in general or agricultural commodities whose prices are primarily determined in world markets, will necessitate decreases in expenditures elsewhere. These decreases in expenditures will force the other producers and suppliers to reduce their prices, so that overall inflation will be checked. In principle, the general lack of purchasing power would reduce our ability to buy foreign oil, and domestic food as well, thus lowering the rate of increase of those prices.

If this indeed is the scenario for the workings of anti-inflationary fiscal and monetary policy in the face of a cost-push, supply-shock inflation it is difficult to see it as plausible and acceptable.

To the extent that we believe seriously that reducing our general demand and purchasing power will bring down the OPEC prices of petroleum, we must surely prefer more powerful and less painful means of restraining OPEC price increases by reducing directly our demand for foreign oil. This can be accomplished by oil import duties or tariffs, quotas, domestic taxes on gasoline which can be substituted for other cost-increasing taxes, or perhaps through the establishment of a single, presumably governmental, buying corporation which could exercise monopsony power to counter the oligopoly power exercised by the oil cartel.

The basic difficulty is that, for a variety of reasons which we shall not undertake to explore here, prices and wages in our economy tend to move upward much more freely than they move downward. Excess demand when the economy is at or near full employment quickly generates rising prices. The remedy for an excess-demand inflation seems fairly clearly, therefore, to be found in ending the excess demand. Hence tight fiscal and monetary policy in such a case seems generally well justified.

If prices are not freely flexible in a downward direction, however, an attempt to combat a cost-push inflation by lowering demand becomes quite another matter. Firms and workers will continue to endeavor to maintain prices, wages and even real incomes by passing on cost increases and demanding returns to match inflation even as demand falls. This drive is so well established that in those instances where it appeared likely to prove unsuccessful, whether because of strenuous domestic or foreign competition, the literally aggrieved parties are quick to solicit and usually receive government "protection," in the form of price supports, acreage limitations, regulatory protection, quotas, tariffs, orderly marketing agreements, "trigger prices," and anti-dumping actions, to name a few.

Thus, constraints on demand, whether through fiscal or monetary policy, have their major if not exclusive effect not in curbing price inflation but rather in reducing output and employment. This suggests that, to avoid recessions such as that of 1974–75, and now of 1980, general fiscal and monetary policy should be accommodative to supply shocks. If aggregate demand in money terms is not allowed to increase in response to a reduction in supply or a raising of the supply curve (with price on the vertical axis), the consequence will be both higher prices and less output and employment. If the aggregate demand curve is moved to the right (thus also raised), output and employment need not be reduced, although prices would thus be free to rise even more rapidly. This suggests the need for instruments other than those involving aggregate demand if we are to combat inflation without causing unemployment and loss of output.

Potentials in Innovative Fiscal and Monetary Policies

The key to stabilization in the current context is to induce greater output and employment in recessions and to reduce inflation brought on by either excess demand or supply shocks. Conventional methods of operating on aggregate demand, whether by fiscal or monetary policy, suffer seriously from an inability to concentrate effects in the right direction in the desired time periods. What we wish is some combination of tools to bring about intertemporal substitution—moving supply and demand from one period of time to another—and reductions of both pockets of unemployment and price rigidities. Where inflation stems from too high an aggregate demand curve, we have looked for remedies in terms of fiscal and monetary policies that lower the demand curve. Similarly, where inflation is generated by a higher supply curve, the remedy should be found in lowering that supply curve. We could then lower prices while maintaining and increasing output and employment.

In terms of fiscal policies, this suggests, for example, that cuts in tax rates need not be inflationary. They should not be inflationary if they are directed at costs and supply rather than income and demand. Thus, decreases in excise taxes will tend to reduce costs and prices, yet increase real purchasing power and demand. They would thus lower the price level while increasing output and employment. Federal moves to buy out state and local sales taxes would have similar effects. Reduction in tariffs would also lower domestic costs and prices and offer the added advantage of increasing the price discipline of foreign competition, thus further curbing inflation.

A major potential for help—or harm—in the struggle against inflation without increasing unemployment is to be found in payroll taxes. In 1980, they come to 6.13 percent on employees and another 6.13 percent on employers, for all covered wages and salaries up to a total of $25,900 per employee. Under existing legislation these rates are scheduled to increase to 6.65 percent on January 1, 1981, with the base rising to $29,700. Labor is the major element in variable costs affecting prices, and it is reasonable to believe that the bulk of payroll taxes on both employers and employees is passed on into the prices of products. Payroll taxes thus account currently for some 12 percent of the price

level. By accounting for more than 13 percent in 1981, they would raise the price level by a full percentage point in themselves, even without allowing for feedback, as firms and employees try to maintain real incomes in the face of rising costs and prices. And in addition to these taxes for social security, it may be noted, there are several percentage points of payroll taxes for unemployment insurance, with a ceiling here of the first $6,000 of employee earnings.

To avoid adding a percentage point and more to inflation the payroll tax increases scheduled for 1981 should be cancelled. Additional financing of social security, if necessary, should come from taxes that impact directly on aggregate demand and not on current supply. As tax cuts appear appropriate to combat a developing recession and to accelerate recovery, as well as to compensate for the automatic increases in taxes stemming from the impact of inflation on taxable income, we should look for further reductions in payroll taxes. If taxes on income and capital gains were substituted for taxes that affect current supply, there could be a progressive reduction of both the after-tax power to spend and the prices of the goods and services at which the spending is directed. As a first approximation, real incomes and output would be the same but prices would be lower. Reductions in payroll taxes would have further advantages in increasing the demand for and supply of labor. They would thus bring about fuller and more intensive use of our basic human resources.

Beyond general reductions of payroll taxes we may consider selective reductions and outright credits to subsidize employment.

Policymakers and some economists have seen an exasperating conflict between the need to keep demand high to combat unemployment and the increasing urgency of the struggle against inflation. High demand serves frequently to bid up the wages of experienced, prime age, white males while leaving unemployment painfully high among youths, minorities, women and the aged. Fiscal policy might therefore well be directed at areas of unemployment without increasing demand for those already employed. Reductions in costs of hiring marginal workers would operate then both to combat inflation and increase employment.

For example, payroll taxes might be eliminated (or credited from other revenues) entirely for the first $30,000 of covered wages earned by each worker in his lifetime or the first three years of employment. This would offer a significant incentive to employers to hire youths and others without experience. It would also make relatively low-paying jobs somewhat more attractive by raising take-home pay by some 6 or 7 percent. Thus both the supply of and the demand for labor would be increased in groups of the population where unemployment is particularly high and labor force participation relatively low.

Payroll tax reduction, suspension or crediting is, however, of only limited potential impact because it can amount to no more than 13 percent of payroll costs for affected workers. One can go very much further by introducing tax credits or subsidies for employment or increases in employment among particular categories of workers. Employment tax credits and subsidies have now been employed in a number of Western European countries and Japan and to a limited extent in the United States. The "New Jobs Tax Credit" offered employers

a reduction in income taxes for increases in employment over 102 percent of that of the previous year. The tax credits amounted to 50 percent of increases in the aggregate of wage payments of up to $4,200 per worker, hence no more than $2,100 in credits per worker, and with a limitation of $100,000 per employer (thus reducing the applicability of the incentive to a maximum of 48 employees). Despite all of these limitations, largely restricting the effectiveness to small firms, and despite lack of adequate advance publicity for a temporary program, the New Jobs Tax Credit has been found in several studies to have made significant if small contributions to higher employment. It was nevertheless allowed to lapse and has been quite partially replaced by a "Targeted Employment Tax Credit," restricted narrowly to various categories of disadvantaged workers, primarily youths from families with far-below-average incomes.

Employment tax credits can, however, prove a major innovation in fiscal policy. They can be directed to particular categories of workers, to particular categories of firms and to depressed industries or regions. Most important, they can be formulated so as to operate effectively at the margin where decisions are made, offering very large incentives at relatively modest budgetary cost.

One might, for example, offer tax credits, preferably against payroll taxes, of 50 percent of wages up to the amount of unemployment insurance benefits (some $80 to $100 per week), for those under the age of 20 without jobs and less than six months of prior employment, for those seeking employment after being out of the labor force due to military service or child rearing, and for all of those unemployed five weeks or more. To avoid an incentive to firms to discharge existing workers in order to take advantage of the tax credit for new ones, the benefits could be restricted to increases of employment over some base figure such as average employment, or 95 percent of average employment, of the previous three years.

In addition, to offer further incentives for increases in employment for all categories of workers, there could be an unrestricted credit to firms for increases in employment beyond, say, 102 percent of the previous average. The Treasury might also pay payroll taxes out of general revenues for all those under the age of 20 and offer corresponding subsidies to nonprofit institutions and state and local government bodies and school districts which participate in the social security system.

A program of this kind would offer considerable stimulus to employment, focused broadly on those who tend most to be underemployed and directly on those whose unemployment is extending beyond short term. It would be anti-inflationary both by increasing the supply of goods and services to the market and by lowering labor costs, with increases rather than decreases in real labor income.

Such a set of employment subsidies would be automatically countercyclical in that the opportunities to increase employment would be greatest in recession when employment is low and unemployment high. It could, however, be made more explicitly countercyclical by adjusting rates and/or coverage to the existing rate of unemployment. It could be tailored to structural problems by adding focus on distressed regions or industries.

Fiscal policy may also be directed to encouraging particular expenditures at one period instead of at an other. Thus, to the extent that there are federal excise taxes, as in airline travel, they could be reduced now with air passenger traffic down but increased later when load factors are higher. The current reductions would be both anti-inflationary and stimulative. Future increases would tend to reduce demand and if cost-push inflation is then less, not unduly aggravate inflation. Large scale unemployment in the automobile industry could be reduced if excise taxes on new cars were eliminated, with the promise that they would be reinstated in the future. This would give prospective buyers an incentive to buy now when costs, without the tax, would be less, thus restoring demand, output and employment currently. The intertemporal substitution would be greatly increased, of course, if the government were to institute a major subsidy or cash rebate for purchase of automobiles now.

One desirable current device would be to couple a rebate out of Treasury funds for the purchase of new automobiles with an increased profits tax on the automobile companies. The result would be increased purchases and production of automobiles at lower prices, with a major portion of the Treasury costs met by increased tax revenues out of both the increased automobile production and sales and the higher profits tax rate. A policy of this kind might have some further advantage of effectively taxing General Motors, the most profitable company, to sustain the less profitable Ford and near bankrupt Chrysler. While offering the danger of subsidizing less efficient firms at some cost in profits to more efficient firms, the general advantages in terms of utilization of otherwise wasted resources of manpower and capacity, along with the reductions in market prices to purchasers, would seem substantial.

Similarly, the investment tax credit, which in its current form tends to be somewhat procyclical, could be converted into a countercyclical tool. It is currently procyclical because the benefits and tax credits to business are greater in booms when investment is high and less in recessions when investment is low. If the tax credit were made variable and essentially marginal, however, it could become an effective countercyclical tool.

What would be called for, specifically, would be substitution for the current, constant 10 percent credit on equipment of a, say, 50 percent credit for all purchases above 90 percent of average purchases of the previous three years. This rate of credit would be explicitly temporary and subject to wide variability, ideally, not merely down to zero but to negative figures, which would imply an extra tax on investment expenditures above the threshold. Thus, the new 50 percent credit might be instituted now (June 1980) with a stipulation that it applies only to equipment purchased before December 31, 1980, and delivered no later than June 30, 1981. As of January 1, 1981, the credit would be reset, possibly to zero or below. Maximum impact might be had by announcing in advance that the credit would be set at zero on January 1.

Firms then would rush to make investment expenditures now while they can take advantage of the credit. Investment would be given a considerable stimulus. If it declines in 1981, the tax credit can be re-

instituted at an appropriate rate. Such a variable credit could thus be used to maintain essentially full utilization of capacity in the capital goods industries. It could also discourage over-expansion as it would become clear that the credit would be reduced when investment demand outruns existing capacity or whatever level of capacity is considered desirable.

In general, tax rates, credits and subsidies on a considerable variety of purchases of durable goods can be instituted on a variable basis to alternately stimulate or discourage some or all kinds of purchases in the interest of stabilization.

The instruments of monetary policy are susceptible to similar extensions. Subsidies can be offered for low interest loans both where credit markets seem imperfect and investment desirable, as in the human capital of education or in housing, and also to sustain or increase demand at noninflationary cost.

Specific credit supports (or controls) may entail large leakages, however. Low cost borrowing by students may do more to encourage their parents to take vacation trips or make other expenditures for education, which might have been undertaken anyway. Nevertheless, imperfections of not completely competing capital markets may make particular credit controls sharply and even dramatically effective, at least in the short run. Recently instituted special reserve requirements against extensions of liabilities by credit card companies and large retailers brought such a sharp cutback in some consumer expenditures that within two months and with evidence of the onset of a sharp recession, the Fed has moved to reduce or end them.

My own inclination for monetary policy is to remove restrictions and to perfect credit markets. New legislation will, over some years, move us considerably in that direction, raising and eliminating interest rate ceilings and applying uniform reserve requirements for all liabilities of a variety of banking and other financial institutions. This should permit a smoother flow of credit and capital into investment which is optimal from the point of view of profitability and desirability, while giving the Federal Reserve a firmer control over a considerable body of money and credit.

As long as all households and firms are free to lend and borrow, however, Federal Reserve requirements for a particular set of banking and financial institutions cannot affect directly vast amounts of credit and potential credit to finance economic activity. An attempt by the Fed to exert severe pressure, using the powers that it does have, may do more harm in the way of distortion of the flow of credit than it may do good in bringing about a desirable total volume of credit. Since in a reasonably free society and free economy there will always be money and credit substitutes for whatever the Federal Reserve is controlling, its controls in the last analysis will be like pushing in or pulling out one portion of a balloon. The economy would generally adjust to get around the pressures and controls, but at some cost in efficiency.

These considerations suggest, perhaps with somewhat different reasons, that there is some merit in the policy of aiming for the fairly steady growth of "the money supply" advocated by Milton Friedman and some monetarists. As we have observed earlier, "the money supply" is not a scalar or single number. It has many dimensions and even with

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the new legislation the Federal Reserve will be hard pressed to keep its various dimensions increasing at a steady rate or rates. It would appear desirable for it to try to do so, where necessary providing a path of money and credit instruments which is more accommodative than constant.

It may well be argued that with supply shocks from OPEC countries, sharply fluctuating materials prices in world markets, rapidly fluctuating foreign exchange rates, and abrupt shifts in government policy whether in the way of interventions in trade or surges in military expenditures, there are enough destabilizing influences on the domestic economy. If moderate swings in monetary policy prove inadequate, attempts to vary sharply the conditions of supply of money and credit under the control of the monetary authority, even though intended to be stabilizing, would appear to offer considerable risks of adding to the instabilities, as well as distortions, it is intended to counteract.

These concerns are compounded by international considerations. Where monetary policy is free to vary with the presumed needs of the economy, it appears particularly likely to become entangled in real or imagined needs in the market for foreign exchange. Tight money to raise domestic interest rates, the supply of foreign funds, and the exchange value of the dollar, may be applied despite needs of the domestic economy for fuller employment and uninhibited investment. A generally steady monetary policy, free from such pressures, may hence be all the more stabilizing. When economic activity declines, interest rates will tend to fall, thus cushioning the reduction in demand. When inflationary pressures are higher, interest rates will tend to rise, along with expectations of future inflation, thus at least partially restraining demand.

To attempt to make monetary policy more sharply countercyclical is in considerable part self-defeating. As we have observed, the expectations of future reversal that an explicitly countercyclical policy will generate will tend to mitigate the effects of whatever the current monetary posture may be. Increasingly strenuous efforts to compensate for the consequent ineffectiveness of current policy eventually, in view of imperfect and segregated credit markets, leads rather to overkill in some areas such as housing and to general distortions of credit flows rather than to the desired aggregative results. Monetary policy may better be directed at removing distortions and imperfections in credit and capital flows than to adding to them.

While some similar reservations may be directed to countercyclical fiscal policy, there does appear here to be more scope for effective action, particularly with instruments affecting supply as well as demand and the allocation of expenditures over time. If one believes that an economy free of government intervention is fully stable or provides as much stability as is possible, the indicated policy may appear to be to eliminate existing government interventions and to add no new ones. If one believes that even an economy such as ours, free of government intervention, would evidence undesirable or unacceptable instability, or if one believes that government actions contributing to instability are inevitable, government fiscal policy to counter

the instability is indicated. The Keynesian contribution of the 1930s, and thereafter, noted forces of self-correction which generally save profit-motivated or free-enterprise economies from disastrous instability. But it raised serious and, to many, decisive doubts as to whether an economy without government intervention could be relied upon to furnish generally either sufficiently full employment or optimal stability.

In more recent years we have become more fully aware of government activities which themselves contribute to instability. These relate in considerable part to the much greater role of government expenditures and taxation. Government purchases of goods and services in the United States currently amount to more than 20 percent of gross national product. Federal government expenditures alone, including transfer payments, come to over 21 percent of gross national product, with federal tax receipts only slightly less. Changes in government expenditures and tax receipts as a consequence of conscious or discretionary decisions as well as of automatic variations determined by pre-set structures of tax rates and transfer payments are thus of great moment. At the least, stabilizing fiscal policy is necessary to counteract the otherwise destabilizing effects of government. One obvious case in point is the effect of a progressive income tax system on tax revenues in a period of cost-push inflation. Without counteraction, the increasing relative and real tax bite produced by inflation itself becomes a major depressant to the economy, clearly in terms of aggregate demand and in the view of some, at least, in terms of negative effects on aggregate supply as well.

A healthy, dynamic economy must be able to cope with and thrive on change. Technological innovation will open up new products and new industries and hasten the decline of old ones. Tastes and foreign competition will change, increasing or decreasing demand in some areas and increasing or decreasing supply in others. This would normally imply that some prices would be going up and others would be going down. In that context it is most important that government refrain from actions which block the particular market forces that would lower some prices while others are rising. If it does so, since change will inevitably raise prices in some markets, the average of some increase in prices and no decrease in prices must inevitably entail inflation. Efforts to combat inflation under circumstances in which government policy itself prevents price decline must inevitably create idle resources, excess capacity, unemployment and losses in real income and output.

Since cost-push inflation causes such grave problems for countercyclical policy, the sine qua non for effective countercyclical fiscal or monetary policy must be the mitigation of the cost-push. Whole hosts of government interventions that shore up and increase prices should then be eliminated. These include: dairy price supports, general agricultural acreage limitation and price supports, regulations in trucking and elsewhere that prevent price competition and foster low utilization and high costs, import quotas, tariffs, "trigger prices," anti-dumping provisions, and "orderly marketing arrangements" which keep out imports or raise their prices along with the prices of American steel, autos, television sets, clothing, apparel, and a list of

other items which is almost endless. In some instances, elimination of these interventions will cause economic loss and hardship to those in the industries directly affected. In the interest of equity as well as political realism, it is important to devise adequate alternatives and compensation for those injured and displaced. This cost will be small compared to the gains in efficiency and lower-cost, full production.

It is hard to see long run success in the battle against inflation without the elimination of these government interventions that promote it. In the short run, however, there remain a number of possible policies which promise significant relief. These again include, paradoxically to some, both reductions in some taxes and increases in some government expenditures.

In terms of upward pressure from energy prices, major increases in taxes on the use of gasoline and other petroleum products as well as duties on imports of foreign petroleum would be very much in order so that our economy can be increasingly and ultimately entirely insulated from this foreign source of inflationary pressure. I have recently proposed a tax of a dollar per gallon of gasoline plus import duties on foreign petroleum equivalent to 75 cents per gallon of the gasoline the imports would provide. The proceeds should then be used to reduce other taxes in such a way as to reduce and eliminate inflation elsewhere in the economy. Some of the proceeds could also be used to compensate those among the poor or retired suffering undue hardship from the higher energy prices.

In particular, the increased taxes, which would still leave American gasoline generally less taxed and at lower prices than gasoline in Europe, would go to reduction and elimination of payroll taxes. As suggested above, this in itself, under the pressure of competition, could bring a one-time reduction in supply prices of as much as 13 percent.

To accelerate this price reduction, and to bring a sharp and immediate break to the inflationary expectations and plans which themselves fuel the inflation, we might well couple reductions in payroll taxes with particular incentives. Thus workers and their unions could be offered elimination of employee payroll taxes, adding some 7 percent to after-tax earnings, in return for giving up wage increases. Since it would take a wage increase of some 12 percent to realize this much in after-tax earnings, most workers would find themselves well advised to accept stable wages and the gain in after-tax income.

Similarly, firms could be told that their payroll taxes would be excused, or credited out of the new petroleum and gasoline revenues, on condition that they do not raise prices. A formula might be devised whereby firms with constant labor costs and little in the way of other rise in costs would be asked to reduce prices in return for the payroll tax saving. In some industries, such as airline transportation, where higher fuel costs were dominant, the formula for price maintenance might be relaxed.

It would appear possible that this could be administered through the tax system with a minimum of additional bureaucracy. That there would be some cheating, as with the income tax system in general, is hardly to be doubted. The forces of competition would again, however, make it difficult for individual groups of workers to insist upon higher wages, or for individual firms to cheat on their commitment to

maintain prices, as long as substantial groups of other workers and firms were responding to the lower tax costs and incentives. The anti-inflationary gains from such a change in our tax system would thus appear to be most substantial.

Finally, we should be reminded that neither tax cuts nor increased government expenditures are necessarily inflationary. We have already observed in several contexts that tax cuts that reduce the supply price of the services of factors of production or of final product would tend to lower prices even if they enlarge government budget deficits. Similarly many government expenditures may reduce costs and prices. These could include direct subsidies of mass transit, the construction of better and more direct roads that lower transportation costs, subsidies to research and development and technological advance, expenditures to eliminate public or private capacity bottlenecks and the subsidy of service of government enterprises such as the post office and public electric power. They may also include subsidies for business investment if, because of market imperfections or other government intervention, business investment is sub-optimum. And generally and most important, they may include expenditures for education, training and the investment in human capital to enhance the productivity of that most costly and vital resource in our productive system.

All of these measures, it may be noted, focus very considerably on the supply side, about which much, frequently mischievious, has recently been said and argued. But as Paul Samuelson has been reported to have remarked, "God gave economists two eyes, one to watch demand and one to watch supply." We would do well to use both eyes.

THE AUTOMATIC STABILIZATION EFFECTS OF THE FEDERAL TAX STRUCTURE

By Donald W. Kiefer

I. Introduction

Beginning in the 1940s several economists contributed to the development of the concept of "automatic stabilizers." [1] In its simplest terms, this concept merely draws attention to the fact that certain institutional elements of the economy automatically exert countercyclical influence; that is, they automatically mitigate or offset certain effects of economic disturbances. This characteristic, also termed built-in flexibility by some authors, is exhibited by the Federal tax structure, among other components of the economy. For example, in an economic downturn as incomes decrease individual income tax revenue automatically declines, thus causing the reduction in disposable income to be less than the reduction in total income. The automatic decrease in tax receipts thereby tends to buffer the economy from the full impact of the income decline.

Early writers distinguished automatic stabilizers from two other types of countercyclical policy: discretionary stabilization policy—a counter-cyclical change in policy adopted by specific decision once an economic disturbance has been recognized—and formula flexibility—the enactment of policies which will change by a predetermined formula once specified economic disturbances occur (e.g. revenue sharing which automatically becomes effective or increases at or above a specified unemployment rate). Attention was also devoted to defining more precisely the concept of an automatic stabilizer; Egle proposed the following criteria: "(1) permanently installed, (2) well defined in its main provisions and purposes, and (3) reliably linked to cyclically sensitive criteria (indexes) in the sense that the device starts to operate countercyclically as soon as these criteria indicate the need for action." [2]

Views of the appropriate and practical degree of reliance on automatic stabilizers have varied considerably. The strongest endorsements of automatic stabilizers came from the Committee for Economic Development in 1947 [3] and Milton Friedman in 1948,[4] who advocated virtually exclusive reliance on automatic stabilizers to promote economic stability. This prescription resulted both from a stronger belief

[1] For a review of the early contributions to the concept see Keiser, Norman F., The Development of the Concept of "Automatic Stabilizers," The Journal of Finance, December, 1956. pp. 422–441.

[2] Egle, Walter P., Economic Stabilization: Objectives, Rules, and Mechanisms, Princeton, Princeton University Press, 1952. p. 46.

[3] Committee for Economic Development, Taxes and the Budget: A Program for Prosperity in a Free Economy, November, 1947.

[4] Friedman, Milton, A Monetary and Fiscal Framework for Economic Stability, The American Economic Review, June, 1948, pp. 245–264.

in the natural stability of the economy and the efficacy of automatic stabilizers than shared by many other economists, as well as from less confidence in the ability to use discretionary countercyclical policies beneficially.

A number of other economists studied the role and effectiveness of automatic stabilizers and generally concluded that, while useful and desirable, automatic stabilizers by themselves were not capable of assuring an adequate degree of economic stability. For example, in 1949 a group of 16 economists, in response to a request from the Joint Economic Committee of Congress, met at Princeton University to attempt to develop guidelines for fiscal policy to promote economic stability. In their report to the Committee, which became known as the "Princeton Manifesto," the economists offered the following view regarding automatic stabilization:

> Automatic flexibility can slow down and perhaps halt a decline of activity or a rise of prices; it can give time for restorative forces to come into play, but it will not, by itself, pull activity back to a full-employment level or restore prices to a pre-inflation level.
>
> We feel strongly that the existing automatic flexibility makes an impotrant contribution to economic stability, which should not be frittered away, as it would be, for instance, by rigid application of the annual-balanced-budget rule. But we do not believe it prudent for policy to regard automatic flexibility as more than a first line of defense; more must be done to cope with serious economic fluctuations.[5]

The difference of opinion regarding automatic stabilizers within the economics profession was noted in a report on economic instability by the American Economic Association in 1950 as follows:

> Some economists would place exclusive reliance on built-in stabilizers. They believe that these automatic stabilizers are very likely to reduce economic fluctuations to tolerable magnitudes; and they fear that discretionary government actions are likely to do more harm than good, owing to the defects of forecasting, the destabilizing influence of uncertainty about government action, and the political pressures to favor special interests. Most economists approve the greatest possible use of automatic stabilizers, but do not consider it prudent to rely solely on them. Hence they favor use of additional stabilizing measures if unemployment or inflation pass certain points.[6]

The view of automatic stabilizers as playing a limited role predominated. While full consensus is, of course, rarely achieved in the economics profession, Clement was willing to state a "weighted average opinion" in 1959 as follows:

> An intuitively compiled weighted average of economic opinion on the efficacy of the existing battery of automatic stabilizers might be the following: the automatic stabilization features of the current fiscal system cannot be relied upon alone to dependably stabilize the economy. They are capable, certainly, of reducing the amplitude of the relatively mild swings in economic activity, they might conceivably provide a floor and a ceiling to these fluctuations, but in no event can they initiate an actual reversal of cumulative movements.[7]

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[5] Statement of Dr. Simeon E. Leland, Hearings before the Subcommittee on Monetary, Credit, and Fiscal Policies of the Joint Committee on the Economic Report, 81st Congress, 1st Session, September 23, 1949. Washington, 1950. p. 9.

[6] Despres, Emile, et al., The Problem of Economic Instability, The American Economic Review, September, 1950. p. 522. This report was prepared under the auspices of the Committee on Public Issues of the American Economic Association "to summarize the expert knowledge and opinion in the field." The Association does not make official policy statements on behalf of its members, however, and the statement should not be interpreted as such.

[7] Clement, M. O., The Concept of Automatic Stabilizers, Southern Economic Journal, January, 1959. p. 313. For brief excerpts from several papers which are consistent with Clement's statement see, Brown, E. Cary, The Static Theory of Automatic Fiscal Stabilization, Journal of Political Economy, October, 1955, footnote 1, p. 427.

Probably the nadir of interest in automatic stabilizers came in the mid-1960s. During the period surrounding the 1964 tax cut most attention was focused on discretionary stabilizers. The Council of Economic Advisers, in its annual report for 1966 gave recognition to the role of automatic stabilizers, but emphasized, "Fiscal and monetary policies must be continuously adjusted to keep the aggregate demand for goods and services in line with the economy's growing capacity to produce them." [8] And in 1966 Walter Heller, who had been chairman of the CEA in 1963 and 1964 when the tax cut was formulated and enacted, wrote, "We now take for granted that the government must step in to provide the essential stability at high levels of employment and growth that the market mechanism, left alone, cannot deliver." [9]

Since the mid-1960s, however, our ability to use, and indeed the desirability of using, the available discretionary policies to attempt to avoid or substantially moderate cyclical fluctuations has come under serious question.[10] Whereas the 1964 tax cut was widely judged a success, the success of the 1968–69 surtax and the 1975 tax cut have been heavily debated. Economists discovered that the difficulties involved in forecasting the course of the economy, and even in definitively assessing its current status, were greater than previously realized. Furthermore, the magnitude and timing of the economic effects of the discretionary stabilization policies were discovered to be much more complex and uncertain than thought earlier. Some of the theoretical underpinnings of an activist approach to countercyclical policy were also subject to question. More recently, renewed attention has been focused on the possible negative consequences for long-term economic growth which result from active discretionary countercyclical stabilization policies (one of the concerns expressed by Friedman and the CED in the late-1940s). While complete agreement does not exist, the central tendency of economic opinion seems to have moved away from activist "fine tuning" of the economy in an attempt to eliminate cyclical fluctuations, and toward the use of discretionary policies primarily for making longer-term adjustments in the growth path of the economy. If this is the case, then the role of the automatic stabilizers and their effect on the cyclical variability of the economy achieve renewed significance.

The next section of this paper develops the concept of automatic stabilization. The discussion begins in part A with the Musgrave-Miller index and subsequently considers the implications of additional development in the static macroeconomic model, concluding that in a model which includes supply and price effects the traditional concept of automatic stabilization becomes ambiguous. Part B of the section considers automatic stabilization within a dynamic framework concluding that automatic stabilization should be defined and measured

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[8] Economic Report of the President, Together with the Annual Report of the Council of Economic Advisers, January, 1965, p. 96.

[9] Heller, Walter W., New Dimensions of Political Economy, Cambridge, Harvard University Press, 1966. p. 9.

[10] For an analysis and brief overview, respectively, of some of the issues involved see, Blinder, Alan S. and Robert M. Solow, Analytical Foundations of Fiscal Policy, in The Economics of Public Finance, The Brookings Institution, Washington, D.C., 1974, pp. 3–115, and Gordon, Robert J., What Can Stabilization Policy Achieve?, American Economic Review, May, 1978, pp. 335–341.

in terms of the effect of the tax structure on the cyclical movement of GNP with respect to full employment GNP. Section III assesses the evolution of the Federal tax structure and reviews the literature which has attempted to quantify its automatic stabilization effectiveness. The paper concludes with a simulation analysis of automatic stabilization within the context of a dynamic growth-oriented model of the U.S. economy. The results imply that the traditional notion of automatic stabilization derived from the static macroeconomic model is invalid. In particular, the automatic stabilizers do not cause the change in real levels of economic activity always to be less than in an unstabilized system. Rather, the automatic stabilizers alter the cyclical pattern of the economy and enhance stability primarily by reducing the variability of economic change.

II. Development of the Concept

The earliest explorations of the concept of automatic stabilization were in the context of a static macroeconomic model. More recent analysis has been within a dynamic framework. The static economic model merely examines the equilibrium conditions in the economy and the determinants of different levels of equilibrium. The dynamic model characterizes the movement of the economy through time. Among the concerns in the dynamic model are the conditions associated with economic stability, the adjustment process from one set of stability conditions to another, and the factors affecting whether and how that process occurs.

A. The Static Context

1. THE MUSGRAVE-MILLER INDEX

A measurement statistic for the degree of automatic stabilization within a static economic model was first offered by Musgrave and Miller in 1948.[11] They relied on a very simple, single-equation economic model which ignores supply considerations, the monetary sector, and the foreign trade sector and assumes that Government expenditures are constant and entirely for goods and services, that all Government revenue is derived from a personal income tax, that there are no corporate savings, and that the level of investment is independent of taxation. In such a simple model the change in national income between two periods may be expressed as follows:

$$\Delta Y = \Delta I + c\Delta Y - c(r_2 Y_2 - r_1 Y_1) \tag{1}$$

where $\Delta Y = Y_2 - Y_1$, the change in income from the first period to the second, $\Delta I = I_2 - I_1$, the change in investment, c is the marginal propensity to consume, and r_1 and r_2 are the average tax rates in the two periods, so that $T_i = r_i Y_i$, where T_i = total tax revenue in period i. Clearly this model also assumes a very simple consumption function in which consumption is a constant linear function of present-period disposable income.

[11] Musgrave, Richard A. and Merton H. Miller, Built-in Flexibility, American Economic Review, March, 1948. pp. 122–128.

The income elasticity of tax revenue, represented by E, is the percentage change in tax revenue which results from a given percentage change in income, or:

$$E=\frac{\Delta T\, Y_1}{\Delta Y\, T_1} \tag{2}$$

where $\Delta T=T_2-T_1$. Solving equation (2) for ΔT and substituting the result into equation (1) yields the following result:

$$\Delta Y=\Delta I\left[\frac{1}{1-c(1-Er_1)}\right] \tag{3}$$

the term in brackets being the simple multiplier for an exogenous shift in I in this model. Musgrave and Miller observe that if $E=0$, i.e., T is a constant, then ΔY is unaffected by changing tax levels and the system exhibits no "automatic stabilization." They therefore suggest the following statistic as a measure for the degree of effectiveness of automatic stability (they use the term "built-in flexibility"):

$$\alpha=1-\frac{\Delta Y}{\Delta Y_0} \tag{4}$$

where ΔY results from equation (3) and ΔY_0 is calculated from equation (3) with E set equal to zero. Since the fraction

$$\frac{\Delta Y}{\Delta Y_0}$$

yields the ratio of the change in income with automatic stabilization to the income change with constant taxes, α is a measure of the fraction of the change in income which is prevented by the automatic stabilization property of the tax structure. An alternative way to view α as that it is the percentage reduction in the multiplier [in equation (3)] which results from the automatic stabilizer. Substituting equation (3) into equation (4) yields the following expression for α:

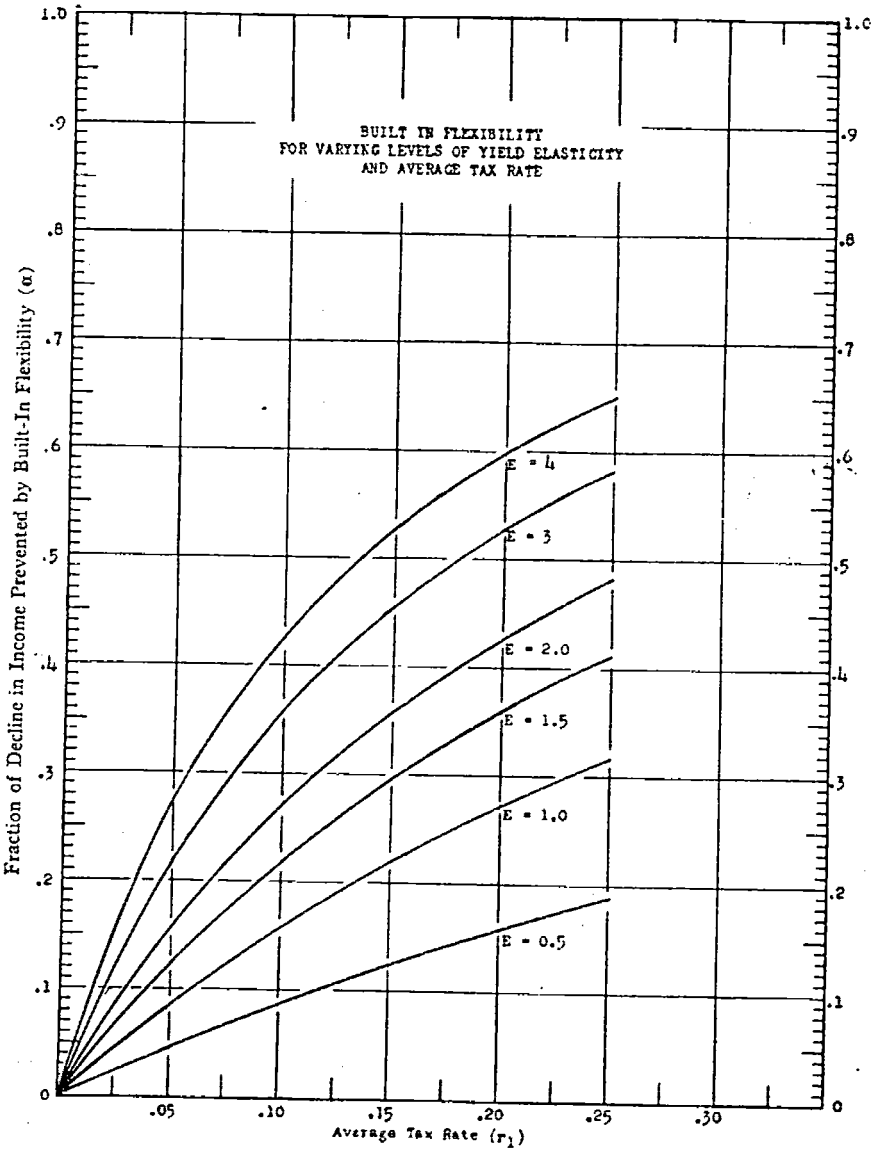
$$\alpha=\frac{cEr_1}{1-c+cEr_1} \tag{5}$$

Hence, α will vary directly with E, the elasticity of tax revenue with respect to income, and r_1, the initial average tax rate. As is shown in the Appendix, this formulation may also be expressed in terms of the marginal tax rate, an approach which is frequently very useful.

Musgrave and Miller provide Chart 1 which graphs α as a function of the average tax rate and the elasticity of tax revenue assuming a marginal propensity to consume equal to .65. Because one of the purposes of the article was to indicate the limitations of the automatic stabilization property, they indicated that as a theoretical maximum, even if the marginal tax rate were 100 percent, the degree of automatic stabilization would not exceed c [see equation (7) in the Appendix]. Thus, the "automatic stabilization" property of the tax system cannot fully stabilize Y (i.e., α cannot equal 1). Of course,

with more realistic values of the tax parameters α is considerably less than its theoretical maximum. Musgrave and Miller suggested that the index of effectiveness of automatic stabilization, α, was approximately 0.36, based on an average Federal tax rate of about 0.20, a revenue elasticity of about 1.5, and an assumed long-run marginal propensity to consume of approximately 0.65. Their estimate, therefore, implies that about one third of the change in national income which would otherwise result from an exogenous disturbance will be prevented by the automatic stabilization property of the Federal tax system.

CHART 1



Source: Musgrave, Richard A. and Merton H. Miller, op. cit., p. 125.

2. CONSIDERATION OF PRICE EFFECTS AND SHIFTS IN AGGREGATE SUPPLY

The Musgrave-Miller analysis is useful in more precisely conceptualizing what is meant by "automatic stabilization" and providing the notion with some quantitative substance. Although the analysis is based on a highly simplified economic model which ignores many issues of central importance to stabilization policy, it is possible to apply the Musgrave-Miller approach in much more sophisticated economic models, as shown in the Appendix. However, with ever greater development in the economic model the concept of automatic stabilization eventually becomes ambiguous. For example, Brown called attention to the effects of the price responsiveness of tax yields and the different stabilization properties of different kinds of taxes.[12] In the Musgrave-Miller model the personal income tax is a function of real income, not nominal income. But, in the United States, of course, the parameters of the personal income tax (rate brackets, exemptions, deductions, etc.) are defined in money terms, and therefore the tax yield is a function of both real income and the price level. In general, there is no reason to expect that the change in real tax burden in response to a change in real income will be the same as the response to an inflation induced change in income. For example, under a simple flat-rate income tax based on nominal income, the real tax burden would rise proportionately with growth in real income but would be unchanged in response to an income increase which was purely inflationary. Under a more complex tax structure the two responses would depend on the tax treatment of different taxpayers and different types of income (e.g., capital gains) and their responses to real and nominal income changes.

The price responsiveness of the income tax cannot be ignored in studying automatic stabilization.[13] To illustrate this, consider two economic disturbances, one causing an increase in aggregate demand, say from an increase in Government expenditures, and the second involving a shift in aggregate supply, say from an increase in oil prices. The increase in demand will result in an output increase and a rise in the price level. In the United States the real income tax level is increased by both real and inflationary income increases, so both elements of the tax response tend to reduce real consumption and serve as an automatic stabilizer. In this case the tax system stabilizes both output and prices since the original demand shift is moderated by the tax response. However, the supply shift caused by higher oil prices will simultaneously reduce output and raise prices, a combination of economic ills which has been termed "stagflation" and has become a familiar economic circumstance in the past decade. The stabilization role of the individual income tax in such a situation is uncertain since its response to lower output (higher unemployment) would tend to bolster aggregate demand while its response to higher prices would tend to retard demand. The automatic stabilizers cannot stabilize both output and prices in response to a supply shift because the stabilizers affect aggregate demand rather than moderating the original supply shift. De-

[12] Brown, E. Cary, The Static Theory of Automatic Fiscal Stabilization, Journal of Political Economy, October, 1955. pp. 427–440.

[13] This analysis is developed in more detail in the Appendix.

pending on the responses involved, the income tax could tend to stabilize output or prices, but not both. If the output decline has the larger effect on the tax level, taxes will decline and provide a stimulus to aggregate demand. The higher demand will serve as an output stabilizer, offsetting a portion of the output reduction caused by the supply shock. However, the increased demand will serve as a price *destabilizer*, further adding to the inflation resulting from the supply shock. By a similar logic, if the income tax serves as a price stabilizer in response to a supply disturbance, it will be an output destabilizer.

Thus, even though the individual income tax would receive a relatively high ranking by the Musgrave-Miller index, the automatic stabilization effect of the tax during a period of stagflation is unclear.[13a] One is forced to accept the conclusion that the significance of the Musgrave-Miller index, and indeed the concept of "automatic stabilization" itself, becomes ambiguous within the context of a fuller model of the economy which allows for both price and output effects and supply and demand shocks. As developed by Musgrave and Miller, "automatic stabilization" refers only to real output levels in the economy, not to other variables, specifically, not to the price level. In fact, an automatic output stabilizer can, in response to supply disturbances, operate as an automatic price destabilizer. Within this broader context it becomes clear that the impact of the tax system on the economy in response to economic changes—the contribution of the tax system to stability or instability—can be evaluated only with a full understanding of the nature of the tax system, its interrelationships with other elements of the economy, and the economic changes being experienced.

3. ADDITIONAL CONSIDERATIONS

This conclusion becomes more strongly reinforced as additional complexities in the economic system are considered. For example, the Musgrave-Miller index is developed from a simple macroeconomic model which includes only an individual income tax.[14] The roles of other taxes in the economy further complicate the analysis. Other important taxes which would require treatment in a full analysis of the "automatic stabilization" characteristics of the Federal tax structure include the payroll tax, the corporate income tax, and excise taxes. The employee portion of the payroll tax presumably has macroeconomic effects very similar to the personal income tax. The employer portion of the payroll tax, however, most likely increases production costs and, therefore, influences the macroeconomic stabilization process through the supply side rather than the demand side of the economy. The corporate income tax affects the level of income through its role in the determination of after-tax corporate profits, which further influences the levels of dividends and retained earnings, and also affects the level of investment through its role in the deter-

[13a] Regarding the experience during 1974 the Council of Economic Advisers reported, "there was no automatic fiscal stabilization to cushion the decline in real income since the revenue-reducing effect of lower real incomes was offset by the revenue-increasing effect of inflation." Economic Report of the President, February, 1975. p. 59–60.

[14] The Musgrave-Miller paper discusses both excise taxes and the corporate income tax and essentially argues that, for simplicity's sake, they can be subsumed into the original analysis without changing the equations. Their effects on other economic variables, for example prices and investment are ignored.

mination of after-tax rates of return. Excise taxes affect the price level and, thus, influence stabilization from the supply side. Quantity based excise taxes shift supply prices upward but do not change the overall shape of the supply function; ad valorem excise taxes shift the supply function and change its slope. A macroeconomic model becomes very complicated when these various tax effects are incorporated. Deriving the Musgrave-Miller index of automatic stabilization for such a model would be difficult but also pointless because, even more so than before, the stabilization effect of the tax structure on the economy will depend on the status of the economy and the nature of the economic changes.

There are other elements of a fully specified macroeconomic system, in addition to a complete description of the tax structure itself, which further complicate knowledge of the stabilizing effect of the tax system. As one example, the simple model from which the Musgrave-Miller index is derived does not consider the method of financing the Government deficit. The multiplier in the denominator of the Musgrave-Miller index is from a macroeconomic model in which both Government expenditures and taxes are fixed in dollar terms. The multiplier in the numerator is derived from a system in which expenditures remain fixed but taxes fluctuate with economic activity. In this latter system, of course, the Government will frequently be in a deficit or surplus position. If economic activity declines and tax revenues automatically decrease, thus creating a Government deficit (assuming a balanced budget before the decline), the "automatic stabilization" effects of the tax decrease will not be independent of whether the deficit is financed by borrowing from the domestic credit markets, the Federal Reserve System, or from foreign credit markets. If the Treasury borrows in domestic credit markets, the interest rate will be increased and credit availability for investment and consumer borrowing will be reduced. If the Federal Reserve "accommodates" the deficit by expanding the money supply, interest rates will be lowered and aggregate demand will be further stimulated but prices will be higher. If the deficit is financed by foreign borrowing a truly external source of purchasing power will be infused into the economy. These alternative financing mechanisms affect the economy differently and, therefore, play a role in determining the automatic stabilization effects of the tax structure in response to economic changes.[15]

B. The Dynamic Context

The most important simplification in the Musgrave-Miller analysis and the above discussion is the static nature of the economic model employed. Within the static model the analysis concentrates on equilibrium points, and the "distance" between equilibria which correspond to different economic conditions. The multiplier is a measure of this distance of displacement of the system equilibrium in response to a change in a specified economic parameter. In this context a smaller dis-

[15] For an interesting analysis of the variation in fiscal policy multipliers depending on the financial mechanism see: Christ, Carl F., A Short-Run Aggregate Demand Model of the Interdependence and Effects of Monetary and Fiscal Policies With Keynesian and Classical Interest Elasticities, American Economic Review, May 1967, pp. 434–443.

placement of the static equilibrium is regarded as greater "stability" and, therefore, any factor which reduces the value of the multiplier is a "stabilizer."

In the more realistic dynamic context the concern is with the state of the economy as it moves through time. As times passes economies grow, rather than remain static, so stability in a dynamic context refers to the maintenance of a constant rate of economic growth at a level consistent with full employment, or a constant relationship to full employment, of labor and resources and with stable prices, or, perhaps alternatively, a stable "acceptably low" level of price inflation. The conditions under which an economy would remain on such a "stable growth path" are complex, and can only be derived theoretically since, in reality, long-term perfectly stable growth is never observed. In such a stable-growth scenario some economic relationships, such as the capital/labor ratio, would increase with the passage of time, but others, such as the ratios of investment, savings, and consumption to total income, would remain constant.[16]

1. FISCAL DRAG

In the static model with a stationary equilibrium, a fixed level of tax revenue was used as the standard for measuring the degree of automatic stabilization because a constant tax is "stabilization neutral" in the static model. In the dynamic model, however, stability along the long-run growth path requires that consumption, savings, and investment remain constant fractions of income. Hence, the "stabilization neutral" tax system in the dynamic model is a tax level equal to a constant proportion of full employment GNP.[17] Such a tax system, analogous to constant tax revenue in the static model, is consistent with economic stability and does not respond to deviations from the stable equilibrium (in this case a growth equilibrium). A tax level which would decrease or increase as a proportion of full employment GNP as the economy moved along its stable growth path can be seen to be inconsistent with remaining on the stable growth path. If the tax level as a fraction of income continuously declines, then assuming that Government spending is a constant proportion of national income, the Government deficit would continuously increase. This increasing deficit would be inconsistent with constancy in the relationships between consumption, savings, and income, and therefore inconsistent with maintaining stable economic growth.[18] In the opposite case in which the tax level as a fraction of income increases as economic growth occurs—a characteristic of the U.S. tax structure—as the economy grows the Gov-

[16] For a simple overview of the characteristics of stable growth see Samuelson, Paul A., Economics, Tenth Edition, McGraw-Hill, New York, 1976, especially ch. 37, The Theory of Growth, and its Appendix, pp. 725–758.

[17] This discussion abstracts from the difficulties inherent in defining full employment GNP and from the interrelationships between full employment GNP and the business cycle.

[18] There are, of course, times when a Government deficit is appropriate for countercyclical purposes, but this aspect of fiscal policy is ignored for purposes of the present discussion of the conditions of stable growth. The condition discussed in the text is also to be distinguished from a reduction in both Government expenditures and taxes (not necessarily by the same amounts). Under certain conditions such a reduction could move the economy to a new long-run stable growth path, at which time expenditures and taxes would again have to achieve constant relationships to national income. The point is not that any particular ratio of taxes to national income is necessarily ideal, or that increases or decreases in the ratio are always bad, but rather that a necessary condition for long-run stable growth is stability in the ratio.

ernment budget will move increasingly into a surplus position. This growing Government surplus will exert an increasing restrictive influence on economic activity, thus diverting the economy from its stable growth path.[19] This increasing restrictive influence of a tax burden which automatically grows as economic growth occurs is known as "fiscal drag."

In the United States the Federal tax burden does automatically increase in response to economic growth due to the overall progressivity of the tax system; in other words, the marginal effective tax rate exceeds the average effective tax rate. Thus, the U.S. tax system does exhibit fiscal drag. Periodic tax cuts are required to avoid the ever-increasing tax burden associated with fiscal drag. It is at this point that the study of the automatic stabilization effects of the tax system becomes intertwined with the study of discretionary fiscal policy. The periodic tax cuts adopted to counteract fiscal drag should be enacted at times which are compatible with stabilization policy goals. In an economy characterized by relatively stable growth the tax cuts should be relatively small and frequent; in a more cyclical economy the tax cuts would be less frequent and timed to coincide with recessions. This concept of periodic reductions in a progressive tax structure to offset fiscal drag creates a dichotomy between the nature of the short-run and long-run tax structures and their automatic economic effects.

Under this view of the tax system, the short-run tax structure (in existence between tax cuts) would be progressive, and the actual effective tax rate could vary depending on the phase of the business cycle and the length of time since the last tax cut. On the other hand, the long-run structure (the average effective structure over a long time period including several tax cuts) would be proportional with regard to income along the stable growth path. This implies that for purposes of assessing the automatic stabilization effects of the tax structure in the short run, it is appropriate to assume an elastic tax structure. but, at the same time, the long-term consequences of fiscal drag may be avoided.

However, the concept of a long-term average tax rate around which the actual tax varies in response to the phenomenon of fiscal drag and periodic offsetting tax cuts presents an additional complexity in the macroeconomic model which must be considered in assessing the automatic stabilization effects of the tax system. There is reason to believe that tax policy changes which are perceived to be temporary have substantially less economic effect than those regarded to be permanent.[20] The argument essentially is that taxpayers base their ecomonic

[19] This is not to suggest that a Government surplus is necessarily bad for economic growth. In fact, one common prescription for our present economic problems is for the Federal Government to run a surplus, thus making additional credit available in the financial markets and lowering interest rates. This is expected to stimulate higher capital investment and lead to a higher level of economic growth. The proposal is, therefore, a suggestion for attempting to shift the economy from one growth path to another. Once the new growth path were achieved it would again be the case that for stable growth a constant ratio of taxes to aggregate income would be required.

It should be observed, however, that there is a limit to the extent to which increasing the Government surplus is consistent with facilitating economic growth. The movement of the Government budget toward surplus both increases forced savings in the economy and makes those savings available for investment. At some point, the demand depressing effect of the higher savings will outweigh the investment stimulating effect of the Government budget. In time of recession, this point is reached while the budget is still in deficit.

[20] See the discussion of the implications of the permanent income hypothesis for the impact of temporary tax changes in Eisner, Robert, Fiscal and Monetary Policy Reconsidered, American Economic Review. December 1969, pp. 897–905.

decisions, not on their current after tax incomes, but rather on their expected future after tax incomes. Hence, if the present tax level is known to deviate from the long-term average tax level, the latter may have greater influence on taxpayer behavior than the former. If this is the case it may be appropriate to think of the tax burden as consisting of two components: a permanent component equal to the long-term average tax burden, and a temporary component equal to the deviation of the actual tax rate from the average. Consumers and businessmen would be expected to base their economic decisions primarily on the permanent component of the tax burden with relatively little attention to the temporary component, so long as the deviation in effective tax rate remained within the "normal" range. This implies that the fiscal drag aspect of the automatic economic effect of the tax structure might actually have little economic effect so long as the deviations from the long-run average effective tax burden are kept relatively small through judicious use of discretionary tax cuts.

The phenomenon of fiscal drag, therefore, introduces an unavoidable interrelationship between the automatic economic effects of the tax structure and the economic effects of discretionary tax policy. For purposes of assessing the automatic stabilization effects of the tax structure in the short run, it is appropriate to regard the tax system as being elastic. However, it is also important to realize that short-term automatic changes in the tax level will have relatively small economic effects so long as expectations are that long-term average levels will be maintained through discretionary policy actions.[21]

2. THE EFFECT OF THE BUSINESS CYCLE ON AUTOMATIC STABILIZATION

In the actual economy, of course, economic growth is not a smooth movement along the long-run growth path. Rather, the economy experiences business cycles, at times growing rapidly, at other times growing less rapidly or even declining, in a fluctuating pattern along the growth path. This dynamic process also imposes different requirements than were observed in the static model if the tax system is to be automatically stabilizing. In the simplest version of the static model the tax system is stabilizing if taxes increase when income rises and fall when income decreases, in other words, if the income elasticity of the tax system is positive. It has already been observed that in the dynamic model the tax system is neutral with regard to stabilization when the tax level remains a constant fraction of full employment income. But what characteristics would the tax system require to automatically exert a stabilizing influence during various phases of the business cycle? An analysis by Cassidy argues that no single tax struc-

[21] This argument also implies a somewhat different view of the impact of periodic tax cuts than that usually expressed. So long as a tax cut is within the range of taxpayer expectations based on past variation in the temporary component of the effective tax burden, the tax cut would not be truly stimulative; it would merely confirm the appropriateness of taxpayer behavior based on the permanent component of the tax burden. Within this framework, a tax cut of normal size would be stimulative only in comparison to a "do nothing" policy which would allow the effective tax burden to increase beyond the expected range, thus convincing taxpayers that the structure of the economy was being permitted to change, necessitating a change in their behavior. This argument is somewhat analogous to the rational expectations analysis of monetary policy in, Thomas, J. Sargent and Neil Wallace, "Rational" Expectations, The Optimal Monetary Instrument, and the Optimal Money Supply Rule, Journal of Political Economy, April 1975, pp. 241–254.

ture can be stabilizing in all phases of the business cycle.[22] Cassidy maintains that to be regarded as automatically stabilizing in all phases of the business cycle the tax structure should be stimulative when national income is below the full employment level and restrictive when national income rises above the stable growth path.[23] He then describes the tax elasticity requirements during various phases of the business cycle to be consistent with these conditions. He indicates that during a period of retardation, when the economy is growing but at a rate too slow to maintain full employment, an income elasticity of the tax system of less than one is required for automatic stabilization. In this circumstance, as income grows slowly the effective tax rate should decline thus providing an automatic stimulus toward full employment. In a recession, when income actually declines, automatic stabilization requires a tax elasticity greater than one, so in this circumstance also the effective tax rate will decline thereby providing a stimulus. Cassidy claims that during a recovery from recession, when income rises more rapidly than the stable growth path rate but income is still below the full employment level, the tax elasticity should be less than one so tax revenues rise more slowly than income (or actually decrease), thereby continuing the stimuus. Finally, Cassidy indicates that during an economic boom, when income is above its full employment level, the tax elasticity should be greater than one to provide a restrictive influence.

In the second part of his paper Cassidy explores the income elasticity of a variety of very simple tax structures (modeled after the payroll tax with only a tax rate and tax base ceiling) under an assortment of economic conditions. His results reemphasize the theme developed in the section above on automatic stabilizers in the static model: the income elasticity of a given tax system depends heavily on the state of the economy and the nature of the economic changes being experienced.[24] His results also indicate that no single tax structure can meet his elasticity criteria for being an automatically stabilizing influence in all phases of the business cycle.

Cassidy's approach is important because of at least two modifications it forces in the concept of automatic stabilization. First, it explicitly treats automatic stabilization in the dynamic growth context as *stabilization with reference to the full employment level of GNP.* The automatic stabilization concept in the static context does not refer to any particular level of income; if the tax system tends to reduce movements from the original level of income, whatever that level may be, the system is regarded as automatically stabilizing. The premise of Cassidy's analysis is that in a dynamic growth context

[22] Cassidy, Henry J., Is a Progressive Tax Stabilizing?, National Tax Journal, June 1970, pp. 194–205.

[23] Cassidy uses a proportional income tax, i.e., a tax with an income elasticity equal to one, as his standard for stabilization neutrality. However, a proportional tax is not neutral in the same sense as a constant tax in the static models because it does respond to income changes from the equilibrium level. An income tax which would claim a constant portion of full employment income, albeit hypothetical, is suggested in the present analysis as consistent with the neutrality concept in the static model and as "more stabilization neutral" than Cassidy's suggested standard.

[24] For a paper which uses a different analytical approach but derives a similar conclusion—that the stabilization effectiveness of the tax structure may be more sensitive to the distribution of income changes than to the progressivity of the tax system and varies considerably depending on the economic changes being experienced—see, Dalton, Thomas R., Measuring the Effectiveness of the United States' Withholding System as a Cyclical Stabilizer, Public Finance, No. 2/1977, pp. 197–209.

only a tax system which tends to move the economy toward the full employment level of income should be regarded as automatically stabilizing.

The second important implication of Cassidy's analysis is the additional emphasis on the dependence of the elasticity of the tax structure, and the automatic stabilization properties of the tax structure, on the economic conditions. This result clearly indicates that one cannot rely on simple point estimates of the elasticity of the tax structure, or simple indices such as the Musgrave-Miller ratio, to draw conclusions about the degree of automatic stabilization provided by the tax structure. A much fuller analysis, with careful attention to current economic conditions, is required.

3. THE EFFECT OF THE AUTOMATIC STABILIZERS ON THE BUSINESS CYCLE

Cassidy's analysis is too narrowly focused in at least one respect, and this limitation also identifies an additional deficiency in concentrating on the automatic stabilization properties of the tax structure alone. Cassidy argues that to be consistent with the concept of automatic stabilization the tax structure should be stimulative, that is, the tax system should be claiming a diminishing portion of income, whenever national income is below the full employment level. This leads to his requirement that the tax elasticity should be greater than one during a recession and less than one during a recovery. If the tax elasticity were greater than one during the recovery phase, tax payments would increase more rapidly than income and the tax system, when viewed in isolation, would be a restrictive factor in the effort to achieve full employment.

The implication of Cassidy's requirement is that the effective tax burden would continuously decline whenever national income were below full employment income. But this cannot be considered automatically stabilizing when the condition of the entire Federal budget is considered. For example, consider the case in which the economy is moving smoothly along its full employment growth path, Government expenditures are fixed at a constant percentage, say 20 percent, of full employment GNP, and the tax system also raises revenue equal to 20 percent of GNP. If a disturbance causes a recession and the tax system is elastic (income elasticity greater than one), tax revenue will decrease as a percentage of income, say to 18 percent. As the economy grows back toward full employment from the depths of recession Cassidy would require that the effective tax rate continue to decrease so as not to restrain the recovery. However, if this were the case, since Government expenditures remain at 20 percent of full employment GNP (in this hypothetical example), the Government deficit would continue to increase as a portion of national income, and thus become increasingly stimulative, as the economy approached full employment. This characteristic is obviously not consistent with automatic stabilization.

Therefore, for a full understanding of the automatic economic effects exerted by the Federal Government, the entire Federal budget must be considered. In somewhat oversimplified terms, if the Federal deficit may be used as a proxy for the "fiscal thrust" exerted by the

Federal budget, then the appropriate automatic changes would be for the deficit to equal zero when the economy is on its stable growth path, to increase automatically as the economy moves below the stable growth path in a period of stagnation or recession, to decrease automatically as the economy moves out of recession toward full employment, and for the budget to move automatically into a surplus position if the economy moves above the stable growth path. The tax system criteria for automatic stability used by Cassidy are inconsistent with these budget criteria. Under Cassidy's tax characteristics, the budget deficit would grow continuously during recession and recovery, and the fiscal thrust of the Federal budget would reach its maximum just as the economy was again reaching its stable growth path. Under these circumstances the budget would no doubt push the economy beyond its stable growth path into an inflationary condition, and only then would the fiscal thrust begin automatically decreasing. Thus, under Cassidy's criteria the tax system would meet the simplest of stabilization requirements, that of exerting pressure in the appropriate direction, but would fail a more stringent requirement, exerting fiscal pressure of an appropriate magnitude in all circumstances. Under Cassidy's system, once the economy was disturbed from its stable growth path the Federal budget would accentuate economic cycles, rather than dampen them.

Cassidy's analysis makes the important point that the automatic economic effects of the tax structure and Government budget depend on where the economy is in the business cycle. The above observations make the additional point that the automatic effects of the Government budget feed back and affect the business cycle, and, in fact, in the dynamic context automatic stabilization should be defined in terms of the automatic effects of the Government budget on the cyclical properties of the economy. In this broader dynamic context, the meaning of automatic stability, or at least the ranking of various possible characteristics according to the degree of contribution to stability, is not unambiguous. Of course, a dynamic system which remains on (or close to) the stable growth path is regarded as more stable than one which has a persistent tendency to move away from the growth path or experience cycles. But how are two economic systems, one of which experiences short and relatively vigorous cycles, the other of which has more moderate cycles of longer duration, to be ranked? Is the length of the cycle or the magnitude of the disturbance the more important consideration or stability? Additionally, stability in the dynamic context must be concerned with the process of adjusting from one stable growth path to another. Is an abrupt or gradual adjustment more stable? How do the adjustments compare if they are combined with various types of cyclical movements? These questions have no definite answer, but they suggest the greater complexity of the automatic stabilization issue when concerned with the impact on the cyclical properties of the economy.

The study of the cyclical effects of automatic stabilizers in dynamic systems has been the subject of several papers, but in many ways is still in its infancy. The research was initiated by Smyth in 1963 in a paper which revealed that in a very simple dynamic economic model

so called "automatic stabilizers" could, in fact, be destabilizing.[25] He specified a simple three equation dynamic macroeconomic model with consumption a linear function of disposable income in the previous two periods and investment a linear function of the change in income lagged one period. He compared the dynamic properties of a version of the model in which taxes are fixed with a version in which taxes are proportionate to income. Smyth's model is dynamic but is not a growth model; the equilibrium level of national income remains constant for constant values of the exogenous variables. In this system a fixed level of taxes is analogous to taxes remaining a constant proportion of full employment GNP. Hence, in this case the static and dynamic stabilization neutral tax structures are equivalent.

Smyth derives the static multipliers for the two versions of the model and indicates that, according to the Musgrave-Miller automatic stabilization index, the proportional tax system should be more stable than the fixed tax system. However, by examining the dynamic properties of the systems Smyth demonstrates that the proportional tax system is more likely to be unstable than the fixed tax system; furthermore, raising the tax rate in the proportional tax system increases the likelihood of instability. These results are the opposite of what would be obtained from the static analysis. Finally, he provides the results of simulation on the two systems with simple hypothetical data which show that subsequent to a disturbance the macro system with a fixed tax oscillates smoothly with dampening cycles which stabilize to a new equilibrium, whereas the macro system with the proportional tax oscillates more rapidly with cycles of increasing amplitude which never stabilize to a new equilibrium.

In a subsequent paper Smyth suggests an alternative to the Musgrave-Miller index of automatic stabilization for a dynamic system; the alternative is the percentage reduction in the standard deviation of income measured about its moving equilibrium which results from the built-in flexibility of taxation.[26] Based on simulations using a simple econometric model of the U.S. economy Smyth estimates that the U.S. tax system has reduced the standard deviation of national income by approximately 37 percent.

These initial explorations by Smyth have been followed by a number of other papers each examining different aspects of the automatic stabilization issue in the context of simple dynamic economic models.[27]

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[25] Smyth, D. J., Can "Automatic Stabilizers" be Destabilizing?, Public Finance, No. 3–4, 1963, pp. 357–363.

[26] Smith, D. J., Built-in Flexibility of Taxation and Automatic Stabilization, Journal of Political Economy, August 1966, pp. 396–400.

[27] See for example: Smyth, David J., Built-in Flexibility of Taxation and Stability in a Simple Dynamic IS–LM Model, Public Finance, No. 1, 1974, pp. 111–114; Johansen, Leif, Some Aspects of Automatic Stabilization, in Smith, Warren L. and John M. Culbertson, Eds., Public Finance and Stabilization Policy, North-Holland Publishing Co., Amsterdam, 1974, pp. 175–201; Boyes, William J., Built-in Flexibility of Taxation and Stability in a Simple Dynamic IS–LM Model: A Comment, Public Finance, No. 2, 1975, pp. 268–271; McLean, Richard and H. O. Stekler, Do Proportional Income Taxes Stabilize? Stony Brook Working Papers No. 161, Economic Research Bureau, State University of New York, May 1976, 10 p.; Delorme, Jr., Charles D. and Hiroaki Hayakawa, The Specification of the Demand for Money and the Built-in Flexibility of Taxation in a Multiplier—Acceleration Model, Public Finance, No. 1, 1977, pp. 48–55; Ip, Pui Chi, Fiscal Policy and Stability in a Dynamic Macroeconomic Model With a Government Budget Constraint, Public Finance, No. 1, 1977, pp. 29–36; Boxer, Robert, Proportional Stabilization in Deterministic and Stochastic Multiplier-Accelerator Models, Public Finance, No. 2, 1977, pp. 168–175; Peel, David A., On the Built-in Flexibility of Taxation and the Deterministic and Stochastic Stability of Macro-Models Under Alternative Expectations Schemes, Public Finance, No. 2, 1979, pp. 258–266.

The papers are all highly mathematical and theoretical in their approach. This type of analysis has not yet been applied to a fully developed econometric model which purports to represent the workings of an actual economy.[28] While the results of the theoretical analyses will not be reviewed in detail here, it can be briefly stated that the studies have focused on several characteristics of dynamic models: whether the movement of income converges to an equilibrium level, if so the income level at equilibrium, the speed of covergence, whether the model is oscillatory, and, if so, the frequency and magnitude of the cycles. These characteristics have been found to be dependent on a number of aspects of the economic model's specification. Among the specifications examined are alternative forms of the consumption function, the investment process, the tax system, and the demand for money function. It is difficult to briefly summarize the results in this literature except to observe that the impact of the tax system on the various aspects of stabilization in a dynamic economic model depends heavily on the specification of the model, and with different specifications the tax system has different effects—positive or negative—on the several aspects of stabilization. These results, of course, reemphasize the conclusions drawn earlier: that the "automatic stabilization" characteristics of the Federal tax system cannot be reduced to a single index or even a simple conceptualization. They depend entirely on the structure of the economy, the nature of the economic changes being experienced, the design of the tax system, and, finally, what is meant by the term "stabilization" in a dynamic context.

C. Summary of the Conceptual Analysis

The conceptual analysis in this section has led to a number of conclusions about the procedures necessary to assess the automatic stabilization characteristics of the Federal tax structure. Briefly stated, they are as follows (not in the same order developed earlier):

1. The analysis should be conducted within the framework of a macroeconomic model which is as fully developed as possible.
2. To be complete, the analysis should consider all of the Federal taxes rather than merely the individual income tax, which has been the focus of most past analyses. The other Federal taxes respond differently to economic change and, in turn, have different effects on the economy.
3. Attention must be paid to the responsiveness of the taxes to changes in real economic activity and also to changes in prices. In general, the responses will not be the same and will vary from one tax to another.
4. The automatic stabilization characteristics of the Federal tax structure should be assessed within the context of the entire Federal budget, with attention to the implications of changing

[28] However, see an interesting analysis of the impact of the 1964 tax cut on the cyclicality of the U.S. economy in, Wharton Econometric Forecasting Associates, Inc., A Study in Counter-Cyclical Policy, in Economic Stabilization Policies: The Historical Record, 1962–76, Joint Committee Print, House Committee on the Budget, Joint Economic Committee, Congressional Research Service, 95th Congress, 2nd Session, November, 1978. pp. 82–91.

revenue levels for the magnitude of the deficit or surplus and the overall thrust of fiscal policy.

5. Attention should be devoted to the short-run versus long-run effects of taxes on the economy. This is especially true with regard to the individual income tax and the problem of fiscal drag. If the decisions of economic agents are based on expected long-term average tax levels, the short-term responsiveness of the income tax on economic change will have relatively small effects on the economy, and the marginal tax rate or tax elasticity may be a misleading indicator of the automatic stabilization effectiveness of the tax structure.

6. The analysis should be mindful of the fact that the automatic stabilization effects will be different depending on the nature of the economic changes being experienced. In particular, the reaction to disturbances on both the demand and supply sides of the economy require evaluation; the automatic stabilization effects may not be the same during a period of stagflation as during a demand-induced recession or boom.

7. The automatic stabilization effects should be evaluated at various stages of the business cycle because they would be expected to differ in strength, and perhaps even direction, over the cycle.

8. The automatic stabilization characteristics of the Federal tax structure should be evaluated within the framework of a dynamic macroeconomic model and defined and measured in terms of the effect of the tax structure on the cyclical movement of GNP with respect to full employment GNP.

III. Empirical Analysis

This section of the report provides a brief overview of the structure of the Federal tax system during the years 1929 to 1979, a review of the economic literature which has attempted to measure the automatic stabilization effects of the tax structure, and an analysis of automatic stabilization within the context of a dynamic growth-oriented macroeconomic model.

A. The Evolving Federal Tax Structure

The Federal tax structure has changed dramatically during the past half-century; however, most of the change occurred between the start of the Depression and the end of World War II. The trends in the ratio of Federal receipts and expenditures to gross national product (GNP) and in the composition of the Federal tax system are indicated in Table 1 and in Charts 2 and 3. At the beginning of the Depression Federal receipts and expenditures amounted to less than 4 percent of GNP. While the size of the budget more than doubled during the Depression, receipts were still only 8.6 percent and expenditures 10 percent of GNP by 1940. Our modern levels of Government economic activity appear to be more a result of World War II than of policies adopted to combat the Depression.

TABLE 1.—FEDERAL GOVERNMENT RECEIPTS AND EXPENDITURES AS PERCENTAGES OF GNP, AND REVENUES OF PRINCIPAL TAXES AS PERCENTAGES OF TOTAL TAXES, 1929 TO 1979

Year	Total Federal Government receipts and expenditures as a percentage of GNP		Receipts as a percent of total				
	Receipts	Expenditures	Individual income tax	Corporate income tax	Social security tax	Excise taxes	Other
1929	3.7	2.5	31.0	32.2	3.1	14.8	18.9
1930	3.4	3.1	34.0	24.4	4.1	17.6	19.9
1931	2.7	5.5	26.0	20.7	6.0	23.9	23.4
1932	3.3	5.5	16.7	19.2	7.3	37.1	19.7
1933	4.8	7.1	17.8	17.3	4.3	45.7	14.9
1934	5.4	9.8	12.4	18.2	3.4	49.7	16.3
1935	5.5	9.1	14.3	20.7	3.4	42.7	18.9
1936	6.1	10.5	14.6	24.9	7.8	33.6	19.1
1937	7.8	8.2	18.5	19.0	22.4	25.2	14.9
1938	7.6	10.1	19.0	13.8	26.8	26.3	14.1
1939	7.4	9.8	12.7	19.1	28.0	27.1	13.1
1940	8.6	10.0	11.7	30.5	23.3	24.4	10.1
1941	12.4	16.4	10.4	47.6	16.2	18.3	7.5
1942	14.5	35.4	17.6	48.2	13.8	14.6	5.8
1943	20.5	44.7	40.5	34.7	10.7	10.3	5.8
1944	19.5	45.4	41.0	30.4	11.8	12.7	4.1
1945	20.0	39.8	43.6	24.1	13.5	14.5	4.3
1946	18.7	17.0	41.8	22.1	14.1	18.4	3.6
1947	18.6	12.8	43.5	20.0	11.9	16.8	7.8
1948	16.7	13.5	43.5	27.2	10.5	17.2	1.6
1949	15.0	16.0	39.7	24.8	12.8	19.4	3.3
1950	17.5	14.3	34.8	34.3	11.9	16.4	2.6
1951	19.5	17.5	39.4	33.7	11.1	13.4	2.4
1952	19.4	20.5	44.8	27.6	11.0	14.2	2.4
1953	19.1	21.1	44.7	27.8	10.6	14.5	2.4
1954	17.4	19.1	44.0	26.4	12.8	14.1	2.7
1955	18.2	17.1	41.9	29.0	12.9	13.5	2.7
1956	18.5	17.1	43.4	26.9	13.6	13.2	2.9
1957	19.4	18.0	43.9	24.9	15.0	13.1	3.1
1958	17.5	19.8	45.0	22.8	15.8	13.2	3.2
1959	18.5	18.7	42.8	25.0	16.6	12.5	3.1
1960	19.0	18.4	43.5	22.3	18.3	12.5	3.4
1961	18.7	19.5	44.4	22.4	19.0	12.7	1.5
1962	18.8	19.6	43.8	21.2	19.3	12.2	3.5
1953	19.2	19.2	43.0	21.5	20.2	11.8	3.5
1964	18.1	18.6	40.0	22.8	20.9	12.3	4.0
1965	18.1	18.0	41.1	23.2	20.1	11.2	4.4
1966	18.8	19.1	41.3	22.2	23.4	8.9	4.2
1967	18.9	20.6	42.8	20.0	24.4	8.9	3.9
1968	20.1	20.8	43.8	20.8	23.4	8.4	3.6
1969	21.1	20.1	46.3	18.4	23.8	7.9	3.6
1970	19.6	21.3	46.1	16.0	25.9	8.2	3.8
1971	18.7	20.7	42.9	16.9	27.6	8.1	4.5
1972	19.4	20.9	45.2	16.1	27.6	6.9	4.2
1973	19.7	20.3	42.5	16.5	30.8	6.5	3.7
1974	20.4	21.3	43.9	15.9	31.0	5.8	3.4
1975	18.8	23.4	42.0	15.0	32.8	5.7	4.5
1976	19.5	22.6	42.6	16.8	31.8	5.1	3.7
1977	19.8	22.2	43.2	16.5	31.7	4.7	3.9
1978	20.3	21.6	43.8	16.6	31.7	4.3	3.6
1979	21.0	21.5	45.1	15.8	32.0	3.9	3.2

Source: Calculations based on data published in Survey of Current Business, Bureau of Economic Analysis, U.S. Department of Commerce, various dates.

CHART 2.—Federal Government Receipts and Expenditures as Percentages of GNP, 1929–79

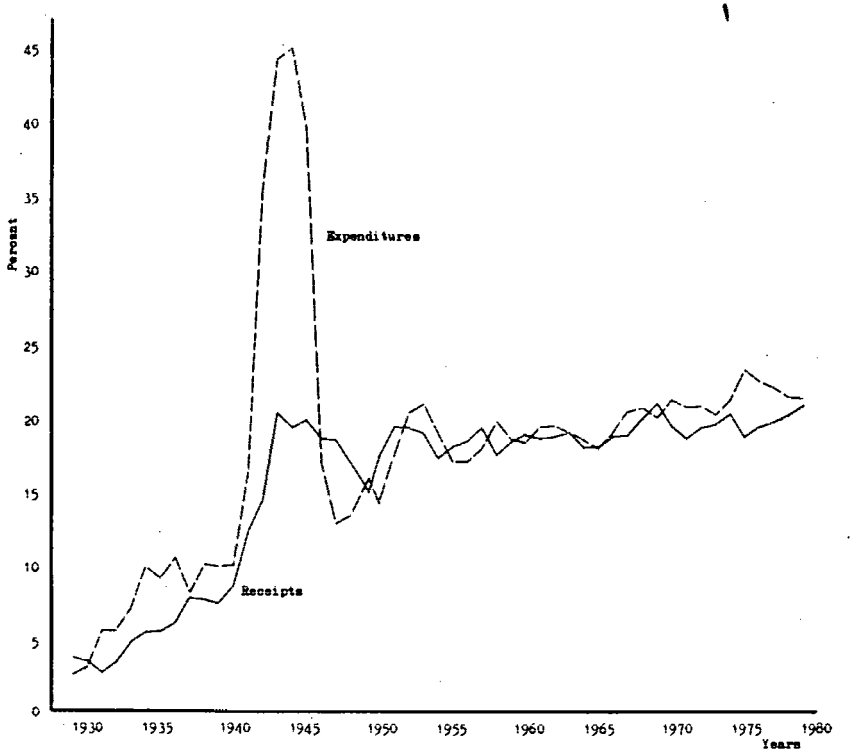
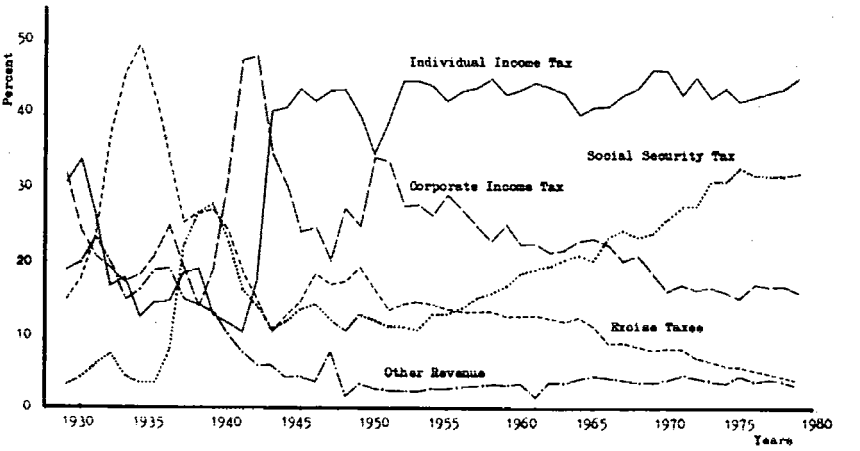


CHART 3.—Revenues of Principal Federal Taxes as Percentages of Total Taxes, 1929–79



During the War expenditures jumped to 35 percent of GNP in 1942 and to 45 percent in 1943 and 1944. More than half of these high spending levels was deficit financed, as the level of Federal Government receipts reached a peak of 20.5 percent of GNP in 1943. After the War, expenditures declined as rapidly as they had risen at the beginning, and tax receipts decreased gradually. In the late 1940s the Government budget reached a level of about 15 percent of GNP. During the early years of the Korean War, Government spending and taxes rose to the 20 percent range, but by 1955 they were back down to near 17.5 percent. Since 1955 there has been a gradual upward trend in spending and taxation as percentages of GNP, and the trend has accelerated somewhat since 1965. During this era Government expenditures were increased by the Vietnam War and later by the 1974–75 recession to their postwar peak, 23.4 percent of GNP in 1975. The spending level had decreased to 21.5 percent of GNP by 1979. In 1969 tax levels reached their peak, at 21.1 percent of GNP, during imposition of the 10 percent surtax which was an anti-inflation measure. Major tax reductions in 1970 and 1971 and again in 1975 kept Federal taxes below 20 percent of GNP during most of the 1970s, however, by 1979 Federal taxes claimed 21 percent of GNP and were increasing steadily due to the effects of inflation on tax burdens.

As shown in Chart 3, the composition of the Federal tax structure fluctuated considerably during the Depression and World War II because of the economic and policy changes. In the postwar era, however, the composition of the Federal tax structure has exhibited stable trends. Except for 1950 and the surtax years (1969 and 1970) the individual income tax has provided between 40 and 45 percent of total Federal revenues. The corporate income tax has steadily declined as a revenue producer from the neighborhood of 30 percent of total Federal revenues in the early 1950s to approximately 16 percent during the past decade. The social security tax has risen in prominence, providing about 32 percent of Federal revenues in the late 1970s compared to 11 to 12 percent during the early 1950s. Excise taxes have steadily declined from about 17 percent of Federal revenues after the War to about 4 percent presently. Miscellaneous revenues have provided less than 5 percent of Federal receipts during the postwar years.

While myriad structural and administrative changes have been made in the tax system during the past half century, probably the most important with regard to automatic stabilization effects is the current payment of tax liabilities first instituted during the War years. Previously tax payments had been made in installments during the year following the year of liability. To accelerate the collection of revenues during the War, taxes were placed on a current payment basis using withholding and estimated tax payments during the year of liability with a reconciliation to actual liability during the following year. The change to a current payment system shortened the lag with which economic changes affect tax payments, and, hence, would have affected the automatic stabilization characteristics of the tax system.

B. A Review of the Empirical Literature

Over the last three decades several writers have attempted to assess the automatic stabilization effects of this evolving tax structure. Detailed empirical evaluation began in the 1950s after Friedman and the

CED, among others, drew attention to the automatic stabilization issue, and Musgrave and Miller further refined the concept. The earlier contributions to this literature were intended primarily to demonstrate that the automatic stabilization effects were relatively small, and, therefore, contrary to the views of Friedman and the CED, discretionary stabilization policies were required.

None of the empirical studies of automatic stabilization have been developed within a framework consistent with the eight points listed in the summary of the conceptual analysis above. With a few exceptions the studies have measured the nominal short-run elasticity or marginal tax rate (which several authors refer to as built-in flexibility) of the individual income tax and have drawn conclusions about automatic stabilization properties based on a Musgrave-Miller type measure. One of the earliest such evaluations was by Pechman who measured the effective marginal tax rate of the Federal individual income tax structure as it existed in 1953.[29] Pechman reestimated the tax base and tax revenue data from 1948 through 1953 as if the 1953 income tax structure had been in effect during those years. Based on his calculations he estimated the built-in flexibility of the tax base at roughly .65 and the effective marginal tax rate of about .27, leading to the conclusion that the built-in flexibility of the income tax was between .17 and .18. Pechman observed that "it seems clear that, at 1953 rates, built-in flexibility alone would offset no more than about 20 percent of a change in total income under present rates and exemptions." [30]

A second analysis of the 1953 tax structure was published by Mishan and Dicks-Mireaux.[31] These authors included the effects of inflation in their analysis and also examined total tax levels rather than just the individual income tax; however, both of these aspects of the analysis were handled very simplistically. Their estimates were based on a cross-section exponential function fit to income tax data for 1953. The estimation yielded an income elasticity estimate of 1.43. The examination of the responsiveness of the tax structure to inflation was based on the assumption that an income increase will bear the same tax whether it is an increase in real income or an inflation-induced increase so long as the distribution is the same, and the additional assumption that productivity will increase at 3 percent annually (i.e., any income increase above 3 percent is assumed to result from price increases). Federal taxes other than the individual income tax are included in the study through the assumption that they will remain proportionate to aggregate nominal income. The authors calculated the increase in overall effective tax rates which would result from various rates of sustained inflationary income increases to assess the automatic effect of the tax structure in retarding the inflation. The authors' conclusions were stated in the following paragraph:

> As for the disinflationary effect of a growth in aggregate real tax, it is plain that though this source of stability is not negligible economists who have put some emphasis on this factor may find the magnitudes a little disappointing. Certainly we are impelled to the conclusion that a passive fiscal policy—maintaining tax rates constant with unchanged (real) government outlays—would

[29] Pechman, Joseph A., Yield of the Individual Income Tax During a Recession, National Tax Journal, March, 1954, pp. 1–16.
[30] Ibid., p. 10.
[31] Mishan, E. J. and L. A. Dicks-Mireaux, Progressive Taxation in an Inflationary Economy, American Economic Review, September, 1958, pp. 590–606.

not by itself bring powerful pressure to bear on mild inflationary tendencies until after the lapse of quite a few years. Built-in stability is built small into the system, not large.[32]

Two studies by Cohen essentially repeated the earlier Pechman analysis for the 1953 and 1954 tax structures using later and more detailed data with particular attention to the distribution of income across the tax rate brackets.[33] Cohen verified Pechman's results that the built-in flexibility of the tax base remained essentially constant over the period 1948–1957, although Cohen's estimate was slightly lower than Pechman's. On the other hand, contrary to Pechman's results, Cohen's estimates of the marginal tax rate, based on averages of the marginal rates in the tax brackets weighted by the amount of taxable income in each bracket, vary considerably from year to year. As a result, Cohen's estimates of the built-in flexibility of the individual income tax also vary from year to year, ranging from .092 in 1952–53 to .179 in 1949–50. Cohen's estimates averaged .124 for the period 1949 to 1953 and .145 for 1954 to 1957, somewhat lower than Pechman's figure. Cohen drew attention to the fact that the distribution of taxable income across the tax brackets varies with economic fluctuations, causing the effective marginal tax rate and automatic stabilization properties of the tax structure to vary. Cohen concluded that "the recent data indicate that the present individual income tax structure, as a built-in stabilizer, is rather limited in promoting economic stability." [34]

An analysis of the individual income tax by Brown and Kruizenga, which primarily assessed the income sensitivity of the tax base, derived effective marginal tax rates of 9 to 10 percent for the income tax in the late 1940s.[35] The authors also concluded from their analysis that an income tax with higher exemptions and higher tax rates would have a more automatic response than an equivalent-yield system with lower exemptions and lower rates. Smith derived quarterly estimates of the built-in flexibility of the individual income tax from 1954 through 1959 based on seasonally adjusted national income data.[36] His estimates range from a low value of zero in one quarter to a high of .19. He claims that, for some years, the quarterly data provide more reasonable estimates than annual data, which yields a wider range of estimates.

Waldorf estimated the effective marginal tax rate and elasticity of the individual income tax from 1947 through 1965.[37] He assumed that a more responsive tax is a more effective automatic stabilizer, although he acknowledged this will not be the case if changes in prices are not associated with changes in real output (e.g., at full employment). His estimates of the effective marginal tax rate show little variation, particularly from 1954 through 1965, and average .145. The purpose of Waldorf's analysis was to evaluate the implications for automatic stabilization of the 1964 tax cut, and he con-

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[32] Ibid., pp. 603–604.

[33] Cohen, Leo, An Empirical Measurement of the Built-In Flexibility of the Individual Income Tax, American Economic Review, May, 1959, pp. 532–541; and Cohen, Leo, A More Recent Measurement of the Built-In Flexibility of the Individual Income Tax, National Tax Journal, June, 1960, pp. 122–126.

[34] Ibid., Cohen, 1960, p. 126.

[35] Brown, E. Cary and Richard J. Kruizenga, Income Sensitivity of a Simple Personal Income Tax, The Review of Economics and Statistics, August, 1959, pp. 260–269.

[36] Smith, Paul E., Built-in Flexibility of the Individual Income Tax: Quarterly Estimates, National Tax Journal, June, 1962, pp. 194–197.

[37] Waldorf, William H., The Responsiveness of Federal Personal Income Taxes to Income Change, Survey of Current Business, December 1967, pp. 32–45.

cluded that the tax cut had little effect on the automatic stabilization characteristics of the tax structure. Tanzi and Hart subsequently published a study which drew essentially the same conclusion as Waldorf's.[38]

A later study by Pechman measured the built-in flexibility and elasticity of the individual income tax from 1954 through 1971, and projected the values under a variety of economic conditions.[39] Pechman's estimates imply a gradually increasing effective marginal tax rate of the individual income tax, especially after the 1964 tax cut. His estimates for built-in flexibility rise from .136 in 1954 to .144 in 1963, and then increase further to .158 in 1971. Through simulation analysis Pechman also explored the sensitivity of the built-in flexibility of the income tax to the business cycle, inflation, and changes in the level of capital gains income. His results imply that the degree of built-in flexibility varies considerably depending on the phase of the business cycle and in response to changing levels of capital gains income; he found built-in flexibility relatively insensitive to inflation if incomes change proportionately, but sensitive if inflation changes the distribution of income. Pechman concluded that despite many changes in the tax law, "The federal individual income tax continues to be an effective built-in stabilizer to the extent that the economic behavior of individuals depends on their disposable income computed on an after-tax liability basis." [40]

A study which uses a different methodology but finds a trend in built-in flexibility which is similar to Pechman's results was published by Snowbarger and Kirk.[41] Pechman and most of the prior studies used time series regression analysis to estimate the income responsiveness of the tax system. Snowbarger and Kirk estimate a simple cross-section equation of exponential form similar to that used by Mishan and Dicks-Mireaux. They estimate the equation for tax data for each year from 1954 through 1969 and derive elasticity and built-in flexibility estimates. Their estimates, like Pechman's, indicate a gradual rising trend of built-in flexibility from 1954 through 1969. However, Snowbarger and Kirk's estimates imply a higher level of built-in flexibility; their estimate is .164 in 1954 and rises to .190 in 1969.

At least three papers have attempted to measure the automatic stabilization characteristics of more than just the individual income tax and have also estimated the stabilization effects in different economic circumstances. Lusher estimated the automatic stabilization effectiveness of Federal and State and local taxes, classified according to the National Income Accounts system, and of transfers and Government expenditures for goods and services.[42] His measure of automatic stabilization effectiveness was a Musgrave-Miller type index except that the basis for comparison was a tax system of unitary elasticity,

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[38] Tanzi, Vito and Thomas P. Hart, The Effect of the 1964 Revenue Act on the Sensitivity of the Federal Income Tax, The Review of Economics and Statistics, August 1972, pp. 326–328.

[39] Pechman, Joseph A., Responsiveness of the Federal Individual Income Tax To Changes in Income, Brookings Papers on Economic Activity, 2:1973, pp. 385–421.

[40] Ibid., p. 412.

[41] Snowbarger, Marvin, and John Kirk, A Cross-Sectional Model of Built-in Flexibility, 1954–1969, National Tax Journal, June 1973, pp. 241–249.

[42] Lusher, David W., The Stabilizing Effectiveness of Budget Flexibility, National Bureau of Economic Research, October 1953, 18 pp.

rather than zero elasticity as in the Musgrave-Miller index. Estimates of stabilizing effectiveness were provided for four historical periods during the 1930s and three forecast periods during the 1950s. Lusher's estimates imply that the greatest contribution to automatic stabilization is provided by the corporate income tax which would offset between 11 percent and 21 percent of an autonomous economic change in the three sample periods during the 1950s. The personal income tax, he estimated, would offset between 6 and 9 percent of the economic change. On the other hand, Lusher's estimates implied that the social security tax and indirect taxes had small but perverse stabilization effects, that is, they were destabilizing. His estimates for the total Federal revenue system were that it would offset between 15 and 24 percent of an economic change.

A paper by Clement estimated the automatic stabilization effectiveness of the Federal tax system and the unemployment insurance system during two postwar business contractions and three expansions.[43] Clement employed a Musgrave-Miller type index assuming that all Federal taxes (including the corporate income tax) affect national income through the impact on disposable income and consumption. He estimated separate consumption functions for the expansionary periods and the periods of contraction. The tax data were adjusted to reflect the characteristics of the tax structure in 1957.

Clement's estimates show automatic stabilization characteristics which vary considerably among the fiscal instruments and the economic periods. The individual and corporate income taxes are estimated to provide the primary stabilization effect. Estimates for the excise taxes indicate a destabilizing influence during contractions. In total the estimates imply the automatic stabilizers offset approximately 28 percent of the movement in national income during expansions, with the corporate and individual income taxes offsetting slightly in excess of 11 percent each. The estimates for the contractional periods vary considerably, with indications that the stabilizers offset 13.6 percent of the economic change in one downturn and 89 percent in the second. Among the taxes, the corporate income tax was estimated to provide the greatest offset to the contractions. The author concluded that the automatic stabilizers are powerful countercyclical weapons, but that their effects are not uniform. He cautioned:

> It is also important to point out that the quantitative impacts of the automatic stabilizers are subject to more or less wide variations. During any cycle, therefore, those charged with countercyclical authority cannot be certain of the degree to which the stabilizers will be helpful. Although the system of automatic stabilizers is a crucial facet of the United States' over-all countercyclical effort, the existence of these stabilizers does not release the government from continuing exertions to implement its stabilization responsibilities.[44]

A subsequent article by Eilbott also estimated the automatic stabilization effectiveness of the Federal tax system and unemployment insurance during the postwar recessions and expansions.[45] Eilbott, like Clement and Lusher, employed a Musgrave-Miller type index, but he modified the formula to account for the separate effects of transfer pay-

[43] Clement, M. O., The Quantitative Impact of Automatic Stabilizers, Review of Economics and Statistics, February 1960, pp. 56–61.
[44] Ibid., p. 61.
[45] Eilbott, Peter, The Effectiveness of Automatic Stabilizers, American Economic Review, June 1966, pp. 450–465.

ments on consumption and the corporate income tax on investment, as well as the effect of the individual income tax on consumption. Rather than estimating consumption and investment functions Eilbott provides estimates of the automatic stabilization effects for a range of marginal propensities to consume and invest. His estimates are based on tax data adjusted to be consistent with the 1965 Federal tax system. The estimates imply the automatic stabilizers have strong effects which are of somewhat greater strength during recessions than expansions. The median estimates (among the ranges of assumed values of marginal propensities to consume and invest) indicate the automatic stabilizers offset an average of 44 percent of the potential economic change during recessions and 33 percent during expansions. Interestingly, two of the periods studied by Eilbott are identical to periods included in Clement's article, and a third period differs by only two calendar quarters; in none of the cases is Clement's estimate of automatic stabilization effectiveness within the range of estimates provided by Eilbott. Eilbott's estimates differ less than Clement's from one period to another; their variance for the different fiscal instruments cannot be compared because Eilbott does not provide separate estimates.

C. Analysis of Automatic Stabilization Within a Fully Developed Macroeconomic Model

As stated earlier, none of empirical studies reviewed above was developed within a framework consistent with the eight points listed in the summary of the conceptual analysis in Section II of this paper. Given the development of the theory reviewed in the previous section it is impossible to draw definitive conclusions regarding the automatic stabilization effects of the tax structure based on measures of marginal tax rates or tax elasticities. As an alternative to this traditional approach, an exercise similar to that suggested by Smyth and others has been conducted using a dynamic, fully developed econometric model of the U.S. economy. Specifically, through simulations on the Data Resources, Inc. (DRI) macroeconomic model the stabilization characteristics of two tax structures are compared: the present Federal tax structure, and a hypothetical tax structure in which the revenue derived from each Federal tax maintains a constant relationship to full employment GNP.[46] While all econometric models have limitations regarding their completeness and precision, the DRI model is a fully developed, "state-of-the-art" representation of the U.S. economy. Its structure is appropriate for the present experiment in several regards. The interrelationships between Federal taxes and economic activity are captured in considerable detail. The effect of tax changes on the Federal budget deficit and, in turn, on the financial markets is represented in the model. The version of the model used for the exercise incorporates periodic tax cuts for the purpose of offsetting fiscal drag, and the responses to these tax cuts within the model are consistent with the view that adjustments occur gradually and are based on long-run policy expectations.

[46] I am indebted to Gregg Esenwein and Everson Hull for technical consultation and for performing the simulations on which this analysis is based.

Though a highly developed econometric model of the U.S. economy is used for the experiment, the exercise should, nonetheless, be regarded as theoretical. No attempt has been made to forecast the future course of the U.S. economy and estimate the actual effect of the automatic stabilizers; nor has such an analysis been made for a historical period. Rather, the DRI model has been used to create a base simulation which is regarded to be "interesting" for the purposes of the experiment. Through a series of exogenous shocks introduced via the consumption and investment equations a base simulation which experiences two complete business cycles in 34 quarters and approaches or exceeds full employment GNP in the cycle peaks has been created.[47] The focus of the analysis is not on the likelihood (or lack thereof) of this possible economic course, but rather on the question: given this cyclical pattern of economic behavior, how would the course of the econmy change without the automatic stabilization effects of the Federal tax structure?

Charts 4 and 5 provide a graphical representation of the base simulation. Chart 4 shows real GNP in 1972 dollars and Chart 5 shows the same data measured as deviations from full employment GNP. The base simulation begins $20 billion below full employment GNP, experiences a short, vigorous cycle in the first 14 quarters and a longer, milder cycle over the next 20 quarters. The first cycle extends above full employment GNP for a period of four quarters; the second cycle remains slightly below the full employment level. Total Federal taxes as a percentage of nominal full employment GNP vary from 20.65 percent, in the fourth quarter, to 22.57 percent in the tenth quarter (the variance is somewhat less if measured as a percentage of actual GNP). Federal taxes average 22.3 percent of nominal full employment GNP in the four quarters (9, 12, 27, and 28) in which actual GNP most closely approximates full employment GNP in the base simulation.

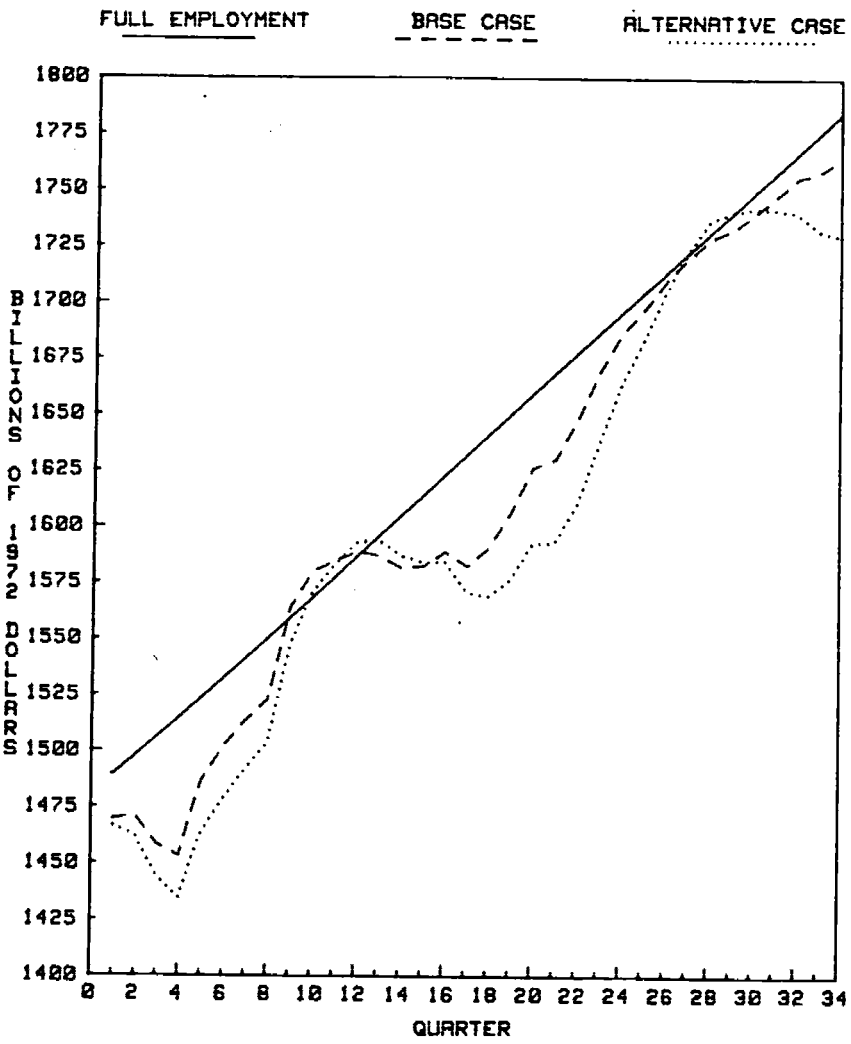
To study the automatic stabilization characteristics of the Federal tax structure as represented in the model, an alternative simulation in which Federal taxes were fixed at 22.3 percent of nominal full employment GNP was generated. This simulation should indicate the path the economy would follow if subjected to the same cyclical forces as in the base simulation but without the automatic stabilization effects of the Federal tax structure. For the alternative simulation each of the four categories of Federal taxes in the DRI model—personal income taxes, corporate income taxes, social security taxes, and excise taxes—was increased proportionately in the first quarter[48] so total Federal taxes would equal 22.3 percent of nominal full employment GNP, and the tax levels were determined exogenously in each

[47] The DRI LOWTRENDO380 solution was used in creating the simulations. The variables adjusted exogenously were real personal consumption expenditures for clothing and shoes, motor vehicles, and housing, and real investment expenditures for private nonresidential structures and producers' durable equipment. These variables were increased somewhat over the initial 12 quarters and reduced over the remainder of the simulation to increase the cyclicality of the projection and force it closer to full employment GNP. While the simulations extend from the first quarter of 1980 to the second quarter of 1988 in the DRI model, quarterly designations (i.e., 1 through 34) will be used in the discussion rather than year designations to emphasize the theoretical character of the analysis.

[48] A simulation was also performed holding the tax levels as a percent of full employment GNP constant at their level in the first quarter. The results were similar tothose described below, except that the alternative simlation exhibited a stronger growth trend due to the stimulus resulting from the lower tax levels associated with the automatic stabilization effects in the first quarter.

CHART 4.—Full Employment GNP, Base Simulation, and Alternative Simulation: Automatic Stabilization Characteristics of the Federal Tax Structure in the DRI Model of the U.S. Economy

[Billions of 1972 dollars]

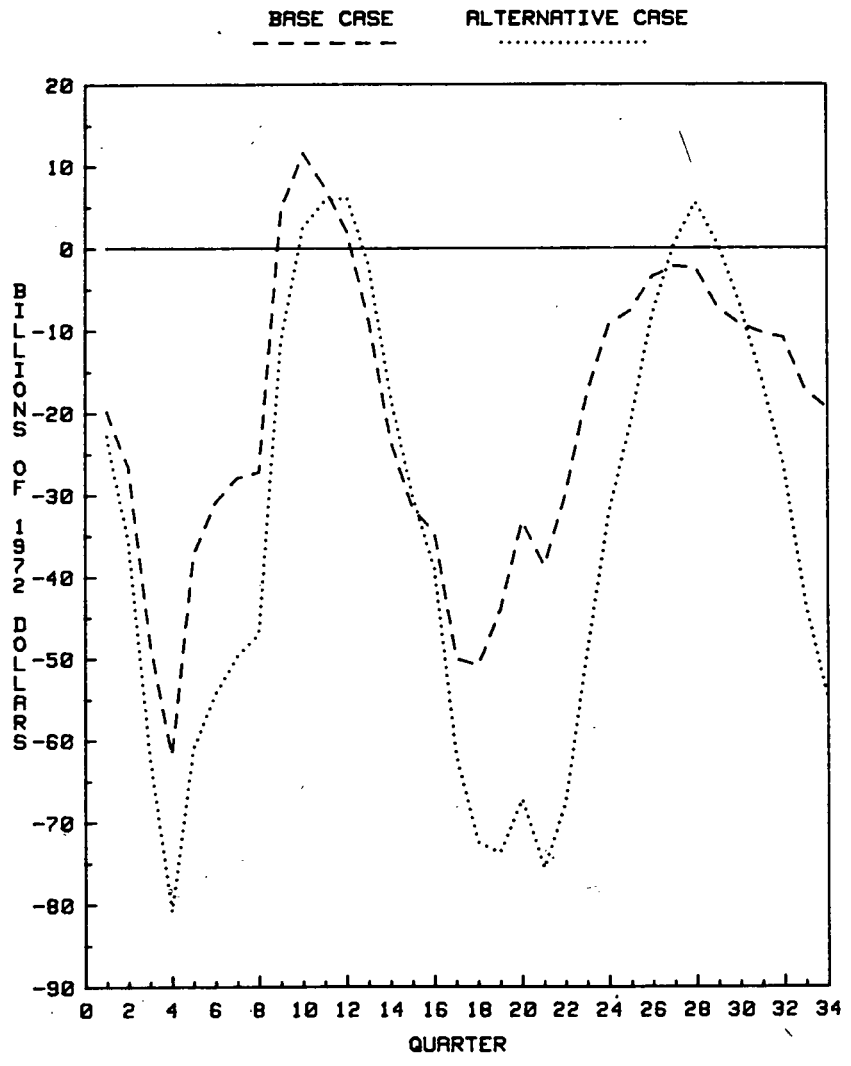


quarter thereafter to maintain that relationship.[49] The path of real GNP in the alternative simulation is also graphed in Charts 4 and 5. As an initial observation the relationship between the two simula-

[49] The taxes were maintained at the following percentages of nominal full employment GNP: individual income tax, 10.021; corporate income tax, 3.625; social security tax 7.079; excise taxes 1.572. There is some slight variation from these ratios in the simulation because of different inflation results. The alternative simulation also involves a slight compositional shift in the tax structure compared to the base simulation. Whereas in the alternative simulation the composition of the tax structure is fixed, in the base there is a slight shift away from excise taxes toward the social security tax. This shift should have minimal effect on the results.

CHART 5.—Deviations From Full Employment GNP in Base and Alternative Simulations

[Billions of 1972 dollars]



tions seems to conform to expectations; that is, the alternative simulation exhibits a cyclical pattern similar to the base but appears to be somewhat more unstable.

Selected data from the two simulations are displayed in Table 2. The first column reports real full employment GNP which was constrained to be the same in both simulations to preserve comparability. The second and third columns report real GNP in the base and alternative simulations. A Musgrave-Miller automatic stabilization index has been calculated for each quarter based on the data in columns 2

and 3. The index is the ratio of the change in real GNP from the first quarter in the base simulation divided by the corresponding GNP change in the alternative simulation. If the automatic stabilization effects of the tax structure work as envisioned by Musgrave and Miller in the static economic model, the value of the index would be between zero and one; that is, the automatic stabilizers would damp the movement of GNP so the stabilized economy always experienced less change. As indicated in column 4 of the table, the Musgrave-Miller index for this experiment ranges from −4.7 to 2.7. Clearly the index fails to reflect a stabilizing influence within this dynamic growth system.

Further study of the graphs in Charts 4 and 5 reveals the reasons for the inadequacy of the Musgrave-Miller index in the dynamic growth context. The alternative simulation is not merely a more volatile version of the base simulation with concurrent cycles. Rather, the changed tax structure quite plausibly produces a different cyclical pattern: the business cycles in the alternative simulation are both longer and of greater amplitude. As a result, there are quarters during which GNP in the two simulations is moving in opposite directions, quarters in which GNP in the base simulation exceeds GNP in the alternative, and vice versa. Thus, it is not always the case that GNP in the more stable simulation has changed less than in the alternative.

One method which might seem to offer the possibility of salvaging the Musgrave-Miller index in this context is to remove the element of economic growth from the data by focusing on the pattern of deviations from full employment GNP. This procedure would apply the Musgrave-Miller index to the patterns shown in Chart 5. Columns 5 and 6 of Table 2 report the deviations from full employment GNP in the two simulations, and column 7 shows calculations of a Musgrave-Miller index based on the deviations. Clearly this procedure also fails to portray the tax structure as a consistently stabilizing influence; the index ranges from −2.3 to 7.2.

Alternative measures of stability must be identified for the dynamic growth context. One possible measure is a comparison of the average absolute value of the deviations from full employment GNP. This measure would be based on the assumption that the preferred economic structure is the one which, on average, deviates least (either above or below) from full employment. The average absolute value of the deviations in the base simulation is $22.57 billlion, and in the alternative the value is $35.51 billion. The ratio of the two numbers is .64 indicating that the average "GNP gap" in the more stable economy is only 64 percent of that in the unstabilized economy, or, alternatively, the automatic stabilization effect of the Federal tax system prevents 36 percent of the average deviation from full employment in this exercise. This, of course, is not presented as a general result: the magnitude and perhaps direction of this effect would be expected to vary depending on the economic circumstances analyzed.

A modification of the above measure would be to focus on the average deviation from full employment, without regard to absolute value. This measure would be based on the assumption that the preferred economy is the one in which average GNP more closely approximates full employment GNP, without regard to the relative magnitudes of

TABLE 2.—SELECTED DATA FROM SIMULATION EXERCISE: AUTOMATIC STABILIZATION CHARACTERISTICS OF THE FEDERAL TAX STRUCTURE IN THE DRI MODEL OF THE U.S. ECONOMY

[Real data in billions of 1972 dollars]

Quarter	Real full employment GNP (1)	Base real GNP (2)	Alternative real GNP (3)	Musgrave-Miller index [1] (4)	Base GNP deviations (1−2) (5)	Alterantive GNP deviations (1−3) (6)	Musgrave-Miller index based on deviations [2] (7)	Base GNP price deflator (1972=1.00) (8)	Alternative GNP price deflator (1972=1.00) (9)	Base price change quarter to quarter (percent) (10)	Alternative price change quarter to quarter (percent) (11)	Base unemployment rate (12)	Alternative unemployment rate (13)
1	$1,489.4	$1,469.6	$1,466.6	----------	$19.8	$22.8	----------	1.746	1.747	----------	----------	6.0	6.0
2	1,497.9	1,471.3	1,462.5	−0.415	26.6	35.4	0.540	1.793	1.795	2.69	2.75	6.0	6.1
3	1,506.5	1,548.4	1,444.5	.507	48.1	62.0	.722	1.840	1.843	2.62	2.67	6.1	6.3
4	1,515.1	1,453.3	1,434.3	.505	61.8	80.8	.724	1.890	1,894	2.72	2.77	6.3	6.6
5	1,523.9	1,486.6	1,463.0	−4.722	37.3	60.9	.459	1.937	1.939	2.49	2.38	6.3	6.7
6	1,532.7	1,501.8	1,478.4	2.729	30.9	54.3	.352	1.987	1.986	2.58	2.42	6.1	6.6
7	1,541.5	1,513.6	1,491.8	1.746	27.9	49.7	.301	2.038	2.035	2.57	2.47	6.0	6.5
8	1,550.4	1,523.2	1,503.5	1.453	27.2	46.9	.307	2.094	2.088	2.75	2.60	5.9	6.4
9	1,559.4	1,564.2	1,548.0	1.162	−4.8	11.4	2.158	2.146	2.137	2.48	2.35	5.6	6.0
10	1,568.4	1,580.0	1,570.9	1.058	−11.6	−2.5	1.241	2.202	2.191	2.61	2.53	5.3	5.7
11	1,577.5	1,585.0	1,583.3	.989	−7.5	−5.8	.955	2.259	2.247	2.59	2.56	5.1	5.4
12	1,586.7	1,588.7	1,593.0	.942	−2.0	−6.3	.749	2.321	2.309	2.74	2.76	5.1	5.2
13	1,595.9	1,587.1	1,593.9	.923	8.8	2.0	.529	2.279	2.369	2.50	2.60	5.1	5.1
14	1,605.1	1,581.7	1,587.1	.930	23.4	18.0	−.750	2.436	2.426	2.40	2.41	5.3	5.3
15	1,614.2	1,582.5	1,584.1	.961	31.7	30.1	1.630	2.492	2.483	2.30	2.35	5.5	5.5
16	1,623.4	1,588.8	1,584.4	1.012	34.6	39.0	.914	2.552	2.543	2.41	2.42	5.7	5.7
17	1,632.5	1,582.5	1,570.6	1.086	50.0	61.9	.772	2.609	2.599	2.23	2.20	5.9	6.0
18	1,641.6	1,590.8	1,569.2	1.181	50.8	72.4	.625	2.667	2.654	2.22	2.12	6.1	6.3
19	1,650.7	1,606.6	1,577.0	1.241	44.1	73.7	.477	2.726	2.709	2.21	2.07	6.1	6.6
20	1,659.8	1,626.6	1,592.7	1.245	33.2	67.1	.303	2.793	2.772	2.46	2.33	6.1	6.6
21	1,668.8	1,630.1	1,593.2	1.268	38.7	75.6	.385	2.862	2.836	2.47	2.31	6.0	6.7
22	1,677.8	1,647.9	1,610.4	1.240	29.9	67.4	.227	2.931	2.903	2.41	2.36	5.9	6.7
23	1,686.7	1,668.9	1,637.4	1.167	17.8	49.3	−.076	3.003	2.972	2.46	2.38	5.8	6.5
24	1,695.6	1,686.3	1,663.5	1.101	9.3	32.1	−1.129	3.081	3.049	2.60	2.59	5.6	6.3
25	1,704.5	1,697.0	1,683.4	1.049	7.5	21.1	7.235	3.159	3.127	2.53	2.56	5.5	6.0
26	1,713.3	1,709.8	1,705.2	1.007	3.5	8.1	1.109	3.237	3.209	2.47	2.62	5.4	6.7
27	1,722.2	1,720.0	1,722.6	.978	2.2	−.4	.759	3.317	3.294	2.47	2.65	5.3	5.5
28	1,731.1	1,728.7	1,736.7	.959	2.4	−5.6	.613	3.404	3.390	2.62	2.91	5.3	5.3
29	1,740.0	1,732.7	1,740.5	.961	7.3	−.5	.537	3.486	3.483	2.41	2.74	5.3	5.2
30	1,748.9	1,739.7	1,742.2	.980	9.2	6.7	.658	3.567	3.580	2.32	2.78	5.3	5.2
31	1,757.8	1,747.5	1,741.8	1.010	10.3	16.0	1.397	3.648	3.671	2.27	2.71	5.3	5.3
32	1,766.6	1,755.8	1,740.1	1.046	10.8	26.5	−2.342	3.737	3.784	2.44	2.91	5.5	5.5
33	1,775.7	1,758.4	1,732.4	1.087	17.3	43.3	−.122	3.822	3.883	2.27	2.67	5.4	5.7
34	1,784.4	1,765.3	1,732.8	1.111	19.1	51.6	−.024	3.906	3.976	2.20	2.40	5.5	5.5

[1] Let G_{ib}=GNP in quarter i in the base simlation, G_{ia}=GNP in quarter i in the alternative simulation, and I_i=the index in col. 4 in quarter i. $I_i=G_{ib}-G_{ib}/G_{ia}-G_{ia}$.

[2] Let D_{ib}=the base GNP deviation (col. 5) in quarter i, D_{ia}=the alternative GNP deviation (col. 6) in quarter i, and I'_i=the index in col. 7 in quarter i. $I'_i=D_{ib}-D_{ib}/D_{ia}-D_{ia}$.

the deviations. Since in the two simulations in the present exercise there are few quarters in which GNP exceeds full employment levels, this measure produces results similar to the last. The average deviation in the base simulation is $21.05 billion, in the alternative is $34.27 billion, and the ratio is .61.

Neither of these measures reflect the degree of variability of the two economic systems. For this assessment the measure suggested by Smyth may be employed: the standard deviation of GNP measured with regard to the full employment level of GNP (i.e., the standard deviation of the deviations from full employment). The standard deviation of the data in column 5 of Table 2 is $18.07 billion and for the data in column 6 the standard deviation is $27.29 billion. The ratio of the two implies that the variability of real GNP measured with reference to full employment GNP is only 66 percent as large in the stabilized economy as the unstabilized system. Thus, by this measure the Federal tax structure does have an automatic stabilization effect within the DRI model, reducing the variability of the movement in real GNP in this particular exercise by 34 percent.

The graph of the simulation results in Chart 5 creates the impression that the stability differences in the two simulations are becoming greater as time passes. This impression can be confirmed using the measures developed above, as shown in Table 3. The simulation exercise has been divided into two time periods—the first 14 quarters, corresponding to the duration of the first business cycle in the base simulation; and quarters 15 through 34, corresponding to the second business cycle—and separate stability indices have been calculated for each period. The statistics clearly imply that the alternative simulation yields results which are less stable relative to the base simulation in the second cycle.

TABLE 3.—SELECTED DATA REGARDING STABILITY OF REAL GNP FROM SIMULATION EXERCISE

[Billions of 1972 dollars]

Period	Average absolute value of deviation from full employment GNP			Average deviation from full employment GNP			Standard deviation of GNP measured with reference to full employment GNP		
	Base	Alternative	Ratio	Base	Alternative	Ratio	Base	Alternative	Ratio
Quarters 1–34	$22.57	$35.51	0.636	$21.05	$34.27	0.614	$18.07	$27.29	0.662
Quarters 1–14 (1st cycle)	24.12	32.77	.736	20.42	30.69	.665	21.45	27.81	.771
Quarters 15–34 (2d cycle)	21.49	37.43	.574	21.49	36.78	.584	15.80	26.64	.593

Thus, when viewed in the above manner the Federal tax structure does seem to have an automatic stabilization effect on real economic activity within the structure of the DRI model of the U.S. economy. But what about price levels? Columns 8 through 11 of Table 2 report the GNP price deflator and the percentage change in the deflator, that is, the rate of inflation, for the two simulations. Based on these data one could not conclude that the Federal tax structure operates as an automatic price stabilizer. Both the price level and the inflation rate are higher in some quarters in the base simulation than in the alternative. Nevertheless, the tax structure does operate as a stabilizer of the inflation *rate* in the simulations. In other words, while the average inflation rate in the base simulation is not significantly different from

that in the alternative simulation, the standard deviation of the inflation rate is lower by 39 percent in the base simulation. One of the characteristics of inflation which has been noted in the U.S. economy over the past several years is that higher levels of inflation have been accompanied by higher variability in the inflation rate. This variability increases the risk in economic decisions which have long time horizons, for example, investment decisions. Hence, a factor which reduces the variability of the inflation rate may be regarded as exerting a beneficial stabilizing influence even if it does not reduce the average inflation rate. In this sense, the simulation exercise implies that the Federal tax structure may also exert a stabilizing influence on the inflation process.

While it was not the primary focus of the analysis, columns 12 and 13 of Table 2 report the unemployment rate in the two simulations. The pattern in the base simulation is clearly preferred. There are only two quarters (28 and 29) in which the base unemployment rate exceeds the rate in the alternative simulation. The average unemployment rate in the base simulation is 5.66 percent whereas the average in the alternative is 5.93 percent; the standard deviation of the base unemployment rate is also lower. Combining the inflation and unemployment results may indicate that the DRI model is suggesting a method of improving the Phillips curve tradeoff: greater economic stability can produce lower average unemployment rates without causing consistently higher inflation.

As a final note regarding the simulation experiment it may be of interest that additional exercises were attempted without success. The DRI model was unable to solve the alternative simulation beyond the 34 quarters reported in Table 2, and also failed to solve a modified alternative simulation in which all taxes except the individual income tax were to be held constant fractions of full employment GNP in an effort to isolate the automatic stabilization characteristics of that tax. In each case the failure of the model to solve was attributable to disruption in the financial markets and unreasonable interest rates occurring on Treasury bills due to the maintenance of large Federal budget surpluses even during economic downturns (no changes in monetary policy were made during the simulations so as to focus exclusively on the effects of tax policy). These limitations in the model reemphasize a point made late in the conceptual analysis in Section II. The automatic stabilization effects of the tax structure are highly complex and depend on myriad interrelationships which are frequently omitted from simpler economic models. Specifically, the relationship of tax revenues to the size of the Federal deficit, and, in turn, to the condition of the financial markets may be crucial. The failure of the DRI model to solve the simulation exercises because of extreme instability in the financial markets may be an indication that the Federal tax system automatically contributes to economic stability through important channels which are not directly reflected in movements of GNP.

D. Summary of the Empirical Analysis

Fifty years ago, at the beginning of the Depression, Federal Government receipts and expenditures amounted to less than 4 percent of GNP. Federal Government activity as a portion of GNP more

than doubled during the Depression, but at the start of World War II was still only half of present levels. During the War Government spending increased to 45 percent of GNP, more than half deficit financed. After decreasing at the end of the War, Federal taxes and expenditures have gradually trended upward (with variations around the trend), from a range of approximately 17 percent of GNP to 1979 levels in the neighborhood of 21 percent.

In the postwar era the composition of the tax structure has exhibited stable trends. The individual income tax has provided between 40 and 45 percent of Federal revenues during this period. The percentage contribution to total revenues of the corporate income tax and of excise taxes has steadily declined, while that of the social security tax has increased.

Several writers have attempted to assess the automatic stabilization effects of this evolving tax structure. Most of the studies have measured the short-run elasticity or marginal tax rate of the individual income tax and have drawn conclusions about automatic stabilization effectiveness based on a Musgrave-Miller index. Some papers estimate stabilization effects in different economic circumstances and a few study the stabilization characteristics of the entire tax structure. While the results of the analyses vary, all conclude that the Federal tax structure is a stabilizing influence in the economy, but most find that the stabilization effectiveness is relatively small. Those studies which examine the issues report that the automatic stabilization effectiveness differs for different taxes and under different economic circumstances.

None of these empirical studies were developed within a framework consistent with the eight points listed in the summary of the conceptual analysis in Section II. As an alternative to the traditional approach, the DRI econometric model of the U.S. economy was used to study the automatic stabilization characteristics of the Federal tax structure. The experiment compared the cyclical properties of the model including the present Federal tax structure to the cyclical properties of an economy in which taxes do not respond to economic fluctuations; specifically, all Federal taxes maintain a constant relationship to full employment GNP. While the exercise must be regarded as hypothetical, it nonetheless produces plausible results. The implications of the results are that in a dynamic growth context the traditional notion of automatic stabilization derived from the static macroeconomic model is invalid. In particular, the automatic stabilizers do not cause the change in real levels of economic activity to always be less than in an unstabilized system. Rather, the automatic stabilizers alter the cyclical pattern of the economy. In the simulation exercise reported the automatic economic effects of the Federal tax structure shorten the business cycle, moderate its amplitude, and reduce the average deviation between GNP and full employment GNP. Additionally, while the average inflation rate is not reduced by the flexible tax structure in the simulations, the variability of the inflation rate is reduced.

Thus, in this particular exercise, when viewed appropriately, the automatic stabilizers do, indeed, exert a stabilizing influence on the economy. But the nature of that influence is somewhat different than might have been previously thought; the primary characteristic of

the enhanced stability is a reduction in the variability of economic change. Automatic stabilization is less than complete, and the stabilization effects will vary in magnitude, and perhaps even in direction, depending on the economic circumstances. In sum, the automatic stabilizers do not relieve the policymaker from continuous vigilance regarding the course of the economy.

Appendix. The Musgrave-Miller Index Expressed in Terms of the Marginal Tax Rate and Within the Context of a More Fully Developed Macroeconomic Model

A. The Musgrave-Miller Index Expressed in Terms of the Marginal Tax Rate

The Musgrave-Miller automatic stabilization index, derived in section II A and expressed as equation (5) is the following:

$$\alpha = \frac{cEr_1}{1-c+cEr_1} \tag{5}$$

This equation can be formulated in terms of the marginal tax rate, an approach which is frequently useful in avoiding misinterpretations. Recall [from equation (2)]:

$$m = Er_1 \tag{6}$$

where m, called the marginal tax rate, is equal to $\frac{\Delta T}{\Delta Y}$. Thus equation (5) may be rewritten as:

$$\alpha = \frac{cm}{1-c+cm} \tag{7}$$

This formulation makes clear that the central tax parameter in determining the degree of automatic stabilization in this model is the marginal tax rate, with higher levels of m being associated with higher degrees of automatic stabilization, but care must be exercised in this interpretation. Some writers have referred to increasing average tax levels in the United States as contributing to greater automatic stabilization of the economy. However, higher tax levels do not, in general, contribute to greater automatic stabilization because, as equation (6) makes clear, unless the higher tax level is accompanied by a higher marginal tax rate, it will be exactly offset by a decline in the elasticity of the tax system (this is because a given change in tax revenues is a smaller percentage change when measured from a larger base).

B. The Musgrave-Miller Index Within the Context of a More Fully Developed Macroeconomic Model

The Musgrave-Miller analysis is based on a highly simplified economic model which ignores many issues of central importance to stabilization policy, however, it is possible to apply the approach in much more sophisticated economic models. For example, it can be shown that in a more developed static macroeconomic model, which includes a monetary sector and attention to aggregate supply conditions as well as capturing many more of the interrelationships within the economic system, the macro multiplier analagous to the expression in equation (3) would appear as follows:

$$\Delta Y = \Delta G\left[\frac{1}{1-c(1-m)+A}\right] \tag{8}$$

where ΔG is a change in the level of Government spending and A is a complex term which captures the effects of price changes, changes in the money and credit markets, and the shift in investment in response to output and interest rate

changes.[50] Government spending is used as the shift parameter in this expression because in the more developed macroeconomic theory behind equation (8) investment is no longer exogenous but is expressed as a function of output levels and capital costs. On purely theoretical grounds the sign (positive or negative) of the term A cannot be determined; it depends on the strength of reactions in the money market to changes in the price level and the responsiveness of investment to changes in capital cost and output levels. On empirical grounds A appears to be positive, however, and perhaps significantly so. This implies that in a more fully developed macroeconomic model, which captures more of the economy's interrelationships, the fiscal policy multipliers are smaller, an implication consistent with the experience of the large-scale macoeconometric models as they have become more sophisticated.

Interestingly, the added sophistication in the macroeconomic structure not only reduces the policy multipliers, it also reduces the Musgrave-Miller index of effectiveness of automatic stabilization. Defining this index as in equation (4), but using the multiplier expressed in equation (8) yields the following:

$$\alpha_A = \frac{cm}{1-c+cm+A} \tag{9}$$

where α_A is the automatic stabilization index in the more developed macro model. Clearly, if A is positive $\alpha_A < \alpha$, where α is as expressed in equation (7). Thus, the more developed macroeconomic model is inherently more stable than the most simple models, and in this more stable world the automatic contribution of the tax structure to stabilization is more modest.

Even this more developed structure is a greatly simplified representation of the economy and the actual tax structure, however, and further relaxing the simplification alters the analysis of the automatic stabilizers. For example, in the Musgrave-Miller model, and the more developed macroeconomic model referred to above, the personal income tax is a function of real income, not nominal income. But, in the United States, of course, the parameters of the personal income tax (rate brackets, exemptions, deductions, etc.) are defined in money terms, and therefore the tax yield is a function of both real income and the price level. In a macroeconomic model with such an income tax the fiscal policy multiplier analogous to equation (8) would be as follows:

$$\Delta Y = \Delta G \left[\frac{1}{1-c(1-m_y-m_pS)+A} \right] \tag{10}$$

where m_y is the marginal tax rate with regard to changes in real income, m_p is the marginal real tax rate with regard to changes in the price level (the change in the real tax level in response to changes in nominal income, holding real income constant), and S is the slope of the aggregate supply function with regard to price. In general, there is no reason to believe that m_y and m_p will be equal. For example, under a simple flat-rate income tax based on nominal income, m_y would equal the tax rate, but m_p would equal zero. The real tax burden would change proportionately in response to changes in real income, but would not change in response to nominal income changes. Under a more complex tax structure the two marginal tax rates would depend on the tax treatment of different taxpayers and different types of income (e.g., capital gains) and their response to real and nominal income changes.

The Musgrave-Miller automatic stabilization index in this model is the following:

$$\alpha_p = \frac{cm_y + cm_pS}{1-c+cm_y+cm_pS+A} \tag{11}$$

where α_p is the automatic stabilization index in the macroeconomic model with a price-responsive income tax. In the normal case, S is positive, however, m_p can be either positive or negative. Hence, the price responsiveness of the

[50] For example, see the development in Branson, William H., Macroeconomic Theory and Policy, 2d Edition, Harper & Row, New York, 1979. See especially the development in chapters 3, 5, 9, and 14.

income tax can either increase or reduce the degree of automatic stability. To illustrate this, consider an increase in aggregate demand, say from an increase in Government expenditures, which results in an output increase and a simultaneous rise in the price level. The positive responsiveness of the tax system to the *real output rise* will decrease real disposable income and thereby reduce real consumption and serve as an automatic stabilizer, just as in the analysis above. The responsiveness of the real tax burden to the price rise may be positive, negative, or zero. A tax system fully indexed to the price level would have $m_p=0$, and, therefore, the earlier analysis (equations 8 and 9) would apply. If $m_p>0$ the real tax burden increases in response to the price rise, thus further reducing real disposable income and consumption, and adding to the automatic stabilization property. If $m_p<0$, the real tax burden would decrease in response to a price rise thereby increasing real disposable income and consumption. In this case the price responsiveness of the income tax would be destabilizing and would detract from automatic stability.

An automatic output stabilizer can also, under some circumstances, operate as an automatic price destabilizer. If an economic disturbance originates on the demand side of the economy, then a tax system with $m_y>0$, $m_p=0$ will serve as both an output and price stabilizer, since the original demand shift will be reduced in magnitude. However, if the disturbance arises on the supply side of the economy the same tax system will be output *stabilizing*, but price *destabilizing*, because the output effect of the supply shift will be reduced by a demand shift (resulting from a change in after tax disposable income) which opposes the output effect of the supply shift but reinforces the price effect.

Furthermore, in a tax system with $m_p\neq 0$, even the output stabilization property of the tax system becomes uncertain. As mentioned above, if $m_y>0$, $m_p<0$, the output responsiveness and price responsiveness of the tax system work at cross purposes in response to a demand shift. In this case the net outcome depends on the changes in price and output caused by the demand shift and on the magnitudes of m_y and m_p. The same uncertainly exists if $m_y>0$, $m_p>0$ with regard to stabilization in response to a shift in supply. The output responsiveness of the tax system will push aggregate demand toward output stability, the price responsiveness will push aggregate demand toward price stability, and the net result will depend on the relative magnitudes involved.

V. MONETARY MANAGEMENT AND INSTITUTIONS

FINANCE AND PROFITS: THE CHANGING NATURE OF AMERICAN BUSINESS CYCLES

By Hyman P. Minsky

I. Historical Perspective

The great contraction of 1929–33 was the first stage of the Great Depression that continued until the end of the 1930s. Although economic turbulence has been evident since the mid-1960s, nothing that has happened in recent years even remotely resembles the economic disaster of the Great Depression. Furthermore, the first part of the era since World War II—the years between 1946 and the middle of the 1960s—were a great success. Between 1946 and 1965 the American economy exhibited consistent and fundamentally tranquil progress; these years were characterized by a close approximation to both full employment and price level stability. Although it was far from a utopia, during these twenty years the American economy was successful, in that substantial and widespread improvements in the economic dimensions of life were achieved. Furthermore similar economic progress took place in the other "advanced" capitalist economies during these years.

Since the middle 1960s the economy has been much more turbulent, and the turbulence seems to be increasing. Both unemployment and inflation showed an upward trend through the 1970s. Measures to manage demand which were deemed responsible for the success of the tranquil years have not been successful in containing the turbulence of the 1970s. Furthermore since the mid-1960s crises have occurred quite regularly in financial markets, and the dollar-based international monetary system set up after World War II has been destroyed. In the mid-1960s an era of mild cycles in income and employment, general price stability, financial strength, and international economic tranquility came to an end. It has been followed by an era of increasingly severe business cycles, growth retardation, accelerating inflation, financial fragility and international economic disarray. However, even though the American economy has performed poorly in recent years, in comparison with what happened in the 1930s this performance is "not bad": we have not had another "great" or even serious depression.

Over the twenty or so years of on the whole tranquil progress after World War II cumulative changes in the financial structure occurred. In 1966–67 the stability of the financial structure was tested and the Federal Reserve found it necessary to intervene as a lender-of-last-

resort. Since the middle 1960s two additional episodes occurred—in 1969–70 and 1974–75—in which the Federal Reserve intervened as a lender-of-last-resort. In early 1980 the Bache/Hunt silver crisis showed that there were serious domains of potential instability in the economic structure.

The thesis underlying this paper is that an understanding of the American economy requires an understanding of how the financial structure is affected by and affects the behavior of the economy over time.

The time path of the economy depends upon the financial structure. The financial relations that generated the instability of 1929–33 were of minor importance during 1946–65—hence the economy behaved in a tranquil way. However over 1946–65 the financial structure changed because of internal reactions to the success of the economy. As a result of cumulative changes, financial relations became conducive to instability. The dynamic behavior of the American economy since the middle 1960s reflects the simultaneous existence of a structure of financial relations conducive to the generation of instability such as ruled after 1929, alongside a structure of government budget commitments and Federal Reserve interventions that prevent the full development of a "downward" cumulative process. The result has been a business cycle characterized by six stages:

(1) An accelerating inflation,
(2) A financial crisis,
(3) A sharp thrust toward lower income,
(4) Intervention (automatic and discretionary) by the Government through its budget and the Federal Reserve (and other financial agencies of Government) through lender-of-last-resort action,
(5) A sharp braking of the downturn, and
(6) Expansion.

Stage 6, expansion, leads to stage 1, accelerating inflation. Since 1966 the cycle seems to take from three to six years and economic policy seems able to affect the duration and severity of particular stages but only at a price of exacerbating other stages.

In this paper I will address the following questions that arise out of the above broad brush perspective:

(1) Why haven't we had a great or even a serious depression since 1946?

(2) Why was 1946–66 a period of tranquil progress and why has it been followed by turbulence?

(3) Is stagflation, as characterized by higher unemployment rates associated with a trend of higher rates of inflation, the price we pay for success in avoiding a great or serious depression?

(4) Are there feasible policies short of accepting a deep and long depression that will lead to a resumption of tranquil progress such as took place in the first post-World War II epoch?

II. Financing and Instability

The above questions deal with the overall stability of our economy. To address these questions we need an economic theory which explains why our economy is sometimes stable and sometimes unstable. In

recent years the discussion about economic policy for the United States has been dominated by a debate between Keynesians and monetarists. Even though Keynesians and monetarists differ in their policy proposals, they use a common economic theory; they are branches of a common economic theory, which is usually called the neoclassical synthesis. Instability, of the kind that we have identified and which leads to the questions we are aiming to answer, is foreign to the economic theory of the neoclassical synthesis; it cannot happen as a normal result of the economic process.

It is self-evident that if a theory is to explain an event, the event must be possible within the theory. Furthermore if a theory is to guide policy that aims at controlling or preventing an event, the event must be possible within the theory.

Within the neoclassical synthesis a serious depression cannot occur as a result of internal operations of the economy. In this theory a serious depression can only be the result of policy errors or of nonessential institutional flaws. Thus a monetarist explanation of the Great Depression holds that it was the result of Federal Reserve errors and omissions and a Keynesian explanation holds that it was the result of an exogenously determined decline of investment opportunities or a prior unexplained decline in consumption activity.[1,2]

The neoclassical synthesis treats the complex system of financial institutions and instruments that are used to finance ownership of capital assets in a cavalier way. A detailed analysis of the behavior of financial institutions and the way the interrelations between financial units and operating units affect the performance of the economy is absent from the core of standard theory. Neither the standard Keynesianism nor any of the varieties of monetarism integrate the financial structure of our economy into the determination of income, prices, and employment in any essential way.

In both variants of the neoclassical synthesis the financial structure is represented by "money". Monetarists use money as a variable that explains prices and Keynesians use money as a variable that affects aggregate nominal demand, but in both money is an outside variable; the amount of money in existence is not determined by internal processes of the economy.

In our economy money is created as bankers acquire assets and is destroyed as debtors to banks fulfill their obligations. Our economy is a capitalist economy with long-lived and expensive capital assets and a complex, sophisticated financial structure. The essential financial processes of a capitalist economy center around the way investment and positions in capital assets are financed. To the extent that the various techniques used to finance capital asset ownership and production lead to banks acquiring assets, money is an end product of financial arrangements. In a capitalist economy investment decisions, investment financing, investment activation, profits and commitments to make payments due to outstanding debts are linked. To understand the behavior of our economy it is necessary to integrate financial relations into an explanation of employment, income, and prices. The performance of our economy at any date is closely related to the current success

[1] Milton Friedman and Anna J. Schwartz, "A Monetary History of the United States 1867–1960." Princeton: National Bureau of Economic Research, 1963.
[2] Peter Temin, "Did Monetary Forces Cause the Great Depression?" New York: W. W. Warton & Co. Inc., 1976.

of debtors in fulfilling their commitments and to current views of the ability of today's borrowers to fulfill commitments.

Financing arrangements involve lenders and borrowers. The deals between lenders and borrowers are presumably a good thing for both. In our economy the proximate lender to an owner of capital assets and to investing units is a financial institution. Financial institutions are typically highly levered organizations. This means that any loss on the assets owned will lead to an amplified loss of the owner's investment. Because of leverage and the obvious desire of lenders to protect their capital, loans are made on the basis of various margins of safety. To understand our economy we need to know how an economy behaves in which borrowing and lending take place on the basis of margins of safety. The borrowing and lending of particular concern is used to finance investment and the ownership of capital assets.

Borrowing and lending also take place to finance household spending and asset holdings. From time to time governments run deficits. Thus there are household and government debts in portfolios that need to be serviced by cash from household income and government taxes. In what follows it will become evident that household and government borrowing is not the critical element making for instability, although the overall stability of an economy can be affected by household and government borrowing.

To borrow is to receive money today in exchange for promises to pay money in the future. As a result of past borrowing, there are payments which have to be made over every short period. Furthermore, if the economy functions well during every short period, new borrowings take place which become promises to pay in the future. Our economy has a past, which is present today in maturing payment commitments, and a future, which is present today in debts that are created.

III. The Significance of Finance

The framework for analyzing relations between cash payment commitments due to financial instruments that are outstanding at any time and the cash receipts of organizations with debts is needed if financial relations are to be fully integrated into the theory of income and price determination. Financial instability is a fact and any theory that attempts to explain the aggregate behavior of our economy must explain how it can occur. As financial instability is one facet of the serious business cycles of history, a theory that explains financial instability will enable us to understand why our economy is intermittently unstable.

Cash payment commitments on outstanding instruments are contractual commitments to pay interest and repay the principal on debts and to pay dividends—if earned—on equity shares. These cash payment commitments are money flows set up by the financial structure. A structure of expected money receipts underlies the various commitments to make payments. Each economic unit—be it a business firm, household, financial institution, or government—is a money-in-money-out device. The relation among the various sources and uses of cash for the various classes of economic units determines the potential for instability of the economy.

Our economy is a capitalist economy that employs complex, expensive, and long-lived capital assets and which has a sophisticated and complex financial structure. The funds that are needed to acquire control over the expensive capital assets of the economy are obtained by a variety of financial instruments such as equity shares, bank loans, bonds, mortgages, leases, and rentals. Each financial instrument is created by exchanging "money today" for commitments to pay "money later". The payments during any period on outstanding financial instruments are the "money later" parts of contracts entered into in prior periods. We can summarize the above by the statement that firms may and do finance positions in capital assets by complex sets of financial obligations. The financial obligations outstanding at any date determine a series of dated cash payment commitments.

The legal form that business takes determines the debts that can be used to finance ownership of capital assets. The modern corporation is essentially a financial organization. The alternatives to using corporations as the legal form for private business are sole proprietorships and partnerships. In these alternatives the debts of the organization are debts of the individual owner or partners and the life of the organization is limited to the life of the partners. As a result of their limited lives and constrained debt carrying powers, proprietorships and partnerships are poor vehicles for owning and operating long-lived and special purpose capital assets. There is a symbiotic relation between the corporate form of organizing business and the emergence of an industrial and commercial structure in which debt is used to finance the construction and the control of complex, special purpose and long-lived capital assets.

In addition to the ordinary business firms that own the capital assets of our economy there are financial firms (banks, etc.) that mainly own financial instruments. These financial institutions finance the assets they own (what will be called their position) by some combination of equity (capital and surplus) and debts. The typical position of the various types of financial institutions will include debts of capital-asset owning firms, households, governments, and other financial institutions; in addition some financial institutions own equity shares.

Thus there exists a complex network of commitments to pay money. The units that have these commitments must have some sources of money. When a financial contract is created, both the buyer (lender) and the seller (borrower) have scenarios in mind by which the seller acquires the cash which is needed to fulfill the terms of the contract. In a typical situation there is a primary and some secondary or fallback sources of cash. For example in an ordinary home mortgage the primary source of the cash needed to fulfill the contract is the income of the homeowner. The secondary or fallback source of cash is the market value of the mortgaged property. For an ordinary business loan at a bank, the expected difference between gross receipts and out of pocket costs is the primary source of cash; a secondary source would include the value of collateral, borrowings, or the proceeds from selling assets. Expected cash receipts are due to contributions to the production and distribution of income, the fulfillment of contracts, borrowing and selling assets; in addition payment commitments can be fulfilled by using what stocks of cash a unit may have on hand.

Our economy therefore is one in which borrowing and lending on the basis of margins of safety occur. Today's payments on outstanding financial instruments are the result of commitments that were made in the past even as today's transactions create financial contracts which commit various organizations to make payments in the future. The balance sheets at any moment of time of units that make up the economy are "snapshots" of how one facet of the past, the present, and the future are related.

Commercial banks are one set of financial institutions in our economy. Demand deposits, which are part of the money stock, are one of a number of liabilities that commercial banks use to finance their position in financial assets. In turn the financial assets of banks are debts of other units, which use these debts to finance positions in capital assets or financial instruments. As we peer through the financing veil of the interrelated set of balance sheets it becomes evident that the money supply of the economy is like a bond in that it finances positions in capital assets. Before one can speak securely of how changes in the money supply affect economic activity it is necessary to penetrate the financing veil to determine how changes in the money supply affect the activities that are carried out.

Each financing transaction involves an exchange of money today for money later. The parties to the transaction have some expectations of the uses to which the receiver of money today will put the funds and how this receiver will gather the funds by which to fulfill the money-tomorrow part of the bargain. In this deal the use by the borrower of the funds is known with a considerable assurance; the future cash receipts which will enable the borrower to fulfill the money tomorrow parts of the contract are conditional upon the performance of the economy over a longer or shorter period. Underlying all financing contracts is an exchange of certainty for uncertainty; the current holder of money gives up a certain command over current income for an uncertain future stream of money.

Just as there is no such thing as a free lunch there is no such thing as a certain deal involving the future. Every investment in capital assets involves giving up of something certain in exchange for some conjectural returns. In particular any set of capital assets acquired by a firm is expected to yield cash flows over time whose sum exceeds by some margin the cash paid for the capital asset. These expectations are, however, conditional upon the state of particular markets and of the economy in the various futures in which cash receipts are to be collected. In making money today-money tomorrow transactions, whether the transaction be a financial transaction, such as issuing or buying bonds, or an investment transaction, in which current resources are used to create capital assets, assumptions about the intrinsically uncertain future are made. The assumptions often are that the intrinsically uncertain future can be represented by a probability distribution of, say, profits, where the probability distribution is assumed to be like the probability distributions that are used to represent outcomes at a roulette table. However, the knowledge of the process that determines the probabilities is much less secure for economic life than it is for fair roulette wheels. Unforeseen and unlikely events occur in

gambling games and in economic life. Unlikely events will not cause a radical change in the estimates of the frequency distribution of outcomes at the roulette table whereas they are quite likely to cause marked change in the expectation of the future that guides economic activity.

The financial structure of our economy can be viewed as apportioning among various units the potential gains and losses from various undertakings in which the outcome is uncertain. By the very nature of uncertainty the actual results are quite likely to deviate markedly from anticipated results. Such deviations will lead to capital gains and losses. Experience with capital gains and losses will lead to changes in the terms upon which a certain command over resources will be exchanged for a conjectural future command over resources; the prices of capital assets and financial instruments will change as history affects views about the likelihood of various outcomes.

Households, businesses, government units, and various types of financial institutions issue financial liabilities. Each issuer of financial instruments has a main source of cash which is expected to accrue so that the financial instruments it has outstanding can be validated. The primary source of cash for households is wages, for business firms it is gross profits, for government units it is taxes, and for financial institutions it is the cash flow from owned contracts. In addition each unit can, in principle, acquire cash by selling assets or by borrowing. Although the normal economic activity of many units depends upon borrowing or selling assets to obtain cash we will consider such financial transactions as a secondary source of cash—where the term secondary does not necessarily carry any pejorative connotations.

Household wage income, business profit flows, and government tax receipts are related to the performance of the economy. The primary cash flows that validate household, business, and government debts depend upon the level and distribution of nominal income. In our type of economy one link between financial markets and income and output production is that some of the demand for current output is financed by the issuance of financial instruments, and a second is that wage, profit, and tax flows need to meet a standard that is determined by the payment commitments on financial instruments if financial asset prices and the ability to issue financial instruments are to be sustained. A capitalist economy is an integrated financial and production system and the performance of the economy depends upon the satisfaction of financial as well as income production criteria.

IV. Hedge, Speculative and Ponzi Finance

Three financial postures for firms, households and government units can be differentiated by the relation between the contractual payment commitments due to their liabilities and their primary cash flows. These financial postures are hedge, speculative and "Ponzi". The stability of an economy's financial structure depends upon the mix of financial postures. For any given regime of financial institutions and government interventions the greater the weight of hedge financing in the economy the greater the stability of the economy whereas an increasing weight of speculative and Ponzi financing indicates an increasing susceptibility of the economy to financial instability.

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For hedge financing units, the cash flows from participation in income production are expected to exceed the contractual payments on outstanding debts in every period. For speculative financing units, the total expected cash flows from participation in income production when totaled over the foreseeable future exceed the total cash payments on outstanding debt, but the near term payment commitments exceed the near term cash flows from participation in income production, even though the net income portion of the near term cash flows, as measured by accepted accounting procedures, exceeds the near term interest payments on debt. A Ponzi finance unit is a speculative financing unit for which the income component of the near term cash flows falls short of the near term interest payments on debt so that for some time in the future the outstanding debt will grow due to interest on exising debt. Both speculative and Ponzi units can fulfill their payment commitments on debts only by borrowing (or disposing of assets). The amount that a speculative unit needs to borrow is smaller than the maturing debt whereas a Ponzi unit must increase its outstanding debts. As a Ponzi unit's total expected cash receipts must exceed its total payment commitments for financing to be available, viability of a representative Ponzi unit often depends upon the expectation that some assets will be sold at a high enough price some time in the future.

Every cash flow can be transformed into a present value by discounting the dated expected cash receipts at appropriate interest rates. Thus from any structure of expected cash receipts and payment commitments a balance sheet can be constructed. In this balance sheet the present value of the unit's assets and liabilities are entered. Furthermore because payment commitments are denominated in money, units with payment commitments keep some assets on hand which are quickly transformable into money and which are not essential inputs to the unit's production process; in part such assets are valued because they insure against some of the possible consequences of unfavorable events.[3]

We will first examine the cash flow, present value and balance sheet implications of hedge, speculative and Ponzi financial postures for business firms. The financing of investment and positions in capital assets by debts is a distinguishing attribute of our type of economy. This makes the cash flows and balance sheets of business of special importance. As our focus is upon the payment commitments due to business debts, the cash receipts of special interest are the gross profits net of taxes but inclusive of interest payments, for this is the cash flow that is available to fulfill payment commitments. The generation and distribution of this broad concept of profits is the central determinant of the stability of an economy in which debts are used to finance investment and positions in capital assets.

The validation through cash flows of the liabilities of households and governments is of great importance to the operation of today's capitalist economics. Household and government financing relations affect the stability of the economy and the course through time of output, employment and prices. However, the essential cyclical path of capitalist economies was evident when household debts were small and

[3] H. P. Minsky, "John Maynard Keynes." New York : Columbia University Press, 1975.

government, aside from times of war, was small. Household and government debt creation and validation modify but do not cause the cyclical behavior of capitalist economies. It will be evident in what follows that if the debt generation and validation by government becomes large relative to the debt generation and validation by business the basic path of the economy is likely to be affected.

The fundamental variables in analyzing the financial structure are the cash receipts and payments of economic units over a relevant time period. The total receipts of a business firm can be divided into the payments for current labor and purchased inputs and a residual, gross capital income,[3a] that is available to pay income taxes, the principal and interest on debts and for use by the owners.

We therefore have:

Gross Capital Income = Total Receipts From Operations − Current Labor and Material Costs

and

Gross Capital Income = Principal and Interest Due on Debts + Income Taxes + Owners "Income".

In terms of the data available in National Income and Flow of Funds accounts gross capital income equals gross profits before taxes plus interest paid on business debts. In analyzing the viability of a financial structure and the constraints it imposes, gross capital income as here defined is the key receipts variable.

The cash payments made by a unit over a relevant time period equal the spending on current labor and purchased inputs, tax payments, the remittance due to debts that fall due and dividends. Over any particular interval cash payments may exceed, equal or fall short of cash receipts. Of the payments the critical items are current input costs, taxes and payments required by outstanding debts. As current costs and taxes are subtracted from current receipts to yield after tax capital income the key relation becomes that between after tax capital income (or gross profits after taxes broadly defined) and the payment commitments on debts. The relation has two facets:

(1) Each relevant period's (quarter, month, year) relation between gross capital income and payment commitments due to debts.

(2) The relation over an open horizon of the sum of expected gross capital income and the sum of payment commitments now on the books or which must be entered on the books if the expected gross capital income is to be achieved.

A necessary though not sufficient condition for the financial viability of a unit is that the expected gross capital income exceed the total payment commitments over time of debts now on the books or which must be entered upon if this capial income is to be forthcoming.

Gross capital income reflects the productivity of capital assets, the efficacy of management, the efficiency of labor and the behavior of markets and the economy. The debt structure is a legacy of past financing conditions and decisions. The question this analysis raises is whether

[3a] In the economic literature, following Marshall and Keynes, this residual is called quasi-rent.

the future profitability of the business sector can support the financial decisions that were made as the current capital-asset structure of the economy was put into place.

Hedge Financing

A unit is hedge financing at a particular date when at that date the expected gross capital income exceeds by some margin the payment commitments due to debts in every relevant period over the horizon given by the debts now on the books and the borrowings that must be made if expected gross capital income is to be earned. The liabilities on the books at any time are the result of past financing decisions. As such they are entered into on the basis of margins of safety. One of the margins of safety is an excess of anticipated receipts over cash payment commitments. However the anticipated gross capital income for any date is uncertain. The holder and user of capital assets, the banker who arranges the financing and the owner of the liabilities expect the actual receipts to exceed the payment commitments due to debt by a substantial margin. One way to treat this is to assume that the owners of the capital assets, the bankers, and the owners of the debt assume there is a lower limit of the gross capital income which is virtually certain and that financing decisions and capitalized values are based upon this lower limit to earnings which are deemed to be virtually certain.

If we capitalize the cash payment commitments and the receipts that capital assets are deemed to be assured of earning at common interest rates we will get the present value of the enterprise that is expected to yield the specified gross capital income. In the case of the hedge unit the difference between these assured receipts and the payment commitments is positive in every period. Thus the capitalized value of the flow of gross capital income will exceed the capitalized value of payment commitments at *every* interest rate. Inasmuch as a unit is solvent only as the value of its assets exceeds the value of its debts, changes in interest rates cannot affect the solvency of a unit that hedge finances.

It is important to emphasize that, for a hedge unit, conservatively estimated expected gross capital income exceeds the cash payments on debts from contracts for every period in the future. The present value of this stream is the sum of the capitalized value of the cash flows net of debt payments for each period; inasmuch as each period's net cash flow is positive the sum will be positive. In particular a sharp rise in interest rates cannot reverse the inequality in which the present value of capital assets exceeds the book value of debts. For hedge finance units insolvency cannot result from interest rate increases.

Even though a hedge financing unit and its bankers expect that cash flows from operations will generate sufficient cash to meet payment commitments on account of debts, further protection for borrowers and lenders can exist by having a unit own excess money or marketable financial assets—i.e., it is convenient (as an implicit insurance policy) to hold assets in the form in which debts are denominated. A balance sheet of a hedge investor will include money or money market assets in addition to the capital assets.

A hedge unit's financial posture can be described by the excess of cash receipts over contractual payment commitments in each period, an excess of the value of capital assets over debt and the holding of cash or liquid assets. We can further divide the assets and liabilities. In particular we can note that the cash can be held in the form of various financial assets such as Treasury debt, commercial paper and even open lines of credit. Similarly the debts of a unit can be short term, long term, or even non-debts like commitments on leases.

A unit that has only equities on the liability side of its balance sheet or whose only debts are long term bonds with a sinking fund arrangement where the payments to the sinking fund are well within the limits set by expected cash flows is engaged in hedge financing. A hedge financing unit is not directly susceptible to adverse effects from changes in financial markets. The only way a hedge financing unit can go bankrupt is if its revenues fall short of its out of pocket costs and commitments.

Speculative Financing

A unit speculates when for some periods the cash payment commitments on debts exceeds the expected gross capital income. The speculation is that refinancing will be available when needed. This speculation arises because the commitments provide for the repayment of debt at a faster rate than the gap between revenues and costs allows for the recapturing of the money costs of capital assets. We restrict the term speculative to a liability structure in which the income portion of gross profits exceeds the income portion of payment commitments.

The liability structure of a speculative unit leads to a series of cash payments and the operations of the unit will lead to a series of cash receipts. The sum of the payment commitments is less than the sum of the cash receipts *but* in some periods the payment commitments are larger than the expected cash receipts; there are deficits. These "deficit" periods are typically closer in time from the "today" at which the balance sheet is being characterized; the deficits for the speculative unit are mainly because the unit has engaged in short term financing so that the principal of debts falling due exceeds the recapture of capital-asset commitments in these early periods. Even as the debt is being reduced in these early periods, the cash flow prospects of later periods include receipts due to the recapture of principal even as there is no need to reduce the principal of outstanding debts. Thus a speculative unit has near term cash deficits and cash surpluses in later terms.

The present value of an organization equals the present value of the gross capital income minus the present value of the cash payment commitments. This is equivalent to the present value of the series of cash deficits and surpluses that a speculative unit is expected to earn. For a speculative unit the shortfalls of these receipts relative to payment commitments occur early on in the future and the positive excess of receipts over payments occurs later: a speculative unit finances a long position in assets by short run liabilities. Higher interest rates lower the present value of all cash receipts, however the decline is

proportionately greater for the receipts more distant in time. Thus a dated set of cash flows which yields a positive excess of asset values over the value of debts at low interest rates may yield a negative excess at high interest rates: a present value reversal, from positive to negative present values, can occur for speculative financing relations and not for hedge financing units.

In a speculative financing arrangement the unit, its bankers and the holders of its debts are aware that payment commitments can be fulfilled only by issuing debt or by running down cash balances during periods in which the payment commitments exceed the relevant receipts. The financing terms at those dates when it is necessary to borrow to pay debts can affect the spread between gross capital income and cash payment commitments. In particular refinancing can make cash commitments at some later date, which initially were expected to be positive, negative. The ability of a firm that engages in speculative finance to fulfill its obligations is susceptible to failures in those markets in which it sells its debts.

A speculative unit will also carry cash kickers. As the near term payments exceed the expected cash flows from income, for a given value of debt the cash balance of a speculative unit can be expected to be larger than that for a hedge unit. However because speculative units are active borrowers it is likely that lines of credit and access to markets will be a part of the cash position of such units, albeit this part will not be visible on the balance sheet.

The gross cash flows due to operations that a unit receives are broken down by accounting procedures into an income portion and a recapture of the value of the investment in capital-assets; the recapturing is called depreciation or capital consumption. The payment commitments on debts are usually separated into the interest due and the repayment of principal. For a speculative financing unit in the periods when there is a cash flow deficit the receipts allocated to income exceed the interest payments even as the receipts allocated to the repayment of principal fall short of the principal amount due on the debt. Thus the speculative unit is earning a net profit and is in a position to decrease its indebtedness by allocating a portion of the excess of income over debt payments to lowering the debts.

Ponzi Financing

Ponzi units are speculative units with the special characteristic that for some if not all near term periods cash payment commitments to pay interest are not covered by the income portion of the expected excess of receipts over current labor and material costs. These units must borrow in order to pay the interest on their outstanding debt: their outstanding debt grows even if no new income yielding assets are acquired.

Obviously asset owners, bankers and debt holders participate in Ponzi finance only if the present value of the sum of all future expected cash receipts and payments is positive. Therefore the positive present value of cash receipts minus payments in later periods must offset the negative present value of cash receipts minus payments in early periods. An extreme example of Ponzi finance is borrowing to

hold assets which yield no or little income in the expectation that at some date the market value of the object held will yield enough to clear debt and leave a sizeable gain. The low margin stock exchange of the 1920s and the margin financing of the Hunt position in silver in 1980 are examples of Ponzi financing.[4] The REITs of the early 1970s, which paid dividends on the basis of interest accruals, were engaging in Ponzi finance. A unit that is heavily involved in building capital assets can be engaging in Ponzi finance.

It is obvious that a Ponzi finance unit's present value depends on interest rates and the expectations of cash flows in the future. Rising interest rates increase the rate of increase of outstanding debts and can transform positive present values into negative present values. Inflation will often lead to financing relations which can be validated only if inflation continues. Acquiring assets because of inflationary expectations bids up the price of favored assets and the financing bids up interest rates. A decline in inflation expectations will lead to a drop in these asset prices which can lead to the debts exceeding the value of assets.

The stability of an economy depends upon the mixture of hedge, speculative and Ponzi finance. Over a period of good years the weight of short term debt in the business financial structure increases and the weight of cash in portfolios declines. Thus there is a shift in the proportion of units with the different financial structures—and the weight of speculative and Ponzi finance increases during a period of good years.

It should be noted that a decline in expected gross capital income, or a rise in the income protection required for hedge financing can make hedge units speculative units; and a decline in expected gross capital income, a rise in the income protection required for speculative financing or a rise in financing costs can make speculative units Ponzi units. Such changes can lead to the value of debts exceeding the capitalized value of these excess receipts. There are two facets to financial instability. In the first the cost of debt and the need to roll over ever larger debt structures leads to a break in asset values as units try (or are forced to try) to decrease their debt dependency; the second is when gross capital income falls because the determinants of profits have fallen. A deep recession requires that such financial markets and cash flow effects occur.

At this point it is worth noting that the level and pattern of interest rates do not affect the solvency even though it affects the size of the positive net worth of a hedge finance unit. However the solvency—i.e., a shift of net worth from positive to negative and back again—of speculative and Ponzi finance units is affected by interest rate changes. In a world dominated by hedge finance the authorities can disregard the course of interest rates. But in a world dominated by hedge finance, the interest inelastic demand for finance from units that must refinance positions and finance commitments will not exist—i.e., in a world dominated by hedge finance interest rates do not change by much.

[4] As this was being prepared a magnificent example of Ponzi financing became "public property" in the problems of the Hunts and their margin financing of positions in silver.

On the other hand, for speculative and especially for Ponzi finance units a rise in interest rates can transform a positive net worth into a negative net worth. If solvency matters for the continued normal functioning of an economy, then large increases and wild swings in interest rates will affect the behavior of an economy with large proportions of speculative and Ponzi finance. Furthermore speculative and especially Ponzi finance give rise to large increases in an interest inelastic demand for finance, i.e., speculative and Ponzi finance create market conditions conducive to large swings in interest rates. In a world where speculative and Ponzi finance is important the authorities cannot disregard the effect of policies on the level and volatility of interest rates.

Households

For households, the cash flow income that is mainly relevant to the financial structure is the difference between wage income as the major component of household disposable income and cash payment commitments on household debt.[5] The secondary household financial relation of importance, which is especially relevant for the various forms of "to the asset" (mortgage, conditional sales) contracts, is between the value of the hypothecated asset and the face or book value of the outstanding debt.

Household debts are either fully amortized, partially amortized or unamortized. In a fully amortized contract a series of payments is specified and at the end of the time the contract is fully paid. In a partially amortized contract there is a payment due at the end of the contract which is a portion of the original principal. An unamortized contract has the full original principal due at its end.

The cash flow relation for a fully amortized contract assumes that the payment commitments are less than the expected wage incomes. Thus a fully amortized contract conforms to the definition of hedge financing. Partially amortized and unamortized contracts can have payments due at some dates that exceed the anticipated wage incomes. The cash flow relations for partially amortized contracts conform to that of speculative financing except that the cash deficit comes late in the sequence of payments rather than early.

Consumer and mortgage debt can become Ponzi-like only if actual wage income falls short of anticipated and other sources of disposable income, for example, unemployment insurance, do not fill the gap. Such shortfalls can occur because of personal events or overall economic events. Various types of insurance premiums added to the cash payment commitments take care of the health and accident portions of the personal risk. Large scale and persistent unemployment can lead to reversal of the inequality for a substantial number of initial hedge units and the subsequent foreclosures and repossession of the hypothecated asset can lead to a fall in asset prices relative to the outstanding debt. This can occur only if a substantial decline in income and employment has taken place. The typical financing rela-

[5] In an economy with massive transfer payment schemes, significant dividend and interest income and significantly high income taxes the relevant household income might well be consumer disposable income.

tion for consumer and housing debt can amplify but it cannot initiate a downturn in income and employment.

However a part of household financing is often Ponzi; this is the financing of holdings of securities and some types of collectable assets. A typical example is the financing of ownership of common stocks or other financial instruments by debts. In principle a separate cash flow account for such assets within the household accounts could be set up. Debts for carrying a fixed portfolio of securities would increase whenever the income earned by the securities falls short of interest payments on the debt. If we set up the cash flow relation for a margin account for common stock we find that if the dividend/price ratio exceeds the interest rate then the financing is speculative, mainly because the underlying debt is nominally short term. If the interest payments exceed the dividend then the financing is Ponzi. Hedge financing disappears as a classification for stock market financing except if the term to maturity of the debt is so long that the borrowing unit does not have to refinance its positions.

Why would any rational man enter upon and a rational banker finance a security holding in which the carrying costs exceed the cash flow from dividends? The obvious answer is that the dividend yield is not the full yield; the full yield will include appreciation (or depreciation) of asset values. Thus in household finance we find that the payment commitments can exceed the dividends and be less than the total asset return including the appreciation of the price of the assets. In the extreme case—which applies to stock market booms and speculative manias (such as the 1979–80 Gold and Silver episode), the cash income from assets approaches zero; the only return is from appreciation. In these cases, if there is a margin between the price in the market of the assets and the value of the debt used to carry the assets, the cash due on debt is acquired by a rise in debt. This rise in debt finances the interest income of the lenders (bankers). Income is earned even though the payor pays no cash.

Household finance can be destabilizing if there is a significant portion of Ponzi finance in the holding of financial and other assets. A speculative boom exists whenever a substantial and growing portion of outstanding payment commitments can be fulfilled only if an appreciation of asset values takes place. In such a boom the current and near term expected cash flows from participating in the production and distribution of income are not sufficient to meet even the income portion of the payment commitments. In this situation some of the unrealized capital gains are transformed into incomes, thus financing demand for output. A speculative boom, as exemplified by a growth in Ponzi financing of asset holdings by households, can induce a rise in current output prices, even as the basis of the Ponzi financing of asset ownership is the anticipation by debtors and their financing agents of inflation in the prices of the assets being financed.

Debt financing of asset ownership and consumption spending by households has increased over the era since World War II. The increase of the items that can be financed by debt and of the ease with which households can debt-finance has meant that the link between household wage income and household consumption is not as close

as in the past. When households can readily purchase consumer goods by promising to pay a portion of future wage incomes, a close link between this period's income and demand for output is broken. Symmetrically when a household's payments on debt contracts exceed the interest due, the household "saves". Thus a buildup of consumer debt will lead to a high ratio of consumption to household income; a decrease in the amount outstanding will lead to a low ratio of consumption to household income. The achieved ratio of savings to wage income in a modern economy reflects the course of outstanding household debts.

To recapitulate, household debt financing and cash payment commitments on account of debt can be broken into two categories: the financing of consumption and the financing of ownership of assets, mainly financial assets. [Housing is in part a consumption good and in part an asset; other consumer durables such as automobiles, etc., are not valued as assets even though they may have a resale value.] The cash flows that will validate consumption financing are mainly household disposable income which is largely wages. The cash flows that will validate the debt-financing of assets are either dividends and interest or the result of selling out the position at an appreciated price. Household debt financing of consumption is almost always hedge financing; only a fall in income (wages) can transform such contracts into examples of Ponzi financing. Housing is typically financed by hedge financing. Positions in common stocks and collectables, such as gold, are often financed in a Ponzi fashion.

Because consumption and housing debts of households are primarily hedge financing, the contracts will tend to be validated unless there is a prior fall in wage income. Household financing of asset ownership can be Ponzi in nature. As a result a rise in interest rates applicable to future prices of the assets or to future income can lead to a sharp fall in the price of assets in position. Such a sharp fall in price means that the margin of safety in asset values falls and the expected appreciation of asset values which enable cash to be raised to satisfy payment commitments is not realized. These effects can determine the markets in which changes in relative prices initiate financial and economic stability.

Government

Government units also have payment commitments on debts. These payment commitments will be validated by some combination of an allocation of tax payments and new borrowing. Government units are often speculative financing units which operate by rolling over short term debt. As long as the total future expected cash flows exceed the total future cash payment commitments on the current outstanding debt, this proves no special problem. However if the expected tax take or expected current operating expenses misbehave then roll-over problems can arise. Government financial policies are not typically initiating forces in the instability that is due to market forces. But government units can mismanage their affairs and individually get into trouble. In particular government units with large floating (short term) debts can find the cost of carrying debts rising relative to the taxes net of current expenses available for servicing debt. High interest rates can make government units into Ponzi units.

Summing Up

The distinction between hedge, speculative and Ponzi finance defines both the sets of markets that need to be functioning normally for payment commitments to be validated and the potential sources of difficulty. If units engage in adequately protected hedge finance their financial difficulties cannot be an initiating factor in instability. Units which initially are hedge financing can become speculative and even Ponzi financing units as their income deteriorates, and thus amplify initial disturbances.

Speculative financing units can fulfill their commitments as long as their longer term income prospects are favorable and as long as funds are forthcoming at non-punitive terms from the markets in which they finance and refinance their positions. Speculative finance units are vulnerable to both income and financial market disturbances. Furthermore shortfalls in income and increases in financing charges can transform speculative units into Ponzi units.

The viability of units which engage in Ponzi finance depends upon the current expectations of future prices of capital assets or financial instruments. These future prices depend upon profits in the more distant future. The viability of Ponzi finance units is dependent upon discount rates, on future cash flows and expectations of future profitability and prices. Obviously too great an admixture of Ponzi and near-Ponzi speculative finance is conducive to instability.

We can conceive of a scale of financial robustness—financial fragility which depends upon the mixture of hedge, speculative and Ponzi finance outstanding. As the proportion of hedge financing decreases the financial structure migrates toward fragility.

V. The Level and Distribution of Income and the Validation of the Financial Structure

A debt is validated when maturing commitments to pay are fulfilled and expectations are sustained that future remaining commitments will be fulfilled. By extension a debt structure, either in total or for various subdivisions of the economy, is validated when on the whole maturing commitments to pay are fulfilled and when expectations are that future receipts by debtors will enable payment commitments that extend over time to be fulfilled. The qualifying phrase "on the whole" is needed because a debt structure will be validated even if some payment commitments are not fulfilled. Debt financing organizations anticipate that some (small) percentage of debtors will not fulfill their commitments.

The validation of debt depends upon various components of income being large enough so that the payment commitments can be fulfilled either out of the income flows or by refinancing. Thus for the Flow of Funds category Non-Financial Corporate Business, capital income as measured by the sum of interest payments and gross profits after taxes during any period must be large enough to enable maturing commitments to be satisfied either out of this grossest of profits or out of the proceeds of new debts issued in roll-over or funding operations. But access to roll-over or funding finance depends upon anticipated future cash flows. Therefore at all times the emerging evidence

on business profitability must lead to anticipated profit flows that enable refinancing to take place. In addition business profits have to be large enough so that when current and recent business profits are fed into whatever logic determines expected profits, the capitalized value of such expected profits is large enough to validate the price paid in the past for capital assets and induce current decisions to produce capital assets, i.e., to invest.

Wages and taxes need to meet standards set by household and government spending and payments due on outstanding debts if commitments on household and government debts are to be met and if new debts are to be negotiated. However, the wage bill and the tax take (once the tax schedule is determined) result from rather than determine aggregate demand. There is no link between the current and past levels of wages and taxes as inputs to anticipated future levels, that feeds back and determines a part of current demand, such as exists between current profits, anticipated profits and current investment demand. Profits are critical in a capitalist economy because they are a cash flow which enables business to validate debt *and* because anticipated profits are the lure that induces current and future investment. It is anticipated profits which enable business to issue debts to finance investment and positions in capital assets. Any theory that aims to explain how an investing capitalist economy works must focus upon the determination of total profits and the division of total profits among debt servicing, household disposable income, and retained earnings.

In neoclassical economic theory profits equal the marginal productivity of capital times the quantity of capital. In our economy fluctuations in employment, output and profits occur which cannot be explained by changes in the quantity or productivity of capital. Furthermore the concept of a quantity of capital is ambiguous; it is questionable if any meaning can be given to the concept that is independent of expected future profits and the capitalization rate on profits. There is an unambiguous meaning to the price at which investment output enters the stock of capital assets, but that price has little or no significance in determining the price of that item as a capital asset.

In equilibrium the depreciated value of investment output equals the capitalized value of future profits. In most of economic analysis the depreciated value of investment output is used as the value of capital—therefore implicitly assuming the economy is in equilibrium. But an economic theory that assumes that the economy is always in equilibrium cannot explain fluctuations. If the value of capital always equals the depreciated value of investment goods then even large scale exogenous shocks cannot affect the equilibrium values determined within the system.[6]

In neoclassical theory the price level and money are always outside the system that determines outputs and relative prices. Within this system of thought change in the money supply is an exogenous shock variable that will change money prices without changing relative prices—and price deflated profits. The neoclassical theory cannot be of help in explaining fluctuating profits. Therefore it is of no use in help-

[6] This is a "quick and dirty summary" of a key position in the Two Cambridge Debate. See G. H. Harcourt, "Some Cambridge Controversies in the Theory of Capital." Cambridge University Press, 1972.

ing us understand how the financial structure of a capitalist economy affects the economy's behavior.

In a capitalist economy the total value of output or of any subset of outputs equals the sum of wages and capital income. Thus for consumer goods we find that the value of output (price times quantity) equals the wage bill plus profits. Similarly the value of investment output (price times quantity) equals the wage bill plus profits. Let us make a heroic but not unreasonable "first approximation" assumption that all of wages are spent on consumption and none of profits are so spent. This means that the wage bill in consumption plus the wage bill in investment equals the value of consumption output which in turn equals the wage bill in consumption plus the profits in consumption. The wage bill in consumption enters both demand and costs, subtracting it from both sides of the equation leads to

Profits in consumption goods production = The wage bill in investment goods production

If we add profits in investment goods production to both sides of the above we get

Profits = Investment

These simple formulas, which are true for a model based upon heroic abstractions, tell us a great deal about our economy.[7] The result that profits in consumption goods production equals the wage bill in investment goods production is no more than the proposition that the price system operates so that consumption goods are rationed by price among various consumers. It also asserts that workers in consumption goods production cannot buy back what they produce; if they did then workers in investment goods production would starve.

The "profits equal investment" result is based upon the identity that profits in investment goods production equal profits in investment goods production. To improve upon this tautology it is necessary to integrate the financing of investment goods production into the model of price determination. Investment output is often special purpose and produced to order. The production of an investment good usually takes time and in the case of modern investment output—let us take a jumbo jet plane or a nuclear power plant as our examples—production often takes the form of a sequenced assemblage of specialized components. The production of investment goods typically involves money being spent on a dated schedule and a receipt of money when the investment good is finished and it becomes a capital asset. In the construction industry this payment sequence takes the form of interim or construction financing while the project is being built and permanent or take out financing for the completed project.

In investment production the funds used are often borrowed. When borrowed funds are used both the borrower and lender alike expect sales proceeds to be sufficient to cover payment of the debts with a margin of safety. Given the contingencies that can arise the margins of

[7] The proposition about profits and investment is by Kalecki. See M. Kalecki, "Selected Essays on the Dynamics of the Capitalist Economy 1933–1970." Cambridge: Cambridge University Press, 1971.

safety required by borrowers and lenders can be large. Thus it is the financing conditions for investment in process—and the recognition that owned funds must yield what could be earned in financing other endeavors—that lead to the value of investment exceeding out of pocket labor cost. To the extent that labor costs represents all current costs (purchased materials, etc.) the supply price of investment output is given by a markup on wage costs where the markup reflects interest charges and the margins of safety required by lenders and borrowers.

The supply price of investment goods depends upon conditions in financial markets and various protections desired by producers and lenders. If production takes time and lenders and borrowers recognize that they live in an uncertain world and therefore want protection then the relative prices of different outputs depend upon particular financing terms and protections desired by borrowers and lenders.

It is worth noting that the supply price of the investment goods produced during a period will be paid only if the demand price of the investment good as a capital asset is equal to or greater than the supply price of investment as output. But the demand price is the capitalized value of future profits. We therefore find that investment will take place only if the capitalized value of future profits exceeds the supply price of investment output.

The proposition that profits equal investment can be opened up to allow for demands for consumption goods in addition to that which is financed by wages in the production of consumption and investment goods. It is particularly important to determine how the government budget and the international accounts affect the generation of profits. We first consider only the Federal Government.

The government hires workers, buys outputs and pays transfers. Government spending is equal to the sum of the wage bill for government employees, purchases from private industry and transfer payments (including interest on government debt). As government purchases equals a wage bill and profits, government spending equals the sum of direct and indirect wages, profits on government contracts and transfer payments.

The government collects taxes. For simplicity we assume that all taxes are income taxes and that tax receipts—the tax take—are a percentage of the total wage bill plus a percentage of profits.

The government budget posture is the difference between government spending and the tax take. If the government budget is integrated into the determination of profits we find that

$$\text{After Tax Profits} = \text{Investment} + \text{The Government Deficit.}$$

This result is critical in understanding why we have not had a deep depression in the postwar period.

An implication of the result that after tax profits equal investment plus the deficit is that taxes on profits do not affect after tax profits unless such taxes affect the sum of investment and the deficit. However, a shift in taxes from wages to profits can be inflationary. The rise in disposable wage income raises demand and the rise in profit taxes will increase the pre-tax profits needed to achieve equality with investment plus the deficit. Pre-tax profits are the product of per unit profits times

the number of units. A rise in pre-tax profits can be the result of greater output or a higher markup per unit of output. Inasmuch as the greater output response is only possible from the industries in which suppliers have market power and are willing to accept a reduction in their market power, the presumption has to be that prices in all production will tend to rise when taxes are shifted to profits.

The profit generating process can be opened up to allow for exports, imports, savings out of wage income and consumption out of profits income. Imports minus exports equals the balance of trade deficit and if we allow for exports and imports the profits equation becomes

After Tax Profits = Investment + The Government Deficit − The Balance of Trade Deficit.

This equation shows that a trade surplus is good for domestic profits and a trade deficit is bad.

Expanding our analysis to allow for savings out of wages and consumption out of profits the profits equation becomes

After Tax Profits = Investment + The Government Deficit − The Balance of Trade Deficit + Consumption Out of Profit Income − Saving Out of Wage Income.

Profits are positively related to investment, the government deficit, and consumption out of profit income and negatively related to a balance of payments deficit and savings out of wages.[8]

For the purposes of this paper the simple equation

After Tax Profits = Investment + The Government Deficit

is of central importance. To understand how our economy functions we can first explore the meaning of the simple equation and then trace out the impact upon the behavior of the economy due to the initially neglected balance of payments, savings out of wages and consumption out of profits items.

If we are to build a complete model of the economy on the basis of this profit equation, like the various econometric models used by business and government, we need to explain investment and the deficit.

Investment can be explained by interpreting the influence of expected profit flows, existing and anticipated debt servicing flows, the current prices of investment output and financial instruments and the supply price of capital assets. In addition the state of uncertainty that determines the leverage ratios for current interim and position financing needs to be considered. Leverage ratios integrate borrower's and lender's risk (uncertainty) into the determination of current output.

The deficit is the difference between government spending and the tax take. Government spending is a policy variable that takes the form of government employment, transfer payment schemes and

[8] These propositions about profits were in Kalecki, op. cit. See also Hyman P. Minsky, The Financial Instability Hypothesis: A Restatement, Thames Papers in Political Economy: Thames Polytechnic, 1978.

purchases from private industry. The tax take reflects policy decisions as to tax schedules and the operation of the economy.

Total employment (labor demand) is the sum of employment in government, investment goods production and consumer goods production. Inasmuch as government and investment goods production are given, the demand for labor in these two sectors is given. Given investment and the deficit as a schedule of the tax take, after tax profits are known. Profits in producing consumer goods are determined by subtracting profits in investment goods and in producing for government, from total profits.

Consumer goods production is carried to the point where profits in consumer goods production equals total profits minus those in investment goods production and in producing for government. We can think of two types of consumer goods production. In one type the price is fixed (profit margins per unit of output are fixed) and the output and thus employment varies. A second source of profits is from the sales and production of flexibly priced output. In this production the wage bill is fixed and the markup varies. The wage bill is divided by the preference system into spending for fixed price goods and spending for flexibly price goods. Wage income will expand by means of increased employment in fixed price outputs and this wage income will be divided between fixed and flexible-price outputs until the sum of the two types of profits in consumer goods production equals the profits to be earned in consumer goods production.[9]

If there is a deficit in the balance of trade then profits to be earned in consumption goods production need to be adjusted for the deficit (or surplus). As imports may be a function of consumption, the profits to be earned in consumption goods production may decrease as employment increases. Similarly consumption out of profits and savings out of wages will affect the employment in consumer goods production associated with each level of investment plus the government deficit.

The fundamental vision in this argument is that private employment is determined by profit opportunities. The aggregate profit opportunities in the economy are in the skeletal and essential analysis determined by investment and the government deficit. Investment and government spending generate profit opportunities in specific production, and wage income (or more generally consumers' disposable income) generates profit opportunities in the production of consumer goods. Unlike investment goods production, where banking considerations enforce a split of aggregate investment spending between wages and profits, profits in consumption goods production are determined by a variable markup on preestablished wage costs for flexibly priced outputs, and by variable employment and fixed markups for fixed price outputs. The preference systems of households determine how each level of aggregate employment (and total wage bill) is related to profits earned in industries characterized by flexible and fixed prices.

[9] In sundry recent writings J. R. Hicks has been making much about fixed and flexible price outputs. See The Crisis in Keynesian Economics, Basic Books, 1974.

VI. Profit Determination and the Validation of the Financial Structure

Profits are the cash flow that do or do not validate any particular structure of business debt. The expected level and stability of profits determines the debt structure that businessmen, their bankers, and the ultimate holders of the economy's assets will accept. In particular in an economy where there are serious consequences to default on financial obligations the potential downside deviation of profits from expected levels is an important determinant of acceptable debt structures.

The various profit formulas we have identified:

(1) Profits = Investment

(2) After Tax Profits = Investment + the Government Deficit

(3) After Tax Profits = Investment + the Government Deficit − the Balance of Trade Deficit

(4) After Tax Profits = Investment + the Government Deficit − the Balance of Trade Deficit + Consumption Out of Profit Income − Saving Out of Wage Income

are important in determining the currently acceptable debt structure and thus the current debt financing of demand, for they define the potential stability of profits. Each of Equations 1 through 4 represents a different structure of the economy and each structure will have a different expected behavior of profits over time.

The first case, Profits = Investment, represents a closed economy with a small government, an impoverished labor force and a "puritanical" and efficient business class which constrains its consumption, in order to preserve and augment its capital, and runs a "tight ship" insofar as business overheads are concerned. In such an economy the amplitude of fluctuations in profits will be the same as the amplitude of fluctuations in investment.

The second case represents a closed economy with a substantial government in the sense that the in-place government spending and taxing schedules can lead to government deficits that are significant in relation to investment. If such government deficits are negatively correlated with investment, then the amplitude of the variations in after tax profits will be substantially smaller than the amplitude of fluctuations in investment.

The third case represents an open economy with a big government. In such an economy the flow of profits depends upon the course of the balance of trade as well as the course of investment and the government deficit. This indicates that the mercantilist perception—that a favorable balance of trade is good for an economy—has merit.

The fourth case represents an open economy with big government in which workers' income is high and stable enough so that workers can save and finance consumption through debt, and in which the administrative structure of business is bureaucratized and expensive so that a large part of profits is assigned to paying salaries and financing ancillary activities such as advertising. Salaries and advertising,

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in turn, finance consumption. Today's American economy is of this type.

In a closed economy with a small government (the first case) the ability of debtors to validate the debt structure by profit flows depends upon current investment. The use of debt to finance positions in capital assets is constrained by the expected volatility of investment. As investment depends upon the availability of external finance and short term financing is available on favorable terms (because of asset preferences and the institutional (banking) structure), fluctuations in financing terms and in profit expectations will lead to fluctuations in investment and in the validation of debts: an economy of the first type will tend to be cyclically unstable. The evolution of financial markets which facilitate the use of short term debt tends to build liability structures which can be sustained only if total investment increases at a rate that cannot for long be sustained. Frequent mild recessions and periodic deep depressions occur in such an economy. During recessions and depressions, payment commitments on the inherited debt structure are decreased through contract fulfillment, default or refinancing.

The first case can be interpreted as representing the American economy before the Roosevelt era reforms and the Great Depression. The total federal government budget was small relative to the gross national product; working class savings were tiny and business was mainly entrepreneurial rather than highly bureaucratized. In these circumstances the volatility of investment was transformed into the volatility of the cash flows that enable business to validate debts. Whenever profits decreased hedge finance units became speculative and speculative units became Ponzi. Such induced transformations of the financial structure lead to falls in the prices of capital assets and therefore to a decline in investment. A recursive process is readily triggered in which a financial market failure leads to a fall in investment which leads to a fall in profits which leads to financial failures, further declines in investment, profits, additional failure, etc. This process was well described by Irving Fisher in 1933 and economists of the early thirties were aware that such a mode of operation was likely to occur.[10] The Federal Reserve System owes its existence to a felt need for a lender of last resort to prevent such cumulative deflationary processes from operating.

The second case can be considered as the essential or skeletal relation for an economy in which government is so big that the changes in the deficit can offset the effect of swings in investment on profits. In particular if spending increases and revenues decrease when investment falls, then the flow of profits will tend to be stabilized. In such an economy if a financial disturbance leads to changes in acceptable financing terms the resulting fall in investment will lead to a fall in profits. This fall in profits will lead to shifts in inherited financial postures, so that the weight of speculative and Ponzi finance in the financial structure increases. This in turn leads to a further fall in asset prices and investment. However, as this is going on tax receipts decrease and government spending (today largely transfer payments) increase, i.e., the deficit increases. Whereas the decline in investment

[10] Irving Fisher, "The Debt Deflation Theory of Big Depression," Econometrica (I) 1933.

tends to lower profits the rising deficit tends to increase profits. The downside potential for profits is diminished. With profits sustained and increased by the government deficit, the shift of the debt structure towards increased weight of speculative and Ponzi finance ceases and is reversed. With gross profit flows stabilized, the reduction, funding and otherwise restructuring of outstanding debts proceeds.[11]

In standard economic analysis the emphasis is upon how government spending affects aggregate demand and thus employment. Thus in the standard formulation, $Y=C+I+G$, the effects of government spending increasing and taxes decreasing would be felt in higher C, I and G, leading to greater employment than would have ruled if government was small. In the analysis just sketched this income and employment effect of government is reinforced by a profits effect of government, especially big government.[12]

Much has been written of stabilization policy. The question that needs to be addressed is "What is it that needs to be stabilized if a threat of a recession/depression is to be contained and if a cumulative decline is to be halted?" The proposition that follows from the argument is that profits have to be stabilized in the sense that the downside variability of profits must be constrained. Big government and the deficits which can occur in an economy with big government are important in stabilizing the economy because they stabilize profit flows.

It should be noted that this stabilizing effect of big government has destabilizing implications in that once borrowers and lenders recognize that the downside instability of profits has decreased there will be an increase in the willingness and ability of business and bankers to debt-finance. If the cash flows to validate debt are virtually guaranteed by the profit implications of big government then debt-financing of positions in capital assets is encouraged. An inflationary consequence follows from the way the downside variability of aggregate profits is constrained by deficits.

The third type of economy is an open economy with a big government. For the balance of payments deficit to be a significant determinant of the course of profits the level of exports or imports must be of the same order of magnitude as investment. If profits determine the willingness of domestic producers to invest and the ability of investors to debt finance then a favorable balance of trade will make for a rapidly developing economy. It should also be noted that an economy whose domestic profits depend upon a large balance of trade surplus is very vulnerable to whatever may cause a reversal of its surplus.

In some ways the Japanese economy is an example of a highly vulnerable open economy. Japanese manufacturing businesses use a great deal of debt financing and export a large proportion of their output. Any reversal of the Japanese balance of trade surplus, unless it is

[11] It is estimated that in the current (1980) United States economy, each percentage point increase in the measured unemployment rate is associated with a $27 to $30 billion increase in the deficit. Thus if the prospective budget is balanced at a 7 percent unemployment rate a 10 percent unemployment rate will be associated with a deficit of $80 to $90 billion even if Congress takes no expansionary tax or spending actions.

[12] The econometric models used in forecasting by the various government departments and private forecasting services are built in $Y=C+I+G$. Once this base is selected then financial considerations can only play a peripheral role in determining system behavior. As far as I know debts, and the need of profits to validate a debt structure and the market price of assets, are not integrated into the structure of existing forecasting and simulation models in any essential way. Such models are at best relevant to an era of financial tranquility like that which ruled in 1946–65.

accompanied by a burst in the government deficit, will lead to failures to validate debt.[13]

It is worth noting that the profit equation of an open economy with small government is

(3a) Profits = Investment − The Balance of Trade Deficit

In such an economy any sharp rise in the balance of trade deficit—or a decrease in the surplus—will lead to a deterioration of profits and the possibility of a deterioration of the financial structure.[14]

Although the fourth case is the most realistic statement of the profit determining relations for the American economy, data on the ratio of savings to wages and consumption to profits are not available. While this is a useful framework for analyzing the behavior of the American economy, its content depends to a large extent upon interpreting consumption out of profit income as largely due to the allocations of profits to salaries, research, advertising and "business style" expenditures. What the full fourth case emphasizes is that the allocation of profits to consumption follows from the building of a bureaucratic business style, which, like inherited debt, may lead to current period "uncontrolled" expenditures.

VII. Some Data

To understand why our economy has behaved differently since 1946 than it did prior to 1939 we have to appreciate how the broad contours of demand have changed. In order to understand why our economy has behaved differently since the middle 1960s than it has earlier in the post-World War II epoch we have to appreciate how the broad contours of the financial structure have changed. The changes in the broad contours of demand have changed the reaction of aggregate profits to a change in investment and therefore have changed the cyclical behavior of the ability of business to validate its debts. The changes in the financial structure have increased the proportion of speculative and Ponzi finance in the total financial structure and therefore increased the vulnerability of the financial system to refinancing and debt validating crises. As a result since the middle 1960s there has been an increased need for Federal Reserve lender of last resort interventions and for contracyclical fiscal policy by which government deficits sustain business profits.

The Broad Contours of Demand

The great contraction of 1929–1933 took place in an environment of small government. In the prosperity year of 1929 gross national product was $103.4 billion and total Federal Government expenditures, combining both the purchases of goods and services and transfer payment to persons, were $2.6 billion. In the same year investment

[13] This is what happened in 1974–75. The rise in the price of oil and the recession in the United States led to an enormous deficit in Japan's trade balance and a wave of business failures. The Japanese economy was inflated out of that crisis.

[14] The Smoot-Hawley tariff led to change in the balance of payments of many countries with small government and therefor exacerbated the developing international depression. While Smoot-Hawley was not the cause of the Great Depression it was a factor that amplified what, even so, was a large downturn.

was $16.2 billion. In 1933, the year in which the great contraction bottomed out and in which the New Deal was started (Roosevelt was elected in November 1932 and took office in March 1933) gross national product was $55.8 billion and total Federal Government expenditures were $4.0 billion. Investment was $1.4 billion in 1933.

Recall that profits equal investment plus the deficit. There is no way a Federal Government that spent $4.0 billion in total can offset by its deficit the effect on business profits of a $14.8 billion drop in private investment. In 1929 business gross retained earnings were $11.7 billion. In 1933 they were $3.2 billion. Inasmuch as the debts of 1933 were largely a legacy of earlier years, the financial problem of business was to meet the payment commitments on debts entered into in prosperous years by cash flows generated by recession incomes.

With investment at $16.2 billion and a government of $2.6 billion there was no way an automatic or semi-automatic response of government spending or taxation could offset the drop of investment. Between 1929 and 1933 gross investment fell by $14.8 billion (from $16.2 to $1.4 billion) and government expenditures rose by $1.4 billion (to $4.0 from $2.6 billion). Business Gross Retained Earnings—a measure of the internal funds available to finance investment and meet payment commitments on account of the principal amount due on debts—fell from $11.7 billion in 1929 to $3.2 billion in 1933.

The recession of 1973–75 was the longest and deepest recession of the postwar period. Of course it is not at all comparable to the great contraction of 1929–33, but it is the best we can do for comparative purposes. This contraction took place in the context of big government. In 1973 gross national product was $1306.6 billion and total Federal Government expenditures were $265.0 billion. Federal Government expenditures were some 20.3 percent of gross national product. Investment in 1973 was $220.6 billion.

The behavior of investment, government expenditures and profits over the 1973–75 recession stands in sharp contrast to the 1929–33 behavior. In terms of the index of industrial production the drop from 125.6 in September 1974 to 109.9 in May of 1975 was very steep indeed; the rise in unemployment from about 5 million in July of 1974 to a peak of 8.25 million in May of 1975 was a great shock to the nation—within a year the unemployment rate jumped from the neighborhood of 5 to 9 percent. In spite of the steepness of the decline in industrial production, Business Gross Retained Earnings increased substantially between 1973 and 1975. Between 1973 and 1975 gross investment fell from $220.2 billion to $190.9 billion—a decline of some $29.3 billion. Over the same years government expenditures rose from $265.0 billion to $356.8 billion (mainly but not exclusively in transfer payments), a rise of $91.8 billion. As a result, in spite of the rise in unemployment rates and the substantial decline in industrial production, business gross retained profits rose from $140.2 billion in 1973 to $176.2 billion in 1975—a rise of $36 billion or 25.7 percent.

The budget deficit rather than government spending enters the profit equation. In 1929 the Federal Government ran a surplus of $1.2 billion and in 1933 the deficit was $1.3 billion, a swing of $2.5 billion or 2.4 percent of the 1929 Gross National Product. In 1973 the deficit was $6.7 billion, in 1975 it was $70.6 billion, an increase of $63.9 billion; the swing in the deficit was 4.7 percent of GNP. But more important

the swing in the deficit of $60.7 billion more than compensated for the swing in investment of $29.3 billion.

In standard policy analysis the impact of big government and the government deficit on profits and therefore on the ability of business to fulfill its financial liabilities is overlooked. If business cannot meet its commitments on debts then the financing loop, by which funds are made avialable to business, is broken. Furthermore if the rate at which business fails to meet its obligations increases then the risk premiums that enter into the calculations of business and financial organizations increases. If profits are sustained and increased even as business investment falls then the balance sheets of business are improved at a rapid rate. The quick recovery from the decline of 1973–75 can be in good measure imputed to the enormous government deficit. If in 1973–75 the Congress and the Administration had tried to hold back the explosive growth of the deficit then the recession would have been deeper and longer, and the rate of inflation would have been much lower in 1979 and 1980 than in fact it is.

TABLE I.—GROSS NATIONAL PRODUCT AND ITS MAJOR COMPONENTS, SELECTED YEARS 1929 THROUGH 1979

[In billions of dollars]

Year	Gross national product	Consumption	Investment	Government purchase			Transfer payments to persons	Exports	Federal Government expenditures	Business gross retained earnings
				Total	Federal	State and local				
1929	103.4	77.3	16.2	8.8	1.4	7.4	0.9	7.0	2.6	11.7
1933	55.8	45.8	1.4	8.3	2.1	6.2	1.5	2.4	4.0	3.2
1939	90.8	67.0	9.3	13.5	5.2	8.3	2.5	4.4	8.9	8.8
1949	258.0	178.1	35.3	38.4	20.4	18.0	11.7	15.9	41.3	31.4
1959	486.5	310.8	77.6	97.6	53.9	43.7	25.2	23.7	91.0	58.5
1969	935.5	579.7	146.2	207.9	97.5	110.4	62.7	54.7	188.4	101.7
1973	1,306.6	809.9	220.2	269.5	102.2	167.3	113.5	101.6	265.0	140.2
1974	1,412.9	889.6	214.6	302.7	111.1	191.5	134.9	137.9	299.3	137.9
1975	1,528.8	979.1	190.9	338.4	123.1	215.4	170.6	147.3	356.8	176.2
1979	2,368.5	1,509.8	386.2	476.1	166.3	309.8	241.9	257.4	508.0	276.0

Source: Economic Report of the President January 1980, table B1 p. 203, except Government transfer payments to persons table B18 p. 223, Federal Government expenditures, table B72 p. 288, and gross retained earnings, table B8 p. 213.

TABLE II.—GROSS NATIONAL PRODUCT AND ITS MAJOR COMPONENTS, SELECTED YEARS 1929 THROUGH 1979

[As a percentage of gross national product]

Year	Gross national product	Consumption	Investment	Government purchase			Transfer payments to persons	Exports	Federal Government expenditures	Business gross retained earnings
				Total	Federal	State and local				
1929	100.0	74.8	15.7	8.5	1.2	7.2	0.1	6.8	2.5	11.3
1933		82.1	2.5	14.9	3.8	11.1	2.7	4.3	7.2	5.7
1939		74.2	10.3	15.0	5.8	9.2	2.8	4.8	9.8	9.7
1949		69.0	13.7	14.9	7.9	7.0	4.5	6.2	16.0	12.2
1959		63.9	16.0	20.1	11.1	9.0	5.2	4.9	18.7	12.0
1969		62.0	15.6	22.2	10.4	11.8	6.7	5.8	20.1	10.9
1973		62.0	16.9	20.6	7.8	12.8	8 7	7.8	20.3	10.7
1974		62.9	15.2	21.4	7.9	13.5	9.5	9.8	21.2	9.8
1975		64.0	12.5	22.1	8.1	14.1	11.2	9.6	23.3	11.5
1979		63.7	16.3	20.1	7.0	13.0	10.2	10.9	21.4	11.7

Source: Table I.

The Broad Contours of the Financial Structure, 1950–1975

In order to understand why our economy has been much more unstable in the years since the mid-1960s than earlier in the postwar

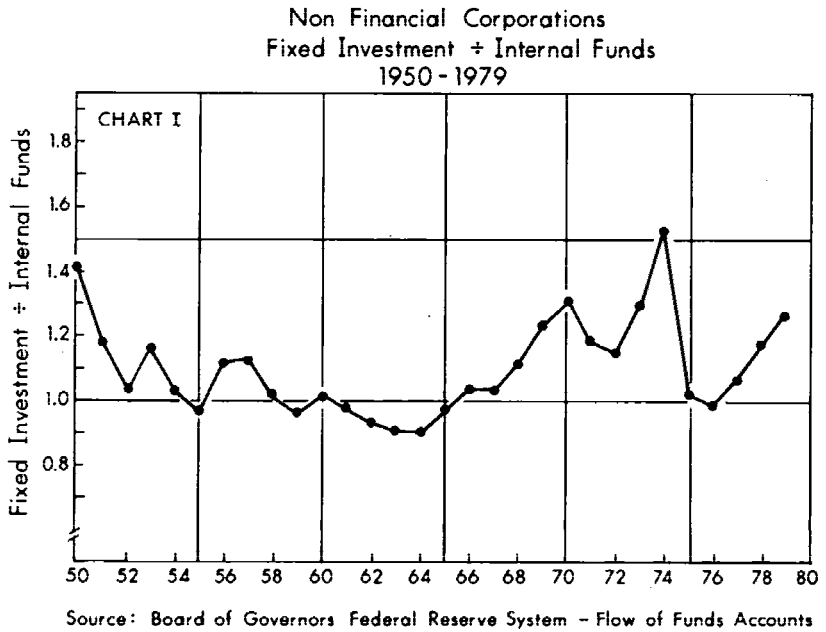
era we have to examine the changes in the financial structure. An exhaustive and in detail study of the evolution of the United States financial structure that uses the analytical foundation of this paper would be useful; however this paper is not the place for it.

A thorough research study should examine the changing composition of the assets and liabilities of the various sectors and the implications of this changing structure, as well as changes in financing terms, for the cash flows of the various sectors of the economy. The cash flow structure due to liabilities need then be integrated with the cash flow from assets and the various cash flows due to income production. In particular the changing relations between cash receipts and payment obligations and between payment obligations and the margins of safety need be understood.

In the absence of such a thorough study we will examine some time series for nonfinancial corporations, households and commercial banking—the three sectors that would constitute a simple economy with finance. The sectors and the data are from the Board of Governors Flow of Funds Accounts.

Non-Financial Corporations

In Chart I the ratio of Gross Fixed Investment to Gross Internal Funds for nonfinancial corporations for the years 1950–1979 is shown. The data on this chart show the extent to which fixed investment was being financed by gross internal flows and the extent to which there was a dependence on external funds. The evidence from the first fifteen years shows a mild cycle in this ratio, along with a downward trend. Ignoring 1950, the maximum ratio was 1.15 in 1951. If we look at the years 1958–1967 we see that fixed investment was at a maximum 1.05 of internal funds and in 6 of the 10 years fixed investment was less than internal funds.

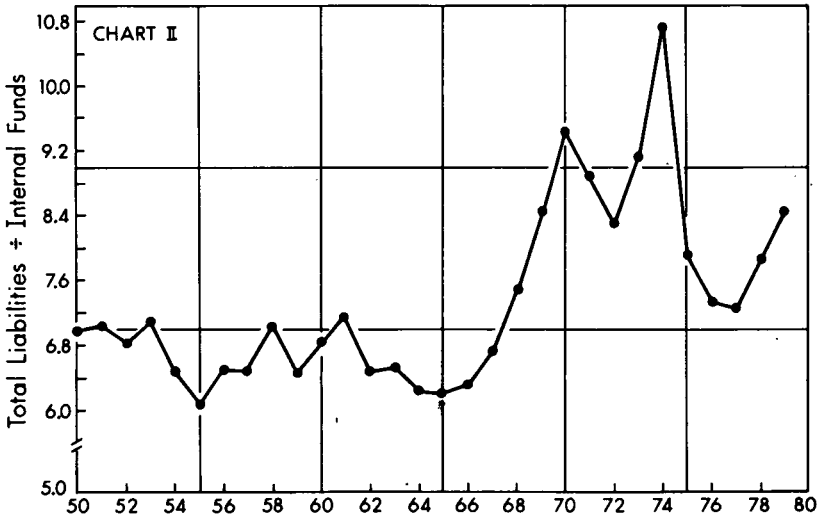


Source: Board of Governors Federal Reserve System – Flow of Funds Accounts

In the years since 1967 this ratio has exhibited both increasing fluctuations and an apparent strong upward trend. The cycles of the period show up strongly in this series. In 1970 the ratio hit 1.30 and dropped to 1.15 in 1972. In 1974 the ratio was greater than 1.5 and in 1975 it barely exceeded 1.0, in 1976 it dropped below 1, and it exceeded 1.25 by 1979. The time series on Fixed Investment/Internal Funds indicates that there was a change in the mode of operation of the economy in the mid-1960s. Prior to the mid-1960s corporations seem to have been internally financing their fixed investment whereas the data indicate that there was an increased dependency on external finance after the middle 1960s.

Chart II measures the ratio of Total Liabilities to Internal Funds of nonfinancial corporations. This chart is indicative of the trend of payment commitments of business on account of debt relative to the funds available to pay such debts. The liabilities are a proxy for the payment commitments; of course the length to maturity of the liabilities and the interest rate on the liabilities would determine the cash flows required per period. Furthermore the internal fluids should be augmented by interest and dividends paid to get a measure of gross capital income after taxes, which is the true variable that measures the ability of cash flows to validate a debt structure.

Non Financial Corporations
Total Liabilities ÷ Internal Funds
1950 - 1979

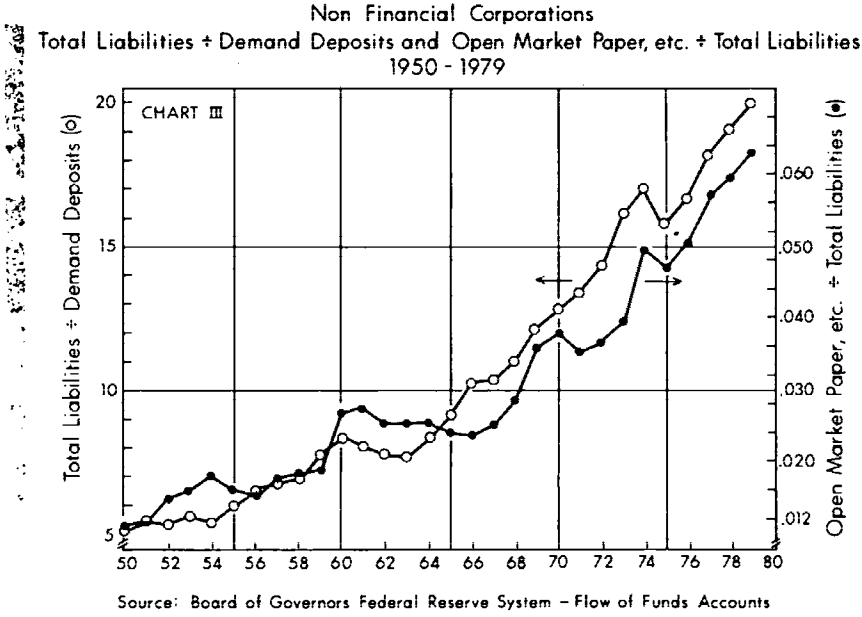


Source: Board of Governors Federal Reserve System – Flow of Funds Accounts

This crude approximation to what truly should be measured indicates that the middle 1960s saw a break in the relationships that determine this data. Up to 1967 the ratio exhibited mild fluctuation around a somewhat downward trend; since those dates the data show a strong cycle and upward trend. The ratio of liabilities to internal funds was

mainly in the range of 6.2 to 7.2 from 1950 through 1967. After 1967 the ratio began to rise and exhibit sharp fluctuation, hitting 9.4 in 1970, 8.3 in 1972 and 10.75 in 1974 before falling to 7.2 in 1977. It then increased to 8.5 in 1979. The high peaks hit in 1970 and again in 1974 indicate that at the tail end of the recent business cycle expansions the ability of business cash flows to sustain debt may well have been under pressure.

Charts I and II showed the ratio of a flow (in Chart I, gross fixed investment) and a stock (in Chart II, total liabilities) to a flow (internal funds) that is one measure of business profitability and ability to meet payment commitments. Chart III shows the time series for total liabilities divided by demand deposits and for open market paper divided by total liabilities. Both series in Chart III measure an aspect of the quality of the balance sheets of nonfinancial corporations. The liability/demand deposit ratio measures the extent to which payment commitments can be met by cash on hand if there is an interruption of cash flows in the form of gross profits. The other ratio reflects an attempt to measure the extent to which business is financing its activities by tapping volatile or exotic sources. The class "open market paper" includes commercial paper—a volatile source—and borrowings from finance companies—a generally expensive source.



Source: Board of Governors Federal Reserve System – Flow of Funds Accounts

Even though the series measure quite different variables they show a remarkably similar pattern: a rather mild upward trend in the 1960s, a pause between 1960 and 1964 or 1966, and then an upward thrust that is stronger than the thrust before the middle 1960s. The first fifteen years of the time series are quite different in the rate of growth they indicate as taking place. It is interesting to note that the break in 1974 shows up in both series.

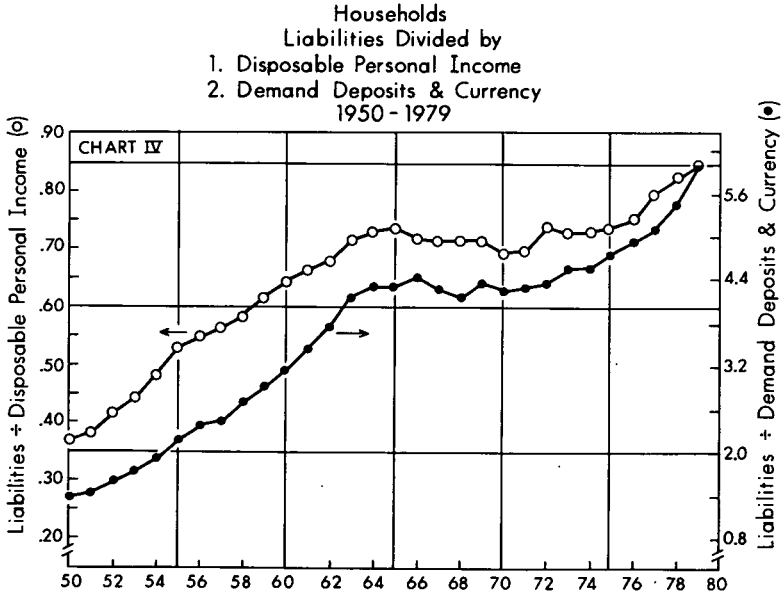
The data presented for nonfinancial corporations indicate that something changed in the middle 1960s. The ratio of debt to internal funds, of liabilities to demand deposits, and of open market paper to total liabilities indicates that the corporate sector not only now has greater debt payments to make relative to cash flows but also that the margin of safety for debt in cash on hand has decreased, and the reliance by business on volatile and relatively uncertain sources of financing has increased. The difference between the two indicates that the liability structure of nonfinancial corporations can not only amplify but even initiate a disturbance in financial markets.

Households

The ratio of liabilities of households to income and to cash on hand (demand deposits and currency) tells a story of something changing in the middle 1970s. Once again the data examined is a proxy for the desired but unavailable data on the payment commitments due to debt.

The payment commitments on household liabilities will typically be paid by disposable personal income. Between 1950 and 1965 the ratio of liabilities to consumer disposable income increased monotonically from .37 to .74—the ratio doubled. From 1965 until 1975, this ratio fluctuated between .74 and .69. In 1976 it stood at .76, in 1977 at .80, in 1978 at .83, and in 1979 at .85. The era of financial turbulence that began in the mid-1960s saw little movement in the ratio of liabilities to disposable personal income until after the mid-1970s when the ratio resumed its rise.

As is evident from Chart IV, the ratio of total household liabilities to demand deposits and currency showed virtual parallel development to that of the ratio of household liabilities to disposable personal income.



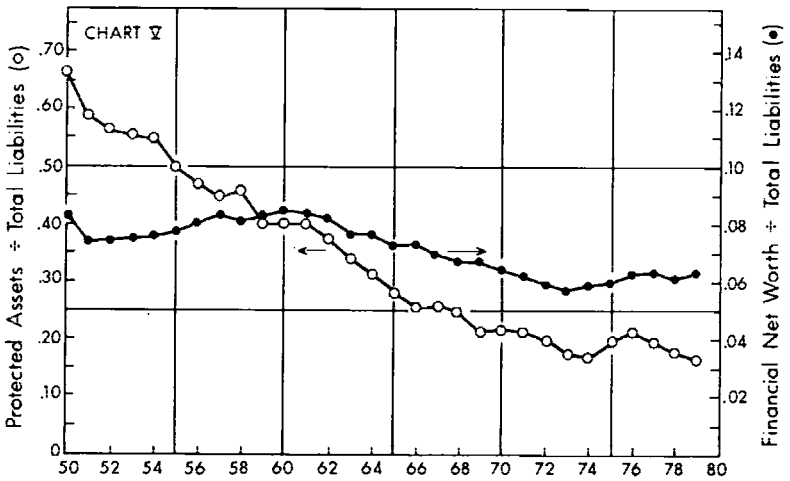
Source: Board of Governors Federal Reserve System – Flow of Funds Accounts

The data for households indicates that the turbulence of the mid-1960s to mid-1970s was not mainly due to household debt being an ever increasing burden. The rise in the ratios in the late 1970s can be interpreted as a reaction to inflationary expectation; however if it is so interpreted then it took a long period of inflation combined with instability to affect expectations.

Commercial Banking

The data for Commercial Banking does not show the sharp changes in the mid-1960s that are so striking for both nonfinancial corporate business and households. In Chart V it is evident that the ratio of financial net worth to total liabilities rose through the 1950s reaching a peak in 1960 and then began a decline which with few interruptions lasted until 1973. The evidence indicates that the difficulties of 1974–75 led to a rise in the ratio, which seems to have been transitory.

Commercial Banking
Financial Net Worth and Protected Assets
as Ratio to Total Liabilities
1950 - 1979



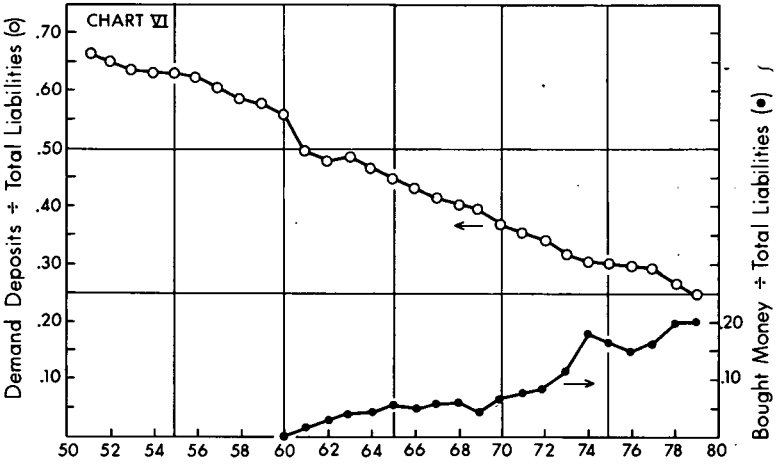
Source: Board of Governors Federal Reserve System – Flow of Funds Accounts

The ratio of protected assets [U.S. government securities, vault cash and member bank reserves] to total liabilities—also in Chart V—shows a steady decline from 1950 to 1974. It appears as if there was a slight decrease in the steepness of the decline in the mid-1960s. The banking trauma of 1974–75 shows up in the rise of protected assets relative to liabilities.

In Chart VI two ratios—that of demand deposits and bought money to total liabilities—are exhibited [brought money is the sum of large negotiable certificates of deposit, deposits at foreign banking offices, Federal funds, security repurchase agreements and open market paper]. The ratio of demand deposits to total liabilities showed a

steady decline from almost .70 to .25 over 1950–1979. The behavior of demand deposits relative to total liabilities is striking evidence of the change in the character of banking that has taken place in the postwar period. In the beginning of the postwar era the commercial banking system mainly owned protected assets and it financed these asset holdings by demand deposits. In recent years the commercial banking system's ownership of protected assets has fallen to below 20 percent of total liabilities even as its demand deposits have fallen to about 25 percent of liabilities. Today the commercial banking system mainly holds private debts and it finances this ownership by liabilities other than demand deposits.

Commercial Banking
Demand Deposits and Bought Money ÷ Total Liabilities
1950 - 1979



Source: Board of Governors Federal Reserve System – Flow of Funds Accounts

Beginning in 1960—and at an accelerating rate after 1969—bought money in the form of large negotiable certificates of deposit (CDs), deposits at foreign banking offices, Federal funds purchased, security repurchase agreements and open market paper became significant bank liabilities. Of these liabilities, deposits at foreign banking offices existed throughout the postwar period but they were a trivial fraction of total commercial bank liabilities in the early years.

The introduction and rapid growth of negotiable CDs after 1960 marked the introduction of bought money and liability management as a significant factor in banking. Since then there has been a virtual proliferation of instruments only a few of which can be identified in the flow of funds data. For example the flow of funds data do not enable us to isolate bankers' acceptances or the money market rate time deposits at commercial banks. Nevertheless even with this truncated list, by 1959 bought money was virtually as significant as demand deposits as a source of bank funds.

VIII. The Answers to the Initial Questions

Our analysis leads to a result that the way our economy functions depends on the level, stability and prospects of profits. Profits are the lure that motivates business and they are the flow that determines whether decisions taken in the past are apt in the light of the way the economy is functioning now. The flow of aggregate profits is the link between the past and the present and the lure of future profits determines the flow of current profits.

The quest for profits has a side effect in that investments result in capital assets and the capital assets that come on stream determine the changes in the production process that are available to produce output. Thus the aptness of the details of the investments undertaken determines the course of useful productive capacity and changes in the ratio of useful output to labor used, i.e., productivity. If on the whole investment is apt then the improvement in techniques that result yield a large enough margin over labor costs to induce sufficient investment to sustain profits. If the incremental outputs—or the outputs that are produced with the inherited capital stock—are not apt then the flow of profits will be attenuated. This tends to decrease investment. Similarly as the foreign balance deteriorates or the savings ratios of households increase the flow of profits decreases. A decrease in the flow of profits can start a recursive process that decreases total investment, profits, etc.

In our current "big government" capitalism, this recursive process is soon halted by the impact of government deficits in sustaining profits. Whenever the deficit explodes (as in 1975 II) the aggregate flow of profits to business increases. Investment turns out to be profitable even if the investments that come on stream are inept. The impact on profits of the deficits that big government generates can override the failure of investments to increase the productivity of labor; big government is a shield that protects an inefficient industrial structure. When aggregate profits are sustained or increased, even as output falls and the ratio of output to man hours worked does not increase, prices will rise. Thus the generation of sustained and rising profits by government deficits is inflationary whereas rising profits that are due to increases in output when labor productivity increases relative to money wages can be associated with falling prices.

Thus the current policy problem of inflation and declining rates of growth of labor productivity are not causally related but rather they are the result of a common cause, the generation of profits by means of government deficits where the government deficits do not result from spending that leads to useful output.

The answer to the first question—why haven't we had a great or even serious depression since 1946?—is that our big government that is in place has made it impossible for profits to collapse as in 1929–1933. As the government deficit now virtually explodes whenever unemployment increases business profits in the aggregate are sustained. The combined effects of big government as a demander of goods and services, as a generator—through its deficits—of business profits and as a provider to financial markets of high-grade default-free lia-

bilities when there is a reversion from private debt means that big government is a three way stabilizer in our economy and that the very process of stabilizing the economy sets the stage for a subsequent bout of accelerating inflation.

There is a second reason for our not having a serious depression since 1946. Once the interrelations involved in financing a sustained expansion led to the emergence of a fragile financial structure in the mid-1960s, the Federal Reserve has intervened strongly as a lender of last resort whenever a financial crisis threatens. This intervention by the Federal Reserve both helps stop the plunge to a deep depression and assures that the subsequent recovery from the rather mild depression that does take place will be inflationary.

The shift from the tranquil progress of 1946–65 to the turbulence of recent years is mainly due to the change in the financing relations of business, households and financial institutions. At the end of World War II the financial structure that was a legacy of war finance and the portfolio preferences that reflected the great depression led to a regime of conservation finance. There is no way that a financial crisis could develop in an economy in which bank protected assets, mainly U.S. Government debt, were 60 percent of total liabilities. Similarly household and business balance sheets and liability-income relations were such that business could readily fulfill its payment commitments.

The analysis indicates that stagflation is the price we pay for the success we have had in avoiding a great or serious depression. The techniques that have been used since the mid-sixties to abort the debt-deflations have clearly been responsible for the stepwise acceleration in the inflation rates. The argument we have put forth indicates that stepwise accelerating inflation has been a corollary of the validation of an inept business structure and poorly chosen investments by government deficits and thus inflation has been associated with a decline in the rate of growth. The continuing taut liability structures due to the ever greater reliance on debt has led to the shortening of business horizons. The very turbulence of the economy operates against prudent investment and finance. The general economic tone since the mid-sixties has been conducive to short-run speculation rather than to the long-run capital development of the economy.

The final conclusion that emerges is that the problems as evident in the American economy since the mid-1960s are not due to vagaries of budget deficits or to errors in controlling the money-supply: the problems reflect the normal way our type of economy operates after a run of successful years. If we are to do better it is necessary to reform the structure of our economy so that the instability due to a financial structure heavily weighted with debt is diminished.

UNDERSTANDING MONETARY POLICY: THE ROLE OF RATIONAL EXPECTATIONS

By William Poole

Business cycle theory and financial market theory have been revolutionized over the past ten to twenty years by the introduction of the rational expectations hypothesis. While it is not yet clear how much of the Keynesian business cycle theory dating from the 1930s will survive, it is clear that few of those who still view themselves as Keynesians have been untouched by the rational expectations revolution. Some of the ideas from this revolution are so obviously correct that the Keynesian theory must at least be modified in important ways.

In contrast to business cycle theory, where the theoretical debate is vigorous and heated, financial market theory is now dominated by the application of the rational expectations hypothesis. Practically all theorists and many practitioners accept the validity of the rational expectations hypothesis applied to financial markets; the basic hypothesis is accepted although there is on-going debate over whether there are certain relatively small departures from a strict version of the hypothesis.

The purpose of this study is to provide a non-technical exposition of the rational expectations hypothesis and especially of its applications to business cycle theory and monetary policy. For reasons made clear below, the business cycle theory built on the rational expectations hypothesis has come to be called "equilibrium" theory and that rather non-descriptive term will be used in this study.

The concept of rational expectations is introduced in the first section and its application to financial markets explained. Section II contains a simple discussion of the older Keynesian views on business cycles and government counter-cyclical policy. Next, in section III, is an overview of economic policy in a rational expectations context with some simple and non-controversial illustrative examples. Later sections treat the application of these ideas to the explanation of business cycle fluctuations and to policy disputes concerning the proper role of government in reducing these fluctuations.

I. Rational Expectations in the Speculative Markets

Prior to the seminal paper by John Muth in 1961, "Rational Expectations and the Theory of Price Movements," [1] most economists shared the popular view that speculative markets were semi-irrational casinos beset by speculative bubbles and waves of optimism and pessimism. J. M. Keynes, in a colorful and widely-quoted passage, shared that view:

[1] Econometrica 29 (July 1961), 315–35.

. . . Professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. It is not a case of choosing those which, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligence to anticipating what average opinion expects the average opinion to be. And there are some I believe, who practice the fourth, fifth, and higher degrees.[2]

In the 1950s a growing body of careful statistical work on the stock market failed to uncover evidence of speculative bubbles and irrationalities in the stock market. Stock prices, rather than moving in long sweeps or trends, were found to move randomly, as if generated by a large roulette wheel. This statistical finding, combined with Muth's rational expectations hypothesis, revolutionized economists' views on the determinants of securities prices.

To understand the hypothesis, ask the following question: how should the price of common stock in XYZ Corporation fluctuate over time if investors are rational and well-informed? Suppose investors *knew* that the price of XYZ common would be $110 per share one year from now, and suppose for simplicity that this stock paid no dividend. If investors could obtain a yield of 10 percent on a bank time deposit, then they would bid the price of XYZ common to $100 today. With the price of XYZ rising to $110 over the next year, a price of $100 today would provide a 10 percent yield matching the yield available on the bank time deposit. No investor would want to buy the stock at a price over $100 and no investor would want to sell at less than $100.

Future stock prices, of course, are not known with certainty. Suppose now that investors' best guess is that XYZ stock will sell for $110 next year. If investors cared only about expected return and disregarded the risk of price fluctuations, then the stock would again have to sell for $100 today to provide an expected return of 10 percent to match the return available on bank time deposits. Since the evidence suggests that riskier securities do not carry extra returns that are very large, the assumption that investors are risk-neutral will be retained in order to concentrate on expectational issues.

While investors on average may expect XYZ to sell for $110 in one year, individual investors may well have higher or lower expectations. Those who believe the stock price will be higher may want to buy XYZ shares at a price of $100, while those expecting a lower price will want to sell. Investors form their price expectations on the basis of all of the information at their disposal. As new information arrives—competitive moves by other firms, new products, etc.—the price expectation for next year will be adjusted up or down. The rational expectations hypothesis is that investors on the average evaluate new information correctly and that market prices fully reflect all available information.

If market prices fail to reflect available information, then there is a profit opportunity available to the astute investor. A way to be-

[2] The General Theory of Employment Interest and Money, p. 156.

come rich is to buy undervalued stocks and sell overvalued stocks—to buy low and to sell high. The fact that so very few are consistently successful in stock market speculation suggests that market prices are not so obviously crazy as to make for easy speculative killings.

Careful statistical studies of stock prices, and other prices, have shown that speculative markets incorporate information very efficiently.[3] The volatility of stock prices is not inconsistent with efficient pricing; some securities are subject to more disturbances than others, and some historical periods are more turbulent than others.

Rather than discuss the technical details of the empirical studies, it seems more appropriate for this study to concentrate on the intuition of how speculative markets behave. Many of the clearest examples of the consequences of well-informed investors' behavior arise in commodity futures markets.

Consider, say, the corn futures market, and suppose that drought conditions are affecting much of the corn belt in the United States. As the drought continues in May and June, September corn futures will rise as speculators and others anticipate a small corn crop and, therefore, a relatively high corn price. The price of corn in June will reflect the price expected to prevail in September.

Now suppose that on June 15 there is a forecast of a good rainfall over the next week. Even before the rain comes, September corn futures will fall in price as the rain forecast—new information—leads market participants to change their expectations about corn prices in September. If the weather forecast turns out to be wrong, September futures will rise again; if the rains actually come, futures will fall. The prices are volatile not because of behavior of the type Keynes emphasized but because the world is uncertain. Betting on the weather is not betting on a sure thing. Just as a lottery ticket worth $1.00 before the drawing is worth either nothing or, say, $1000 after the drawing, so also is a corn futures contract worth more or less depending on whether it rains or not. Speculative prices fluctuate randomly because truly *new* information, such as that on the weather, arrives randomly.

Many kinds of events are relevant to corn prices; under the rational expectations hypothesis the market price of corn reflects all available information. Of course, people have different views on the significance of new information. Opinions and assessments differ; one observer may believe the market has responded too much to a news item and another too little. One observer may be correct some of the time and incorrect some of the time.

To build a case that a market does not incorporate all available information it is not enough to show that the market sometimes makes mistakes. In an inherently uncertain situation mistakes cannot be avoided. What can be avoided are mistakes that are systematic. A betting analogy is helpful; if betting on a fair coin, an outcome of tails when heads was bet does not provide evidence that the bet of heads was a mistake in any relevant sense. What would be a mistake would be to pay 75 cents for a chance to win one dollar if heads came up on a fair coin.

[3] For an excellent statement of the application of the rational expectations hypothesis to speculative markets and a summary of evidence, see Eugene F. Fama, "Efficient Capital Markets: A Review of Theory and Empirical Work," *Journal of Finance* 25 (May 1970), pp. 383–417.

Evidence on the behavior of speculative prices has provided a very strong case for the proposition that random purchases are extremely close to fair bets; securities are not systematically biased bets. Moreover, it appears that the application of special investment expertise does not systematically pay off. There is so much expertise around, and information travels so rapidly that it is extremely difficult to beat the market. It is not only amateurs who have trouble beating the market; full-time professionals earn their living primarily from selling brokerage and investment services rather than from market speculation.

II. Traditional Keynesian Business Cycle Analysis

That speculative markets function efficiently and rationally is now widely accepted. However, the application of the same basic theoretical ideas to understanding unemployment is extremely controversial. Before discussing equilibrium business cycle theory a brief introduction to Keynesian business cycle theory is needed.

For the purposes at hand, the Keynesian view can be fairly simply stated. In that view disturbances to aggregate demand cause changes in the operating level of the economy, generating more or less employment and output. These disturbances to aggregate demand are thought to arise from a number of sources, including especially changes in the optimism or pessimism by business firms about their future prospects which leads them to increase or decrease the amount of their spending on investment goods.

For example, if business firms become more optimistic in their view of future profits and demand, then they will want to expand their plant and equipment in order to be able to produce more goods to take advantage of the expected stronger future demands. Increased investment adds to the current aggregate demand in the economy, leading to an increase in output and employment in those industries building plant and equipment. As workers in those industries receive their paychecks they increase their demands for consumption goods and services of all types. These demands lead to an expansion in the output of consumption goods thus further strengthening aggregate demand and employment and output. The original increase in investment demand, then, has a multiplier effect generating a larger total increase in aggregate demand than the original impulse.

In the pre-Keynesian analysis a surge in aggregate demand of the type discussed above would not lead to an increase in total output but only to a bidding up of prices. In commodities markets, as emphasized in the previous section, demand and supply disturbances do affect prices promptly. In Keynesian analysis, however, wages and prices are slow to adjust and so a disturbance to demand produces a major impact on output and only a relatively minor impact on prices.

Keynesian theory emphasizes disequilibrium; disturbances to aggregate demand affect output because wages and prices are slow to adjust to their new equilibrium levels. Output and employment rather than prices and wages adjust to clear markets over the business cycle although, of course, wages and prices do adjust over the longer run. That many prices and most wages are relatively slow to adjust—in contrast to prices in speculative markets, which adjust almost instan-

taneously—is a fact; what is at issue is the reason for the slow adjustment and the implications of slow adjustment for government policy.

In the Keynesian world the role of government stabilization policy is to offset disturbances in private demands. If investment demand is strong, then government should maintain a reasonably stable aggregate demand by cutting back its own spending or by increasing taxes to reduce private spending. If the change in government spending or taxes is well timed and of the right magnitude, it can cancel out the change in private investment demand.

Instead of fiscal policy, the government could engage in countercyclical monetary policy. In the face of surging investment demands, money growth should be reduced and interest rates forced up. With higher interest rates firms find it more difficult to finance their investment expenditures and consumers are encouraged to cut back their expenditures on automobiles and housing and European vacations as the cost of borrowing funds rises. Here again, if the change in monetary policy is properly timed, it can choke back interest-sensitive private spending in more or less equal amount to the components of private investment spending that are increasing.

III. Preliminary Discussion of Rational Expectations Ideas on Policy

The equilibrium business cycle theory built on the idea of rational expectations challenges the Keynesian view of the potential effectiveness of stabilization policy on several grounds. One is that the stability of private responses to government policies cannot be guaranteed because the strength of private responses depends importantly on the expectations by private economic agents as to what the government will do in the future. Without clear information on the expectations of private agents, the government has no way of knowing how large a tax change or monetary change should be in order to stabilize the economy. Indeed, it has no guarantee that its action will not in fact make the economy less stable rather than more stable.

A second important proposition in the equilibrium business cycle theory is that aggregate output and employment depend on unanticipated changes in government policy but do not depend on any monetary or fiscal policy changes that are anticipated by private agents. On this view, the government can choke back a boom or offset a recession only to the extent that its policy changes take private agents by surprise. To the extent that private agents anticipate what the government will do, policy changes will affect only prices and wages but not output.

The proposition that fully anticipated monetary changes produce no effects on output and unemployment is especially important and controversial. If this theory is correct, no monetary policy that is consistent, and therefore predictable, can produce any stabilizing effects on output and employment. Only to the extent that policy is unpredictable and perhaps even capricious will effects on output and employment occur.

It is important to understand that, for the reasons discussed at length below, the equilibrium business cycle theorists claim that gov-

ernment stabilization policy mistakes are *in principle* unavoidable. Keynesians, of course, recognize that policy mistakes have been and will be made but they claim that with advances in knowledge and improved policy mechanisms counter-cyclical policy can become more effective over time. In contrast, under the equilibrium view the most stabilizing policy is a steady policy specified in detail in advance; attempts to make policy adjustments on the basis of the current "needs" of the economy *must* on the average be destabilizing rather than stabilizing. Clearly, the claim that an active policy cannot in principle be stabilizing is indeed a revolutionary one.

The fundamental idea, which will be explained in greater detail later, is that observed price and output behavior over the business cycle reflect equilibrium optimizing responses in a world of uncertainty. Slow wage and price adjustment, rather than reflecting sluggish disequilibrium adjustments, may reflect optimal responses of workers and firms to the information they have available, including information about present and future government policies. At a minimum, the importance of expected future government policy for current economic behavior cannot be ignored.

The importance of expectations for understanding the effects of government policy can be best explained through a series of examples. I will start with several non-economic ones.

Consider first a simple engineering control problem—that of controlling temperature in a building with a thermostat. The thermostat should be designed carefully taking account of the nature of the building and the nature of the heating plant. However, the problem is ordinarily not very complicated; the thermostat can simply turn on the furnace when the temperature drops to 64° and turn off the furnace when the temperature rises to 66°.

A more complicated engineering control example is that of maintaining an airplane on a steady course. Here, a well-designed autopilot may in fact do a better job than a human pilot in routine situations. However, in a storm it may be necessary for the pilot to take over the controls because the nature of the control problem has gone beyond the capabilities of the autopilot.

It is instructive, however, to compare two very different situations in which the pilot takes over the controls from the autopilot. One is the case of a storm just discussed. The second is the case of a potential collision situation with another aircraft. Here the problem is no longer simply a matter of a "game against nature." The key to the situation is the interaction with the other pilot. Each pilot must be concerned about the technical operation of his aircraft—a game against nature—but also with the reactions of another intelligent being. The pilot taking evasive action must not only be concerned with how to change the course of his plane but also with how the other pilot will *interpret* his course changes. This control problem is fundamentally different from that of coping with a storm; air currents never try to anticipate or outguess a pilot.

Another instructive example is the comparison of the two card games, poker and solitaire. In solitaire it matters not at all whether the cards are played the same way in identical circumstances. In poker it matters a great deal because a player will disclose his hand if he

plays the cards in an identical fashion at all times. Solitaire is a game against nature. Poker is fundamentally different; it is a game against intelligent opponents.

Social policy problems almost always involve "games" between intelligent agents. This fact has always been at the very center of disputes over foreign policy.

Consider the foreign policy problem of what should be a nation's policy if an aggressive foreign power absorbs territory piece by piece. No individual piece may be worth war. On the other hand, if the foreign power were to grab a very large section of territory then the aggressive action would be worth war. The foreign policy problem involves making judgments about the opponent's expectations and plans. The problem also involves making sure that a nation does not inadvertently send misleading signals of its intentions to the aggressive foreign nation.

Consideration of this very important example uncovers several key elements common to all problems in which the expectations of others are important. One is that a central component of today's policy must involve the issue of the opponent's expectations as to what policy will be followed next year. If a country does not respond today to a minor land grab that is insignificant in and of itself then it will tend to create expectations in the foreign power's leadership that it will not respond next year to another such venture.

A second important component to this problem is that a foreign power's expectations depend importantly on how a country behaves relative to its previously announced intentions. Suppose country A had announced that it would defend country X. If the foreign power invades country X and country A does nothing, then A's present announcements about its future policy will be less credible. For example, if A does not defend X after promising to do so, then when A says that it will defend country Y other countries may have little reason to believe that A will in fact do so.

Clearly, in the foreign policy area a key problem is that of maintaining credibility. Among other things, that means that a government must not lightly falsify past expectations. If a country has promised to defend country X but then does not do so, it is in much worse shape than if it had never promised to defend X in the first place.

The key feature of this foreign policy problem is that there is a policy "game." The word "game" is appropriate because the problem involves actions and reactions by intelligent agents. The rational expectations revolution in economics involves applications of these same ideas to economic problems.

A problem with Keynesian economics, at least in its generally accepted form in the late 1960s, was not that expectations were ignored but that theoretical models of how expectations were formed were obviously wrong, or at least misleading in many contexts. In particular, formal Keynesian models assumed that expectations were based on relatively simple extrapolations of the past. Expectations based on past observations have come to be called "adaptive expectations". In contrast, rational expectations are formed on the basis of all available information. For example, instead of forecasting future inflation on

the basis of observed past inflation alone, under rational expectations information such as that on future government plans and on the likelihood of electoral outcomes is also used.

Several examples illustrating expectations phenomena in economics will now be examined. Consider the policy problem of imposing price controls. If workers and firms believe that a wage-price freeze may be imposed, then they will attempt to protect themselves by getting their wage and price increases in place in advance of the imposition of a freeze. That point is obvious, but the conclusion that a freeze must therefore be imposed in surprise fashion is not the correct conclusion to draw.

To understand the problem with a surprise freeze, consider the situation faced by two hypothetical governments. One has imposed surprise freezes several times over the years. Residents of that country will respond to events such as a surge in inflation by altering their expectations of the likelihood of a surprise freeze and their anticipatory wage and price increases designed to beat a freeze will exacerbate the inflation problem. The very possibility of controls will destabilize wages and prices. In contrast, the government that never uses controls and never even considers using them will not be faced with anticipatory wage and price increases.

It might be argued that this analysis simply shows that a government can only use controls once. However, even this view is wrong. "Never again" is not a credible claim for a government that has used controls once. The imposition of wage and price controls in the United States in 1971 has affected the environment in which wage and price decisions are made and will be a source of difficulty for many years to come. Whenever inflation seems to be a difficult problem, workers and firms will always begin to change their expectations towards the possibility that controls may be imposed again. Even if controls are never again in fact imposed in the United States, one of the costs of the 1971–74 controls is the long-continuing uncertainty about the possibility of controls.

This situation is identical in its principle to that of the foreign policy case discussed earlier. Government policy towards the invasion of country X will necessarily affect expectations of future government policies in similar circumstances for many years. A key input to the decision to adopt a particular policy at a moment of time must be not only estimates of the effects of that policy in the situation at hand but also estimates of its effects on the future expectations of other agents with respect to policy decisions that will arise in the future. There may even be important expectational effects in totally different policy areas. A domestic economic policy that lightly falsifies expectations of economic agents will affect the way in which foreigners form their expectations of our foreign policy, and vice versa. Trust and confidence apply to individuals and governments and not to specialized areas of their behavior.

This discussion of the concept of rational expectations has been deliberately left somewhat vague and impressionistic. Formal economic models must, of course, be precise and rigorous, but the assumptions used in these models can be very misleading if they are interpreted too literally.

By "rational expectations" theorists mean expectations that reflect all available information and in a formal economic model that means that economic agents are assumed to know the model—to know how the world works—and therefore to know the impact of any variable, x, on any other variable, y, up to an unpredictable random error term. Moreover, to the extent that the value of y in the future depends on the value of another variable, z, in the future, economic agents are assumed to form forecasts of z that are accurate up to an unpredictable random error.

For example, suppose the variable y to be forecast is the rate of inflation next year. The problem is to form rational expectations concerning y. In formal models it is assumed that economic agents know how past growth in the money stock and other observable variables—the x's—affect next year's inflation. It is also assumed that agents form rational expectations on next year's money stock and other variables—the z's—that will affect next year's inflation.

This approach to economic theorizing appears to assume that economic agents know far more than they can in fact know. Without getting into a lengthy discussion of methodology, several points should be emphasized.

First, all theory involves abstractions. Keynesian theories built on adaptive expectations—the hypothesis that expectations of the future depend on extrapolations of the past—are not more "realistic" than rational expectations. We know that people look ahead, and the fact that they do not do so perfectly does not per se destroy the usefulness of the rational expectations construct. By the same argument, of course, the fact that people look ahead does not per se destroy the usefulness of the adaptive expectations construct. What is at stake is not the descriptive accuracy of the theory's premises but the accuracy of its predictions of real-world phenomena.

A second point is that the assumption of rational, well-informed behavior by economic agents is at the heart of all economic theory. There is no satisfactory alternative to this assumption. The assumption is rather like the zero friction assumption used in engineering. In particular applications something other than zero friction may be assumed, but as a general matter there is no satisfactory alternative to assuming zero friction.

A third and final point about the rational expectations assumption is that for many macro policy debates the important issue for policy-makers is not whether private markets fail to reflect fully rational expectations but rather whether the policy-makers have superior information. A belief that private expectations are not rational has *no* policy significance unless the government knows how private expectations are mistaken or biased.

Some aspects of the differential information issue have been explored rigorously in economic models by assuming that policy-makers have informational advantages of various kinds. In particular, the consequences of policy-makers obtaining information more quickly than private economic agents have been studied. While government policy can be effective in these models, there does not seem to be a good case for the government to act rather than simply to give up its informational advantage by disclosing information promptly.

In sum, careful exploration of rational expectations models in recent years has provided tremendous insight into economic stabilization policy problems. Even if expectations are not as rational as assumed in these models, it is now abundantly clear that these models capture very important aspects of the policy problem that were completely suppressed in the Keynesian models. Since these aspects—especially that of "gaming"—are of great importance even if expectations are not completely rational, the discussion in this section has concentrated on the fundamental issues. It is simply not the case that these issues can be avoided by dismissing out of hand as "extreme" the rational expectations assumptions built into formal economic models for purposes of precision and rigor.

IV. Basic Assumptions of Rational Expectations Business Cycle Analysis

The basic assumptions of the rational expectations analysis of business cycle fluctuations concern not only the way in which expectations are formed but also the way in which individuals choose their jobs and firms choose their employment and output. We are interested in the extent to which price and output behavior over the business cycle reflect optimizing equilibrium behavior in a world of uncertainty.

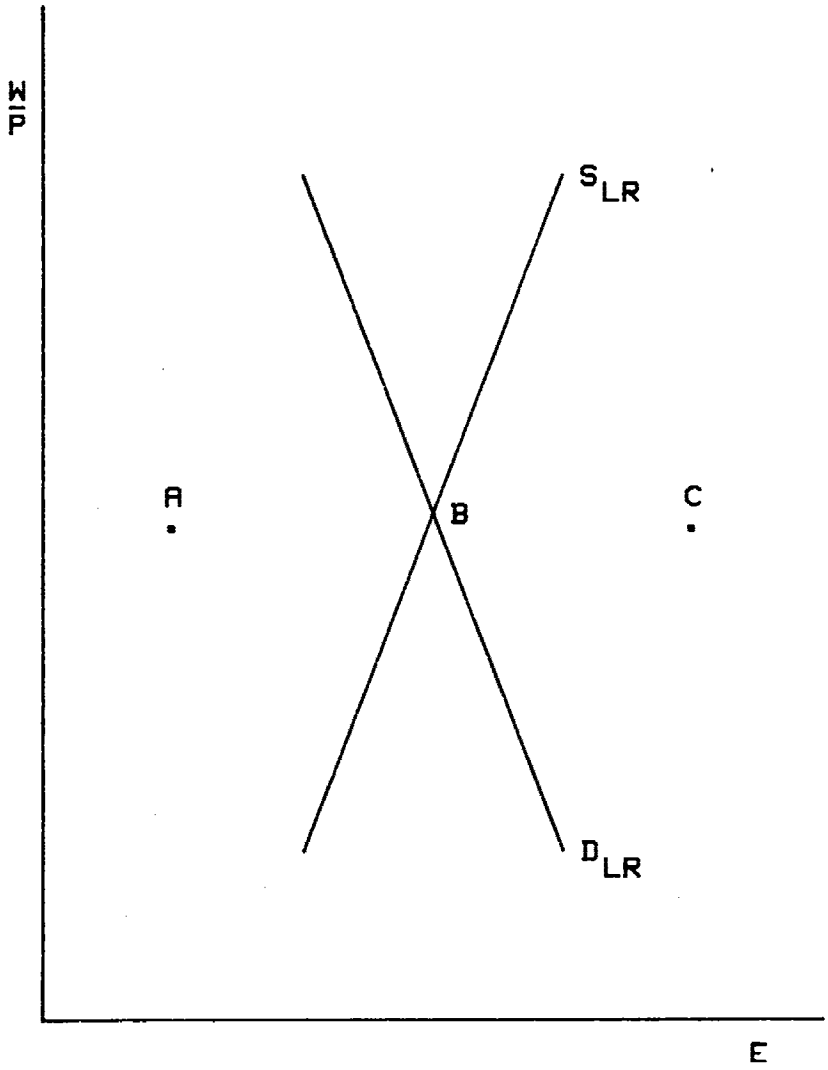
We assume, first, that individuals want to be "fully employed." We must examine the meaning of "full employment" and what we mean by the statement that individuals "want to" be fully employed.

Clearly, individuals do not want to work all the time; what we mean by full employment involves a constellation of tradeoffs involving attitudes towards vacations, towards the number of hours of work, and the nature of the job. The availability of other means of support such as unemployment benefits or income from investments will affect the speed with which unemployed individuals accept new jobs. Given these attitudes and given the nature of the available jobs we may summarize the amount of labor that people want to offer in a diagram (Figure 1) relating employment to the wage that is paid.

The wage that is paid must be measured not in terms of dollars alone but in terms of purchasing power of the money wages. This concept of real wages is denoted by the symbol W/P, where W refers to the money wages and P to the price level. Sometimes this wage concept is called "wages adjusted for the price level." If, over some period of time, money wages grow by 10 percent and the prices of goods workers buy also grow by 10 percent, then there has been no change in real wages and we assume that the amount of labor that is offered is the same, abstracting from population change and other non-wage effects.

The relation of the amount of labor offered to the real wage paid is shown in Figure 1 as the curve labeled S_{LR} for the long-run supply of labor. The long-run supply of labor curve in Figure 1 is drawn with an upward slope reflecting the assumption that the higher the real wage is the greater will be the number of workers and the number of hours offered in the labor market. However, the slope of this curve is fairly steep reflecting the observation that the amount of labor offered is not much affected by the real wage in the long run. For example,

FIGURE 1



the forty-hour week has been standard for many years even though the real wage has had an uptrend over a long period of time.

The long-run supply of labor curve is meant to reflect behavior on the average over the long run. However, over short-run periods it is

frequently observed that workers will permit their hours of work to fluctuate around the long-run average. In some weeks or months people put in overtime and in other weeks or months they work short hours.

Thus, even in long-run equilibrium for the economy as a whole there will be some unemployment. While some firms are expanding others will be contracting, producing a certain amount of normal unemployment. Some individuals quit their jobs to look for better ones; some are fired for poor performance. Unemployment for these and similar reasons is called frictional unemployment, and is a normal part of a properly-functioning labor market. This unemployment is analogous to the normal vacancy rate for rental housing. It is *efficient* for there to be some "unemployed" housing; otherwise, families moving from one apartment to another would have to coordinate their moves rather than simply to move into an already vacant unit. The rent charged will have to reflect the average vacancy rate. Similarly, it is efficient for firms to be able to lay off workers, and for workers to remain unemployed for a time while they search for the most suitable jobs, and the hourly wage of unstable jobs will have to reflect the instability.

Underlying this view of long-run behavior is the view that individuals are utility maximizers—that they do the best they can in the labor market considering the jobs that are available and their attitudes towards work and leisure, stable jobs and unstable jobs, safe jobs and dangerous jobs, and so forth, taking account of the wages that go with each job. Individuals who are unhappy with their jobs will leave them for other jobs if they feel superior alternatives are available.

When we say that individuals "want" to maintain full employment, what we mean is that they will take action of some kind or another to achieve their desired employment if they are not working the desired number of hours. Those who are suffering frequent layoffs will search for better jobs. We assume that individuals will make trade-offs between the pay they receive per hour and variability and working conditions of their jobs. Those who are in jobs requiring longer hours and/or shorter vacations than they desire may accept other jobs even if they involve a lower wage per hour.

Workers in jobs they consider unsatisfactory are assumed to search for better jobs. If we do not observe search of any kind then we must assume that the worker feels that the status quo, however unsatisfactory, is better than what he or she thinks a job search will uncover. There is, therefore, nothing in this view that workers want to be fully employed that says that they will be in fully satisfactory jobs in all respects. Almost everyone would like a job that has a higher wage, shorter hours, better working conditions, and more sympathetic superiors than the job he is now in. Everyone is constrained by his own skills and the labor market he faces.

As is true of workers in their employment activity, firms are also assumed to be maximizers. Firms do the best they can within the environment in which they are forced to compete.

The basic proposition that firms will hire workers so long as their outputs are at least as great as their wages may be summarized in the

labor market diagram (Figure 1) as the downward sloping demand for labor curve labelled D_{LR}. The demand for labor curve is downward sloping for a variety of reasons. One of them is that as a firm hires more labor and produces more output, it must generally cut prices on its output in order to sell additional units. It will pay the firm, therefore, to hire additional labor only if that labor can be obtained for a lower wage.

The labor market equilibrium will tend toward the intersection of the long-run supply and demand functions shown in Figure 1 as point B. (Ignore points A and C for the time being). At a wage above the long-run equilibrium more labor would be supplied but firms could not afford to hire those extra workers or pay for those extra hours because the extra output produced would not bring extra income sufficient to cover the higher wages. Similarly, at a wage below the equilibrium less labor would be offered, but firms would be willing to raise the wage to obtain more workers because the output produced would have a greater value than the wages and other costs paid to produce it.

The labor supply and demand analysis sketched above is conventional and has been accepted for many years, at least as a long-run proposition in the form discussed here. While conventional, however, it is important that this analysis be understood so that the full implications of the rational expectations analysis of short-run labor market behavior can be appreciated.

The final major input to this analysis concerns the way in which expectations are formed. In the long-run analysis sketched above it is assumed that the wage and price levels actually realized closely approximate those that had been expected at some prior time. Put another way, in the long run analysis we assume that there cannot be permanent deviations of realized values from expected values. Although errors may be made in the short run, errors will not be made consistently in the same direction over a long period of time. Thus, the long-run equilibrium in Figure 1 may be interpreted as determining employment and the real wage on an average basis over a period of time, with it being understood that short-run fluctuations around this equilibrium point may occur.

Business cycle fluctuations are interpreted as the fluctuations around the long-run equilibrium point. In the equilibrium business cycle theory these fluctuations are analyzed as being the result of expectational errors which occur in the short run even if they will average out over the long run. For example, a firm may produce a product in the expectation that it will sell well only to find that in fact the item can't be given away.

Short-run expectations by firms and workers are assumed to be based on the best possible analysis of all the available information. For example, in launching a product firms rely on market research and statistical analysis as well as information on probable government actions and actions of competitors. We assume that this information is processed rationally—as efficiently as the firm knows how. Rational expectations may, of course, turn out to be wrong after the fact, but expectations are not formed in a haphazard or biased way.

Similarly, we assume that workers form their expectations as efficiently and rationally as they can. If, for example, an unemployed

person knows that a better job offer may be available at firm Y, then he will search out the opportunity before accepting a job offer from firm X. Here again, though, individuals obviously make mistakes. It is not unknown for a handsome job offer to be accepted and then for the individual to find that the company goes bankrupt in a year or two. In the meantime the other firm has filled its empty position and the individual in question cannot return to his old job. We cannot assume that expectations are always accurate because the future is full of surprises; what we can assume is that individuals have ample incentive not to waste information. Some, of course, do a better job at evaluating information than others.

V. The Equilibrium Theory of the Business Cycle

In the previous section we have analyzed the basic features of the long-run equilibrium in the labor market toward which the economy is adjusting. Now we must examine short-run behavior in order to obtain an understanding of business cycle fluctuations, ranging from several quarters to several years in the United States. While there are a number of different versions of the equilibrium theory, for present purposes it is sufficient to emphasize the common ground of the various approaches.[4]

Two key features of labor market behavior concern the labor offered by workers who anticipate changes in wages in the future and the choices of workers given that some firms offer steadier work but lower wages than other firms.

Consider first the choice of a worker who believes that he could obtain $6 per hour this week but only $5 per hour next week. Clearly, the worker will want to work extra hours this week at $6 per hour and fewer hours next week at $5 per hour. He or she is willing to substitute hours of work this week for hours of work next week within the longer run objective of working an *average* of forty hours per week. Individuals do not have overwhelmingly strong preferences, by and large, to work an absolutely steady forty hours per week but are willing to work longer hours some weeks and shorter hours other weeks if given the incentive to do so. For many workers the incentive is institutionalized in the form of premium pay for overtime specified by law and/or contract.

The second observation concerning behavior in the labor markets involves the worker's choice between a job with steady hours each week and one with less steady hours per week but with a higher wage per hour. Suppose a worker has a choice between a steady clerical job at 40 hours per week at $5 per hour and a factory job *averaging* forty hours per week, but with variable hours week to week at $5.50 per hour. In this example, we assume that the factory worker's job is more variable because the firm finds it necessary to work overtime in some weeks and short time in other weeks due to a fluctuating flow of orders.

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[4] An excellent non technical exposition of many of these ideas is Robert E. Lucas, Jr., "Understanding Business Cycles", in Karl Brunner and Allan H. Meltzer, eds., "Stabilization of the Domestic and International Economy" (Carnegie-Rochester Conference Series on Public Policy, Vol. 5), pp. 7–29. Lucas, it should be noted, is primarily responsible for the development of the equilibrium business cycle theory.

The choice between steady and unsteady employment will depend upon the worker's preferences and attitudes. Even without a wage differential some workers might even prefer variable employment in order to have longer blocks of time for their own leisure. On the whole, though, it seems reasonable to assume that the more variable employments must carry higher wage rates in order to convince workers to accept them. That assumption underlies the specific example given in the previous paragraph.

These two features of labor market behavior in the short-run imply that the short-run supply of labor function is much more elastic—responsive to wages—than the long-run supply of labor function. If the demand for labor goes up this week and the wage rate rises somewhat, many workers will be pleased to substitute extra hours this week at a wage that is viewed as somewhat higher than they are likely to receive in the future. Indeed, many workers have made conscious decisions to work for firms with variable demands for labor and for those workers the extra hours of work will be offered with no increase in the wage rate other than, perhaps, a standard overtime premium. These workers offer the extra hours of work in the short run because it is part of their longer-range agreement with their employers that they do so.

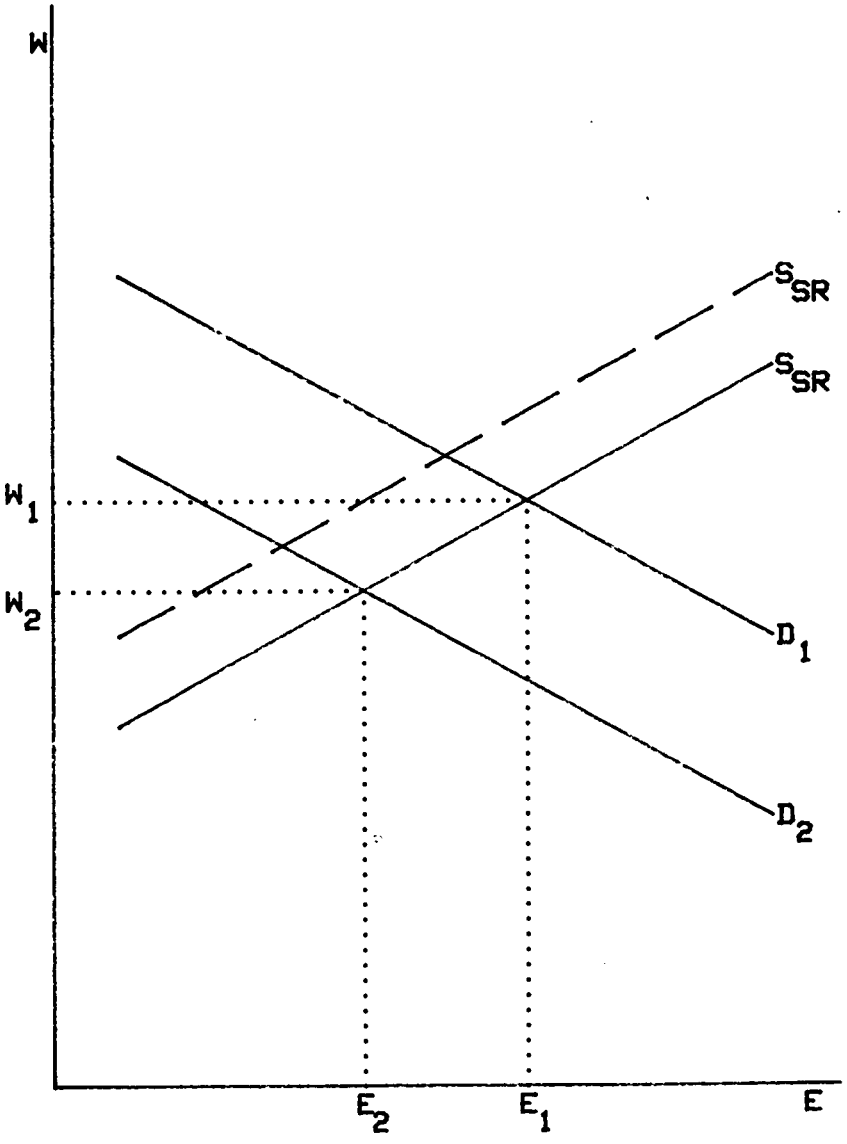
Finally, it is reasonable to argue that although labor supply in the long run depends on the real wage—that is, the money wage adjusted for the price level—in the short run it is useful to think of the labor supply function as being a function of the money wage only, taking the price level as given. The real wage relevant to the worker is not the current money wage adjusted for the current price level but rather adjusted for some average expected price level in the near-term future. A household is not required to spend its income in a particular week or month but rather may spread out its spending over a period of time. Just as households may offer extra labor in weeks when the wage rate appears to be especially favorable, so also may households make their expenditures in periods when the price level seems especially favorable—that is, lower than anticipated in the future. Thus, spending may be accelerated if there is a good furniture sale, or may be deferred in anticipation of a sale in the future. For this reason, the price level relevant for short-run real wage calculation is an average expected price level in the future and not just the current price level.

If we hold constant the anticipated price level in the future, then we may show in Figure 2 the short-run supply of labor function as a fairly flat or "elastic" function of the current money wage, W. If the anticipated average price level rises, this entire function will shift up to the dashed supply function S_{SR}. However, at this point suppose that the average price level that households anticipate is not changing so that we may assume that labor supply function is described by the solid supply function labeled S_{SR} in Figure 2.

Now consider the short-run demand considerations in the labor market. As the demand for a firm's product fluctuates, its demand for labor fluctuates. Other things equal, a firm has an incentive to produce extra output when demand and prices are relatively high, and to reduce its output when demand and prices are relatively low.

Consider the situation in which the demand for a firm's output declines so that the firm's demand for labor in the labor market declines from D_1 to D_2 in Figure 2.

FIGURE 2



In this situation the amount of labor demanded falls and the wage rate may fall a bit, or rise more slowly than it had been before. However, in the United States the major short-run impact is on employment and relatively little impact shows up in wages. In Figure 2 employment drops from E_1 to E_2 while wages drop just a little from W_1 to W_2.

Recall that Figure 2 shows the short-run demand and supply situation in the labor market. This situation will show up in the long-run labor market diagram—Figure 1—as a move off the long-run labor supply and labor demand functions to a point such as point A in the figure. As supplies and demands bounce around in the short run the long-run equilibrium remains unchanged at the intersection of the long-run supply and demand functions but the actual levels of employment and the real wage bounce around between A and C. No longer-run adjustments are needed as long as the economy averages out at about the long-run equilibrium even though in the short-run employment fluctuates on either side of that equilibrium. No longer-run adjustments occur precisely because individuals in the short run are willing to have somewhat variable hours of work and employment provided they average out to about the desired long-run amounts.

Returning to the short-run demand conditions, it should be noted that firms experiencing short-run declines in the demands for their products may not reduce their demand for labor proportionately. That is, in Figure 2 the change in employment from E_1 to E_2 may be a smaller percentage change than the change in the firm's output. Firms may want to hold on to their experienced workers and not put them on lay-off when demand is slack because if those workers then accept other employment the firm will have lost experienced personnel.

We have not yet discussed short-run pricing behavior by firms. A reasonable view of much pricing is that firms absorb short-run fluctuations in demand without changing prices very much. It makes no sense, for example, for a retail store to reprice its merchandise when demand is low due to a snowstorm. Pricing behavior on the part of firms is similar in many respects to the wage behavior on the part of employees. Both are willing to have variable output and employment with relatively stable prices and wages in the short-run.

This short-run analysis clearly makes sense in an environment in which output and employment is fluctuating around the desired long-run equilibrium values. Many fluctuations experienced by workers and firms are of exactly this type. Demands fluctuate due to weather, seasonal changes, and unexplainable random disturbances that more or less average out.

Unanticipated Disturbances

Every firm must deal with demands that fluctuate over time. The discussion above concerns the ways in which firms respond to normal day by day and month by month fluctuations in demand. Some demand changes, however, turn out to be persistent—that is, a surge (slump) in demand turns out not to be followed in any reasonably short period of time by an offsetting fall (rise) in demand. These longer-run changes may be regarded as fundamental disturbances to

which firms must adjust. At this point, consider disturbances that are unanticipated.

Some unanticipated persistent changes affect individual firms without affecting the economy as a whole. For example, a firm with a successful new product may find demand running persistently high while one of its competitors finds its demand running persistently low because of the sales won by the new product. Sales for the two firms taken together—the aggregate sales for the industry—are not affected but the individual firms will in time start to adjust to the longer-run equilibrium when they find the changes persistent and not random.

Some disturbances, however, turn out not to average out across firms but to reflect disturbances for the economy as a whole. Some of these aggregate disturbances are random over time and average out over several months or quarters. For example, a bad winter may simply divert demand and production from the winter quarter to the spring quarter of the year. A major strike may have the same effect, depressing employment and output when struck industries are closed down and expanding employment and output when the labor dispute is settled and production resumed to make up for the short-fall.

Other disturbances in the economy as a whole turn out to be persistent rather than random, and it is these disturbances that produce what we call business cycle fluctuations in aggregate output and employment. Aggregate disturbances may lead to business cycle fluctuations precisely because firms and workers have adjusted their modes of operation efficiently for the typical fluctuations they individually experience

Firms and workers must attempt to sort out short-run disturbances from the longer-run persistent disturbances that require longer-run adjustments such as permanent job changes and permanent closing or opening of new facilities. When a disturbance reflects a relative disturbance such as the shift in demand from one firm to another discussed earlier, each individual firm is adjusting towards its longer-run equilibrium as it sorts out the extent to which the disturbance is persistent rather than transitory. But when an aggregate disturbance occurs, firms respond in exactly the same way; in this case, though, their adjustments are in the same direction and do not cancel out, and so produce the aggregate change in employment and output that we call the business cycle.

Suppose that in an environment of general price stability—an inflation rate of zero—aggregate demand drops. Unless workers and firms have some special information about this fall in demand, industry by industry they treat it like any other fall in demand—a probably temporary aberration. Aggregate output falls and unemployment rises and there is very little change in wages and prices. This aggregate result is the sum total of the responses of individual industries. Each industry responds as it would if the disturbance had been confined to that industry alone. The response seems perfectly sensible and efficient when the disturbance is confined to a particular industry, but when there is an aggregate disturbance these same responses add up to economy-wide unemployment that seems highly inefficient.

Suppose that the fall in aggregate demand turns out not to be reversed in a quarter or two or three. Workers who had agreed to accept variable employment for a higher average wage in the expectation that employment would average out to about forty hours per week find themselves working week after week an average of, say, only thirty hours per week. This average may reflect some weeks working a full forty hours and some on layoff working no hours at all. Workers thought they had accepted variable hours jobs averaging forty hours per week at $5.50 per hour instead of steady jobs at $5.00 per hour, but now they find themselves with an average of only thirty hours of work per week over an extended period of time. If they had known that the jobs would only average thirty hours per week, then they would not have taken them but would instead have taken the steady forty hour per week job paying $5.00 per hour. If the unemployment continues, workers will gradually accept lower wages as they shift to other jobs. Moreover, the firms experiencing the persistent decline in demand, whose workers are on short hours, will shade their prices down since they have bulging inventories and excess capacity.

These results are illustrated in Figure 3 that relates the amount of unemployment to the rate of change of prices. The curve in this figure is ordinarily called the "Phillips curve" and so is labeled "PC" in the diagram. The vertical line is drawn at the "normal" level of unemployment. That is the level that obtains on the average over a long period of time and it reflects the normal process of job change, of the unemployment suffered by new entrants into the labor force as they take time to find their first jobs, and so forth. In the example being discussed—that of an unanticipated persistent decline in demand—unemployment runs somewhat above this normal amount, denoted U_N in the diagram, and so price change is somewhat below the average rate of change over this period which was assumed to be zero in this discussion. That is, as unemployment develops the rate of price change turns negative; prices actually fall in this situation. The argument runs in the opposite direction when there is an unanticipated increase in demand that turns out to be persistent rather than transitory. In this case, unemployment runs somewhat below the point labeled U_N in Figure 3 and prices tend to rise more rapidly than they had been earlier.

An important application of the assumption that workers do the best they can given the situations they face is the behavior of workers on temporary layoff. Suppose a plant closes down and a worker becomes unemployed for a period of time. The situation may be undesirable, but that is not the point. If the worker is unhappy he has a choice of taking another job, although perhaps that job offers a substantially lower wage than the one he had before. A worker may not in fact take another job at a lower wage but prefer to remain on layoff anticipating that he will be rehired in the not too distant future.

There is an important sense in which a worker laid off from a high-paying job is *voluntarily* unemployed if he does not accept an available lower-paying job. Making that statement is not the end of the analysis but rather serves to focus attention on the reasons why workers may prefer to remain unemployed rather than to accept lower paying jobs. Clearly, some workers do leave high-paying but unstable

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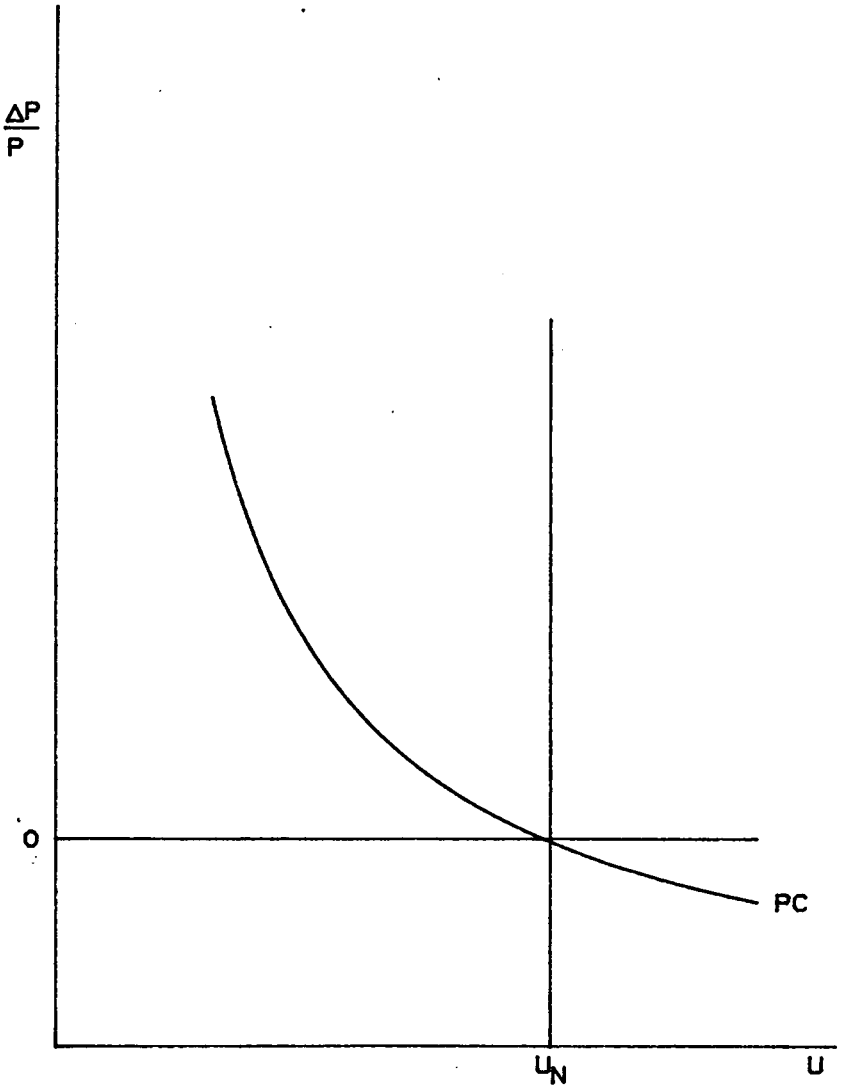
FIGURE 3



jobs for lower-paying but steady jobs. Also, some remain in steady but lower-wage jobs rather than accept risky employments offering higher wages. And some move in the other direction, accepting riskier but higher-paying jobs.

To say that cyclical unemployment is voluntary is not to say that there is no problem. Consider an analogy. Suppose a farmer moves to an area known to suffer from unreliable rainfall. He moves there be-

cause the land is cheap and he believes he can do well. However, after several years of worse than usual drought he is forced into bankruptcy.

The farmer's suffering is real, but his decision to buy a farm in an arid area was voluntary and his decision to hold on until forced out by bankruptcy is also voluntary. It is clearly poor public policy to subsidize his losses, for such a policy will only encourage additional farmers to settle in risky areas, expecting to realize handsome returns if the weather is good and to pass the losses on to the general tax payer if the weather is poor. If, however, public policy could promote better-informed private decisions—through improved weather forecasting, for example—then there would be a role for the government to improve efficiency and to reduce the suffering resulting from voluntary decisions.

Extending the analogy, suppose the farmer's decision to buy the arid land were based on a well-founded expectation that the government would sell water from a new irrigation dam. If the government cancels the dam it had committed itself to build, then the farmer's bankruptcy must be regarded in a different light from the earlier example of bankruptcy due to drought. Here, consistency and predictability of government policy is essential to efficient private decision-making.

Anticipated Disturbances

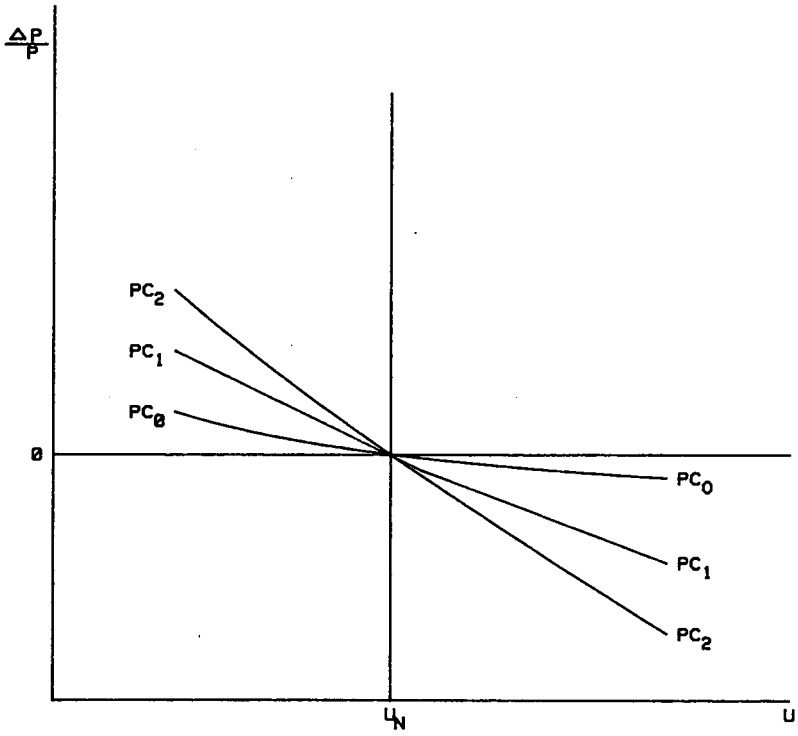
A very different analysis is appropriate when changes in demand are anticipated rather than unanticipated. Suppose, for example, that a firm announces that it is permanently closing a particular plant as of a particular date. In this case, the workers who are let go know that they are not on temporary layoff with some probability of recall but that their old jobs are permanently gone. A worker will not wait around with the expectation of being recalled but will immediately search for a new job. Indeed, if the plant closing is announced in advance the worker may quit his old job even before the plant is closed in order to take a new job.

Suppose, though, that a plant closing is announced as permanent at the time it takes place. Then, the same amount of initial unemployment may occur in the first week as would be the case with a temporary layoff but when the closing is expected to be permanent workers will much more readily accept lower paying jobs than they would in the temporary layoff case.

This situation is analyzed in Figure 4. The curve labeled PC_1 is the same as the curve labeled PC in Figure 3. However, when a disturbance is anticipated to be permanent, the relation between unemployment and price change is not shown by PC_1 in Figure 4 but rather by the steeper curve PC_2. (The curve PC_0 will be discussed later.) A given amount of unemployment when the disturbance is anticipated to be permanent results in a much more rapid adjustment of wages and prices than when the change is anticipated to be temporary.

The argument runs in symmetrical form when unemployment is below the point labeled U_N. Suppose that there is a surge in demand. Some workers work longer hours than their average while others experience less than the usual number of layoffs. In addition, workers who are unemployed are more quickly employed by firms wanting to

FIGURE 4



increase production to meet the surge in demand. If the surge is thought to be temporary, then the price and wage change will be relatively moderate, as shown by the slope of the curve PC_1. On the other hand, if the surge in demand is thought to be permanent, then there will be a much more rapid increase in wages and prices as shown by the curve PC_2.

In the preceding discussion the formation of expectations has not been analyzed. The discussion was based on the assumption that a disturbance such as a plant closing was known to be either temporary or permanent. In fact, it is frequently not known whether a disturbance is transitory or permanent; those affected must form the best possible expectations about the permanence of the disturbance. The assumption is that these expectations are rational. In some cases it will, of course, be obvious that a disturbance is temporary, or permanent. But the nature of disturbances is frequently unclear and, consequently, the reactions of those affected will depend importantly on their expectations which may, incidentally, be somewhat volatile if they are based on scanty information.

Effects of Government Policy

With this background, we can now discuss the impact of government policy within this rational expectations framework. (Discussion of optimal policy is in a later section.) Suppose, first, that government is passive in the face of fluctuations in the unemployment rate. In this situation, the effect of unemployment on price change for a typical disturbance which is viewed as mostly transitory is shown by PC_1 in Figure 4. Now suppose the government introduces a policy designed to respond quickly to changes in the unemployment rate. Once people learn of this policy they will react differently to unemployment than they would in an environment in which the government is passive.

To understand this point, suppose again that there is a reduction in aggregate demand that increases unemployment. Now workers expect the government to take some action to reduce unemployment and so they believe that the unemployment they are experiencing is more likely to be temporary than they would otherwise have believed. Therefore, workers have less incentive than before to accept wage reductions because they anticipate that their lay-offs will be temporary. Thus, the relation between unemployment and price change becomes PC_0 rather than PC_1. Workers and firms—both anticipating quick government action—have less reason to cut wages and prices than before *because* they believe that the unemployment is likely to be of shorter duration than they did before. Returning to an earlier analogy, the farmer trying to grow crops on arid land will hang on longer if he expects government subsidies, or completion of an irrigation project, than if he expects no assistance. The issue being discussed, it should be emphasized, is not the wisdom of governmental action but the effects of expectations about such action on private behavior.

If there is a surge in demand that workers and firms believe will be promptly offset by government action, then when unemployment falls below U_N firms and workers will feel less need to increase wages and prices than before. If government is in fact succesful in stabilizing unemployment—keeping it reasonably close to the long run equilibrium level of U_N—then not only will unemployment fluctuate less than it normally would be so also will prices and wages. In addition, as emphasized in the above argument, the change in wages and prices associated with any given change in unemployment will be smaller than before as shown by the flatter slope of PC_0 compared to PC_1.

This analysis of short-run behavior in the labor and product markets has emphasized the central role of expectations of workers and firms. To repeat, we assume that expectations are rationally formed, that individuals base their expectations on all the information available to them about the behavior of the markets in which they function, and that they learn from their past mistakes. Insofar as government policy affects the behavior of these markets, workers and firms will incorporate in their behavior expectations of government policy changes. Analysis of government policy must assume that workers and firms adjust their behavior to the nature of that policy.

From this analysis it should be clear that not only does government policy affect unemployment and prices but also that government policy

will affect the response rules or modes of behavior of firms and individuals in response to any particular observed disturbance. If the government introduces an active stabilization policy after a period of passive policy, it will make mistakes in policy management if it does not recognize that the introduction of the active policy will change modes of private behavior, represented by the change in the Phillips curve in Figure 4 from PC_1 to PC_0. In particular, it should be emphasized that a careful statistical study of the Phillips curve during a period of passive government policy might disclose a curve such as PC_1 but that curve is not the one relevant to the analysis of policy during a period when policy is active. The problem raised for policymakers is severe because while the historical data may produce the estimates labeled PC_1, the government may have little information to show how the Phillips curve will shift; that is, in a new policy regime there may be no way of knowing the precise position of the new Phillips curve PC_0. And, without that precise information the government will not be able to provide accurate forecasts of how its policy changes will affect the economy.

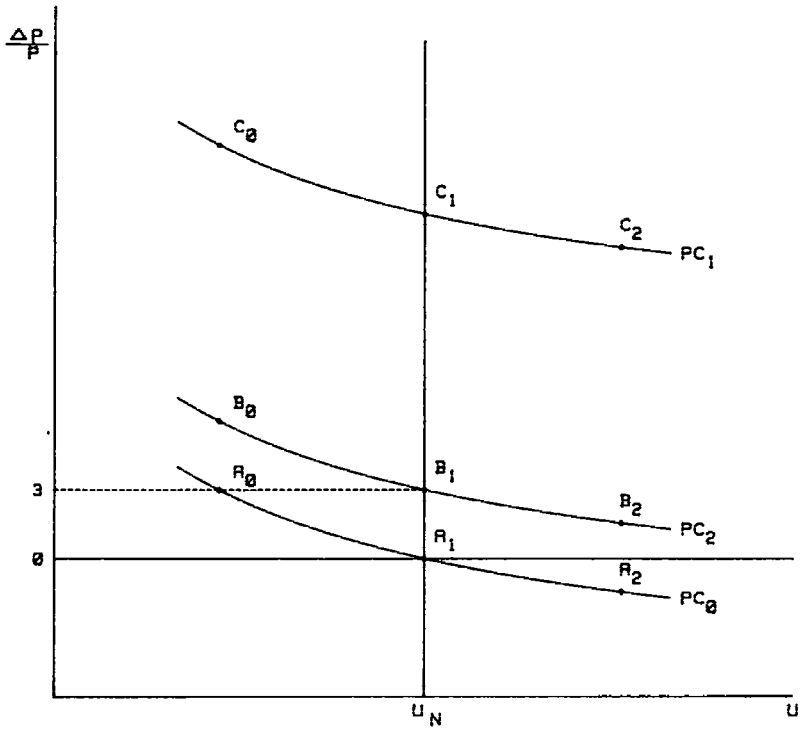
This point is so important that it is worth additional comment. Consider a series of chess games in which a particular player decides to change his general style of play. When A first changes his style, he may well take B by surprise. B may respond to A's moves on the basis of B's best response under A's old style of play. But A, in analyzing the likely results of his new style of play, cannot assume that B will continue to respond as if A's style had not changed. Over a series of games B will catch on to A's change in style, and B will alter his style to reflect the change. Without question, A is sure to make some poor moves if he assumes that B will not catch on to his new style. Similarly, the government is bound to make policy errors if it assumes that private economic agents do not catch on to the changed policy style of the government.

VI. The Phillips Curve and Inflation in the Long Run

The analysis in the previous section was carried on under the unrealistic assumption that the trend rate of inflation was zero. Unemployment fluctuated above and below the level U_N while the inflation rate fluctuated above and below zero. The Phillips curve PC_1 from Figure 4 has been relabeled PC_0 in Figure 5. In the previous argument, the economy sometimes operated at point A_0, sometimes at point A_2, but on average at point A_1 in Figure 5.

Now suppose that the government, looking at the Phillips curve PC_0 in Figure 5, decides that it would be a worthwhile tradeoff to accept some ongoing inflation in return for a lower rate of unemployment. This choice may seem both reasonable and feasible; after all, if the economy has operated along PC_0 for many years there would seem to be no reason why it could not settle down at A_0 instead of A_1 on the average. And, if the Phillips curve is fairly flat it appears that only a small amount of inflation would accompany a substantial reduction in the unemployment rate.

FIGURE 5



Suppose the government now follows a policy that moves the economy to point A_0 and holds the economy at that point for a period of time. Such a result might occur because the economy had been operating for a long period of time at about a zero rate of inflation and private expectations were fully adjusted to that environment. But, if the economy stays at A_0 for some period of time rather than fluctuating between A_0 and A_2, then eventually workers and firms will realize that the position A_0 is not a transitory situation but rather a persisting one.

From the previous discussion recall that the short-run equilibrium shown in Figure 5 may also be shown on the diagram showing the long-run supply and demand for labor, Figure 1. Figure 1 has been reproduced here for convenience as Figure 6. The normal unemployment rate, U_N, in Figure 5 is the amount of unemployment that ac-

companies the full employment or normal level of employment. E_N, in Figure 6. However, if the economy is operating at point A_0 in Figure 5 it is operating at a point such as X_2 in Figure 6. At X_2 employment is higher than the amount that workers want to offer at the equilibrium real wage $(W/P)_N$ and so workers in this now persisting situation will be bidding up wages. The long-run supply function in Figure 6 reflects the fact that workers are willing to supply labor in excess of E_N month after month only if a higher real wage is paid, and in an effort to obtain that higher real wage money wages are bid up. Viewed from the other side of the market, firms trying to obtain sufficient numbers of workers and overtime hours out of present workers will offer higher money wages. In addition, at X_2 in Figure 6 firms find that the value of the output being produced by the extra workers is less than the extra wages that are being paid, and so firms will be raising their prices in these strong demand conditions in order to make the extra output profitable.

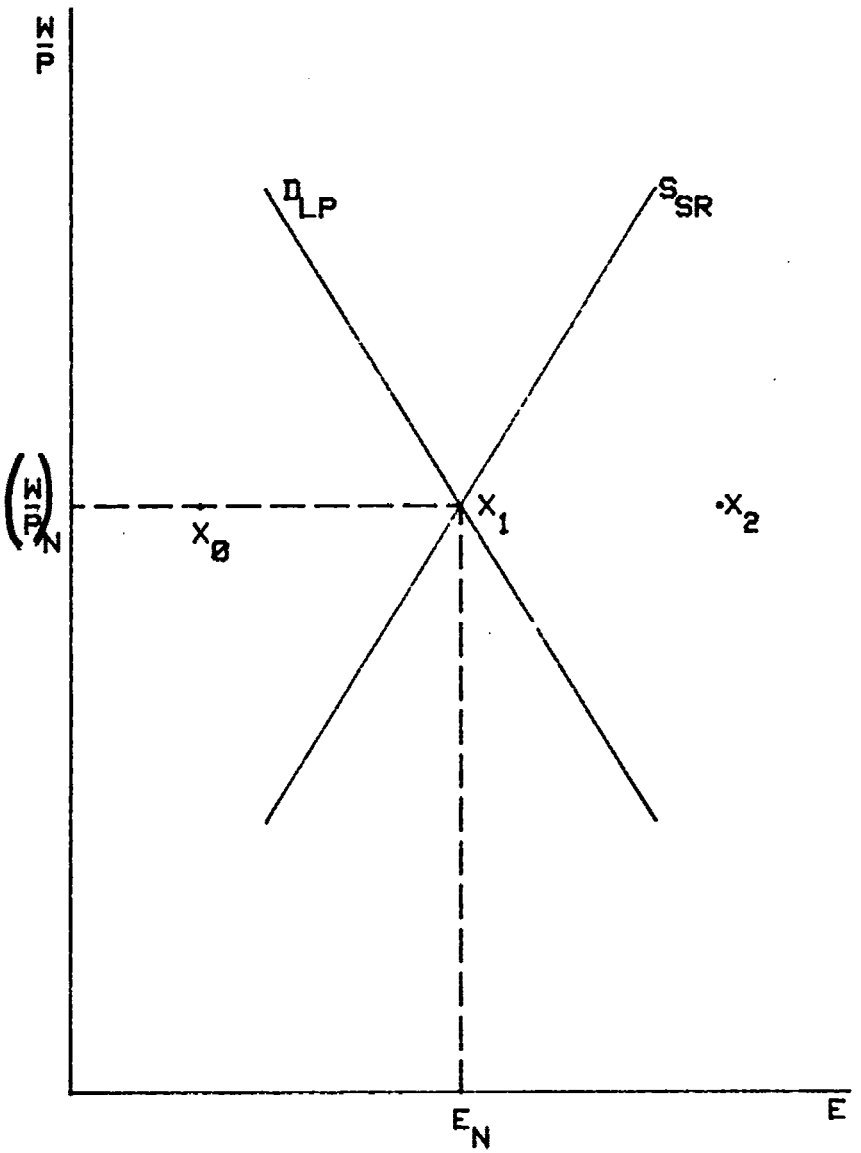
Thus, both wages and prices are now rising and the position A_0 in Figure 5 is not sustainable. If the government persists in its expansionary policy, workers and firms will gravitate back towards the equilibrium point X_1 in Figure 6. Wages and prices will now be rising more rapidly and in Figure 5 the economy may settle down to point B_1. At B_1 there is ongoing wage and price inflation; workers insist on steady wage increases in order to keep up with the ongoing price increases, and firms insist on steady price increases in order to keep up with their rising wage costs. In this inflationary equilibrium wages and prices rise together so that the real wage—the money wage adjusted for the price level—settles down to the equilibrium $(W/P)_N$ shown in Figure 6 and employment settles down to the equilibrium level E_N.

In Figure 5 the point B_1 is not on the old Phillips curve PC_0. Suppose the economy operated at point B_1 for a period of time. Everyone comes to expect the ongoing three percent inflation and everyone adjusts to the new environment. Now disturbances in demand produce a rate of inflation above or below three percent. If the economy were to fluctuate up and down around the point B_1 it would move between point B_0 and point B_2. There would be a new Phillips curve PC_1 describing these adjustments. The curve PC_1 looks just about the same as PC_0 except that it is displaced upward.

The concept of an inflationary equilibrium at a point such as B_1 is extremely important. As a first approximation the economy may behave in real terms—that is, in terms of employment and output—at B_1 in exactly the same way as at point A_1. For an analogy, once an economy switches from English measure to metric measure and everyone has learned how to use the new measurement system, all of the real magnitudes can behave pretty much as before. Once the new system is learned, people take their gloves with them when their thermometers read 0 degrees celsius just as they did before when their old therometers read 32 degrees farenheit.

Of course, there will be a period of learning and adjustment to the inflation but, given the incentives to learn, the process probably will not take too long. Households that do not adjust will be punished in

FIGURE 6



the form of a lower standard of living, more unemployment, and poor consumption decisions. Similarly, firms that do not learn will be punished in the form of lost profits when they make pricing and production mistakes.

Clearly, if expansionary government policy has moved the economy from fluctuations around the point A_1—fluctuations between A_0 and A_2—to a new longer-run situation of fluctuations around point B_1—between B_0 and B_2—then the government policy makers have made a serious mistake. Unemployment averages about the same but now the inflation rate averages about three percent. Recall that the government thought that it was going to move from A_1 to A_0; it thought it would obtain lower average unemployment in return for some increase in inflation. Instead, it obtains no permanent reduction in unemployment but a permanent increase in the rate of inflation as long as the new expansionary policies are continued.

If the government, and the voters, do not realize that the move from A_1 to B_1 was a predictable long-run consequence of more expansionary policies, then the mistake may be repeated. Suppose the government tries to operate at point B_0, believing that a reduction in unemployment is worth a small increase of inflation above three percent. Repeating the above analysis, the economy does not operate for any sustained period of time at point B_0 but rather settles down to a point like C_1.

The above process has much to do with the explanation of the increasing rate of inflation in the United States over the past fifteen years. Government policy—supported by the attitudes and misperceptions of the voters—has become increasingly inflationary. No one intended to move from a point like A_1 in the early to mid 1960's to a point like C_1 today. But concern over unemployment and a lack of appreciation for the lagged inflationary effects of expansionary policy has led to a series of expansionary policy mistakes. The process by which the U.S. economy went from point A_1 to point C_1 is still not well understood by the general public. Recession lowers inflation somewhat as in a move from C_1 to C_2. But such evidence is commonly misinterpreted because inflation at C_2 is higher than inflation at a point like B_1 at which unemployment is lower.

The combination of ongoing inflation and unemployment, however, is no mystery once it is understood that there is no long-run tradeoff between inflation and unemployment. Points of long-run or sustainable equilibrium are points A_1, B_1, and C_1; along this line there is no trade-off whatsoever between inflation and unemployment. The only trade-off is a short-run, non-sustainable one. Unemployment may fluctuate along PC_0 between A_0 and A_2 averaging out at A_1, or may fluctuate between C_0 and C_2 averaging out at C_1.

This discussion has proceeded under the assumption that as a first approximation the trend rate of inflation does not affect the average level of unemployment—that the equilibrium points A_1, B_1, and C_1 in Figure 5 all occur at the same unemployment rate U_N. However, there is some evidence that equilibrium at a higher rate of inflation occurs at a higher unemployment rate—that the line connecting A_1, B_1, and C_1 has an upward slope—due to inefficiencies caused by inflation. This issue is difficult to resolve because major changes in the

demographic composition of the labor force have occurred in recent years at the same time the inflation rate has risen. How much of the higher average unemployment should be attributed to inflation and how much to the greater proportion of women and youth in the labor force is uncertain at this time. For the purposes of this study, which emphasizes exceptional issues, the assumption of a vertical long-run Phillips curve at U_N will be maintained.

VII. Monetary Policy in a Rational Expectations World

The earlier sections have linked short-run and long-run behavior in the labor market and have shown how the short-run behavior is closely linked to the expectations of the private sector concerning whether disturbances are transitory or permanent and unanticipated or anticipated. I have argued that the judgments of workers and firms about the nature of the disturbances they observe will depend importantly on their perceptions of the government's policy. The purpose of this section is to analyze the policy issues more carefully and to explore the nature of the policy options that are available.

The earlier analysis emphasized that the extent to which economic disturbances show up in output and employment rather than in wage and price change will depend importantly on the perceptions of workers and firms as to whether those disturbances are transitory or permanent. On this view, government policy can move the economy along a short-run Phillips curve such as PC_0 in Figure 5 to the extent that the disturbances are assumed or interpreted by the private sector as being temporary. Twenty years ago it made good sense to believe that if the economy moved from A_1 to A_0 then the government would take action to reverse the increase in inflation and push the economy back towards A_1 again.

In more recent years, however, confidence that government policy would be consistent with an inflation rate that would be roughly stable and relatively low has been shaken. The prevailing assumption today—reinforced by considerable experience over the past 15 years—is that when the inflation rate rises the government will be slow and cautious in undertaking policies to slow the economy, and that when the unemployment rate rises the government will be quick to respond with economic stimulus. Because of the government policy over the past 15 years the Phillips curve is now quick to shift up and slow to shift down. These responses on the part of private individuals are sensible and rational given this experience with government policy. Those who have bet that the government would follow a policy to bring the inflation rate down have lost again and again over the past 15 years.

Given this inheritance, it is clear that one of the first orders of business for government policy-makers is to reestablish credibility in the long-run stability of policy. It is unfortunately true that the only way to establish this credibility is for the government's actual policy to be consistent with the beliefs that the government wants private parties to hold.

Because of the last fifteen years experience, there is a real risk that there will be expectational errors of major magnitude in the

United States in coming years. Suppose that the government pursues with firm resolve a policy of lower money growth consistent with lower inflation. Suppose, for example, the Federal Reserve reduces the average rate of money growth so that the trend rate of inflation will be three percent in the long run instead of the (approximately) 10 percent underlying inflation now being experienced. If the government's resolve were fully accepted by the private sector, then inflation expectations might adjust quite quickly and the Phillips curve shift down from PC_2 to PC_1 in Figure 5. The adjustment process of reducing the rate of inflation would involve some increase in unemployment but it might be possible to go fairly smoothly from point C_1 to point B_1.

The problem with this happy scenario is that there is little reason for private parties to accept government statements of resolve to reduce the rate of inflation. After all, that refrain has been heard many times over the past few years. Suppose the government's resolve is not taken seriously and private parties maintain their inflation expectations. Then, when the more restrictive government policy takes hold the economy moves from C_1 to C_2 and perhaps further down the PC_2 curve to even higher rates of unemployment. In the meantime, because the government's promises are not trusted, private parties believe that the high unemployment is a temporary phenomenon and that the economy will continue to fluctuate back and forth along the PC_2 curve. Indeed, workers and firms might even come to believe that the high unemployment will be met by a massive dose of economic stimulus which would raise the inflation rate even more in the long run and so they might shift their expectations of long-run inflation *up* rather than down as unmployment rises. In that event, the Phillips curve would shift out to a curve not shown in Figure 5 but lying above and to the right of PC_2. Such a mistaken expectation would be a serious matter for it would mean that both inflation and unemployment would be higher than if expectations shifted the Phillips curve down to PC_1 reflecting a correct view of the government's intentions.

The nature of the expectational mistake discussed here is familiar to every pedestrian. If two pedestrians are walking toward each other and each steps to his right they pass without bumping. However, if one steps to right anticipating that the other will also, but the other steps to his left anticipating that the first will step to his left, then the pedestrians bump. Indeed, the expectational errors may have several rounds. After each pedestrian has changed directions right into the path of the other they each change course again only to find that they have both changed course in the same direction and are still blocking one another. Expectational mistakes of the same kind lead at times to automobile accidents, mid-air plane collisions, and ship collisions on the high seas with clear visibility.

The danger of a costly expectational impasse between government policy-makers and private firms and individuals is a real one today. There are several things that government policy-makers can do to help avoid such errors.

First, government policy should be as steady and predictable as possible so that the problem does not arise in the first place. Automobile

accidents sometimes happen when a driver fails to take a standard evasive action in a standard situation. When cars are approaching each other the standard evasive action is for each driver to turn to his right. Except in exceptional circumstances, a driver should turn to the right even if the oncoming car is entirely in the wrong lane since the oncoming car ought to be expected to swerve back into its own lane. Similarly, government policy should follow a stable and predictable course unless conditions are exceptional.

The need for the government to follow a consistent course is even clearer when it is understood that the "game" being played is not one between two identical partners—such as in the automobile driving example—but between a highly visible and dominant partner, the government, and a very large number of private individuals and firms. In this situation, the private economy is not in a position to take a leadership role because it consists of a huge number of independent individuals and firms who cannot speak with one voice or act in a coordinated way. The government, on the other hand, is clearly in a leadership position and so has a special responsibility to act in a clear and predictable fashion.

Avoiding the occurrence of situations in which expectational errors are likely is obviously of great importance. Nevertheless, situations may arise through accidents or mismanagement in which the expectational errors have arisen and in which it is necessary to face that fact. Given the events of the past fifteen years the Federal Reserve is probably in such a situation today. If the Federal Reserve follows a clear, disciplined, and highly visible monetary policy it still cannot be certain that private parties will believe that the policy will continue.

In this unhappy situation, the Federal Reserve and the Federal Government more generally can do only two things. First, the policy that is followed should be cautious and only mildly restrictive in order to reduce the damage from a major expectational error. For example, returning to Figure 5, if the Federal Reserve followed a policy consistent with a long-run rate of inflation of 8 percent, then if the policy were believed it should produce a Phillips curve lying between PC_1 and PC_2. However, if the Federal Reserve is not believed and the Phillips curve remains at PC_2, then the unemployment consequences of that expectational error will be smaller than if the Federal Reserve aimed for a quick reduction of inflation to 3 percent or zero percent. The expectational error will produce damage, but it will be more in the nature of a side-swipe than a head-on collision.

By acting in relatively small steps and actually creating a policy that is consistent with announced intentions, the government can not only minimize the size of the expectational error but also can over time build credibility. As private parties see that the government is following exactly the policy it said it was going to follow they will be more ready to believe the government when it announces policy changes in the future. Growing credibility will reduce the size of future expectational errors and make possible a smoother reduction in inflation from future actions.

Another step the government can take is to reduce expectational errors by undertaking highly visible policy actions that are consistent with and supportive of an announced policy to reduce inflation. For

example, over the long run the rate of inflation is closely linked to the rate of money creation but the Federal Reserve has frequently complained that it does not have accurate control over money creation for a variety of technical reasons. In addition, the Federal Reserve has frequently argued that only *long*-run money growth matters and that, therefore, no one should be much concerned with short-run deviations in money growth from an announced long-run target. However, many have become accustomed to seeing these supposedly unimportant short-run fluctuations in money growth accumulate to an apparently permanently higher rate of money growth in the long run.

In these circumstances, Federal Reserve insistence that it will control the rate of money growth in the long run is not terribly credible given its performance over the last fifteen years. However, the Federal Reserve could improve its credibility if it would undertake the technical reforms to make money stock control more precise. It has, in fact, already taken the most important of these steps. On October 6, 1979 the Fed announced that it was abandoning its old money control technique based on close control over interest rates and was instead adopting a system widely believed to be more effective—that of closely controlling the quantity of bank reserves. The Federal Reserve should adopt a number of other technical reforms to help convince the market that it fully intends to adhere to its lower announced money growth targets.

The administration and Congress could also help to reinforce expectations that the government as a whole will follow a less inflationary policy in the long run. Although Federal Reserve money creation is by far the most important cause of inflation, money creation is to some extent itself a consequence of continuing large deficits in the Federal budget. Thus, steps to control Federal deficits would help the Federal Reserve to control money creation.

In addition, many regulatory and other policies of the Federal Government serve to generate unnecessary inefficiencies in the production process which, by reducing the supply of goods, add to inflationary pressures. Ritual statements about Federal budget control and less regulation and red tape will not be very convincing. The private sector would be more convinced that the government will follow a less inflationary policy in the long run if it could observe specific and helpful decisions in the government's budgetary and regulatory process.

VIII. Fiscal Policy Issues

It should be clear from this discussion that the importance of expectational issues is not limited to questions of monetary policy. Indeed, most of the same issues arise in connection with fiscal policy and are usually easier to understand in the fiscal policy context. Several examples will be presented in this section.

For many years economists have advocated an active fiscal policy and many have especially recommended frequent changes in investment incentives in order to encourage extra investment when the economy is weak and to discourage investment when the economy is booming. One such incentive is the investment tax credit which permits a firm to deduct a certain percentage of a qualifying investment expenditure directly from its tax bill. An intuitively appealing policy is to make the size of the credit higher in recession and lower in boom.

Whether or not counter-cyclical variations in the investment tax credit will in fact work in a stabilizing direction, however, depends importantly on expectational issues of the type discussed in this study. For example, suppose the economy is beginning to enter a boom. At such a time, it is never quite clear whether a boom is really starting or whether there is simply a temporary surge in the context of a basically stable economy. Suppose, though, that business firms believe that the government may respond to the surge by lowering the investment tax credit in the near future. In that circumstance, firms have a considerable incentive to accelerate their investment spending so that they will obtain the advantage of the tax credit. Investment spending originally scheduled for next year may be moved forward to this year.

Suppose the government does not change the tax credit. Then, what might have been a temporary surge may be turned into a larger surge followed by a larger let-down as firms change the timing of their spending in response to their expectations. In this case, even though the investment tax credit has not been changed, the very fact that the government might have changed the credit has produced a disturbance in the economy adding to aggregate demand in one period and subtracting from it in another. The existence of the credit has destabilized the economy.

Suppose, on the other hand, that firms accelerating their investment spending make the economy look like it really is in a boom. In this case, the government might suspend or reduce the credit in order to temper the boom. If, however, there really wasn't a boom then the government has done nothing more than to move investment spending forward in time and to lower the incentive for spending in the future. If the economy had been on a basically stable path, this path may be turned into a recession path in the future as firms reduce their spending because of the reduction in the tax credit.

Sometimes, of course, the tax credit will be used successfully. In some cases a boom really does develop and reducing the credit may serve to temper the boom. However, an overall evaluation of the effectiveness of the investment tax credit as a stabilization device must not concentrate on the successful cases. The failures must also be considered. Clearly, after carefully examining expectational effects it should no longer seem obvious that an investment tax credit can be used successfully to stabilize the economy on average over a substantial period of time.

A somewhat similar analysis applies to adjustments in personal income taxes. Suppose taxes are cut during a recession and increased during a boom in an effort to stabilize the economy. Put this way, it is obvious that the policy ought to be successful, or at least work in the correct direction. However, the problem arises precisely because it is never possible to be sure that a tax cut in anticipation of a recession will not in fact fuel a boom and vice versa. Clearly, once a long-term policy of counter-cyclical personal income tax changes is established, individuals have an incentive to anticipate the tax changes and to move income from one period to the next. Work may be accelerated or deferred in an effort to have the income taxed at a lower rate and these accelerations and decelerations may exacerbate rather than reduce business cycle fluctuations.

IX. Optimal Policy

A number of comments on policy have already been made; the purpose of this section is to pull together these ideas in a fairly general framework.

Policy should always be viewed in terms of a government response rule. If a response pattern is to be called a "policy" it must be the case that the same response will occur in the same circumstances.

That a policy involves a regular and predictable response pattern is widely understood in the managerial context of policy-setting by superiors for subordinates. A superior wants a subordinate to handle a particular kind of case in a particular way whenever the case arises. The reason for having a policy in this sense is precisely so that work can be delegated to lower levels and yet cases be handled as if the superior were handling them himself. Specifying a policy rule does not make policy "mechanical" and "rigid"; it is frequently unclear as to whether a particular case should fall in one policy category or another and so a subordinate must always use judgment to determine the classification of the cases he must deal with. It is skill in making these judgments and in deciding that unanticipated events require new policies that determine success rather than the absence of policy rules in the name of "flexibility."

One reason for having a policy is to make possible delegation of authority by superiors to subordinates, but another reason is to provide private parties who must deal with the government information as to what to expect under a given set of circumstances. For private parties to be able to act and plan their own affairs efficiently they must be able to predict the responses of the government in a given set of circumstances. Of course, this notion is far more general than that of just economic policy. The same notion applies to foreign relations, to policies followed by one corporation with respect to other corporations, and so forth. The pervasive use of formal contracts is one reflection of this need for predictability.

In any important and controversial area policy can never be fully written down and completely predictable. New and difficult cases will always arise and it will be difficult to know whether to treat a new situation as falling in one old category or another. In some cases new categories of response must be established. Or a new case may uncover a problem with the established policy, which will then have to be changed. Nevertheless, the vast bulk of cases requiring governmental action are handled within existing policies; without established policies, attempts to handle every matter on a case-by-case basis soon break down in chaos. Indeed, it is sometimes better to handle a new tough case by placing it in an existing category, even though that solution seems on its face to be wrong, because it may be more important to maintain the broad outlines of an existing policy than to treat a new case in the best possible way when that case is considered in isolation.

General economic policy and especially stabilization policy has ordinarily not been discussed in these terms but rather has been discussed in terms of what has come to be called "discretionary policy." The argument usually given is that monetary and fiscal policy actions can-

not be well specified in advance but rather should be determined on a case-by-case basis in the light of all information available to policy-makers at the time. On this view, "discretionary policy" is not really policy at all because no general response rule can be specified.

Nevertheless, even those who are vigorous advocates of discretionary economic policy do not believe that government actions should be random and capricious. Indeed, it is believed that policy should respond in more or less the same way in more or less identical conditions. Discretionary policy can be a loose and fuzzy type of response rule because there is no need to delegate these important decisions to subordinates and therefore no reason for superiors to specify more precisely how subordinates should behave under given circumstances.

However, the role of a policy in controlling the responses of subordinates is not, as emphasized above, the only function of making a policy precise. The other component—that of providing predictability for those who deal wih the policy-makers—must not be ignored. In the case of general stabilization policy, a fuzzy discretionary policy will increase the likelihood that the private sector will form expectations about government policy that will not match the intentions of the policy-makers.

The problems raised for private decision-makers by discretionary government policy go well beyond the expectational issues discussed so far. Suppose, for example, that a local government were to collect property taxes based on what the tax collector thought was a fair tax payment for each property owner considering that owner's general economic condition. Such a tax collection system would clearly be arbitrary and capricious since two neighbors with identical properties with identical market values might have very different property taxes assessed. Such a tax collection system not only would fail to provide equal protection under the law but also would make it very difficult for private parties to plan their economic affairs since they would not know what taxes would be levied upon them.

Continuing with this example, consider a different property tax system—one based on an accurate assessment of property values and an equal tax rate applied to the assessed value. Such a system does not suffer from problems of arbitrariness and favoritism. However, suppose that each property owner's tax so calculated was raised by 5 percent if a flip of a fair coin came up heads and lowered by 5 percent if the flip turned up tails. The system would be fair and impartial but the uncertainty generated by it has no useful function and indeed may interfere with the efficiency of private decision making.

Now consider an extension of the same basic idea but at the level of the Federal income tax. Suppose that personal income taxes were determined as is now the case but that each person's tax bill were adjusted up or down by 5 percent after flipping a coin. Here again, the uncertainty would serve no useful purpose.

These conclusions are not controversial, but is the answer any different if the tax bill is changed not individual by individual on the basis of coin flips but rather for everyone together on the basis of a single coin flip? That is, suppose that the personal income tax were determined as is now the case but that as of June 1 every year the Secretary of the Treasury flips a coin and adjusts everyone's taxes up or down by 5 percent depending on the outcome of that flip.

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This last example seems fanciful but to the individual discretionary economic policy as practiced in recent years has had essentially the same effect. To the extent that policy changes are not based on a well-defined policy rule those changes are unpredictable to the individuals to whom they apply. To the individual, the occurrence of income tax changes in the United States clearly has had and still does have a considerable element of chance.

Uncertainty over income tax changes disrupts planning; that alone is not a sufficient reason to avoid tax changes. But it is necessary to make an argument showing that the gains from the changes offset the losses due to the uncertainty. If anticipatory effects prevent tax changes from having a systematic stabilizing effect on the economy, then the uncertainty over tax changes will produce larger costs than the small or zero stabilization benefits from those changes. Exactly the same arguments apply to monetary policy.

If economic policy can stabilize the economy it ought to be possible to write down that policy explicitly rather than to rely on the judgment of the policy-makers. For example, although it may seem difficult to write down exactly the response pattern of a skilled airplane pilot, we know that automatic pilots can be built that will duplicate, and perhaps in some respects exceed, the performance of human pilots in a wide range of conditions. Much of what a human pilot does reflects his learned responses to various circumstances, and it is in fact possible to write down equations describing autopilots that closely duplicate the performance of human pilots. Similarly, if discretionary economic policy is indeed successful it ought to be possible to write down rules or equations describing the responses of successful discretionary policy-makers in various circumstances.

With respect to monetary policy there is a long-standing controversy concerning rules versus discretion. Those who favor discretion insist that it is not possible to write down a rule that will perform better than discretionary case-by-case responses. That argument, of course, can be turned around since there is no convincing evidence that discretionary policy makers can do a better job than a rule. In the early days of autopilots skilled human pilots vigorously resisted the idea that a mechanical device could hold an airplane on a steadier course; now we know that in many circumstances the mechnical devices do a superior job.

The case for autopilots or rules is in fact far stronger in an environment occupied by intelligent agents than in an environment occupied only by dumb nature. We certainly do not want two aircraft in congested airspace flying on autopilots, but that is not the correct analogy for economic policy. If government economic policy were on autopilot, then the private economy, which is never on autopilot, could respond optimally to the predictable behavior of the government.

Everyone now recognizes the importance of expectational issues in economic policy, just as was always true in other areas of social policy such as diplomacy. In economic policy the burden of proof should rest on those who advocate discretionary policy rather than on those who advocate stable and predictable rules of behavior on the part of government.

When these ideas are applied to monetary policy there are two basic choices available. One is a monetary policy that maintains a steady and constant rate of growth of money without regard to the state of the economy. A variant on this approach that is appropriate for the circumstances of the U.S. economy in 1980 is a gradually declining rate of monetary expansion, given that we have an inheritance of too high a rate of money growth over the last fifteen years.

The other alternative is a monetary policy that reacts in a predetermined way to the current state of the economy. For example, monetary policy might be specified in terms of a stable long-run average rate of growth of money of 4 percent. Then, if the unemployment rate was between 6 and 7 percent money growth might be at a rate of 5 percent, and if unemployment were between 7 and 8 percent money growth might be 6 percent and so forth. In the other direction, when unemployment is between 5 and 6 percent money growth might be adjusted to 3 percent; for unemployment between 4 and 5 percent money growth might be 2 percent and so forth.

A reactive policy of this type may or may not be more stabilizing than a non-reactive policy because of the expectational anticipatory effects of the type discussed earlier with respect to changes in the investment tax credit. It is not an easy matter to know whether a reactive policy will be stabilizing; probably the only way to find out is to try the policy and see whether it seems to work over a period of time. But any policy rule—whether reactive or non-reactive—has the great advantage of reducing the magnitude of expectational errors. If rational expectations arguments are taken seriously—as I believe they must be—then a policy rule of some type is required for policy to be stable and government behavior predictable.

DEPOSITORY INSTITUTIONS, FINANCIAL INNOVATIONS, AND ECONOMIC ACTIVITY: CYCLES AND TRENDS SINCE THE ACCORD

By William Jackson

Introduction

The Federal Reserve-Treasury accord of 1951 marked the end of an era when the control of the financial markets was subordinated first to the needs of World War II finance and later, in the post-war years, to the exigencies of Treasury debt management. The rules of the financial game were changed, but they were also profoundly affected by the post-war commitment to a policy of maintaining high employment. Largely for this reason, all participants in financial markets were aware that each successive administration was constrained, if possible to avoid, but at least to take active steps to minimize, recessions. The consequence was a quarter-century of mild downturns and an unprecedented average growth rate. Only in the seventies did it become evident that the long-run effect of such a policy was progressive, stepwise, deterioration in the purchasing power of money.

The financial markets were, naturally, interested participants in public policies that favored growth. This essay reviews the manner in which depository institutions and other market participants adapted to the new circumstances by introducing innovations of various kinds. In part these innovations were designed to turn to practical account the opportunities of a relatively buoyant economy; in part they were responses to official intervention and controls, whose private intent was to counter or offset the public constraints. In both cases, their effects tended toward an economization in the use of liquid assets, especially of traditional money.

This essay attempts in broad terms to evaluate the circumstances that have seemed to favor the introduction of innovations, and to estimate whether the evolutionary process has had the effect of reducing or, on the other hand, aggravating the susceptibility of the economy to cyclical disturbances.

Both viewpoints can find support. The increased size and diversity of financial markets have not only catered to the changing needs of customers, but in a mixed economy buffeted by international, political and technological discontinuities, financial intermediaries have been able to dampen some of the shocks associated, for example, with inflation, and therefore to contribute to the resiliency of the economy and to an improvement in social well-being. Others, however, would view the process as fraught with danger to economic stability. The innovations, while they might in the short run contribute to a kind of economic exhilaration, in the long run risked weakening the financial foundation of the economy and thus creating the preconditions for liquidity crisis. In the past, financial panic had frequently been the trigger of

the most serious cyclical collapses, and there is no assurance that the U.S. economy, or the Western world, is exempt from an increased hazard of a more extreme business cycle than the cycles of 35 years following World War II.

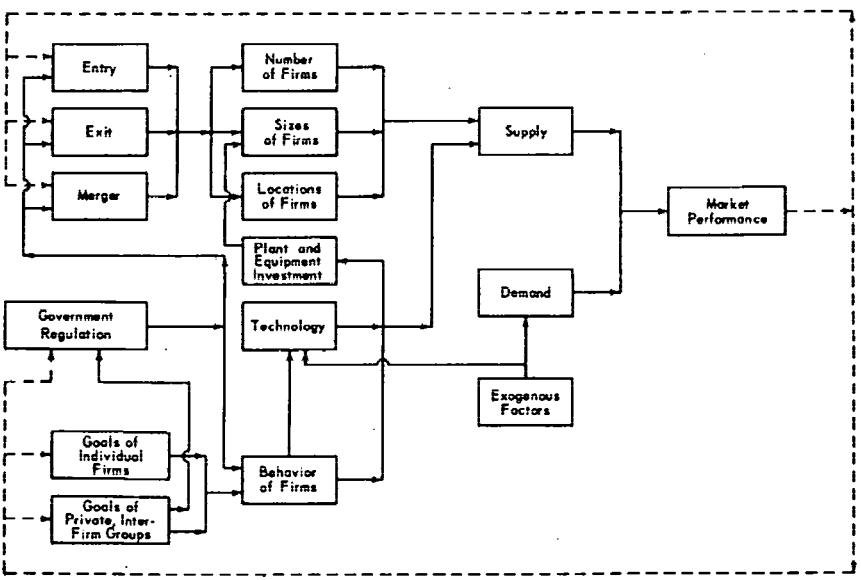
The Financial Environment

To lay the foundation for testing whether financial innovation is socially beneficial, the motivation of market participants will be analyzed using insights drawn from several models of the market process [4, 5, 6, 7, 12, 15, 16, 19].[1] In such models of economic change, innovation—a significant change in observed conduct or institutions—occurs when factors favoring improved conditions overcome the inertia of existing arrangements.

The potential for innovation arises from variations in income expectations, knowledge, market size, relative prices, the rules of regulatory bodies, or technology. These will open up possibilities for higher levels of well-being (accounting-dollar profits, risk-adjusted profits, or satisfactions) for a number of market participants. On the other hand, resistance to innovation exists continually as a consequence of aversion to risk, economies of scale, "externalities," market failure, political considerations, and tradition. Innovators must thus surmount many negative feedbacks by convincing present and potential market participants—especially customers for the end products and regulators—that their well-being will be raised by new arrangements.

A framework of this market process is sketched in the chart below. In this flow chart, financial and other firms face numerous restric-

Simple Schematic of the Market Process



Source: [16], p. 10. Reproduced by permission of the copyright holder, Holt, Rinehart & Winston, Inc.

[1] Numbers within brackets indicate references cited at the end of this paper. The primary model from which the following synthesis is derived is [15].

tions on their operations including—but going beyond—the balance sheet requirement that the sum of assets less liabilities and net worth must equal zero. Firms can manipulate many policy tools, but face constraints such as internal "rules of thumb," levels of demand, reactions of competitors, and regulatory policies. The following analysis looks at some of the major factors affecting financial innovation.

A first important factor is market structure. Perfectly competitive financial enterprises view interest rates as given, and vary their input and output quantities to maximize profits. Less-than-perfectly competitive financial firms operating in unregulated markets, however, accept the possibility that competitors may retaliate by varying interest rates. They are thus likely to prefer different kinds and proportions of assets and liabilities. Although these preferences may trim profits, they also may reduce risk and may allow the benefits of specialized knowledge to improve the tradeoff between return and risk. (The constraints seemed to work in the past, when competitors not bound from within fell by the wayside.)

Regulation adds another layer of restrictions on firms. The aim of regulation is often to reduce risk for society as a whole, as is shown by its protection of proven practices and existing firms. The more risk-averse the regulators, the greater the number of restrictions. The resulting additional decision rules that would-be innovators must consider need not, however, restrict welfare, since they may prevent highly risky innovations that could inflict losses on market participants or other sectors of the economy [23].

Internal conditions may set the wheels of change in motion. Alterations in the goals or self-imposed restrictions of individual firms, multi-firm trade associations, and Government regulators can affect the behavior of individual enterprises. Firms can choose to invest in research and development to gain a technological edge, as well as in plant and equipment. In these ways, they can increase their scope of operations to the benefit of their customers. In doing so, they can attain a larger size and market share. Once the firms have attained large dimensions, they presumably can engage in diversified activities through pooling of risk and increasing division of labor to manage more complex portfolios. In these circumstances, smaller competitors may need to produce distinctive outputs in order to survive with small market shares.

The external environment is perhaps a more important influence on innovation. When the cost of submitting to an externally imposed constraint rises, many enterprises will search for ways to regain their previous status. They often seek to modify restrictions through private or public action; if they cannot do so, then they may innovate in ways that flow around the constraints.

If supply and demand conditions give rise to lower well-being than could be achieved by actions taken during the planning period—as firms and their regulators often believe—then market participants will respond to these conditions. Resulting innovations that do not meet with success in the marketplace will fall by the wayside.

If sharp changes in the environment occur while most market participants refuse to acknowledge them, then new firms may invade the market, old firms may suffer losses and leave it, enterprises may seek refuge in larger size by merging, or collective action may seek to control prices. More aggressive firms will probably tailor their production to customer needs through innovating. An extreme change in environment, combined with deep-rooted inertia, may even provoke the creation of an entirely new industry. The new industry, whose members often include adaptive survivors from the old one, may displace the old industry completely or partially. Transportation provides classic examples.

Financial Innovation: Sources and Nature

Several broad conditions are likely to induce financial innovation:

Impositions of new regulations;
Increasing variability of yields on assets and liabilities;
Changes in availability of balance sheet items;
Variations in competitive tendencies of enterprises;
Technological breakthroughs or cumulative smaller advances; and
External demand variations [19].

The responses to these stimuli will occur with a lag, as in any adaptive behavior mechanism, after the perceived need for action has overcome the inertia of tradition. Most of the resulting new arrangements are likely to be examples of one of the following four categories of innovation:

(1) Modifying the characteristics of an item determined externally (incorporating it into the firm's policy framework);

(2) Introducing an existing product from another market (another industry or country) into portfolios;

(3) Relaxing balance sheet constraints by stimulating the demand for assets or liabilities already offered; and

(4) Creating entirely new markets for products or services [19].

A majority of the innovations, cited in Table 1 below, appears to have increased the well-being of customers and the profits of financial firms. Some of them, however, may have generated net welfare losses for society as a whole even though they were profitable. One of the innovations, the one-bank holding company movement, spawned an extremely unprofitable institution: the bank-related real estate investment trust. Since Table 1 was compiled after the fact, it does not list would-be innovations that did not meet customer needs in their initial environment. Discussions of the birth and characteristics of most of the innovations cited in the table appear in [5, 6, 12, 15, 16, 17, 19, 20, 24].

Table 1. Selected financial innovations by depository institutions in the last three decades

Sector and date
Commercial banking:
"Computer banking" (1950s).
Negotiable certificates of deposit (1961).
Subordinated capital debentures (1963).
Short-term promissory notes (1965).
Eurodollars (1966).
Evolution of Federal Funds market (1960s).
Credit cards (1960s).
Multinational banking (1960s).
One-bank holding company form (1968).
Bank-related commercial paper (1969).
Loan repurchase agreements (1969).
Working capital acceptances (1969).
Floating prime rate (1971).
"Wild card" unregulated deposits (1973).
Floating rate notes (1974).
Automatic transfer service: "ATS" (1978).
Savings institutions:
Brokerage of savings accounts (1950s).
Mortgage participations (1957).
Transfers of funds from household savings (1970).
Negotiable order of withdrawal accounts (1972).
Credit union share drafts (1974).
Remote service units (1974).
Variable rate mortgages (1975).
Money market certificates (1978).

Source: [19], pp. 72–73, with additions.

In Table 1, it appears that many of the innovations in the commercial banking sectors have seemed to raise the risk levels borne by their providers. On the other hand, many of the innovations in the savings and loan association, mutual savings bank, and credit union industries have tended to be low-risk operations for these savings institutions. In the past, such tendencies may have reflected the portfolio diversity of banks, which can experience "pooling" of risk by spreading their operations over many markets. By contrast, savings institutions have had specialized consumer saving and lending portfolios.[2] More recently, banks and savings institutions have innovated by tying returns on some assets to open-market rates. Their use of floating prime rates and variable rate mortgages reduces the risk of damage from unanticipated inflation and the accompanying high rates payable on liabilities.

In Table 1, clusters of innovation seem to surround interest rate peaks. Also, commercial banks appeared to introduce few innovations

[2] As will be shown below, banks have had greater liquidity—lower loan-to-deposit ratios—than savings institutions since the Accord, thereby incurring lower asset risk. Also, combining multiple activities within one portfolio tends to reduce total risk, if the activities are somewhat unrelated to each other, for banks as for all investors.

in the fifties, while thrift institutions seemed to introduce few in the sixties. The reasons for this behavior lie not only in supply-side adjustments, but also in customer demands derived from the ebb and flow of economic activity.

Monetary Policy, Business Cycles, and Money Substitutes

Reliance on the services produced by money, which would be expected to affect financial innovation, has also been the basis for the central bank to conduct monetary policy. After the 1951 Accord, the Federal Reserve appeared to rely on interest rates as policy levers to govern the demand for money, and thus business activity. In the late sixties and seventies, it also seemed to include the growth rate of "M1" as one of its control mechanisms [12].

The familiar M1, cash and demand deposits, had been viewed as the medium of exchange and store of purchasing power. M1, earning no interest, is not even partially buffered against the ravages of inflation. Consequently, in the waves of inflation and tight money that have often climaxed in credit crunches [21], incentives to produce near-monies have become more powerful than in the pre-Accord era. The central bank has often provided further incentives by restraining the growth of M1 at such times, even while it recognizes that innovators will seek to evade that pressure.

After the waves of tight money have subsided, however, familiarity with the new substitutes for cash and demand deposits tends to keep them alive. The demand for them may not decline much after the crunch is over if the innovations are regarded as desirable (and, especially, low-risk) arrangements for the long haul.

Recognizing these considerations, as of early 1980:

> The Federal Reserve has redefined the monetary aggregates. This action was prompted by the many financial developments that have altered the meaning and reduced the significance of the old measures. Some of these developments have been associated with the emergence in recent years of new monetary assets—for example, negotiable order of withdrawal (NOW) accounts and money market mutual fund shares; others have altered the basic character of standard monetary assets—for example, the growing similarity of and the growing substitution between the deposits of thrift institutions and those of commercial banks [20, p. 97].

The revised definitions for "money" are as follows:

> M1–A—Currency plus demand deposits at commercial banks. (It is essentially the same as the old M1 with one exception—it excludes demand deposits held by foreign banks and official institutions.)
>
> M1–B—M1–A plus other checkable deposits at all depository institutions including NOW accounts, savings accounts subject to automatic transfer to checking accounts ("ATS"), credit union share drafts and demand deposits at mutual savings banks.
>
> M2—M1–B plus savings and small-denomination time deposits at all depository institutions, overnight repurchase agreements at commercial banks, overnight Eurodollars held by U.S. residents other than banks at Caribbean branches of member banks, and money market mutual fund shares.
>
> M3—M2 plus large-denomination time deposits at all depository institutions and term repurchase agreements at commercial banks and savings and loan associations [20].

Evidence of the popularity of substitutes for cash and demand deposits appears in Table 2. In the sixties and seventies, it appears that

the demand for money grew more slowly in recessions than in upswings, a not surprising finding. The table, however, does show a continuing high demand for near-monies.

TABLE 2.—TREND AND CYCLICAL BEHAVIOR OF GROWTH RATES OF NEW MEASURES OF MONEY

Period	Average annual percentage rates of growth of monetary aggregates[1]			
	M1–A	M1–B	M2	M3
Trend:				
1960–79	4.9	5.1	8.3	9.0
1960–69	3.7	3.8	6.9	7.2
1970–79	6.0	6.4	9.6	10.8
Peak to trough[2]				
1960 Q2–1961 Q1	1.9	1.9	6.5	7.0
1969 Q4–1970 Q4	4.8	4.8	5.7	8.7
1973 Q4–1975 Q1	4.2	4.3	6.2	8.2
Trough to peak:[3 4]				
1961 Q1–1969 Q4	4.2	4.2	7.2	7.5
1970 Q4–1973 Q4	6.8	6.8	10.8	12.9
1975 Q1–1979 Q4	6.2	7.1	10.6	10.6

[1] See the text for the definitions of the newly defined monetary aggregates. Data on the new aggregates are not available prior to 1960.
[2] Averages of annualized quarter-to-quarter rates of growth. The base quarter for each calculation is the quarter following the peak (peak is the 1st quarter shown).
[3] Averages of annualized quarter-to-quarter rates of growth. The base quarter for each calculation is the quarter following the trough (trough is the 1st quarter shown).
[4] Data for 1979 Q4 were the most recent figures available to the source. Also, 1979 Q4 may not have been a cyclical peak.

Source: Adapted from [20], p. 103.

M1–A, essentially the former M1, has grown at a slower pace than has M1–B since interest-earning check-like accounts became popular in the Northeast and in limited forms elsewhere during the mid-seventies. The enactment of the Depository Institutions Deregulation and Monetary Control Act of 1980 (Public Law 96–221), which will allow NOW accounts at all federally insured depository institutions in 1981, seems certain to stimulate M1–B at the expense of M1–A, accentuating their divergence. Innovations in corporate cash management instruments and in consumer time and savings deposits have produced even more rapid growth in components of M2. Indeed, a recent innovation emerging from the investment banking industry, the money market mutual fund, appears to have become so competitive with savings deposits that it is considered a component of M2, even though it is not a deposit. Moreover, efforts by corporations to store purchasing power in low-risk forms (not subject to the rate ceilings imposed under "Regulation Q" [24] since the early seventies) have produced even more rapid growth in the additional components of M3.

Another indicator of the economy's desire to mobilize the services of money by innovating is the rate at which it "turns over" the stock of money. The speed of this turnover, known as "velocity," is gross national product divided by the outstanding quantity of whatever monetary measure is considered. Clearly, a growing GNP can be funded by a larger stock of money, a higher velocity, or both. The richer the menu of liquid substitutes for traditionally defined money, the higher will be the velocity of narrowly defined money. This is brought about by the borrowing and lending activities of financial intermediaries mobilizing funds that otherwise might lie dormant.

Velocity of traditionally defined money accelerates when increasing desires to spend meet with resistance from a slowly rising stock of cash and checking accounts, if monetary policy is restrictive. As higher interest rates raise the cost of holding M1, the result will be a search for interest-bearing liquid assets. This, combined with the spending of cash on hand to avoid high borrowing charges, will reduce aversion to risk and thus favor innovation. As money substitutes then flourish, the velocities of various monetary measures are likely to diverge. The velocities of M1–A and perhaps M1–B would be rising, even while the velocities of higher-numbered monies might be steady or even falling—because their quantities would be rising rapidly. When economic activity and interest rates decline in recessions, reversals of such behavior could occur. Over the long run, the trend of velocities should reflect the behavior of the economy in defending itself against the secular climb in interest rates and prices, by minimizing reliance on M1–A.

Table 3 portrays such behavior. In it, rapidly changing velocities of M1–A and M1–B show that the relationship between spending and the quantity of traditionally defined money has been far from constant. M1–A and M1–B velocities tend to fall or to grow slowly in recessions and to soar in expansions, moving in sympathy with production and interest rates. M2 velocity, though falling faster in recessions, has shown a flat-to-downward trend, apparently indicating the substitution of alternatives to demand deposits. M3 velocity, plunging even more rapidly during recessions, has generally not recovered in expansions, suggesting that its additional rapidly growing components have been attractive refuges for corporate funds.

These developments may not have diminished the potency of monetary policy as it is now conducted; the central bank currently sets targeted growth ranges for all four of the monetary aggregates. Under Public Law 96–221, the Federal Reserve can eventually determine the reserves required to back up all accounts included in M1–B. The Federal Reserve is expected to pay closer attention to M1–B than to M1–A in monitoring and conducting monetary policy.

TABLE 3.—TREND AND CYCLICAL BEHAVIOR OF VELOCITIES OF NEW MEASURES OF MONEY

Period	Average annual percentage rates of change in velocity for monetary aggregates			
	M1–A	M1–B	M2	M3
Trend:				
1960–79	3.2	3.0	−0.1	−0.8
1960–69	2.9	2.9	−.2	−.6
1970–79	3.6	3.1	0	−1.1
Peak to trough:				
1960 Q2–1961, Q1	−1.7	−1.7	−6.3	−6.7
1969 Q4–1970, Q4	−.3	−.3	−1.2	−4.1
1973 Q4–1975, Q1	1.5	1.4	−.5	−2.4
Trough to peak:				
1961 Q1–1969, Q4	3.1	3.1	.1	−.2
1970 Q4–1973, Q4	3.6	3.5	−.4	−2.4
1975 Q1–1979, Q4	4.9	4.1	.6	.6

Source: Adapted from [20], p. 105. See the footnotes to table 2.

It does appear that rising velocity of traditionally defined money has contributed to an effective increase in spendable funds, as sug-

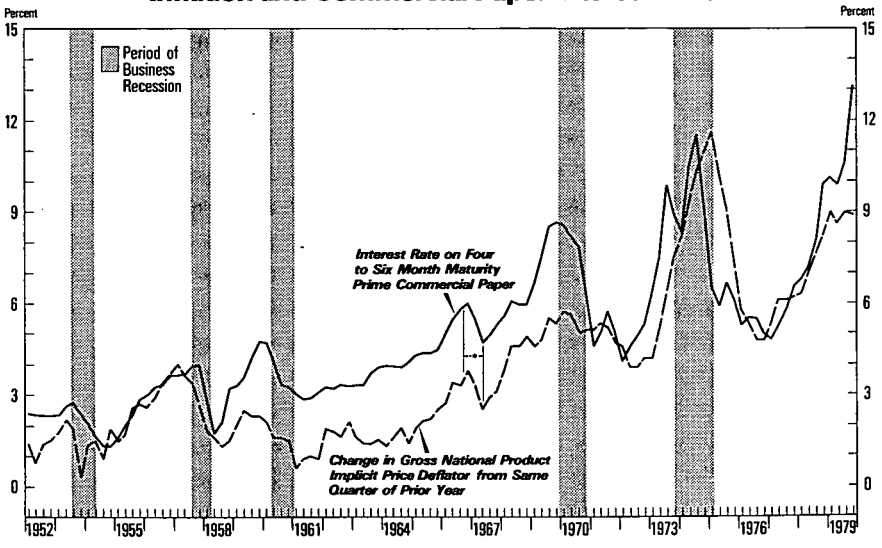
gested by loanable funds theories of financial market equilibrium[9]. In this way, the indirect contribution of financial innovations to economic growth can come at times when the central bank does not desire further economic expansion. This could provide a possible connection between innovation and business cycle.

Business Cycles and Financial Innovation

Instead of being considered consequences of business cycles, financial innovations are sometimes viewed as causes of the cycles [11, 14, 21, 22]. In this line of reasoning, financial innovations frequently reduce the liquidity of the economy during expansions and thus lower resistance to unanticipated adverse developments. An external shock thus can provoke a panic among vulnerable speculators, which in turn sets contractionary forces in motion in the real and financial sectors not originally affected.

To test such a contention, the relationships between financial innovation, financial cycles, and business cycles can be suggested by graphical analysis. The first chart portrays measures of inflation and interest rates that indicate the supply and demand for funds in the economy [9] and especially in the financial sectors [12]. It suggests that a strong incentive to innovate, the lost return from holding idle cash, has trended upward since the Accord. Valleys in inflation and interest rates during recessions and early phases of recoveries have been followed by ever-higher peaks—except for the "soft" inflation rate in the late fifties and early sixties.

Inflation and Commercial Paper Interest Rates



* Period of slow growth sometimes identified as a Mini-Recession.

Data Source: Figures accessed from the files of Data Resources, Inc. Data are as of March 1980.

This chart also shows that high, and especially rising, rates of interest and price change often signal that a downturn lies ahead. High short-term interest rates precede, and often proceed through, business

cycle peaks.[3] This phenomenon may be linked to the clustering of financial innovations around interest rate peaks, through the reaction of the central bank. Taken by themselves, the innovations prolong the life of business upswings, by opening up "escape hatches" through which alert market participants can flee some of the effects of financial stringency on their operations for a while. The innovations may, however, incite a further tightening of monetary policy if the central bank views them as contributing to,[4] as well as reacting to, the inflation that led it to tighten the monetary screws in the first place.[5] If the fires of inflation are being fueled by cost-push factors, however, restraining innovations in the financial sector on the grounds that they promote irresponsible spending and investment could set strong recessionary forces in motion, without dampening the underlying cost-and-price raising disturbances.

Another connection exists between the financial climate and the pace of innovation. As is shown in the Appendix, high rates of inflation and interest slash business and consumer confidence. Weak consumption and investment are then likely to follow with varying time lags, providing another reason why tight money is liable to set recessions in motion. During such times of uncertainty, when restrictive monetary policy, rampant inflation, or rising unemployment provoke fears for the future, aversion to risk increases. Many investors seek refuge in riskless private and Treasury securities, thus raising the yields on illiquid, lower grade, or unfamiliar investments [8]. In the cold light of the risk-fearing environment, market participants are likely to reexamine their reliance on financial innovations. Indeed, avoidance of risk tends to persist well into the subsequent recovery, as market participants seek the comfort of strengthened balance sheets. At such times, innovations become institutionalized only if they seem desirable for years to come, or if significant resources have been invested in them.[6]

Sectoral Financial Balance: Trends and Cycles

The causes and consequences of financial innovations may also be revealed in the balance sheets of the major private sectors. If the "liquidity" of one or more major sectors shows a marked downtrend, such a tendency would suggest that continuing innovations have raised the "efficiency" of the services provided by liquid assets and the well-being of market participants. The economy's balance sheets also, of course, reflect fluctuations of cash flows over business cycles and governmental incentives to borrow.

If downtrends in measures of financial balance have persisted despite periodic recessions, it would seem that they need not be the "cause" of

[3] The first chart also shows that interest rates tend to bottom out after the troughs of recessions, making them lagging indicators at such times. See [9] for a lag structure model of interest rates.

[4] As was noted above, if innovations boost the velocity of the narrowly defined money stock, then the rising velocity—which can be equated with an increase in the supply of loanable funds—might be viewed as undermining the intent of a restrictive monetary policy.

[5] As this paper is being written, the Federal Reserve has set forth an "inflation-fighting" program of credit restraint to curb consumer, business, bank, nonbank finance, and foreign bank use of many of the innovations cited above. See Board of Governors of the Federal Reserve System. Monetary and credit actions. Federal reserve bulletin, April 1980, pp. 314–318.

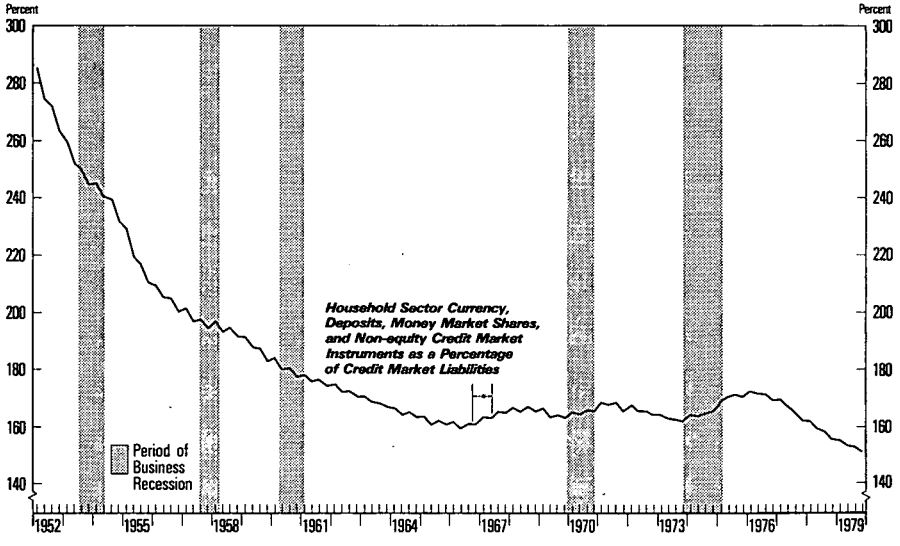
[6] Losses experienced by market participants, who underestimated the true risk involved, may then de-institutionalize innovations such as real estate investment trusts associated with the banking industry, by writing down the value of the invested resources.

the slumps, especially if business downturns have accompanied high as well as low absolute ratios of financial strength. Institutional memory of "liquidity crises" suffered by individual firms, industries, or sectors is likely to restrain later reliance on the innovations associated with specific crises, however, and to set in motion actions to fortify portfolio positions—at least until confidence returns.

Such contentions can be analyzed by examining the health of the balance sheets ("liquidity" in a broad sense) of households, businesses, commercial banks, and savings institutions. These measures are painted against the same backdrop as that of the first chart, to illustrate trends after 1951 and fluctuations through five recessions and the "mini-recession" of 1966–1967.[7] In all four sectors, the measures focus on debt (asset and liability) portfolio items, excluding equity items that are less directly related to credit market activities by depository institutions [12]. Data are taken from the Federal Reserve Flow of Funds Accounts [2].

The largest sector, households, is the ultimate source of funds for the economy. The second chart graphs a summary measure of its financial balance, the relationship between its deposits plus credit market assets and its credit market liabilities.[8] Starting from a highly liquid portfolio position that reflected the memory of the Depression and the unspent earnings of the wartime and postwar years, the household sector lowered its aversion to risk. Household financial balance plunged steadily, without much apparent effect from three recessions,

Household Financial Balance



*Period of slow growth sometimes identified as a Mini-Recession.

Data Source: Board of Governors of the Federal Reserve System, Flow of Funds Accounts, as accessed from the files of Data Resources, Inc. Data are as of February 1980.

[7] This author has presented shorter-range indicators of the condition of the financial system elsewhere [27].

[8] Household credit market assets consist of money market mutual fund shares, U.S. Government securities, State and local government securities, corporate and foreign bonds, open-market paper, and mortgages owned. Household credit market liabilities consist of mortgages owed, consumer credit, bank loans "not elsewhere classified," and other loans. The household sector includes households, personal trusts, and nonprofit organizations [2, p. 541].

as innovations in Government-aided mortgage [24] and consumer credit markets proliferated in an environment of high consumer confidence.

In the early stages of the 1966–1967 and later two downturns, however, household financial balance became stronger for a while, continuing to rise until the subsequent expansions were under way. Since early 1976, consumers on balance have reacted to inflation not by saving more and spending less to protect their portfolios as in the past, but by reducing their liquidity. The recent downtrend in their saving and balance sheet strength seems to have been aided by ongoing innovations in consumer credit and mortgage markets. There also have been deterrents to financial saving such as "Regulation Q," progressive income taxes, and retirement plan contributions. In partial reaction, financial innovations such as money market mutual funds, money market certificates, and encouragement for eventually deregulated rate deposits in Public Law 96–221 have sought to provide incentives for saving despite inflation.

Even as households became somewhat more reluctant to supply funds to borrowers, the largest of them, nonfinancial business, grew less liquid itself. As is shown in the third chart, the balance between business financial assets and credit market liabilities [9] has displayed a marked downtrend. Cash management techniques and liability management arrangements have allowed businesses to lessen the traditional cushions of liquidity that had been thought essential to guarantee their survival. (Tax incentives, governmental guarantees, and inflation, all of which stimulate borrowing, also contributed to this trend.)

Business balance sheets, weakening during expansions when the lure of profit lessens aversion to risk, have, according to one view, flashed long-lead "early warning signals" of most recessions since the Accord. The lessening of liquidity in the fifties and sixties can also be viewed as a trend phenomenon that mirrored the increase in business confidence resulting from the Government commitment to full employment—in large part because a widely feared "secondary postwar depression" never materialized.

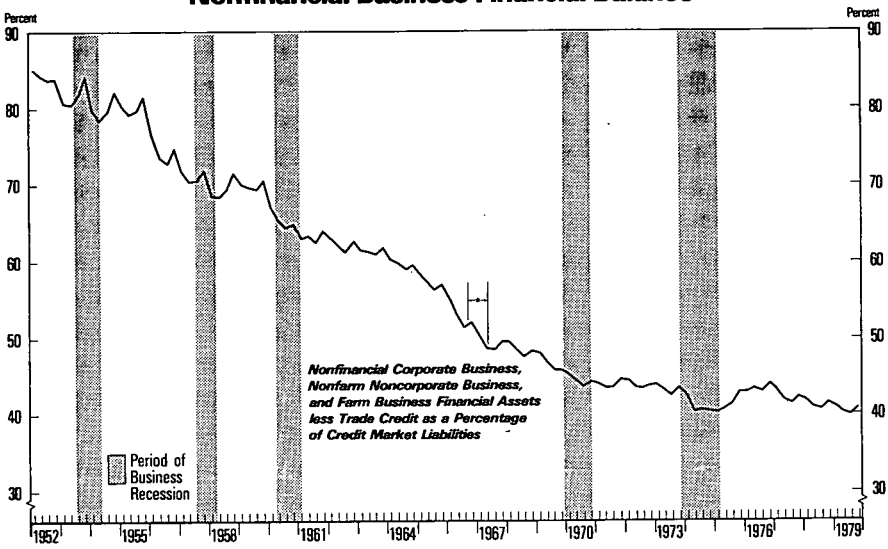
Meanwhile, after recessions have trimmed sales expectations, the resulting weaknesses in inventory and capital investment eventually allow business balance sheets to strengthen somewhat.[10] Business caution in protecting portfolios lasts until the financing demands of increasing production again tap treasuries, as was the case in the last expansion.

Increasing reliance of business on external finance occurred as the banking system became more aggressive in catering to business clients. The fourth chart demonstrates that U.S. banks have more than doubled their aggregate loan-to-deposit ratios since the Accord [2, pp. 549, 780]. Government securities, which had been protected against loss by pegged

[9] Nonfinancial business financial assets consist of deposits, credit market instruments, and miscellaneous financial assets. Nonfinancial business credit market liabilities consist of corporate bonds, tax-exempt bonds, mortgages, bank loans "not elsewhere classified," and other loans. This sector includes the accounts of farm business, nonfarm noncorporate business, and corporate business [2, p. 542]. Trade credit is excluded from this measure since it is endogenous to the sector.

[10] Business credit demand rises early in most recessions because profits sag, while capital spending programs previously set in motion plus unanticipated inventory investment must be financed.

Nonfinancial Business Financial Balance

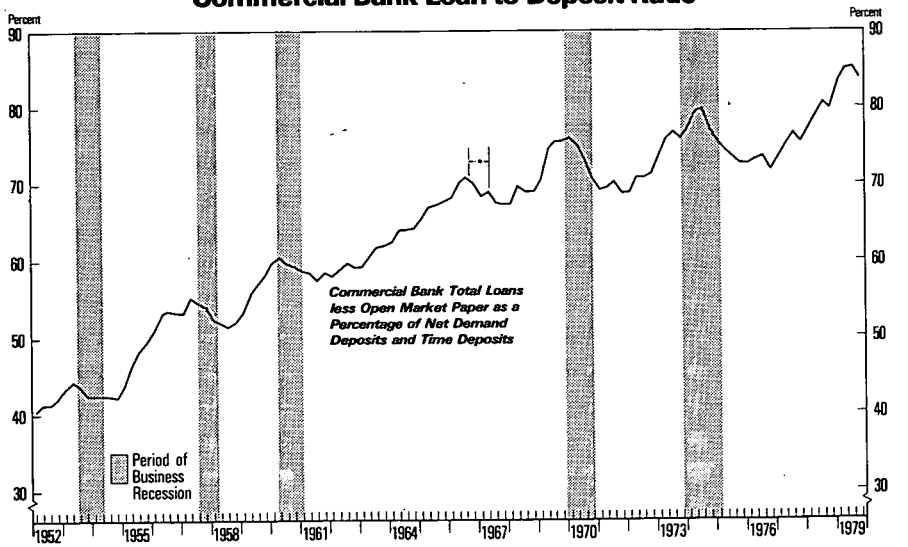


* Period of slow growth sometimes identified as a Mini-Recession.

Data Source: Board of Governors of the Federal Reserve System, Flow of Funds Accounts, as accessed from the files of Data Resources, Inc. Data are as of February 1980.

interest rates prior to the Accord, lost much of their appeal in the fifties. Banks also increasingly monitored their other earning assets, a process known as "asset management." By doing so, the banks were able to increase their loan portfolios, aided by customer demand for deposits of a traditional nature during a relatively low-interest era when Regulation Q was not very restrictively applied [24]. Banks did not feel the need to innovate aggressively.

Commercial Bank Loan to Deposit Ratio



* Period of slow growth sometimes identified as a Mini-Recession.

Data Source: Board of Governors of the Federal Reserve System, Flow of Funds Accounts, as accessed from the files of Data Resources, Inc. Data are as of February 1980.

In the early sixties, business (and consumer) financing demands began to impinge upon supplies of traditional deposits that were somewhat restrained by Regulation Q. The banks sought greater freedom in issuing somewhat less-regulated liabilities: both deposit (certificates of deposit) and nondeposit obligations. Their success in this process of "liability management," in turn, led to further aggressiveness in asset markets. Banks grew confident that, with access to new forms of borrowing, they could fund somewhat illiquid loans to a greater extent than in the past. Banking innovations thus have proliferated, in part reflecting the "aggressive" bank behavior associated with the bank holding company movement [5, 10].

The liquidity of the banking system is, however, sensitive to swings in business activity. During economic expansions, loan demand increases more rapidly than does deposit supply. This tendency is intensified by low demand for traditional deposits and a scramble for funds by borrowers during the "credit crunch" phase around the end of expansions [21]. Accordingly, bank loan-to-deposit ratios have been roughly coincident indicators of recession peaks—except for the inflation-stimulated ratio of the last recession. (Non-business borrowing may taper down as consumer confidence falls before the business cycle peaks, while business borrowing is still rising.) As do others, the banks experience cyclical episodes of reliquification and caution in the late stages of recessions and in recoveries. Likewise, when confidence returns during expansions, they tend to lower their liquidity, as has been the case since 1976.

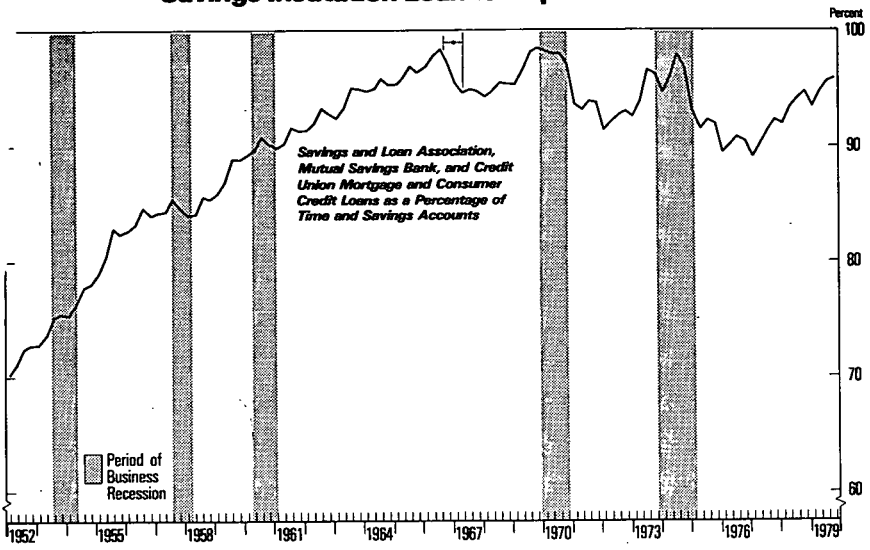
Unlike banks, savings institutions as a group have not become progressively less liquid; their lending behavior fell into two clearly demarcated periods [2, p. 551]. The fifth chart shows that they became more aggressive lenders in the fifties and early sixties. Demand for their traditional assets, mirroring the housing and consumer-goods upswings in a high-employment environment, combined with their freedom to attract deposits without restraint from Regulation Q, allowed them to become less liquid without innovating extensively.[11] (The growing extent of their activities produced speculation among monetary theorists that the potency of monetary policy—then directed at banks—could have become reduced. This hypothesis was similar to the one that provoked the central bank to redefine what is "money" in 1980.)

The upward march of savings institution loan-to-deposit ratios was abruptly halted by the "credit crunch" of 1966. Then, the almost-zero liquidity of many savings institutions was squeezed further by the withdrawal of deposits whose owners sought open-market returns greater than the institutions could pay. Federal regulators, pursuant to Public Law 89-597, then applied effective Regulation Q rate ceilings to them and to banks,[12]—even while a general decline in interest rates was beginning. The memory of that spell of illiquidity, and similar episodes of almost as high loan-to-deposit ratios during the next two recessions, stimulated savings institutions to seek greater liquidity in

[11] Mortgage innovations occurred in the Government sector in ways that seemed to be beneficial to savings institutions and other lenders [24.]

[12] Strictly speaking, Regulation Q rate ceilings have not been applied to credit unions, whose rates are limited under separate Federal authority.

Savings Institution Loan to Deposit Ratio



* Period of slow growth sometimes identified as a Mini-Recession.

Data Source: Board of Governors of the Federal Reserve System, Flow of Funds Accounts, as accessed from the files of Data Resources, Inc. Data are as of February 1980.

their assets and lesser liquidity in their liabilities. Their innovations such as longer-term fixed rate deposits had apparently lowered their vulnerability to rising interest rates until recently.[13]

The liquidity of savings institutions did not, however, improve much in the last two recessions. Instead, under the rate schedules for deposits provided by Regulation Q, deposits at savings institutions were unattractive in the tight-money phases of the recessions, becoming attractive again only when falling open-market rates prevailed. Meanwhile, as both mortgage demand and supply declined during the recessions, the loan-to-deposit ratios of savings institutions softened well after the business cycle peaks. Then, the ratios tended to revive somewhat as inflation, interest rates, and mortgage demand surged forward again in expansions. Even though aggregate loan-to-deposit ratios for savings institutions have not reattained the heights of earlier periods, their high levels suggest that the institutions are essentially fully invested.

Conclusions

It would appear that although the economy has been growing somewhat less liquid since the Accord, the rate of attrition from the highly liquid balance sheets of the fifties has not been worsening. Since mid-century, the economy has been mobilizing the services of liquid assets to a significant extent, at least partially in reaction to rising interest rates and prices. Its occasional pauses in doing so, associated with recession-related episodes of avoiding risk and with regulatory responses to possible risks in some innovations, have apparently restrained most innovations to those raising social well-being over the three decades. In a sophisticated economy, such developments need

[13] The 1978 innovation of the 6-month money market certificate, seemingly designed to aid savings institutions and housing [24, pp. 85–87], apparently produced opposite results when interest rates soared to double-digit ranges.

not provoke another Great Crash. Financial innovations do appear to cluster around business cycle peaks. At such times, the actions of the central bank may contribute to recessionary forces. Within the last three decades, however, recessions have occurred while ratios of financial balance have been both "high" and "low," making it hard to place the blame for business slumps on financial innovations by themselves.

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Appendix. Inflation, Interest Rates, and Economic Apprehension

Perceptions of the outlook for the economy apparently can be quantified by at least two measures. The first, the price-to-earnings ratio of a broadly based index of common stocks, the Standard and Poor's 500 Stock Average, indicates a forecast of the business environment based on financial investment. The second, the level of the well-known Survey Research Center Index of Consumer Sentiment, indicates household confidence in the future and satisfaction with the present. Low-confidence levels of these measures are strongly associated with high inflation, with its now-generally-accepted welfare losses to society, and with inflation's companion, high interest rates.

The following correlations demonstrate these associations. The correlations are computed over the 100 quarters for which the consumer sentiment variable can be approximated by the data source. The inflation and commercial paper interest rates are those plotted in the first chart in the text.

	Commercial paper rate	GNP inflation	Price-earnings ratio
GNP inflation	0.83		
Price-earnings ratio	−0.54	−0.72	
Consumer sentiment	−0.75	−0.84	0.56

Source: Computed from figures accessed from the files of Data Resources, Inc. Data are as of March 1980. A correlation of 1.00 in absolute value indicates complete association of 1 variable with another; a correlation of more than 0.26 in absolute value is considered "highly significant," differing from no association at the stringent 1 percent level of statistical significance.

VI. LABOR INSTITUTIONS AND LABOR RELATIONS

MANPOWER POLICY: RETROSPECT AND PROSPECT

By Eli Ginzberg

1. Introduction

There is more than one way in which the theme of manpower policy during the past half century can be addressed within the context of the Joint Economic Committee's concern with economic stabilization over the business cycle. We could take advantage of the long time span since the Great Depression and, at the beginning of 1980, identify a series of themes, some recurrent, some unique, which emerged during these five decades and which warrant attention and evaluation for their possible contribution to the armamentarium of cyclical policy instruments. Alternatively, we could opt for a chronological approach and pay attention to the specific macro conditions which prevailed at different stages of the economy's evolution and which called forth different manpower responses. A third approach would be to attempt a merger of the thematic and the chronological which is the one that will be followed.

One of the most powerful doctrines in economics is the theory of comparative advantage which implies that gains follow specialization, and it is anomalous that economists frequently fail to benefit from their own theories. As a longtime participant observer of the manpower scene I see every reason to take advantage of direct experience. Unlike the more "scientifically oriented" of my colleagues, I do not believe that economists, or any other social scientists, can escape from their values, preconceptions, and prejudices and I believe that the same holds for those in the natural sciences, although the theories of the latter can usually be subjected to more rigorous objective tests.

My decision to start with a chronological approach is reinforced by a conviction that societies, like individuals and intermediary institutions, repeatedly confront an uncertain future to which they must respond, if only by deciding to do nothing different from what they have been doing—which, of course, itself is a response. Hence, to understand the evolution of manpower policy in the U.S., it is not only desirable but necessary to probe the different challenges on the employment front to which manpower policies sought to respond.

Let me recall the differences between my two mentors, Wesley C. Mitchell and John Maurice Clark, to the Great Depression of the early 1930s. It was Mitchell's view that the federal government should intervene as little as possible in 1932 and 1933 since he was convinced that the long delayed recuperative forces of the market would soon turn the economy around. J. M. Clark was an activist; he had a view of the

economy that Keynes later elaborated and popularized: once the downward threshold had been pierced, income and employment could keep declining until the economy ground to a halt. If two of the nation's, in fact, the world's, leading economists, could assess the evidence so differently and offer such different advice, there is clearly much to be gained from a retrospective on manpower policy that remains sensitive to the changing macro context. To assist the reader in following the details of the story we will establish some gross demarcations: the first covers the sixteen years of the *Depression, War, and the Reconversion;* the next, the Truman-Eisenhower era which can be designated as *The Years of Domestic Tranquility;* third, the last two decades can be entitled *Activism and Uncertainty* encompassing the administrations of Kennedy, Johnson, Nixon, Ford and Carter.

2. Chronology

A. Depression, War, and Reconversion

An historical account of manpower policy in the United States which would include more than its cyclical manifestations would have to start at the beginning of the Republic, when a slave was defined for purposes of representation in Congress, followed by the proximate termination of the slave trade, open immigration, and the use of the military in the conquest and settlement of the West.[1]

Moreover, if the focus of the present effort were to move beyond federal policy and include private-sector efforts, we would have to include the attempts of leading corporations in the 1920s to reduce seasonal and, to a lesser extent, cyclical fluctuations.[2] But in the present context the Great Depression is clearly the start of the story.

For the larger part of the 1930s the nation was afflicted with the most devastating depression in its history: the unemployment rate reached a peak of at least 25 percent; many workers were forced onto part-time schedules; manufacturing wages dropped to 5 cents an hour. Unemployed persons sold apples on the streets, foraged in refuse cans for food, stood in line for a bowl of hot soup provided by a philanthropic organization.

The overwhelming electoral victory of Franklin Delano Roosevelt over Herbert Hoover was an unequivocal signal from the American people that they had lost faith in the market to provide jobs and income for all who were able and willing to work. Consequently, President Roosevelt acted early and strongly to provide through the newly established Civilian Works Administration, later the Works Progress Administration (WPA), both jobs and income for millions of the unemployed.

Even in retrospect it appears that the new administration had little option. It is possible that the new leaders might have legislated a dole without work, but the experimental mood and mode of the New Deal did not favor such a choice. The work ethic was deeply embedded in the American way of life. There was no reason to flout it once it had been decided to rely upon a spending policy to turn the economy around.

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[1] Good Jobs, Bad Jobs, No Jobs, Eli Ginzberg, Harvard, ch. 20.
[2] The Illusion of Economic Stability, Eli Ginzberg, Harper, 1939, ch. II.

Moreover, the passage of the Social Security Act in 1935 indicated that the federal government, on its own and in cooperation with the states and the private sector, would establish income supports for persons who had lost conventional sources of earnings as a result of unemployment, old age, or death of the principal wage earner.

Cyclical and secular goals can never be sharply differentiated. The Aid-to-Families-With-Dependent-Children provisions were adopted to help reduce the inflow of women into the labor force. Old Age and Survivors Insurance (OASI) was also expected to reduce the numbers seeking jobs. Unemployment Insurance (UI) gave the short-term unemployed some income when they were laid off or discharged.

With all these new federal supports in place, the national economy was shored up against a new severe decline. Nevertheless, doubts were soon raised about the effectiveness of public employment, not only through WPA but also the Civilian Conservation Corps (CCC) and the National Youth Administration (NYA) as a lasting solution to the nation's severe unemployment. With the 1937 setback and the slow recovery that followed, the doubts increased. Many saw no early escape from the high, if falling, levels of chronic unemployment that had characterized the entire decade.[3] In 1938, over 10 million workers were unemployed and less than 29 million were on the payrolls of nonagricultural establishments.[4]

The nation's mobilization for war in 1940 and 1941, followed by its becoming an active belligerent on December 7, 1941, led to a strikingly rapid change in the labor market. The expansion of the defense industry and the Armed Forces proceeded at such a rapid pace that the more than 10 million unemployed in 1938 shrank to 2.7 million in 1942 and to 1 million in 1943 while the total number of employees in nonagricultural establishments expanded by almost 10 million between 1938 and 1942.[5]

From the standpoint of manpower policy, we should note that the federal government made a decision to rely as far as possible on the "free labor market" to obtain the workers it needed to man the new wartime factories and offices. The government established some facilitating machinery, such as the War Manpower Commission and its Regional Offices, which sought to match job seekers and employers; the President, reacting to the pressure of black leaders, moved to reduce discrimination in war employment; the propaganda machines urged women to enter the labor market as a matter of patriotic duty and they responded in large numbers.

Only rarely were the powers of the Selective Service System used to "force" workers to accept or remain at designated civilian jobs. In 1944 the Under Secretary of War, Robert Patterson, asked Congress to legislate the regulation and control of the civilian labor market. Although some shortages engendered by a strike or other malfunctioning of the labor market interfered with military output, Congress and the nation, satisfied with how well the voluntary system was working, refused to respond to Patterson's request for draconian controls.

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[3] Historical Statistics of the United States, U.S. Department of Commerce, Washington, D.C., 1960, p. 73.
[4] Ibid.
[5] Ibid.

As the war finally drew to a close, there was concern about the recurrence of a major depression and large-scale unemployment as a result of the demobilization of military and naval establishments, which comprised more than 11 million persons, and the necessity to convert the economy from war to civilian output. The passage of the GI Bill contributed to reducing the number of veterans immediately searching for jobs, but except for this one piece of legislation, the diffuse concerns about a postwar depression did not lead to action, at least federal action. Nevertheless, the Committee for Economic Development under the leadership of Paul Hoffman undertook a major educational campaign to encourage businessmen to move as expeditiously and strongly as possible once the war wound down to reconvert their factories to meet what he correctly estimated would be an explosion of civilian demands on the economy.

In 1945 and again in 1946, Congress debated the desirability of a Full Employment Act which eventually was passed into law as the Employment Act of 1946. The story of this legislation has been chronicled.[6] An oversimplified view might see the Employment Act as the institutionalization of the lessons of the New Deal. This legislation stipulated that never again should the federal government stand by and fail to act if the economy went into a tail-spin. In the Employment Act, Congress declared that it was the obligation of the federal government to use all of its powers to facilitate the economy's operating at a high level of employment, output and income and, in the event of a decline, to use its powers to help restore the economy to a high level of performance.

B. The Years of Domestic Tranquility

The economic recession which so many economists expected to follow the Armistice fortunately did not materialize, but during the second half of the 1940s the unemployment rate reached a monthly peak of over 7 percent. But President Truman, beset by difficulties abroad and feuding with the Congress on many issues, did not launch any manpower initiatives other than some steps to desegregate the Armed Forces after his surprise election in 1948. The lackluster performance of the economy and the soft employment picture remained characteristic until after the outbreak of hostilities in Korea.

President Eisenhower did not believe that presidents had to be activists; he was certain that, after the traumatic experiences of the Great Depression, World War II and Korea, the American people looked forward to the federal government's keeping a low profile. Advised by an ultra-conservative Secretary of the Treasury, George M. Humphrey, and a sophisticated academic economist, Arthur F. Burns, the President interpreted the Employment Act of 1946 to mean that in the event of a cyclical downturn, the federal government could incur a budget deficit for one year.

His conservative stance notwithstanding, President Eisenhower signed an important piece of manpower legislation in 1958, the Na-

[6] The Employment Act—Past and Future: A Tenth Anniversary, edited by Gerhart Colm. National Planning Association. Washington, D.C., 1956; The Employment Act and the Council of Economic Advisers, 1946–1976, H. S. Norton, University of South Carolina Press, Columbia, South Carolina, 1977.

tional Defense Education Act, which Congress passed in response to the launching of Sputnik and which legislated the expansion of the nation's supply of scientists and engineers. Although the President did not really approve of the federal government's financing higher education, he could not veto a measure which Congress defined as a priority closely linked to the nation's defense. But he vetoed not once but twice Senator Douglas' bill aimed at having the federal government assist distressed areas to improve their economies and increase their employment.

C. Activism and Uncertainty

During his campaign for the Presidency, John F. Kennedy talked about "getting the country moving again," but in accordance with the dictates of politics and his own underlying conservatism he did not specify just how he planned to accomplish this goal if he emerged the victor. In 1961, the Area Revelopment Act (ARA), a modification of Senator Douglas' twice vetoed effort to help distressed areas, was passed and was signed by the new President. With this legislation the federal government reentered the manpower arena in a modest and unobtrusive fashion. The ARA authorized the use of federal funds for the short-term training (up to 90 days) of the labor force to encourage employers to relocate in areas of high unemployment. For the first time since the 1930s, the federal government became directly involved in funding manpower training with an aim of expanding employment. Although it was a modest effort with small funds spread over a great many locations, it did represent a departure in policy: it was an acknowledgement that the market alone might not assure jobs to all who wanted them and were able to work.

Despite the President's campaign promise to "get the country moving again," the unemployment rate during the early months of 1962 rose above the 7 percent level and the recovery from the third recession in a relatively few years found the country at a new high level of unemployment. Largely under the Congressional leadership of Senator Joseph Clark and Representative Elmer J. Holland of Pennsylvania, an extensive record had been developed in 1960 and 1961 through hearings, research, and expert testimony about the "manpower problem"; this record laid the basis for a more direct and focused effort to cope with the distressingly high levels of unemployment. Much of the responsibility for rising unemployment was ascribed by manpower advocates to automation which in turn suggested the remedy: retraining the workers who had lost their jobs as a result of technological advances.

The Council of Economic Advisers (CEA) under Walter Heller was unimpressed by both the analysis and the remedy. In its view the trouble stemmed from a deficiency in overall demand; the solution lay in macro-stimulation. But the manpower protagonists found support among the Federal Reserve Board, in the U.S. Department of Labor, and above all in both Houses of the Congress and in both political parties.

The Manpower Development and Training Act (MDTA) was passed with large bipartisan majorities in March 1962 as a federal-

state training program with an appropriation of $81 million. Not long thereafter, the CEA's education of the President began to bear fruit and he became willing to pursue an expansionary macro policy which coincided with the turnaround of market forces.[7]

By the time Congress looked at MDTA in the late spring of 1963 it was clear that the CEA had won out over the structuralists: weak demand, not automation, had been the cause of high unemployment; the recovery had led to the reemployment of most skilled workers who had earlier lost their jobs. But the structuralists were also right: MDTA revealed the existence of a large number of marginal workers who needed training, workers who were poorly educated, without skills, with little work experience. The amendments of 1963 to MDTA opened the program to these disadvantaged persons.

Additional federal innovations were made in the following year via the manpower provisions of the Economic Opportunity Act which established the Job Corps (residential training centers) for seriously disadvantaged youth and the Neighborhood Youth Corps in which youngsters from low-income families would enroll in a work experience program which would provide them with a modest weekly wage. This latter program, it was hoped, would keep the cities cool during the long hot summer.

When the economy continued to expand after 1965, less because of the success of the fine-tuning of economists and more because of Vietnam and the growing inflation, both the Administration and Congress shied away from new legislative initiatives in the manpower arena. The group most in need of help were innercity blacks and in 1968 President Johnson sought the help of the National Association of Businessmen; he asked them to lend a hand by recruiting and hiring large numbers of minorities. But the effort was aborted by the recession that got under way late in 1969.

The first Nixon Administration saw the emergence of a new dimension of manpower policy, federal job creation which had been dormant since the New Deal. In December 1970 President Nixon vetoed the new manpower act because it contained a provision for direct job creation. Six months later, faced with the release of large numbers of Vietnam veterans into a soft labor market and a Democratic Congress committed to federal job creation, the President signed the Emergency Employment Act—a $2.2 billion, two-year job creation effort. It should be noted parenthetically that the AFL–CIO was a principal lobbyist for the job creation approach.

In the succeeding two and a half years the administration of manpower programs clearly called for decentralization and decategorization, but this essential reform was held up because the Nixon Administration did not want to accept a permanent job creation title in the design of the Comprehensive Employment and Training Act (CETA). A compromise was finally worked out which limited the new job creation title to a relatively small number of slots, 200,000, to serve the structurally unemployed.

President Ford took office in August of 1974; in September he reviewed the state of the economy with 100 leading authorities and re-

[7] Employing the Unemployed, edited by Eli Ginzberg, Basic Books, New York, 1980, ch. 1.

ceived an optimistic assessment, but shortly thereafter the economy turned down, headed for its worst post-World War II recession.

The Democratic leadership in the Congress, dissatisfied with the Administration's cautious proposals, decided to take the lead to cushion the impact of prospective large increases in unemployment and large losses in consumer purchasing power. It moved along three interrelated fronts by creating about 200,000 additional public service jobs, this time for the cyclically unemployed; extending the UI system to provide support for up to 65 weeks, and providing unemployment assistance for considerable numbers of workers who had previously not been covered by the UI system. Since even at its peak, public service employment (PSE) provided work and income for no more than 1 out of every 25 of the unemployed, unemployment insurance and unemployment assistance carried most of the responsibility for supporting those who had lost their jobs. But the Congress had established the principle of using PSE as an explicit counter-cyclical tool.

The response to the recession of 1974–75 had drawbacks. There were two distinct PSE programs on the books, one aimed at helping the structurally unemployed, the other, the larger effort directed to the cyclically unemployed. In 1976 under the leadership of the Senate, Congress moved to increase the targeting of PSE in favor of the structurally unemployed, a position that it reaffirmed and strengthened in the reauthorization of CETA which it passed in 1978.

But we must go back and look more closely at the early days of the Carter Administration which came into office in January 1977. Within the first few months, the new Administration placed heavy bets on manpower policy, most importantly by allocating half of its $20 billion stimulus package for the expansion of manpower programs (mostly PSE) and using its influence to obtain a comprehensive Youth Act from the Congress. The Administration promised to expand PSE from a level of under 300,000 to 725,000 within twelve months, a promise that it kept and even exceeded.

But doubt and confusion accompanied the successful expansion of PSE.[8] The budget advisors found the program very costly; the CEA expressed doubts about whether these large-scale federal expenditures were leading to a net increase in jobs or only to a substitution of federal for state and local dollars; many members of Congress were concerned about the fiscal and administrative integrity of CETA. The unchecked enthusiasm for manpower policy did not survive the first year of the new administration. The prolongation of recovery not only into 1978 but also into 1979 with the concomitant decline in the unemployment rate to below 6 percent also helped to erode support for the costly manpower programs, especially in a period of accelerating inflation.

The budget for fiscal year 1980 reflected the relative strengths of the opposing sides; the critics were able to obtain some reductions in the scale of the PSE program but they were not able to gut it. The budget

[8] Job Creation Through Public Service Employment, Vol. II, An Interim Report to the Congress, National Commission for Manpower Policy, March 1978; and Monitoring the Public Service Employment Program: The Second Round, National Commission for Manpower Policy, Special Report No. 32, March 1979. Both studies were prepared by Dr. Richard Nathan, at the time Senior Fellow of The Brookings Institution.

for fiscal year 1981, submitted at what appeared to be the onset of the long-delayed recession, contains the preceding year's compromise but with the important addition of the President's signaling his concern for the horrendously high and unyielding unemployment rates among disadvantaged teenagers by requesting additional budgetary authority that, over two years, would result in $2 billion additional funding.[9]

3. A Thematic Recapitulation

Now that we have presented the chronology of federal manpower policies and programs we are in a better position to focus on the principal themes that have informed this almost half-century of federal effort, involving fifteen administrations from the first term of FDR to the fourth year of the incumbency of Jimmy Carter.

The themes that offer the most understanding are those which address the ends that Congress sought to accomplish with its several interventions, although most legislation of course is responsive to multiple, not single goals. We will consider then the groups in the body politic which Congress singled out as beneficiaries of the new programs and the specific programs which Congress passed to accomplish its multiple objectives. An assessment of these different manpower programs and policies will help to inform the prospective section at the end of this analysis.

It is relatively easy to identify at least fifteen specific objectives which Congress hoped to achieve through manpower programming. Here in brief is a short summary of each of the objectives:

To provide jobs for the chronically unemployed, a goal which covers the New Deal efforts when so many regularly attached members of the labor force suffered long spells of unemployment and the more recent focus on the structurally unemployed, that is, on those who, despite the generally upbeat nature of the post-World War II employment situation, experienced substantial difficulties in getting and holding regular jobs.

To assure through the job creation programs of the 1930s as well as those of the 1970s, that the unemployed who were placed in federally supported jobs contributed to useful social output. The history of WPA is replete with illustrations of such useful output from construction projects to the production of original and attractive art. And Dr. Richard Nathan's studies of the work performed by persons on PSE in the late 1970s also point to useful output.

In light of our ethos that it is better for a person to earn his way than to receive a hand-out, Members of Congress have sought to protect the self-respect of the unemployed by providing them with opportunities to work on useful projects, preferably where their skills can be utilized, but in any case to work.

To bring the economy closer to full employment or at least to reduce the gap between performance and potential were surely high among the Congressional objectives during the New Deal, the response to the recession of 1974–75, and the Carter stimulus package of 1977.

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[9] Expanding Employment Opportunities for Disadvantaged Youth, Fifth Annual Report to the President and the Congress of the National Commission for Employment Policy, 1980.

Although there were specific regional stimulation objectives in the ARA legislation of 1961, it was not until 1973 when Congress legislated the decentralization of manpower programming under CETA that specific localities, of which South Carolina is an outstanding example, had increased scope to stimulate local economic development through the judicious harnessing of the federal training funds to assure new employers of a ready work force.

The fact that training programs could be approved under MDTA only after a finding had been made by local officials and representatives of employers and labor that there would be jobs for the workers to be trained, suggests that the goal of the training effort in the 1960s was closely linked to meeting the requirements of communities for specific orders of skill.

At the time of the wind-down of hostilities in Vietnam, President Nixon was willing to sign, if reluctantly, the Emergency Employment Act of 1971 on the ground that it would help ease the demobilization effort at a time of a soft civilian labor market.

Basic to the philosophy underlying both MDTA and CETA was the belief that persons first entering the labor market and those who had obtained jobs but were still at the bottom of the ladder could be helped by entering a training program through which they could add to their human capital and could look forward to securing better jobs with more income and better career prospects.

Closely related was the belief when MDTA was first passed in 1962 that unless retraining opportunities were provided by the federal government to workers who had lost their jobs in a number of industries where automation had made rapid progress, such as coal mining and steel, there was a real danger that many skilled workers would never make it back into the regular labor market, surely not into good jobs.

Both during the New Deal and after 1964 when the federal government explicitly focused on the problems of youth, one important objective was to provide students in high school with some earning opportunities so that they would be encouraged to remain in school and secure a diploma which, it was assumed, would later ease their transition into employment.

The Neighborhood Youth Corps (NYC) of 1964 had a related objective which had not been included in the New Deal/NYA work-study program. The intervening years had witnessed the substantial relocation of the black population from Southern farms to the inner cities of the North. With racial tensions rising rapidly—Watts followed within one year of the passage of NYC—Congress hoped that the $600 to $700 or so that a high school student could earn during the summer would prevent the cities from exploding.

The Civilian Conservation Corps of the New Deal made it attractive for large numbers of out-of-school youth with little prospect of securing jobs to spend a year or so on environmental projects, many of which were aimed at beautifying our national parks and making them more accessible to tourists.

The Job Corps—a creation of the Great Society—had a related but distinguishable objective. Here the emphasis was on rehabilitating the most seriously disadvantaged of urban youth, those from low income homes, who were school dropouts, most of whom belonged to minorities, in residential centers where they would be afforded the opportunity for educational remediation, skill training, personal counseling, and assistance in career development.

Since the unemployment rate among white married men was low or very low during most of the 1960s and 1970s, MDTA and, even more, CETA focused attention increasingly on blacks and to a lesser degree the Hispanic communities which were afflicted with differentially high levels of unemployment. A striking response was the provision in the Emergency Employment Act of 1971 to facilitate the upward mobility of minorities into the regular civil service by affording them opportunities to acquire job experience and training while holding PSE jobs.

Finally and most importantly these many varieties of manpower programs, together with the ever broader unemployment insurance system, aimed to provide income to those at the lower end of the distribution and particularly to those whose unemployment cut off their normal source of earnings.

A few strands run through this synopsis of rich and variegated federal manpower programing. There are, first, the two extremes of public manpower policy: one mandates income transfers to the unemployed so that, despite their loss of jobs, they will obtain the income they need to protect their basic standard of living, even if many of the extras in their usual consumption might be jeopardized especially if they remain out of work for a long period of time.

At the other extreme, the federal government seeks to compensate for the employment shortfall in the regular economy by creating public service jobs. The earnings from such jobs have tended to provide a level of income considerably higher than transfers under UI and, with liberal state of local supplementation, some of the unemployed lost little.

In between these two contrasting modes there is a variety of training efforts directed to helping to prepare the unemployed for the job market or to increase the skills of those who have been poorly prepared. Here too there is a considerable range between efforts that are heavily income-transfer oriented, such as the Summer Youth Program and most other "work experience" programs for adults, and true training programs such as practical nurse training or automotive mechanics which provide enrollees with 10 to 12 months of serious skill instruction with the aim of assuring their permanent advancement up the skill and income hierarchy.

One other set of observations is suggested by the chronology. In the manpower programs and policies since 1962, there has been a distinct shift in the targeted groups. Except for the early years of MDTA and the 1974 counter-cyclical PSE program, white adult males with more or less regular attachment to the labor force have not been singled out. Instead, the programs have increasingly sought to enroll disadvantaged white and minority adult males with poor or no labor

market experience and youths with similar characteristics, in which low family income has been an important selection criterion. While many disadvantaged women, both white and black, have participated in these programs, they were seldom singled out for special attention either by the Congress or the prime sponsors.

Except for the Job Corps and a limited number of other experiments, the manpower programs served poorly the seriously disadvantaged persons, those released from institutions and older persons. Since Congressional funding fell far short of the sums required to assist those with lesser handicaps for employment, the manpower officialdom decided to concentrate on those more likely to make the transition into regular jobs.

4. Related Manpower Programs

So far we have considered the manpower policy arena as consisting of the specific programs under the jurisdiction of the U.S. Department of Labor together with the federal-state unemployment insurance system and the special legislation for unemployment assistance benefits passed in 1974. But, as with all boundary demarcations, the lines could be drawn somewhat narrower (without UI) or broader. The following paragraphs provide a brief consideration of the nature and goals of a group of related federal efforts which have had as one of their principal objectives facilitating the employment or reemployment of persons able to work.

The oldest of these efforts, dating back to the Public Works Administration in the New Deal, involves federal funding for public works in periods of high unemployment where one major objective is the direct and indirect increase in employment. For many reasons, including the relatively high cost per worker employed, the difficulty of hiring large numbers of unskilled workers, the long start-up time, the out-of-sync relationship with the recovery phase of the business cycle, Congress has been chary about using the public works approach as a counter-cyclical tool but not so chary as to neglect it completely. Several times in the post World War II era sizable public works activities were nonetheless launched for counter-cyclical purposes. The assessment made by the Brookings Institution of the earlier efforts reached a negative conclusion of its utility as a counter-cyclical tool. The study concluded that there may be a way to improve early planning, to stress "soft" public works, to insist upon the hiring of the structurally unemployed, but it is questionable how far, even under the most favorable of circumstances, public works can be used as a major instrument for counter-cyclical employment policy.[10]

In 1967 and again in 1971 Congress decided that special efforts had to be directed to finding jobs for the rapidly growing numbers of employable persons on the welfare rolls; it therefore legislated Work Incentive Programs, WIN I and II. These two programs required women on AFDC with no child under 6 at home and otherwise employable to make themselves available for training or placement. Those

[10] "Public Works and Post War Recessions," Wilfred Lewis, pp. 99 ff in Should the Federal Government Establish a National Program of Public Work for the Unemployed, Legislative Reference Service, U.S. Congress, September 1964.

who were placed were permitted to retain some earnings above their welfare allowance to compensate them for job-related expenses and to encourage them to remain employed. Through these programs, several hundred thousand women are removed from the welfare rolls each year but because of limited skills, low earnings and recurrent family problems, a significant proportion rejoin the welfare rolls. The Carter Administration at the beginning of 1980 is seeking to launch a substantial demonstration program which will provide a job for the principal wage earner in every family with children on welfare. The results will be monitored to determine whether a more carefully crafted effort will in fact prove successful in moving large numbers of employable persons from welfare into permanent jobs.

In 1976 and in 1978 Congress passed special tax legislation aimed at stimulating increases in employment. The first provided relatively modest benefits for employers if they could demonstrate that they had expanded the total numbers on their payroll from the preceding year. The latter act was a targeted tax credit which provided larger financial advantages over two years to employers who could demonstrate that they had newly hired "structurally unemployed" persons.

Since there is no easy or direct way to assess the employment creating efforts of these two approaches, much less to sort out costs and benefits, there are substantial differences of opinion among the experts about their employment-creating potential. The issue is further complicated by the U.S. Treasury's dragging its feet in popularizing such tax reduction schemes. Even the skeptics admit that the use of the tax approach could, under a supportive bureaucracy, operate with some speed and success in stimulating employment gains in soft labor markets; there is less agreement about the potential costs of such an approach. The Treasury has argued with some justification that most employers would gain a tax advantage for hiring persons whom they would have added in any case, and this elicits the response from proponents that the same could hold true for the special benefits that are provided for accelerated capital investments.[11]

The last related federal program with clear manpower objectives is the Equal Employment Opportunity structure which was given a legislative basis in the Civil Rights Act of 1964 and which has been elaborated and refined since then via legislation, administration, and judicial interpretation. The aim of affirmative action programs is to decrease and remove the discriminatory barriers against minorities and women—as well as against older persons and the handicapped—so that they can share more equitably in jobs, careers, and income. Unless affirmative action programs succeed in altering employer personnel practices, there is relatively little that federal training programs alone can accomplish for minorities. In fact to the extent that affirmative action programs are successful—and they have been in varying degrees—to that extent manpower programs are likely to prove more effective.

This brief consideration of manpower programs rooted in public works, welfare, tax or affirmative action helps to underscore the multi-

[11] Increasing Job Opportunities in the Private Sector, Special Report No. 29, National Commission for Employment Policy, November 1978.

dimensional and multifaceted aspects of employment in an advanced economy even if one's perspective is restricted to federal policy alone. If we broaden our perspective to include the major determinants of employment in the private sector of the economy and in the transformations that characterize the larger society, we will multiply these facets many times.

5. The Transformation of the U.S. Labor Market—the Longer View

With the advantage of hindsight, we can distinguish the following major transformations that have occurred during the past half century and can briefly indicate the major forces which contributed to these developments:

The accelerated movement of persons off the farm, including a high proportion of all blacks, encouraged by the Agricultural Adjustment Act of the New Deal and subsequent federal farm support policies; the strong demand for unskilled labor during World War II; the broadening experiences of the millions who served in the military forces; the continuing rapid expansion of non-farm employment in the post-World War II era. The economy accommodated well to these changes. However, many minority group workers who relocated in urban centers suffered high unemployment. Prior to moving they suffered from high underemployment on Southern farms.

The rapid growth, both absolute and relative, of the numbers of women who hold jobs. Among the principal factors contributing to this transformation have been the response to the patriotic appeal for married women to enter or reenter the economy during World War II; rising levels of education; smaller families after 1957; a shift of the economy toward services; metropolitanization, and more recently the women's revolution reflected in changing aspirations, career preparation and life styles.

The generally strong demand for labor (but not strong enough to provide jobs for the rapidly growing numbers who wanted to work) during the four decades from 1940 to 1980 which kept the country free of any serious or sustained decline in employment. In the quarter century between 1950 and 1975, the U.S. experienced a 50 percent gain in total employment and, in the four years since the turning point in the recession of 1974–75, the economy has added another 12 million jobs or a gain of roughly 14 percent.

The rapid growth of the labor force particularly since 1960 reflected a doubling of the numbers of young people reaching working age—from 2 to 4 million annually—reinforced by the steep increases in the numbers of women in the labor force, with further additions from immigrants, both legal and illegal.

The two previously mentioned developments resulted in the fact that despite its rapid growth in total employment, the U.S. economy has been characterized by an unsatisfactory level of unemployment throughout most of the last four decades except for the three wartime periods when the labor market varied between tight and very tight.

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In the depressed 1930s, as an effort to hold young people out of the labor market, and in the post-World War II era, educational expenditures were increased rapidly with the result that more and more young people acquired their high school diplomas and a significant proportion went on to acquire an associate, college, or higher degree. Thus a better educated labor force contributed to the flexibility of the U.S. economy in coping more effectively with the opportunities it confronted in the post-World War II era and which were reflected until recently in high productivity and rapid growth.

A fuller account of the important transformations in the employment scene would have to go beyond the factors noted—migration from farm to urban centers, increase in women workers, continuing high level demand for labor, rapid growth of the labor force, high levels of unemployment, and rising educational achievement. Attention would have to be paid to trade unions, trends in technology, the growth of income transfers, early retirement, and the many other developments which have had important impacts, direct and indirect, on the employment scene. But the critical point of an enlarged perspective is that manpower policies and programs have had only a modest impact relative to the far-reaching effects of the underlying forces propelling the economy and the society.

6. Prospect

The principle advantage of a retrospective view is that it is possible to discriminate between the more important causes and consequences and those of less importance which have helped to shape the course of events. Without the advantages of time and distance, it frequently is impossible to separate the important from the unimportant. But we must be careful in extracting the "lessons" of the past; we must not apply them indiscriminately to the future, which will always differ from the past. Within these parameters we attempt to set out our best understanding of the potential and limits of manpower policy against a concern for economic stabilization. We will set out the guiding principles with only a modicum of supporting analysis. As a rhetorical device the perspectives which follow are divided into two groups: lessons and problems.

LESSONS

It is not practical to seek to distinguish too sharply between cyclical and structural causes of unemployment and to develop specific remedies for each. A loose labor market, such as existed in the later 1930s, and to a lesser degree in the later 1940s, 1950s, and mid-1970s, illustrates how cyclical and structural components run into each other and confuse and compound policies and programs which seek to distinguish sharply among the unemployed as to the causes of their unemployment. This is not to say that in the face of limited federal dollars it is not desirable or feasible to distinguish among unemployed persons in terms of their need for and ability to make use of special manpower assistance, but in a national economy with substantial differences among local economies there are limits to making a rigid

separation between cyclical and structural unemployment. The confusion in the early days of MDTA and the difficulties in operating CETA with two Titles II and VI after 1974 speak to this point.

How far can manpower programs go to absorb the unemployed? Clearly quite far, if they are financed at the level of the New Deal when they provided employment at peak for around 3 million workers in comparison to less than 30 million employed on non-farm jobs. On the other hand not very far when we look at the more recent record: the 425,000 increase in PSE jobs between March 1977 and March 1978 must be considered in the perspective of a nonagricultural work force of around 85 million. Without further elaboration at this point, we can postulate that manpower policies should be viewed not as a substitute for but as an addition to macro policy which must retain primary responsibility for enabling the economy to operate at a continuing high level of employment.

Manpower policy has demonstrated its capacity to assist particular groups of unemployed or underemployed persons to improve their employability prospects and thereby to help them to obtain regular jobs or better jobs with more earnings and security. This was most clearly the case when, as under MDTA, disadvantaged adults and youths had an opportunity to enter serious training at the conclusion of which they were able to find jobs at double the legal minimum wage. The same favorable result can be deduced for some young people who entered the Job Corps and, through this second chance opportunity, were able to remedy their educational deficiencies, obtain pre-skill training and upon completion to enter desirable apprenticeships.

In a culture such as ours which continues to place a high value on work, there is clearly a place for manpower policies and programs which through income maintenance, training programs, or public service employment aim to make a contribution to future employability of the unemployed. One proviso: this logic does not cover the regularly attached worker who is laid off and who is likely to be recalled, even in a severe recession, before his 26 or 39 weeks of unemployment insurance runs out. Nevertheless, the logic probably holds for most of this group who have been continuously unemployed for 39 weeks, at which point they should surely be encouraged to enter a retraining program, search for a job in a distant community with the help of a relocation allowance, or accept a PSE position as the price of necessary continuing income assistance.

Although the evidence from the new Youth Entitlement program will not be available until 1981 or later, the record of the New Deal's NYA and the Great Society's NYC leaves serious questions about whether the opportunity for high school students to earn while they learn is sufficient inducement to keep potential dropouts in school, or to induce significant numbers of dropouts to return to school to acquire their diplomas. There is a rationale for encouraging students to remain in school if they can profit from instruction until they earn their dipolmas, but if the school provides a dysfunctional learning and socializing environment, as many do, the use of manpower programming to keep young people on the rolls can be self-defeating. Many of these young people really need a more constructive environment, such as a well designed and operated cooperative educational program.

It is easier to see a role for manpower programming to assist young people who are out of school but who are having difficulty in developing an effective attachment to the labor market. To permit them to flounder, to move from one short term unskilled job to another with long intervals of unemployment in between, may result in their reaching their mid-twenties without a regular attachment to the labor market and this bodes ill for their long-term opportunities to work and support themselves and their dependents. Better by far to help them remedy their educational deficiencies, acquire work experience and skill, and facilitate their transition into regular jobs.

The same logic applies to persons who are released from institutions—reformatories, drug rehabilitation units, prisons, mental institutions. Almost all of these individuals will find it difficult to get regular jobs on their own. Their prior institutionalization makes most employers wary about hiring them, particularly since the job seekers frequently have little skill or experience.

Although periodic efforts to link work and welfare more closely, such as WIN, have had only modest success since the New Deal, the about-to-be-launched experiments to provide jobs in the private or public sector for the principal wage earner in each family on welfare with children (over 6) speak to the continuing concern of administrations and the Congress that employable persons not receive public assistance without working. The difficulties that have not been surmounted to date involve finding solutions that rely less on compulsion and more on incentives; how to operate a two-tier public employment sector without the lower paying jobs threatening the wage and working standards of the regular civil service employees; assuring that an enlarged number of PSE jobs for unemployed persons does not lead to the "artificial" creation of new households for the purpose of qualifying for one of these positions; assuring that those who obtain a governmental work assignment will sooner or later move into the regular economy. This simple list of these difficulties helps explain why progress in linking work and welfare has so far proved so difficult. But that is no reason to give up: the challenge remains. Clearly, manpower programming should be able to assist in the reduction of employables who receive welfare or other forms of income transfer.

We have identified seven important lessons from the nation's uses of manpower policy which should help in the period ahead in improving the employability and employment of vulnerable groups in the population and in easing the transitions of such groups from non-work to work settings.

The lessons we have extracted do not provide a blue print for the future but they point directions to where manpower policy can prove constructive.

PROBLEMS

To exploit fully the past for the light that it can throw on the future requires that attention also be directed to a set of issues where the findings are equivocal and the recommendations for future policy no more than suggestive.

Many economists, including some who are ideologically friendly to governments assuming a redistributive goal, believe that in an economy

with less than full employment, manpower programs directed at improving the employability and employment of disadvantaged groups can do little more than alter the positions of persons in the queue. In their view, if one person gains another must lose. The theoretical constructs which they use to demonstrate this inevitable outcome are powerful but not necessarily fully convincing. Improvements in the quality of the labor force, particularly increasing the numbers able to meet employers' routine hiring standards, may have a marginal effect on the numbers hired. In any case, even the skeptics are usually willing to admit that manpower programs may have a beneficial outcome in terms of equity since they expand opportunities for the disadvantaged even when they do not enlarge the total numbers who are employed.

A closely related issue, only recently joined in debates among economists, is the potential of "selective manpower policies," that is, expenditures targeted at locations and groups which experience differentially high unemployment. The advocates contend that selective measures can contribute to employment increases without substantially worsening the current inflationary pressures. While the theoretical analysis is sophisticated, this approach must still prove itself. If it could, the potential for manpower policy in an inflationary era could be promising indeed.

The economy is steadily shifting away from goods production to output of services; as many as 2 out of every 3 workers is employed in a service industry today. Since service employment is more heavily concentrated among small and medium employers, upward mobility is harder to pursue since it frequently involves changing employers. Since many entrance jobs in the service sector pay little, the lack of clarity about how to get a better job at better pay in the future may be a deterrent to certain young people who confront such jobs. This formulation is no more than an hypothesis to explain some aspects of the youth labor market. But the critical role of jobs and income mobility in influencing workers' behavior surely justifies a more careful study of the growing importance of service jobs in the U.S. economy.

The experience of the economy in the 1960s and 1970s points up new interrelationships among rapid job creation, the rapid growth of the labor force, and the slow downward response of the unemployment rate. If it is true, as it appears from this recent experience, that a ratchet effect has been operating whereby new jobs attract new members into the labor force, the size of the "overhang" is critically important in any national effort to move toward a full employment economy. Estimates made in the late 1970s suggest that there may be as many as two potential workers for every counted unemployed worker. Whether this calculation is sound and how long the ratio will hold requires study.

A related phenomenon involves the likely consequences of having raised the compulsory retirement age from 65 to 70 in a period of continuing inflation. Half of all workers have been retiring prior to the age of 65; if they now decide to remain until they are 70, the implications for the labor market, in terms of both competition for jobs and opportunities for advancement, warrant attention. In some sectors such as higher education, the implications can be serious if the

new legislation blocks opportunities for new hires and tenure appointments.

We need to know much more about the interactions between changes in the domestic labor market and the flow of newcomers, legal and illegal, to the United States. If some of the more extreme estimates of illegal newcomers are correct, and if the potential stream of immigrants is as large as some believe, manpower policy must reckon with these present and future flows at least until they have been brought under more effective control if this should become the declared and enforceable policy of the United States.

These six problematic areas, which are illustrative rather than inclusive, have been identified for the sole purpose of warning against simplistic views concerning the potential of manpower policy in the years ahead. In light of the limited extant knowledge of the determinants of employment external to our economy and society which will affect the future supply of labor, we must see manpower policy as no more but also no less than what it is—an evolving tool to improve the realization of the nation's employment goals.

THE GREAT DEPRESSION AND THE TRANSFORMATION OF THE AMERICAN UNION MOVEMENT*

By Everett M. Kassalow**

Summary Overview

The American trade union movement was deeply influenced in its form and outlook by the great depression which began in 1929. Its membership, its structure and ultimately its economic philosophy were sharply transformed by the experiences of 1929–1939.

Prior to the 1930s U.S. unions had never organized more than 19.5 percent of the wage and salary force (the figure for 1920). Even that high point was exceptional, and the percentage of organization typically fluctuated around 11 or 12 percent from the mid-twenties to the depression.

Union membership in the 1920s was largely confined to skilled craft workers, although less-skilled workers in a few industries such as coal mining, brewing, clothing and the railroads were, at times, fairly well unionized. The great expansion of employment in the "new" mass production industries in the 1920s went on almost entirely outside the U.S. union movement. (The growth of "company unionism" in autos, steel, and a few other industries is excluded from consideration here.)

The great depression struck union membership a further blow in the 1929–1932 years, as the rolls of the American Federation of Labor dropped from their relatively low level of 2,933,000 in 1929 to 2,126,796 by 1933. (AFL membership was over 4 million in 1920.)

U.S. UNION MEMBERSHIP AND THE WAGE AND SALARY FORCE, 1900–55

Year	U.S. union membership[1] (thousands)	Membership as a percentage of employees in nonagricultural establishments, United States
1900	791	6.1
1910	2,116	10.2
1915	2,560	11.5
1920	5,034	19.5
1925	3,566	12.2
1930	3,632	11.6
1933	2,857	11.3
1939	8,980	28.6
1945	14,796	35.5
1950	15,000	31.5
1955	17,749	33.2

[1] Prior to 1930 membership includes Canadian members, who, however, were less than 10 percent of the total in those years.

Source: U.S. Bureau of Labor Statistics. Membership, of course, includes all unions, not just AFL or CIO unions.

*This paper concentrates on the impact of the great depression and the business cycle in general upon the economic policies of the union movement. A brief survey of the relationship between the business cycle and the union as an economic factor can be found in the appendix which follows the main text.

**With the assistance of Ira Cure, Congressional Research Service.

As the full impact of the great depression was felt, the ideas and aspirations of millions of workers were sharply affected. The tenacious hold which laissez-faire and competitive individualism seemed to have over so much of American life was substantially loosened, and significant government intervention in economic life came about to help reverse the great economic decline. This intervention included legislation designed to encourage workers freely to form "unions of their own choosing." Along with the change in social outlook brought about by the depression the new labor legislation helped touch off a veritable explosion of union growth. From its low point of 2,689,000 in 1933, union membership climbed to 8,980,000 by 1939. As a percentage of the non-agricultural wage and salary force, union membership rose from less than 12 to 28.6 percent by 1939. From then on the American union movement was to remain a "mass" phenomenon in American life, and it was to have a far more profound effect on the economy than in previous decades.

It was not only the number of union members which changed. As the union movement came to embrace millions of new semi-skilled and unskilled workers in American mass production industry, its economic program also underwent important changes. A movement which represented a fourth and then a third of the wage and salary force, including the millions of semi-skilled workers, inevitably fashioned an economic program which differed from one that typically represented around 12 percent of the same force, and was concentrated so largely among skilled workers. In some contrast with the skilled craftsmen, less-skilled workers more often tended to look to government intervention to help cope with some of the social and economic problems of an expanding industrial civilization. An emerging generation of labor leaders also came to view the economy, and government's role in it, in a new light.

In part as a result of unfriendly encounters with government injuctions against many of their activities, unions and union leaders of skilled workers, prior to the great depression, had traditionally looked with skepticism upon government intervention in economic life. They were content to depend almost entirely upon their own labor market scarcity and skills to further their working conditions, their wages and fringe benefits (as unemployment insurance, pensions, health, and similar benefits later came to be termed).

The failure of campaigns to organize mass production workers in the steel and meat packing industries at the end of World War I, the successful promotion of "company unionism" on the part of many major corporations, and a not particularly friendly series of national administrations which succeeded that of President Wilson, were additional forces which put the AFL on the defensive in the 1920's. This was in some contrast with bolder positions it tended to assume on some social legislation before the war.

The view that *major federal government intervention* was necessary to deal with and reverse business cycle downturns was largely unsupported in the AFL. In the course of a serious business downturn, as in 1921, labor support for local and state public works programs as well as for emergency relief was generated, but this was a limited exception to a more general philosophy of economic "voluntarism"

which looked to business and labor cooperation in running the economy. Beyond this, on several occasions the AFL was to assert that ultimate "responsibility" for coping with unemployment was "placed squarely on industry."

There were a few unions that took exception to the general labor opposition to federal government intervention in economic life in the twenties. After World War I, for example, unions of railroad workers came to favor such intervention in order to improve their ailing industry, as well as to assist them in gaining union recognition. By the end of the 1920s, too, the United Mineworkers had also come to seek government intervention in their industry which seemed to be suffering from excess capacity. But these were exceptions to a general hands-off policy characteristic of AFL top leadership. The 1930s and its aftermath changed this fundamentally.

In the course of the great depression and World War II the AFL came to accept government intervention, first in the form of economic stabilizers (notably unemployment insurance), and then as a legitimate intervenor to help regulate economic life and expedite economic growth.

For the Congress of Industrial Organizations (CIO), born in the midst of the great depression and very much a product of Franklin Roosevelt's New Deal, the passage to an interventionist economic program presented fewer problems.

In the case of both AFL and CIO (separate until 1955), the coming of World War II put off for a time any coming to grips with the problem of the business cycle and large scale unemployment which persisted through 1941. The economic impact of the War accomplished what a decade of reform had vainly sought, the elimination of large scale unemployment. With this experience before them, by the war's end top union leaders firmly resolved that what had been accomplished economically in war, had to be matched in peace, namely an end to large scale unemployment.

Like many other Americans the leaders of American unions came to adopt a more aggressive attitude "against" unemployment and business cycles, at least in its downward phase. Aided and abetted by the Employment Act of 1946, the unions' economic views and programs increasingly came to reflect the "new economics," with its emphasis upon growth and full employment, as well as the basic responsibility of the federal government to provide guidance for the economy. The unions' programs have come to include however, a more selective approach toward both monetary or fiscal policy than is characteristic of most professional economists. Generally, AFL–CIO rejects the inevitability of business cycles and any automatic downward phasing in economic life.

The Economic Policies of AFL–CIO and the Business Cycle

It should be clear, at the outset of any survey, that American trade unions are intensely pragmatic institutions, not ordinarily given to theorizing about economics, or other affairs for that matter. They are basically reactive kinds of bodies, which tend to meet and solve problems as they confront them. It is primarily by surveying their various

policy declarations and reports on current problems (over the years), that one can somewhat artificially (one is tempted to say artistically) recreate a kind of general economic philosophy that may be imputed to the national labor bodies (AFL and CIO), as regards business cycles and related matters. For the purpose of this analysis, emphasis has been placed upon the official policy making convention reports, resolutions and proceedings of the peak associations of the labor movement, the AFL, the CIO and then the merged AFL–CIO.[1]

The AFL and the 1921 Downturn

The evolution of the American Federation of Labor's philosophy and policies on business cycles after World War I is reasonably well illustrated in its different reactions to the more or less normal business downturn of 1921, as opposed to the shattering depression of the 1930's.[2]

It was proposed to the 1921 AFL convention, by its affiliated union the International Association of Machinists, that in light of the unemployment which was "causing great suffering among the wage earners," the AFL Executive Council be "instruced to work for the enactment of a national law that will provide for the payment of unemployment benefits and the funds for same shall be derived by taxing industry." The resolutions committee rejected this proposal and in explanation its chairman warned against "centralizing authority in our national government and destroying the state rights. . . ." President Gompers rose against this "so-called unemployment insurance" (which "is not insurance against unemployment" but is only "compensation for lack of employment"), on the ground that if it were enacted, "every action of our life in so far as it refers to labor and employment, would be subject to regulation and discipline of government." [3] The proposal was defeated.

What Bernstein writes of Gompers (who died in 1924) seemed to be typical of much of AFL top leadership in the twenties. Gompers "harbored a profound distrust for the state when it intervened in economic life. . . . Industry . . . must be self-governing, with employers and workers sharing equally in an industrial democarcy . . . [he] opposed state-sponsored unemployment and health insurance and was unenthusiastic about [government] old age pensions. . . ." [4]

The AFL was, however, concerned about mounting unemployment and this same 1921 convention recommended that a committee of of-

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[1] The AFL held annual conventions down to the time of merger in 1955, and the CIO tended to do likewise. The merged AFL–CIO holds biennial convention. The reports and proceedings of these conventions are the foundation sources for most of this chapter. For these national union federations and their officers, at least, this writer is satisfied these sources adequately represent their views on general economic matters. A larger study, of course, could draw upon other AFL–CIO statements and publications as well as those of the affiliated national unions. Generally speaking, the national unions devote less attention to national economic policy issues than does the central federation. I have made some use of the AFL–CIO periodic testimony before the Joint Economic Committee of the Congress.

[2] The AFL's response to serious unemployment in 1893 and 1907 is briefly but usefully summarized in Lewis L. Lorwin, The American Federation of Labor (Washington, D.C., The Brookings Institution, 1933.) Chapter XI.

[3] The American Federation of Labor, Report of Proceedings of the Forty-First Annual Convention, Denver, Colorado, 1921 (Washington, D.C., the Law Reporter Painting Co., 1921), pp. 375–377. Hereafter we shall cite succeeding convention proceedings in more abbreviated form.

[4] Irving Bernstein, The Lean Years (Boston, Houghton, Mifflin Company, 1960), p. 93. In the 1920's, however, several AFL state and local bodies and a few national unions did support social insurance proposals.

ficers be appointed to investigate and report to the Executive Council. In its subsequent report this committee complained the Congress had crippled the Federal Employment Service after World War I, thereby shrinking needed information about the labor market. It added, this left the U.S. as "the only important country which has not maintained effective unemployment agencies." The AFL, itself, was undertaking a survey of several industrial centers to get some information about the extent of unemployment. It, then and later, strongly supported the establishment of a "federal employment service competently organized and adequately financed . . . to bring job and workmen together. . . ." [5]

The leadership of the AFL responded very positively to an invitation from Secretary of Commerce Herbert Hoover to participate in a national conference on unemployment. An emergency relief program was recommended by the conference (the only report which was considered that was agreed upon unanimously), to be carried out by the states. The AFL committee presumably agreed with other conference participants that:

1. . . . the fundamental cause for unemployment is waste in industry which becomes cumulative and periodically produces industrial depression. . . .
2. . . . responsibility for dealing with the unemployment problem was removed from the controversial field and placed squarely on industry because it can be served only by management's employment of the involuntarily idle.
3. A method of temporary relief . . . [could be] provided by an executive agency directed to get practical results in the present emergency through action by the states and municipalities. . . .

The conference also endorsed a proposal for a continuing study and a "special committee to investigate the business cycle." The National Bureau of Economic Research was charged to prepare a report on unemployment and the business cycle.

The AFL concluded that the most important principle emerging from the Hoover conference was "that unemployment is preventable and industry is responsible for developing a preventive program." [6] Going on to their own observations they felt seasonal unemployment could be minimized by better planning of work.

One "indirect way to stimulate industry in periods of depression," suggested the AFL's own committee on unemployment, was to provide "for the expansion of public works and public highways" to help offset "periods of depression" and "cycles." They added, "Extension of credit to [such] investment projects . . . will be based upon absolutely sound security." [7]

When the report on business cycles was issued (stemming from the 1921 conference on unemployment) it received a broad endorsement from the AFL. It emphasized the need for more information gathering by the Commerce and Labor Departments. The report also supported "the use of public works and the construction work of our utilities" as "a balance wheel for business." To support these projects the report expressed hope for putting "aside financial reserves" in "times of prosperity for the deliberate purpose of improvement and expansion in times of depression. . . ." [8] The AFL added, its own view,

[5] AFL . . . , Report of Proceedings . . . 1922, pp. 73 and 76.
[6] Ibid., pp. 74–75.
[7] Ibid., p. 77.
[8] AFL . . . , Report of Proceedings . . . 1923, pp. 42–43.

that "the most potential factor against unemployment is the resistance against wage reductions. Wage reductions mean the abridgement of the power to purchase. . . . Wage reductions accentuate depression and unemployment." [9]

AFL Stand Against Federal Government Intervention

In their report to the 1923 convention, AFL officers also issued a call to "Industry's Manifest Duty" which reaffirmed their belief in a kind of joint self government by industry and labor (unions). Such a form of "industrial democracy" could check some of the "great abuses" which sometimes accompanied "the great driving force of American industry." Such "abuses, terrible and costly as they have been," were nevertheless judged "largely coincidental." Better to correct them with a self policing system in which industry and labor participated jointly. The resulting, more democratic order was a preferred alternative to falling "under the dominion of a state bureaucracy which must be destructive alike of freedom for the individual and of progress for industry as a whole." [10]

It is difficult today to appreciate the hostility toward federal government intervention which was provoked by court actions against unions in those years. These actions usually were in the form of injunctions against strikes and other union activities, or proceedings against unions under the Sherman Anti-Trust Act. It is not surprising, as a consequence, that hostility to government led the AFL, at times, to enunciate almost a cartel-like philosophy. At its 1926 convention, the officers proposed, and the convention adopted "labor's disapproval of anti-trust and anti combination laws," and held "that industry and labor should be free to work out their problems without undue intrusion on the part of the government." The great freedom and power of corporations under existing law, however, was to "be made conditional," on corporations agreeing not "to deny the right of workers or of the consuming public to unite into" organizations "of their own choosing." [11]

The Federation also felt it found important support for its economic position in the report of the distinguished Committee on Recent Economic Trends (1929) which, under Secretary of Commerce Herbert Hoover, had surveyed economic developments from 1922 to 1929. The AFL agreed with the "final basic principle which the committee formulated" namely that the "key to sustained progress is complete acceptance of the relations between prosperity for workers and national prosperity." The Federation also sensed a greater stability in prices and felt "a speculative element has gone out of business," as a result of which enterprise now had to look more and more to "mass consumption" if "mass production" were to continue. The Federation did express concern over the unevenness of American prosperity and the tendency of advancing technology to displace factory workers.[12]

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[9] Ibid., p. 42.
[10] Ibid., p. 34. In this convention and others, the AFL made exceptions as regards government action on behalf of child labor and other groups (women), too weak to protect themselves. In these cases legislation was deemed acceptable.
[11] AFL . . . , Report of Proceedings . . . 1926, pp. 37–38.
[12] AFL . . . , Report of Proceedings . . . 1929, pp. 34–37.

On the eve of the great depression, the AFL again expressed concern about the lack of sufficient data on unemployment and called once more for a "nation-wide employment service under federal management . . . ." It continued to publish its own figures on unemployment in trade unions, based on its own questionnaire survey. It reaffirmed its hope for greater stabilization of industry, responsibility for which "devolves primarily upon management." It felt that the 1921 Presidential conference on unemployment had marked a new epoch, as a result of which local governments were brought into the planning and execution of public works. Industrial and civic forces were "galvanized . . . to fight depression as never before." Great new issues of municipal bonds were forthcoming to help finance work programs, and these probably shortened the depression. But this is "only a partial index" to what could be accomplished "in the next unemployment period," if "states, counties and towns incorporate their experience into methods of long range planning." Financing and establishment of these projects was seen as basically a local or state matter.[13]

The great emphasis upon public works as a business cycle antidote was not an uncommon view in those years; but it doubtless also reflects the significant strength of the construction unions within the AFL in the 1920s. Even public works, for this purpose, however, were largely looked upon as a matter for state and local initiative.

The Depression of 1929, the AFL in Transition

The AFL reaction to the 1929 downturn was a fairly guarded one, at first. The officers' report to the 1930 convention saw unemployment as serious, but probably less severe than the mild 1924 downturn, and certainly less so than 1921. Still unemployment had risen in the U.S. to 3.7 million in the first half of 1930 (by AFL estimates), although not so severely as in a number of European countreis. (A significant part of this analysis was devoted to the worldwide character of the downturn and comparisons with European countries.)

The AFL saw "Three main causes . . . . for most unemployment: seasonal dull periods in industry; business depression; and increased efficiency, due to improved machinery and methods . . . ." [14]

This concern with "increasing efficiency," which leads to disproportionate gains in the nation's ability to produce, as opposed to its ability to consume, was to remain a major feature of AFL economic analysis of the country's ills for over a decade.

When the AFL compared the 1929–1930 downturn to previous downturns in the twenties, it was encouraged that there had been fewer wage cuts. They praised President Hoover's White House conference of labor and employers wherein the latter had affirmed their intention of refraining from initiating "any movement for wage reduction". As their part of this agreement the union leaders agreed with the President in recommending against any wage movements "beyond those already in negotiation . . . ." [15]

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[13] AFL . . . , Report of Proceedings . . . 1928, pp. 48–50.
[14] AFL . . . , Report of Proceedings . . . 1930, pp. 47–55.
[15] Ibid., p. 58.

The AFL leadership set forth its own Unemployment Program. They affirmed that "Society has a responsibility for providing service for all who need employment . . . ." To provide aid "in finding employment" should be the first priority, and the emphasis here was upon a useful public employment placement service. The AFL was critical of private employment agencies which "profit through the misfortunes of workers." Related to the call for an effective employment service was, once again, the need for better information on employment and unemployment.

For program specifics the AFL proposed: [16]

1. Reduction in hours of work, with cuts in work hours to keep pace with increasing productivity, instead of resorting to layoffs. Cuts in daily work hours, a five day work week and vacations with pay were the remedies.
2. Stabilization of Industry, including more planning by management to offset seasonal layoffs. To help individual establishments work out the problem of stabilization, there should also "be comprehensive planning by an advisory body, repreentative of all production and consumer groups . . . ." Such "a national economic council" should help secure "the cooperation of voluntary associations, and governmental agencies in a coordinated undertaking."
3. "Efficient Management in Production and in Sales Policies" by eliminating waste and achieving greater efficiency. With the resulting higher profits all could gain. The federal government could also contribute by increasing "its service to industry both in the technical field and in supplying information on how to work efficiently." [17]
4. Nation-wide System of Employment Exchanges.
5. Adequate Records (more and better statistical information on the economy).
6. Use of Public Works to Meet Cyclical Unemployment.
7. Vocational Guidance and Retraining.
8. "Special Study of Technological Unemployment," to help determine "when and where displacements will take place and to establish the practice of providing in advance adjustments for such workers."
9. Relief Proposals—Some industries, it was noted, with problems of seasonal unemployment which cannot be eliminated, should work out with their unions funds to provide weekly incomes "to workers during periods of cyclical unemployment." Some unions already had "unemployment funds for the *relief* of members out of work." The Executive Council was urged to investigate plans, "legislative or otherwise" for providing relief for "those who are suffering from forced unemployment."
10. Education for Life, to better prepare all individuals for "a constructive part in life." Education should "be planned with specific reference to the world of work."

This program was broad gauged, though significantly the reduction in hours of work came first, and it was combined with the great drive for the five day week when the whole program was reported to the convention. The movement for shorter hours had long been a central feature of AFL's social program, and it had devoted much time and study to this issue. In the report to the convention considerable emphasis was placed upon persuading cities and other local bodies to provide relief to the unemployed.

The AFL in Transition, Calls for Planning, Debates on Unemployment Insurance

As much as any other issue the question of "relief" for unemployed workers came to signify a kind of passage in the AFL approach to

[16] This and the foregoing from Ibid., pp. 59–64.

[17] The AFL had, during the 1920's, engaged in cooperative work with a few progressive industrial engineering and management training groups, and this proposal probably harks back to these initiatives. This proposal would, however, seem to run against the expressed fears about excess production and productive capacity.

economic policy issues, in this era, and more particularly to the government's role therein. A series of resolutions were proposed to the 1930 convention calling upon the organization to support legislation for unemployment insurance. The chairman of the resolutions committee who had just presented the 10-point unemployment program justified his opposition to these unemployment insurance proposals by insisting this involved "the question of whether the American Federation of Labor shall consider to hew to the line in demanding a greater freedom for the working people of America, or whether liberty shall be sacrificed in a degree sufficient to enable the workers to obtain a small measure of relief under government supervision and control." He attacked the "registration" of workers which must accompany any unemployment insurance system. Would the delegates finally succumb to carrying "industrial passports" and relinquish their freedom of movement? [18] Finally the committee chairman did note that the Executive Council had called for a thorough investigation of all plans to find relief for the unemployed. AFL President Green opposed the resolutions supporting legislative plans for unemployment insurance on some of the same grounds, but he also called attention to the doubtful legality of any federal action. He urged the convention to await the results of the proposed study by the Executive Council. After further discussion the convention accepted the committee's report and President Green's appeal. The convention did urge President Hoover "to immediately appoint a national committee to recommend measures for immediate relief" to help the unemployed.[19]

By the time of its 1931 convention, it was clearer to AFL leaders that their earlier hopes that industry would refrain from widespread wage cutting were doomed. Moreover unemployment was mounting to unprecedented heights (5,415,000 or a rate of 18.4 percent, by union estimates, for the first 8 months of 1931). The Federation's officers proposed a new version of their program against unemployment, stressing the maintenance of wages, shorter hours, requesting employers to take on additional workers, strengthening employment agencies, creating work through public building, keeping young persons in school to reduce competition in the labor market, giving preference to workers with dependents, and providing relief from public and private funds.

The officers then went well beyond these proposals, and called for the prevention of unemployment by coordinated "economic development," including "national planning." This was to be done by a national economic council. Its functions, the AFL officers suggested, could not be clearly spelled out, as all groups involved in production would have to experiment and learn how to make such a body work. ("We do not yet know enough to plan the agencies or chart the functions of economic control.") The President was urged to call a "national economic conference to [help] find a way forward. Such a conference would be a step toward planning on a national scale." Al-

[18] The European system of workers' passbooks often made a vivid impression on U.S. labor leaders who visited the continent. Samuel Gompers wrote: "The European working man's identification is a badge of his still existing serfhood. While in America anyone may freely roam the country over, in most countries in Europe the laborer must be prepared to produce his legitimation book on the demand of the police or on applying for employment . . ." Samuel Gompers, Labor in Europe and America (New York: Harper and Brothers, 1910), p. 217.

[19] Ibid., pp. 305–319.

though it listed all the groups to be involved, communities, states, industries and unions, the call did not indicate any specific role for the federal government.[20]

The previous convention (1930) had also called for some form of national economic council, but it was tied to the problem of "stabilization," especially seasonal employment regularization. The 1931 proposal went beyond this, but was still vague as to any precise role or action for the planning bodies. Moreover, the fuller organization of wage earners was seen as a necessary corollary of any new coordinated economic program.

The 1931 convention also reaffirmed its belief in the "high wage philosophy," and criticized the growth in unequal distribution of income in the 1920's which threw "the industrial mechanism out of balance." [21] Clearly the union movement was moving on to a more systematic level of economic analysis.

With unemployment estimated to have averaged over 10,800,000 for the first nine months of 1932, the AFL officers reporting to that year's convention began their economic analysis with a detailed examination of trends in income distribution, to prove that there had occurred a "piling up [of] excess income in the hands of a few while workers' share fell away. . . ." These riches were largely invested since high income people "cannot possibly spend it all for the necessities of living," and much went "to build new industrial plants and equipment. . . ." As a result ". . . producing capacity was increased beyond the capacity of consumers to buy; speculation became more profitable than normal business activity." [22] Under these circumstances, it was reasoned, the depression became inevitable.

AFL Calls for National Planning by "Functional" Groups

Reaffirming its support for "planning," the AFL indicated it was a key to using "our full productive powers. . . . Under former economic organization we have in the past assumed that if each person were free to seek his own best interests and profit, the well being of the whole would follow automatically. This is no longer . . . practical. . . . Unlimited competition does not work." The AFL officers called for a central coordinating authority, and to avoid "the evils of bureaucracy," representation in it should be based on "functional" groups. While the officers still couldn't clearly "foresee the development of agencies for national economic planning" they felt the necessary first step was the calling of a national conference of the country's major social groups, including labor and industry.

As in its 1930 and 1931 call, the AFL officers seemed to avoid assigning any clear role to the federal government in the proposed planning body or conference. This seems to be the meaning of the emphasis upon functional groups. In some industrial aspects, however, the program seems to have anticipated the National Recovery Act of 1933.

[20] AFL . . . , Report of Proceedings . . . 1931, pp. 78–82. Lorwin, op. cit., pp. 295–296, notes economic planning was in the air having been put forward by several economists and writers. When the officers reported their program to the 1931 convention, one delegate sought, quite unsuccessfully, to amend it by calling for the creation of a labor and industry board "to regulate all industry," and, if necessary, "take over all essential industries for one year." AFL . . . , Report of Proceedings . . . 1931, pp. 366–367.

[21] AFL . . . , Report of Proceedings . . . 1931, pp. 84–87.

[22] AFL . . . , Report of Proceedings . . . 1932, pp. 24–26.

The committee charged with the responsibility for reporting to the convention that part of the officer's report which dealt with planning (along with other parts of the economic program) added its own words of caution. They expressed their "understanding that the Executive Council has in mind some plan which in the main provides methods of voluntary cooperative action," and the authority administering it, "is not to be armed with the power of law enforceable by the courts." [23] Several decades of unhappy experience with federal injunctions aimed at unions had, as we have previously suggested, left their deep mark on union ideology.

When it came to specific measures to reverse the depression, the Federation showed new signs of tougher interventionism. It called for: "steeply graduated income and inheritance taxes; constructive control of credit to finance production"; federal collections of hours and income data; "federal licenses for corporations operating on an interstate scope, with specific requirements as to accounting"; organization of wage-earners to advance their interests in industry and elsewhere; "use of national [federal] credit for self-liquidating projects for building homes, for workers and other small income groups, for slum reclamation and similar undertakings"; planning for "the expansion and contraction of national credit should be a part of the whole undertaking of economic planning"; and the "advance planning of public works." [24]

The Acceptance of Unemployment Insurance

In 1931 AFL leadership once more came under great pressure to support unemployment insurance. The officers presented a special report to the convention, drawing heavily on British and German experience with UI. Despite the support of the unions for the existing insurance programs in those countries, the AFL officers concluded that "the possibilities of the prevention of unemployment have increasing significance and must be carefully safeguarded against policies that crystallize unemployment and habits of accepting it as inevitable." After all, the only real remedy for unemployment was employment. Unemployment insurance "encouraged industry to keep a work force larger than their needs," and also "encouraged workers to hang to a declining industry." Such insurance might "be the crutch that permanently weakens industry and keeps it from solving a problem whose solution is essential." The AFL Executive Council offered, instead, its own program of hours reduction, a "national conference of employers and labor" to devise "ways and means . . . through which all working people" may have an opportunity to share in "work available." [25]

An important reason for opposition to unemployment insurance was the fear that it would lead to "regimentation . . . a national service" which "would be used to break down unionism." (Again this reflects the continuing suspicion of government which might, in this case, gang up with employers to force workers to accept non-union jobs as part of any registration and eligibility requirement for insurance benefits.) The AFL top leaders distinguished the U.S. situation from that in

[23] Ibid., p. 320.
[24] Ibid., pp. 36–37.
[25] AFL . . . . , Report of Proceedings . . . 1931, pp. 161–163, and 368.

Britain and Germany by noting that in these two countries the union movement had achieved sufficient strength to avoid being broken by any system of registration and employment record keeping. Moreover in those countries, unlike the U.S., there was "no aggressive organization of employers seeking to destroy or nullify union organization." [26]

Over opposition from a growing number of unions and delegates, the Federation leaders carried the 1931 convention against resolutions favoring legislation for unemployment insurance.

By 1932, however, the minority had become a majority and AFL President Green, who had expressed some hesitation in his opposition in 1931, now took the lead. Acting with the approval of the Federation's Executive Council he convened a group of experts on unemployment insurance to help him and his staff to draft legislation. They came to support a system of unemployment insurance to be enacted by the states. (Fear that a national law, which would have been preferable, would be unconstitutional, led to the state enactment route.)[27] This was submitted to the 1932 convention. Although it represented action in only one sector, one labor historian has termed it "a turning point in the history of the American labor movement; the American Federation of Labor by endorsing unemployment insurance turned its back on voluntarism." [28]

Organized labor's shift in support of social insurance (pensions and health, as well as unemployment insurance) was a cautious one. The unions, as one of the architects of the U.S. social security system wrote, played only a secondary role in the enactment of the Social Security Act of 1935, though they were supportive of the legislation.[29]

But the turning point reached in the great depression was critical. In modern times organized labor has clearly become the most important proponent of expansion of this program, witness its key role in the passage of the medicare law, and its lead in the continuing campaign for national health insurance. The unions have also taken the lead in periodically pressing for improving the benefit and eligibility provisions of unemployment insurance as well as old age pensions. They stand as the leading supporters of these programs which are now widely regarded as essential built-in-stabilizers, helping to offset business fluctuations. One leading labor economist noted, in the midst of the great depression, that the unions' shift of position on social security legislation, in a sense, was transforming it from being almost exclusively a bargaining, balance force on behalf of its members vis-a-vis their individual employers, into "an instrument of social progress." [30]

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[26] Ibid., pp. 162–163.

[27] Philip Taft. A. F. of L. From the Death of Gompers to the Merger (New York, Harper & Brothers. 1959), pp. 36–37.

[28] AFL President Green remarked: "We have been irresistibly forced to take new positions, to pursue a flexible policy, and to adjust ourselves to the changed order." Bernstein, op. cit., pp. 353–354.

[29] Edwin E. Witte, in Milton Derber and Edwin Young, editors, Labor and The New Deal (Madison, University of Wisconsin Press, 1957), pp. 250–252.

[30] George E. Barnett. "American Trade Unionism and Social Insurance," American Economic Review, vol. XXIII, No. 1, March 1933, pp. 6–8. How much of a key change was the AFL switch to support of unemployment insurance was grasped by another writer for the American Economic Review, who in 1932 had forecast this change. Lyle W. Cooper saw that (coming) change as part of a general shift of worker support away from the "welfare capitalism" of the 1920's, toward "more militant efforts" as a result of which there would be far "more laborers organized." Vol. XXII, No. 4, Dec. 1932, pp. 657–659.

AFL Support for NRA and Shorter Hours

The Federation's officers were keenly aware of the great changes taking place in American economic life and policy by this time. With the first 100 days of the New Deal behind them, at the (October) 1933 convention they reported their participation in "The creation of machinery and the initiation of undertakings to have economic institutions and to start a concerted drive for recovery. . . ." They judged, "We are trying to work out a revolutionary shift of concepts in a practical way," a shift from a deep belief in purely individually oriented actions "to an understanding that permanent progress for any group is interdependent upon progress for all other groups. . . ." The Federation supported the passage of the National Recovery Act, terming it "the most important and far-reaching legislation ever enacted by Congress. . . ." [31] Under the industrial parts of this legislation, labor and management under "supervision" of government, (again notice the gingerly attitude toward government which, after all, had provided the initiative in this area) were empowered to draft codes of practice, industry by industry. Decisive for the AFL, of course, was the requirement that every such code had to guarantee employees "the right to organize and bargain collectively through representatives of their own choosing. . . ." [32]

During these years the Federation continued its strong support for shorter hours as a major remedy for large scale unemployment. They became important sponsors and supporters of the Black-Connery 5-day, six-hours a day, 30 hour work week. Here, too, support of such a broad piece of regulation for all employees was a significant acceptance of government intervention.[33]

The drive for shorter hours was reinforced by the Federation's economic analysis of the causes of the great depression. Again in 1934 stress was placed upon the technological revolution, the enormous increases in productivity since the World War, and the widening of the margin between the nation's production power and the population's ability to consume.[34]

The relative growth of the AFL's economic analysis in these years is revealed not only in its treatment of technology and productivity but also by its efforts to come to grips with the debt issue. The officers noted with concern that for every $100 received in wages, salaries, dividends and interest, $20 had to go to service debt by 1932–33. This compared with $6 in 1913–14. The Federation officers feared and opposed currency inflation as a method of recovery and to liquidate the debt. They argued this would destroy workers' purchasing power even more than it had been eroded by the depression.[35]

While this sounds like fairly conservative economic doctrine on the debt issue for the union movement today, the Federation did not shrink from radical proposals when it contemplated the still desparate unemployment situation. They hailed the provision of federal relief and praised the various public works efforts of the government. But the

[31] AFL . . . , Report of Proceedings . . . 1933, p. 27.
[32] Ibid., p. 4.
[33] AFL . . . , Report of Proceedings . . . 1934, pp. 375–382.
[34] Ibid., pp. 123-215.
[35] Ibid., p. 121.

country simply couldn't afford the burden of close to 11 million people unemployed "who are creating no wealth. . . ." They argued "experience . . . has proved that business even when left to its own devices takes no measures to put the unemployed to work on a national scale. . . ." They insisted "our unemployment problem is immediate and critical" and in symbolically important words added, "final responsibility for its solution rests upon the government. . . ." [36]

This was indeed a far cry from a few years earlier when the ultimate responsibility for employment was placed just about solely on employers shoulders. Hopefully a plan under which labor, industry and government could cooperate to restore work to the unemployed would be devised, but if this didn't work, government had to find other means. When "private business is not able to resume its normal functions, then society is forced to take over the means of production." [37]

When, in May 1935, the Supreme Court struck down the NRA in the Schechter case, the Federation declared to its affiliates, "Our first experiment in national planning . . . was abruptly brought to a close." In their evaluation the officers noted that the NRA resulted in certain economic and social benefits, but they also pointed to "certain major insufficiencies" including "insufficient powers of enforcement" and "insufficient labor participation" in code making and code administration. These gaps "must be remedied in our next program for national economic control. . . ." [38]

However, 1935 marked something of a turning point in the Federation's attention to unemployment and the business cycle. The modest recovery underway reduced some of the economic pressure on the organization. Of equal importance, the AFL was caught up in the new wave of union organization which added several million union members within a few years. The great struggle with the Congress of Industrial Organizations (CIO) which began as a result of the suspension of a number of unions bent on the industrial union principle of organizing, also shifted the main focus of the AFL's attention. The ensuing years witnessed great gains in the union organization including major advances in the automobile, steel, rubber and electrical machinery industries. While CIO unions led in these mass production industries, AFL unions also made important gains in a number of manufacturing industries and continued their dominant position among skilled craft workers in construction, printing and elsewhere.

In the years 1936–1937 much less attention was centered on economic questions in the Federation's work and its conventions (judging by the report of its officers and the convention proceedings). The rise in unemployment in 1938 modified this situation. In 1939 the officers reported that, "as the tenth year of serious unemployment draws to its close, we place the problem of getting the unemployed back to work in private industry as our first concern." They felt that despite some improvement since the crash of 1929, the recovery forces which lifted business out of depression in the past were no longer sufficient "to

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[36] Ibid., p. 114. The Federation continued to rely on its own unemployment estimates, in the absence of any official series. The AFL estimates (prepared by its own Research and Statics Department) came under attack from the Chamber of Commerce, but were warmly defended at the convention.

[37] Ibid.

[38] AFL . . . , Report of Proceedings . . . 1935, pp. 37–41.

break the present business stagnation." The economic structure of the nation had changed, and there was "no longer opportunity for highly profitable investment in great expansion of the nation's producing plant and equipment" and in its "natural resources", since excess capacity already existed. The AFL went on to argue that "Profits today depend on an increasing sales volume of goods produced by mass production," and this depended on "steady expansion of consumers' buying power." [39]

This sounded akin to the doctrine of secular stagnation then being developed by Professor Alvin Hansen and others.

The Federation returned to the need for the coordination of effort by all the nation's functional economic groups. It urged the creation by Congress of a National Advisory Council composed of such groups, which would, in turn advise Congress, the logical agency in the development of a program for "industrial expansion through profitable private enterprise." [40]

This theme of a high level group, advising and working with government, is a recurring one in AFL history, both before World War I and right to World War II and afterward. It has its most modern counterparts in the 1979 pay-price accord worked out between President Carter and AFL–CIO President Lane Kirkland along with selected business and public representatives, as well as the 1980 Economic Revitalization Board on which Mr. Kirkland serves as co-chairman, along with Irving Shapiro of the Du Pont Co.

By 1940 and 1941, the impact of defense expenditures and the growing sense of a looming war became a powerful influence on the levels of unemployment, and AFL's perception thereof. Forecasts were reported, for example, when the Federation met in the Fall of 1940, that the 9.3 million unemployment level of August 1940 would fall to 4 to 6 million by the Fall of 1941 and to between 1.5 and 3 million by the end of 1942.[41] Again in 1941 forecasts were made, to even lower levels, of the way growing defense spending would continue to melt unemployment. As might be expected in these and subsequent years, economic discussion shifted from concern with unemployment to problems of wage and price control, manpower needs for defense, etc.

The War and Its Impact on AFL Economic Policy

As the war wore on AFL interest gradually turned to problems of reconversion and postwar economic organization. Support was expressed for different legislative proposals which typically had as their objective the elimination of unemployment, and to establish a Post-War Economic Advisory Commission with representation of functional groups, as proposed in the so-called Voorhis Bill of 1941. A recurring theme was the need to combat unemployment as vigorously in peacetime as had been done in War. With the cry of "deflate labor" still "ringing in labor's ears" from the First World War, as one delegate put it, it is not surprising that the Federation went ahead to establish a post war problems committee.[42] By 1942 the Federation

[39] AFL . . ., Report of Proceedings . . . 1939, p. 205.
[40] Ibid., pp. 206–207, and 522.
[41] AFL . . ., Report of Proceedings . . ., 1940, pp. 93–94.
[42] AFL . . ., Report of Proceedings . . ., 1942, pp. 586–587.

also had a functioning committee on taxation which reported to the convention of that year.

In 1944 this Post-War Planning Committee, as it came to be called, was arguing for public policy designed "to achieve maximum levels of employment and production." The Committee consulted with many sympathetic "outside" experts and also held a widely attended Post War Forum in New York City. The AFL program for that forum was also proposed and accepted by the 1944 convention. It stressed the need for worldwide cooperation for peace and freedom as well as postwar prosperity. The 1944 convention called for reorganizing and strengthening the Post-War Planning Committee whose name was changed to the Employment Committee. Support was expressed on behalf of consultation between labor and "private organizations and governmental agencies, for the advancement and maintenance of employment and maintenance of consumer purchasing power at levels that will maintain high levels of employment," all to be done in order to assure jobs, "personal freedom and justice to individual workers and free enterprise for employers." [43]

This language clearly reflected the legislation which was taking form under the leadership of Senators Kilgore and Murray, that was to result, eventually, in the Employment Act of 1946.[44]

Organized labor, AFL and CIO, were early supporters of proposed "full employment" legislation, though each had its own reservations about the final version of that legislation (the Employment Act of 1946.) [45]

Economic Policies of the CIO

Before we turn to that phase of the evolution of labor's view on economic policy it is useful to interject at least a brief sketch of the development of CIO's positions during these years.

Born in the midst of the great depression, in its very first convention in 1938 the Congress of Industrial Organizations took notice of the threat to employment growth which began to occur by the Fall of 1937. It appointed a special director of unemployment, and took "the position that government has the responsibility to provide work for those unemployed who are willing and able to work." It ascribed the great depression to the growing imbalance between profits and property income on the one hand and wages on the other, in the 1923–1929 period. It hailed the NRA and the National Labor Relations Act which strengthened unions and workers' purchasing power. It commended the role, in the recovery from 1933 on, of "vast government expenditures" which helped replace missing private investments in providing industrial activity. It attributed the turndown of late 1937 and 1938 to the abrupt decline in Federal spending after 1936, when government "reduced its expenditures and began at the same time to collect increased taxes." The upturn which began in the Spring of '38 had largely been due to "a rapid pick-up in Federal expenditures and in government net outlays." It also looked to organized workers to raise wages and to reduce hours as the most important factor in sustaining the recovery getting underway. It deplored the tendency of "consum-

[43] AFL . . . , Report of Proceedings . . . 1944, pp. 257–269 and 572–573.
[44] Stephen Kemp Bailey, "Congress Makes a Law, the Story Behind the Employment Act of 1946." (New York, Vintage Books, 1950).
[45] Ibid., pp. 92–93.

ing power continually [to] slip behind production." For this reason, it felt "only government contributions to the general consumer income can guarantee . . . economic balance . . . ." It called for full production which could be "created only by intelligent direction . . . [that] must necessarily come from government . . . ." [46]

This represented, for that time, a relatively "advanced" economic position, with its emphasis on government spending to offset possible deficiencies in private investment.

With the level of unemployment still very high in 1939, CIO President John L. Lewis' report to the convention put much emphasis upon the fear of technological unemployment which could wipe out "the beneficial effects of wage raises or decreased hours." It called upon the government to undertake "an immediate and thorough-going survey of technological unemployment and its consequences." Meanwhile it pressed for a shortening of hours, "until the goal of a 6-hour day and 30-hour week is reached." On the *general* question of unemployment, the CIO called "upon the President to bring labor, industry and government about the conference table in order that they might agree upon ways and means to establish prosperity and end unemployment. . . ." [47]

These themes were not unlike similar ones being proposed in the AFL conventions of these years. By 1940, top CIO leaders were testifying before the Temporary National Economic Committee on the effect of technological changes upon employment. None of those testifying opposed technological change but they outlined programs to prevent the "human tragedies and the destruction of cities and towns" which often came in the wake of sweeping technological advance. Included in these programs were: provisions in union-management contracts that workers displaced by technology be absorbed in other ways by the company and dismissal wages for workers thrown out of work.[48] With its membership concentrated in such industries as coal, steel, auto and electrical machinery, the CIO was especially sensitive to the great technological changes which were accompanying economic recovery and the new defense build-up.

CIO Plans for Post War Reconversion and Full Employment

It was recognized that the National Defense Program was providing an extensive stimulus to employment, but fear was expressed that sooner or later this would be tapered off, and the CIO repeated its calls for a national conference to find ways and means to end unemployment. CIO also repeated its support for public work programs for the relief of unemployment. It emphasized the problems of relieving youth unemployment.[49]

As the threat of war became more imminent the CIO called upon the government to establish industry councils, to be composed of representatives of labor and management, to help plan for increased production and meet the nation's defense needs.[50]

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[46] Congress of Industrial Organizations, "Proceedings of First Constitutional Convention," 1938 (1938), pp. 47–60.
[47] CIO . . . . Daily Proceedings . . . 1939, pp. 26, 110 and 241–242.
[48] CIO . . . . Daily Proceedings . . . 1940, pp. 61–623.
[49] Ibid., pp. 171–172.
[50] CIO . . . . Proceedings . . . 1941, pp. 164–165.

The onset of the war led the CIO, like the AFL, to turn its primary attention to a host of new problems, including controls over wages and prices and production, and to mobilize manpower. By 1942, however, concern was being expressed over the problems of post war conversion of industry, and CIO President Murray established a Post-War Planning Committee. Notice was taken that the country demonstrated during the war that we have the knowledge, the skills, the machines and resources to produce a "gold standard of living" for every American. It could and should do the same in peacetime. Particular attention was paid to the $23 billion "worth of government owned plants and equipment" which had to be put to constructive use after the war. Again the relatively high concentration of so many of CIO's industrial union members in war plants lent urgency to its call for careful scrutiny of the possible uses (or non-use) of those plants after the war's end.

Vast unfilled public needs, it was argued, for houses, roads, hospitals and schools also helped the prospects for millions of new jobs after the war.[51]

This convention program was followed up by CIO's Political Action Committee which convened a two day full employment conference in January, 1944. Under the chairmanship of Sidney Hillman of CIO PAC, Professor Alvin Hansen opened the meeting with a speech on Reconversion and Post-War Needs in which he forecast turbulent conditions in the reconversion period. "Without any planning . . . we are likely to face . . . both inflation and deflation. . . ." Hansen's was one of 42 short addresses, by labor, farmer, government, and other figures, on subjects ranging from reconversion, veterans, women workers, negro workers, and industrial planning to social security and housing.[52] Most of the emphasis was upon planning for full employment after the war.

At its 1944 convention, later in the year, the CIO expressed doubts about the so-called (Senator) George Reconversion Act which President Roosevelt had signed into law. This law had superseded the Murray-Kilgore-Truman bill, supported by labor, which contained much stronger proposals for planning and production in reconversion and peacetime.[53] The convention passed a resolution entitled "Sixty Million Jobs and Prosperity for All," and read into the record a new pamphlet "CIO Re-Employment Plan," by its President Philip Murray, which spelled out its postwar plan in some detail. It highlighted goals for housing, transportation, regional development, health and education. The heart of the plan was a national production board (styled after the War Production Board) and separate industry councils, all to be run by representatives of labor, management and government. These bodies would "establish minimum production goals for all the basic industries, which will add up along with production of small business, farmers and public enterprise—to a national production goal equal to the production capacity of the nation." Beyond this "enterprise would still be free to top these minimum goals." [54]

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[51] CIO, Full Employment, Proceedings of the Conference on Full Employment (CIO Political Action Committee, January 15–16, 1944, New York, 1944).

[52] During the debate on different pieces of reconversion legislation, both AFL and CIO stressed the necessity to maintain federal control over the U.S. Employment Service, which had been the practice in wartime. Their argument proved unsuccessful.

[53] Id.

[54] CIO . . . , Final Proceedings . . . 1944, pp. 259–276.

AFL, CIO AND THE 1946 EMPLOYMENT ACT

As previously observed both AFL and CIO were supporters of the original full employment bill of Senator Murray (S. 380, itself an outgrowth of earlier efforts by Senators Kilgore, Truman, and Murray and others). Its passage in what seemed to be very watered down form in 1946 (The Employment Act) greatly disappointed both AFL and CIO. The latter commented that in its final form "it was altered and slashed beyond recognition" and even embodied "a refusal to seek the objective of full employment." [55] The AFL 1947 convention adopted a resolution deploring the "emasculation" by Congress in 1946 of the original Full Employment Act, and called for new legislation along the lines of the original bill.[56]

Within a year or two as the wider possibilities of the Employment Act of 1946 were appreciated, the tune of both AFL and CIO had changed. The latter, for example, in a 1948 convention resolution on the Council of Economic Advisers, hailed the Council and the passage of the (Employment) Act as "landmarks in the history of Congressional legislation." They strongly approved of the Council's practice of consulting with private economic groups and urged the fuller development of this practice, as well as enlargement of the staff of the Council.[57] By this time both AFL and CIO had established small committees (of elected officers) to meet periodically with the CEA.

In the case of the CIO, its committee which met with the Council had actually become one of CIO's regular standing committees (first called the Full Employment Committee in 1946, and renamed the Economic Policy Committee a few years later).

The CIO saw in the Council and its work the opportunity for the nation "to give greater attention to long range industrial planning problem of the kind CIO unions" had proposed from time to time.[58]

The AFL was also supportive of the Council, and commended it for giving guidance to "private groups as well as governmental agencies . . . to pursue the objectives of the Full Employment Act." [59]

The Federation, returning somewhat to its earlier position was, however, more cautious than the CIO in any support for government intervention or planning. During the recession of 1949 it "recognized the importance of giving free rein to the normal corrective forces of a free economy, so that the necessary adjustments would be brought about . . . to restore economic health. . . ." They stressed the value "of the free market pricing system." The Federation also opposed any proposals for "providing for plant expansion through government financing." [60] This latter position contrasted with the CIO which, in the same year, resolved that if "private enterprise fails or refuses to make investment in new productive capacity" then "government . . . must accept responsibility for breaking the basic industrial bottlenecks of monopoly which defeat full use of our productive resources." [61]

While a few differences between AFL and CIO persisted, what was more significant in the evolution of union attitudes on the business

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[55] CIO . . . , Final Proceedings . . . 1946, p. 74.
[56] AFL . . . , Report of Proceedings . . . 1947, p. 557.
[57] CIO . . . , Proceedings . . . 1948, pp. 374–375.
[58] Ibid.
[59] AFL . . . , Report of Proceedings . . . 1952, p. 177.
[60] AFL . . . , Report of Proceedings . . . 1949, pp. 249–250.
[61] CIO . . . , Proceedings . . . 1949, p. 412, in a resolution on "Full Employment Planning Through Industry Councils."

cycle was the growth of overwhelming support for the goal of full employment, and the emerging central role of government in pursuing it. Full employment become the key rallying point of union economic policy. When the recession of 1949 struck, for example, the CIO rejected "the belief that our government can indulge in the luxury of budget cutting when millions are jobless and less than full production prevails." It called upon government to accept responsibility for stabilizing production and employment, and to plan for steady growth in production, year after year, so as to assure full employment."[62]

Responding to the recession of 1954, the AFL decried the losses in production and income. Although productivity surged ahead, consumption lagged. AFL declared it essential to bring consumers' ability to buy into step with the country's productive and physical growth." While government "alone cannot . . . shape the course of the nation's economic progress . . . the government . . . must, of necessity provide the guidance . . . and . . . give leadership in defining the goals to be attained. . . ." To restore full prosperity the AFL set forth an agenda which called for a comprehensive program of public works including schools, hospital, roads and other structures, a long range program of public housing, reduction of taxes, an increased minimum wage and strengthening of the unemployment compensation system.[63]

What was of equal significance in the 1950s was the greater professionalization of the economic analyses of the union movement. For example, convention reports and resolutions increasingly called attention to the gap between the full employment rate and the actual rate of the gross national product. Thus, in 1950 the AFL officers' report to the convention, under the title Full Employment Not Achieved by Mid-1950, noted that a fully employed labor force would have produced $273 billion as against the actual first half of 1950 annual rate of $265 billion.[64]

The 1949 convention report of CIO President Philip Murray offered a detailed analysis of the nation's economy taking as its point of departure the country's 1949 gross national product and its constituent parts, consumer expenditures, private investment, net foreign investment, and government spending. It proceeded to criticize the theory that the GNP should depend on savings and business investment. Arguing that there was inevitably great volatility in business investment, CIO insisted the way to avoiding boom and bust economics was to base the economy increasingly on greater consumption expenditures. CIO rejected the idea that downward adjustments in the economy could be healthy, as "the business press tried to tell the nation." While not condoning "waste and reckless spending by government," CIO strongly urged increased government spending when "the private forces of the economy are not sufficient for full employment and maximum production", and we were "confronted with deflation." [65]

Not only did the level of sophistication in labor's economic analysis tend to grow in these years, but economic policy itself seemed to come more to the fore. In the case of the CIO, for example, each presidential

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[62] Ibid., pp. 411–412.
[63] AFL . . . , Report of Proceedings . . . 1954, pp. 248–249.
[64] AFL . . . , Report of Proceedings . . . 1950, p. 285.
[65] CIO . . . , Proceedings . . . pp. 64–70.

report to the annual convention usually led off with a fairly long economic analysis, and a long resolution on economic policy would be adopted by the convention.

The 1955 merger convention of AFL and CIO struck economic themes which were to echo again in succeeding years—themes which showed how far the labor movement had evolved away from its economic "voluntarism" of the pre-1929 depression. The resolution on economic policy declared that "Organized labor had taken the lead in urging the Federal Government to assume a more positive responsibility for the nation's economic growth and stability." As a result of labor's urging, in the preceding twenty years the government had enacted social security, minimum labor standards legislation, a housing program and tax programs all of which "introduced a greater degree of stability into our system." The passage of the Employment Act of 1946 and the acceptance by both political parties of the obligations imposed by this Act were witness to the significant change that has taken place in the Federal Government's role in economic affairs.[66]

To maintain economic growth and to sustain full employment levels in the years ahead a nine point program, largely geared to federal government actions, was offered, including: (1) Encouragement of free collective bargaining to help wage and salary earners to share adequately in the fruits of industrial progress; (2) a federal tax policy to strengthen consumer buying power and to close loopholes; (3) improvement of the federal minimum wage to help low-income families; (4) congressional enactment of a specific program of special assistance to areas of permanent economic distress; (5) improvement in the unemployment compensation system in the areas of benefits and duration as well as eligibility requirements; (6) improvement in social security including higher pension and disability benefits; (7) a national housing goal of two million new housing units a year; (8) new farm programs to halt the continuing decline of farm income; and (9) low-interest loans to encourage business and farm investment, particularly for small business. In addition the federal government was urged to make a major contribution to economic growth by reducing the backlog of pressing public needs, the latter to include aid to schools, hospitals, roads and other public facilities.[67]

The practice of including a long economic analysis in the officers' report to the convention, often in a lead-off position, was picked up by the merged AFL–CIO. In the 1957 convention, which was the first following the merger meeting, the Executive Council's report included such a long section on "The National Economy." Reflecting, to some extent, the particular interests of the Chairman of AFL–CIO's Economic Policy Committee Walter P. Reuther (and those of his union the United Automobile Workers), that report, and the economic policy resolution the convention later adopted, put important stress on the problem of administered prices and the way in which they contributed to higher prices and threatened full employment.[68] The 1957 convention also included reports and resolutions on automation, taxes and

[66] AFL–CIO. Report of the First Constitutional Convention. Proceedings. 1955. p. 68.
[67] Ibid., pp. 69–70. Special resolutions detailing necessary federal and state and local tax changes were also adopted, pp. 70–72.
[68] AFL–CIO. Proceedings of the Second Constitutional Convention of the AFL–CIO, 1957. vols. I and II. (Washington, D.C. 1957.)

other matters. In several succeeding conventions as the economic policy resolution was introduced, AFL–CIO President George Meany turned to Walter Reuther, one of the Vice Presidents, for a presentation on this issue, which consisted of a fairly long address on the resolution and the body's economic views.

Full employment and its pursuit continued to be the principal hinge of AFL–CIO economic policy in the conventions that followed. In 1959 the organization inveighed against the "Slow-Down of Economic Growth." It charged restrictive government policies had brought about a shocking state of stagnation in recent years. It estimated the loss in production from 1953 to 1959 at $225 billion.[69]

In criticizing the stagnation of the fifties, the AFL–CIO economic policy committee chairman Walter P. Reuther pointed out in 1959, before the Joint Economic Committee, that each recession recovery in the post World War II era had been successively weaker. Thus, after the 1949 downturn, production reached some 128 percent above the low point of that recession after 8 months; after the 1954 recession, recovery was 93 percent over the low point; 8 months after the 1958 recession, the recovery went only 84 percent above the low point.[70] In turn Reuther called for a stepped up rate of growth to overcome this alleged stagnation.[71]

AFL–CIO noted that experience teaches that upturns from recessions usually slow down about 12 to 15 months after the pick up starts, unless expansionary measures are added to them to carry forward. The objective must be to move up to full employment and sustain it. Clearly a balancing role had to be played by the federal government; but even when it moved from deficit to surplus, when private spending sufficed for full employment, the government should move only gradually, and "avoid slamming on the brakes" as had occurred in 1959–1960, which led to a sharp recession.[72]

AFL–CIO also stressed the importance of "monetary ease . . . to encourage expansion of demand and employment." It urged this upon the Federal Reserve System's Open Market Committee.[73]

Still recessions might occur, and to cope with such contingencies advance preparations were necessary. AFL–CIO supported granting discretionary tax cutting power to the president, to quickly offset a downturn. Advanced planning of public works including a grant of discretionary power to the President to authorize projects when needed, was also recommended for quick anti-recession action.[74]

Generally speaking then and later, the AFL–CIO carefully avoided advocating a policy with exclusive fiscal (or monetary) emphasis. The importance of collective bargaining in protecting workers' living standards, for example, was seen as a vital part of a full employment program. Reform of unemployment and old age insurance programs also had a role.[75] Some of these specific program items often reflected

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[69] AFL–CIO . . . , Proceedings . . ., 1959, vol. II, pp. 76–78.
[70] Reuther testimony in Joint Economic Committee, Hearings, January 1959 Economic Report of the President, Jan. 17 to Feb. 10, 1959, Eighty-Sixth Congress, 1st session, p. 542.
[71] Ibid., Hearings Feb. 1–10, 1962, Eighty-Sixth Congress, pp. 272–273.
[72] AFL–CIO . . . , Proceedings . . . 1961, vol. II, pp. 66–67.
[73] Resolution of the National Economy, in Ibid., vol. I, pp. 365–366
[74] Resolution on the National Economy, in Ibid., vol. I, pp. 85–86.
[75] Ibid., vol. II.

the more immediate or exclusive needs of AFL–CIO affiliated national unions and their members, in some contrast to the more general economic policies the federation was advocating.

By 1970 AFL–CIO spokesmen were emphatically stressing the need for a broad gauged approach to economic policy. Its research director Nathaniel Goldfinger stated to the Joint Economic Committee:

> America can no longer rely, solely, on aggregate fiscal and monetery analysis that was originally developed in the 1930s and 1940s—before the onset of rapid and radical changes in technology, economic structures, urban growth, and race relations. The social and economic consequences of national economic policies—on the job opportunities of blue collar workers, for example, on meeting such high priority social needs as housing and the rebuilding of urban areas and on the distribution of income—can no longer be ignored in a simplistic focus on aggregate national averages that conceal and distort almost as much as they reveal about the well-being of the people.[76]

Increasing emphasis was also given by AFL–CIO to the need for tax reform. Tax reduction, essentially tax cuts for low and moderate income families, and elimination of tax loopholes for wealthy families and corporations were to be an essential part of a balanced economic policy.[77]

The eclectic character of the union organization's economic program has continued to distinguish it from the more exclusively conceptual and theoretical proposals of most expert economists.

The AFL–CIO also strongly supported the position that the Employment Act of 1946 mandated the President and the Council of Economic Advisers to set forth clear full employment goals in their annual Economic Report. Testifying before the Joint Economic Committee the then AFL–CIO Director of Research, Stanley Ruttenberg bitterly criticized the 1953 Report for containing no statement of full employment goals for 1956 or the period ahead. He called the failure to carry out the requirements of the Employment Act a great disappointment and a disregard for the original purposes of the act.[78] The inclusion of such objectives and the long run growth potential in the Economic Report a few years later, brought forth strong commendation from the AFL–CIO.[79]

In passing it is worth noting that goal-setting had, to some extent, been eliminated from the original draft of the 1946 Employment Act. On the other hand, such goal-setting was a part of the 1978 Humphrey-Hawkins amendments to the 1946 Act.

Better Balance in Private Economy to Avoid Booms and Busts

As the economy moved out of the recession of 1960–1961, and entered on a fairly sustained expansion in the succeeding decade, AFL–CIO economic policy became somewhat less concerned with the business cycle. The expansion of the 1960s was viewed as great improvement

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[76] In Joint Economic Committee, Hearings. The 1970 Economic Report of the President Part 3. Invited Comments. Ninety-First Congress. 2d session, p. 497.

[77] AFL–CIO . . . . Proceedings . . . 1967. vol. I. p. 536.

[78] Joint Economic Committee. Hearings, January 1956 Economic Report of the President. Jan. 31 to Feb. 28, 1956. Eighty-Fourth Congress. 2d session. p. 430.

[79] See the Statement of Walter P. Reuther. Vice-President AFL–CIO and Chairman AFL–CIO Economic Policy Committee, before Joint Economic Committee, Hearings. January 1962. Economic Report of the President. 25—Feb. 8. 1962, Eighty-Seventh Congress. 2d session, p. 721.

over the record during most of the 1950s. But more attention was turned to the problems of income distribution. AFL–CIO contended that a disproportionately large share of the economic gains of the 1960s had gone to business and wealthy families. This was resulting in a lack of balance in the private economy. Profits had increased disproportionately to wages, and this was feeding the fires of an unsustainable boom of business investment in plants and machines. This business boom, added to the rise in military spending brought about by the Vietnam War, was creating inflationary strains. An improved balance between wages and profits in the private economy was essential for continued, healthy expansion, without booms and busts. Government's tax policies also had to aim at a fair distribution of the tax burden, rather than favor capital and profits, as had been the case in recent years.[80]

Toward the end of the 1960s and early in the 1970s, the AFL–CIO continued to criticize the lack of economic balance in the economy, and it also began to zero in on the Federal Reserve Board's move toward higher interest rates. Restrictive tight money and unprecedented high interest rates were contributing to rising living costs hurting residential construction and raising the danger of increasing unemployment. Rather than "these policies of general restraint," which were "ineffective in combatting profit inflation and the capital investment boom," AFL–CIO came out for *selective* credit and fiscal measures.[81]

The AFL–CIO had been on record in support of comprehensive controls to cope with the inflation and balance of payments crisis even before 1971. More than any other large economic group, when inflation has been at hand during the past 19 years the union movement has tended to express support for comprehensive controls (including prices, wages and other income-comprehensive measures as opposed to controls on wages alone). However, it viewed the controls imposed by President Nixon in 1971 as lacking in equity and not comprehensive. AFL–CIO President George Meany, then and on other occasions, argued that under a controls program "The proposed wage freeze was very simple to enforce. Every employer was an enforcer and happy to be an enforcer." As for the price freeze there were "no plans for that except the Internal Revenue Service and they enforced it on the telephone." Moreover, once the freeze was on and a control program had to be devised and administered the union movement insisted, in Meany's words, on a "voluntary and independent . . . tripartite setup," like the National War Labor Board of World War II, to administer the wage end of the program.[82] Eventually the labor members of the tripartite board walked out of the 1971 control program (with the exception of the President of the teamsters union), in protest against the inequities they attributed to it.

The insistence on an independent tripartite board to administer the wage end dates back to what seems to have been union labor's general satisfaction with the equities of that type of program in World War II. George Meany was a prominent labor member of the War Labor Board in those years.

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[80] AFL–CIO . . . , Proceedings . . . 1967, Vol. II, pp. 61–84.
[81] AFL–CIO . . . , Proceedings . . . 1909, Vol. II, pp. 63–67.
[82] AFL–CIO . . . Proceedings . . . 1971, pp. 12–28.

The major recession of 1974–1975 provoked a major outburst from AFL–CIO. It charged that the government's restrictive fiscal and monetary policies were responsible for the largest and steepest recessionary decline since the 1930s. AFL–CIO complained that it took the Administration more than a year to acknowledge the recession which began in November, 1973. For their part, AFL–CIO had called for steps to get the economy on the road to balance and health as early as February 21, 1974.[83]

It is worth noting here that, committed as it is so strongly to full employment, there is always a tendency, on AFL–CIO's part to call for counteraction even in the face of mild, adverse economic signs, in advance of virtually every other major economic group. In a sense, AFL–CIO rejects the business cycle, in any sustained form. It could be argued this gives its policies some bias toward the inflation side, although AFL–CIO has not been timid in advocating wage and price controls to cope with inflation on several occasions in the post-war decades.

AFL–CIO reserved a heavy part of its fire, in 1974 and 1975, for the Federal Reserve Board. The latter's tight money crunch and soaring interest rates, it was alleged, pushed the national economy to the brink of disaster. Housing starts fell, deep cuts were made in investment plans by public utilities, and the spectacular rise of interest rates was adding sharply to inflationary pressures by raising business costs. The Executive Council charged that "in the name of fighting inflation, Dr. Burns has made the Federal Reserve Board an engine of inflation." AFL–CIO President George Meany also singled out Arthur Burns for criticism in his opening address to the 1975 convention.[84]

AFL–CIO also criticized the Administration's mid-year budget review which seemed to predict and accept a persistently high rate of unemployment into 1980. It attacked the administration's concern with the debt, rather than on creating jobs and stimulating the economy.

To meet and reverse the recession, AFL–CIO proposed a 15 point program which included: (1) Income tax cuts; (2) the full implementation of government housing programs; (3) an accelerated public works program including $5 billion of federal grants to local governments for short-term construction and repair programs; (4) an expansion of the public service program; (5) Congress to direct the Federal Reserve to reduce long- and short-term interest rates, and at the same time reorganize the Board to abolish the banker-dominated Open Market Committee, its functions to be absorbed by the Board whose membership should be broadened to include representatives of major groups in the economy, including organized labor; (6) federal aid to very hard pressed state and local governments; (7) a federal program to restore railroad tracks and beds; (8) enactment of long overdue improvements in the unemployment insurance system; (9) a federal program to continue health insurance for the unemployed who lose their coverage when they lose their jobs; (10) Congress to close tax loopholes which could raise $20 billion of revenue; (11) a

[83] AFL–CIO . . . Proceedings . . . 1975, Vol. II, pp. 66–72.
[84] Ibid., p. 74 and pp. 22–25.

comprehensive national energy policy to establish U.S. energy independence [earlier in the year AFL–CIO had called for a fair and equitable system of allocation and rationing to meet the oil crisis]; (12) a federal farm program to help to hold down food prices and more fairly distribute income support payments; (13) a new Reconstruction Finance Corporation-type agency . . . to provide loan guarantees and help preserve and create jobs in the private sector; (14) an international economy policy to stop the export of American jobs and undermining of the nation's industrial base; (15) a full scale congressional examination of the structure of the American economy on business mergers, interlocking relationships among the giant corporations and banks to explore their domination of key parts of the national economy, as well as their effect on prices and America's position in the world economy.[85]

With its strong predilection for steady full employment, it is not surprising that organized labor has systematically tended to attack high interest rates and tight money. It has, from time to time, advocated selective credit controls but opposed general monetary restraint. AFL–CIO rather consistently, for example, has argued that any credit restrictions not be applied against at least some stipulated forms of construction. It has also come to call for comprehensive reform of the Federal Reserve System itself.

Linked with its criticism of tight money policy has been AFL–CIO's support for aggressive, positive federal fiscal policy in order to achieve and maintain full employment. This was put succinctly by the top officers reporting to the 1963 AFL–CIO convention. "The most powerful tool for boosting economic activities is federal fiscal policy—the federal government's taxing, spending and investing. . . . A federal policy of adding to demand should be pursued, until unemployment approaches minimum levels."[86] As with monetary policy, however, in recent years AFL–CIO has become increasingly selective in its approach to fiscal policy changes—even those aimed at offsetting any downtrend in the economy. This is true on both the tax cutting or government spending side. Here, too, it tends to be less general in its approach than do most Keynesian economists. AFL–CIO does not usually, for example, support general tax cuts without linking these with measures to eliminate what it judges to be at least the most egregious tax loopholes. On the expenditure side most recently AFL–CIO's growing concern with the public sector (including public service jobs) has often tended to align it in support of specified federal expenditures rather than to favor almost exclusive reliance on tax cuts—the position more often recommended by latter day Keynesian economists to stimulate a lagging economy.

AFL–CIO consistently rejects the argument that there is a tradeoff between unemployment and inflation, and that there is an incompatability between full employment and price stability. It certainly tends to dwell more on the former.

Under the title "The Budget Deficit vs. Measures for Full Employment," the Executive Council's report to the 1975 convention complained that the Administration and the majority of Congress did not

[85] Ibid., pp. 92–95.
[86] AFL–CIO . . . Proceedings . . . 1963, p. 76.

understand that the focus on budget costs ignored the fact that more aggressive Federal action could bring great benefits—increased jobs and increased earnings, reduced unemployment benefits and welfare costs, increased sales for business, and increased tax receipts, since these were the benchmarks of an economy rapidly moving to full employment. AFL–CIO concluded, "[only] full employment would produce a budget surplus." In the face of heavy unemployment in 1975, AFL–CIO reminded the nation that despite great public spending and a great debt rise, "the production miracle of World War II did not bankrupt the country. And a massive investment today of public funds would not bankrupt the nation, it would restore it to economic health." [87]

These two themes in AFL–CIO macro-economic policy, a consistent opposition to general monetary restraint, and support for aggressive fiscal policy action when full employment is threatened—these have become characteristic of organized labor's economic outlook. They are combined, however, as we have previously noted, with a variety of more specific policies ranging from strengthening collective bargaining and improving social security to, more recently, greater controls over international trade and investment.

The great recession of 1975 is a useful stopping point in an appraisal of the impact of the business cycle, and especially the great depression of 1929, on organized labor's economic policy positions. By 1975 AFL–CIO had become an unremitting advocate of full employment and, in turn, an intractable opponent of any easy acceptance of the business cycle. It had become, in its own fashion, a strong defender of the so-called new economics, though it reached that point by its own pragmatic route, and with its own significant variations.

Appendix. Unions in the Business Cycle: Membership Growth, Strikes, Employment, Prices, and Wages

Union Membership and the Business Cycle

Near the heart of any relationship between unions and the business cycle, of course, is the latter's influence on the ebb and flow [88] of union membership. The earliest theories of union membership growth and decline linked these directly and rather tightly to the highs and lows of the business cycle. Strong advocates of the proposition that unions would grow in response to improvements in business conditions included practitioner Samuel Gompers, first president of the AFL, on the one hand, and early eminent labor economists such as John R. Commons and George E. Barnett, on the other.[89]

Reducing the problem to economic terms, Commons noted that in prosperity "employers make more profits, work full time, and need employees and are able to pay higher wages. . . ." At the same time, the "cost of living is rising and the hours of work are increasing," as a result workers as individuals, then in organizations [unions], demand higher wages and better hours. "Unions grow and strikes occur. . . ." Employers begin to resist, and then with the coming of a depression and price declines, the labor movement subsides and often changes its appeals to the political field.[90]

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[87] AFL–CIO . . . . Proceedings . . . 1975, pp. 83–88. Since the end of World War II, AFL–CIO added, federal debt which was 103 percent of gross national product in 1947, had fallen to 47 percent in 1960 and 25.7 percent by June 1974.

[88] I am indebted for this phrase to one of the pioneers in the study of union membership, Leo Wolman, among whose works was "Ebb and Flow in Trade Unionism" (New York: National Bureau of Economic Research, 1936).

[89] A very useful survey of much of this literature can be found in Albert A. Blum, "Why Unions Grow," Labor History, Winter, 1968.

[90] As paraphrased by Blum, in Ibid, p. 49.

This widely accepted view of union growth was shaken by the experience of the 1920's. A long period of prosperity witnessed a significant decline in the size of the union movement. By the end of the 1920's, students such as Leo Wolman were seriously questioning the business cycle explanation of union growth. He noted that, "The years since 1922 have been years of high production, rising wages, and probably as great stringency in the labor market as in past periods of the same kind. Why then has the experience of organized labor stood in such sharp contrast with its own past and with the history of foreign labor movements?" [91]

The great depression of the thirties and the explosion in union membership produced a new variation on the business cycle theory of union growth. It was in the context of great "domestic social upheavals" which characterized the low-end of the business cycle (or wartime periods), stated several students of union growth, that were sown the seeds of social discontent, which, in turn, produced great outbursts of union membership.[92] In the thirties, for example, businessmen who had previously enjoyed great public prestige, came to be blamed for the depression, and at the same time, widespread sympathy developed for unions in their struggles with business to obtain union recognition. Wartime periods also weaken the hold of prevailing social and political ideas, and pave the way for outbursts of social change, such as rises in union membership. Bernstein's theory of union membership growth placed much less stress on purely economic factors.

A sophisticated gloss on the business cycle explanation of union membership was added by John T. Dunlop. He recognized the importance to outbursts of union membership advances of wars, depression, etc., but he tied the beginning of such major outbursts to Kondratieff long economic waves. Such union expansions had their roots in the "major upheaval and fundamental unrest" which "came at the bottom of the period of bad times in the long waves . . ." After a long "period of high unemployment and downward pressure on wages exerted by price declines, labor organizations emerge which are apt to be particularly critical of the fundamental tenets of the society and the economy," and they lead powerful organizing efforts.[93]

More recently, Professors Orley Ashenfelter and John Pencaval have sought to restate an economic explanation of union growth, taking into account that the simple linkage with the business cycle failed to explain the 1920s. Their model is based on three major variables. The first of these is changes in prices, with real wages tending to lag when prices are rising, thereby leading workers to seek protection through organizations. The second element is the growth of employment in unionized sectors. (Generally both these phenomena would be part of a typical business upturn, but the 1920s were not a period of major price growth.) Ashenfelter and Pencaval note, however, that "trade unions are more than vehicles by which employees expect to raise wages. Unions are also agencies of protest and as such they reflect labor's grievances and aspirations. . . ." They point out that "the stock of labor's grievances at any time is a function of the amount of unemployment in the preceding trough of the business cycle. . . ." All these factors, in turn, however, are limited by "the proportion of employment in union sectors that is already unionized," the greater this proportion "the more difficult it is to further increase union membership." Finally, they add in the role of the "general climate of opinion" and "the effects of [labor] legislation," such as the Taft-Hartley Act, etc. Reducing these variables to a series of equations (the climate of public opinion is represented in their equations by the percentage of membership of the House of Representatives which is affiliated with the National Democratic Party) the authors claim their variables and regression equations will explain the great periods of union growth (1917–20, 1933–37, 1941–45) as well as the lack of growth in the boom period of 1924–

[91] Leo Wolman, "American Labor Since 1920," Proceedings of the American Statistical Association, Vol. XXV, March 1930, Supplement, p. 103.

[92] Irving Bernstein "Union Growth and Structural Cycles," in Industrial Relations Research Association, Proceedings of the Seventh Annual Meeting, Detroit, Michigan, 1954 (Madison, Wis.: IRRA. 1955).

[93] Dunlop in Richard A. Lester and Joseph Shister, editors, "Insights into Labor Issues" (New York: The Macmillan Company, 1948), pp. 191–192. A critique of Dunlop's effort to link union membership growth with the Kondratieff wave is to be found in Blum, op. cit., p. 51.

1928 (the latter being a period of relative price stability and lower employment growth).[94]

While the Ashenfelter-Pencaval model seemed to identify "the historical determinants of union growth," some question was raised "as to whether the[ir] model" had "equally identified the determinants of future union growth." William J. Moore and Robert J. Newman, for example, have tried to demonstrate that, at the least, the influence of the broad economic variables are significantly modified by such structural factors as the character of the labor force in any given period (blue collar vs. white collar, each with different propensities to unionize), union leadership, regional differences and urbanization levels, unfriendly legislation such as states' right to work laws, etc. Employing a model embracing most of these variables, Moore and Newman conclude the Ashenfelter-Pencaval model is too limited in predicting possibilities of union growth.[95]

More recently, the period of recovery from the 1974–1975 recession (which included a high unemployment level) has not proven to be very significant for union growth.[96] This was true even though it met the Ashenfelter-Pencaval requirements of rising prices and employment, as well as the presence of a fairly large Democratic party congressional majority. Like so many other models based on presumed relationships between economic variables, the A–P model also seems to be a victim of the recent "stagflation."

For the time being the latest chapter on the relationship between union growth and the business cyle analyis has been added by George S. Bain and Farouke Elsheikh whose study of four countries (United Kingdom, United States, Sweden and Australia) strongly reasserts the close connection between the two. It notes that "there is some evidence . . . that the impact of the business cycle upon union growth may have been even stronger in the nineteenth century than in recent times . . . ." In any event, however, their own econometric based study, concludes "the great bulk of union membership growth has taken place during the twentieth century, and the business cycle had a significant impact upon it . . . ."[97]

Bain and Elsheikh find that the principal "determinants of the rate of change of union membership" in all four countries, are "the rate of change of prices, the rate of change of wages, the level and/or rate of change of unemployment, and the lagged level of union density [rate of existing union membership in relation to employment] . . . . "In the case of Australia and the United States they also add "that government action [the enactment of new labor laws, etc.] has had a significant impact upon union growth . . . ."[98]

Strikes and the Business Cycle

The recognition that strike activity ran in cycles, and that these strike cycles were somehow related to the business cycle, goes back many decades.[99] Albert Rees has demonstrated, at least through the early post-World War II years, that strike cycles show a high correspondence to business cycles. In general, he finds "a clear tendency for strikes to lead at the upper turning point [of a business cycle] and to lag at the lower turning point . . . ."[100]

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[94] Orley Ashenfelter and John H. Pencaval, "American Trade Union Growth," Quarterly Journal of Economics, Vol. LXXXII, August, 1969. In terms of the Ashenfelter-Pencaval factors, 1924–1929 was also an unfavorable period "politically", for U.S. unions.

[95] William Moore and Robert J. Newman, "On the Prospects for American Trade-Union Growth: A Cross Section Analysis," Review of Economic Statistics, Vol. LVIII, No. 4, Nov. 1974. Moore carries this analysis a step further in "An Analysis of Teacher Union Growth," Industrial Relations, Vol. 17, No. 2, May 1978.

[96] This is particularly true if we look at the "rate" of unionization, as against absolute numbers of union members. On the other hand, examining National Labor Relations Board union organizing election data from 1949 through 1970 Arvil A. Adams and Joseph Krislov find a good fit between trends in that data and the A–P model. (Admittedly, these elections account for only a modest part of union organizing and new membership.) See, "New Union Organizing: A Test of the Ashenfelter-Pencaval Model of Trade Union Growth." Quarterly Journal of Economics, Vol. LXXXVIII, No. 2, May, 1974 Moreover, it would seem that the A–P model would not "explain" trends in NLRB elections in the 1970's.

[97] George S. Bain and Farouk Elsheikh, Union Growth and the Business Cycle (Oxford: Basil Blackwell, 1976), p. 119.

[98] Ibid., p. 114.

[99] Albert Rees cites some of these earlier studies by Alvin H. Hansen, John I. Griffen, and Dale Yoder and E. H. Jurkat and D. B. Jurkat, in "Industrial Conflict and Business Fluctuations," The Journal of Political Economy, Vol. LX, No. 5, October, 1952.

[100] Ibid., p. 374.

The explanation for the increase in strikes as the peak of the cycle approaches, Rees finds to be in the state of the labor market. Employment is "very highly correlated with the business cycle," and unions take advantage of "rising employment to secure wage increases and other benefits in unionized plants and also to organize the unorganized . . . ." On the other hand in the trough of a business cycle, as employment falls, there is a drop in organizational strikes as employees are "afraid to form unions for fear they can be easily discharged and replaced by others . . . ." At the same time, "Employees already organized will be afraid to strike when they see the bargaining power of the empoyer rise relative to theirs . . . ." Thus, the employer can fill orders out of inventories in spite of a strike; he can make up lost production after the strike; and the union may fear forcing concessions from the employer would weaken his competitive position vis-a-vis non-union employers, and "thus imperil the jobs of some union members . . . ." [101]

As to why strike cycles peak before the peak of the business cycle, Rees concludes this "probably represents a maximum in the divergence of expectations between employers and unions . . . ." For example, unions follow closely employment levels, which usually do not lead at the business cycle peak. The employers are likely to concentrate on "some of the activities which do lead at the peak . . ." as, "the number of business failures . . . many series on investment . . . [new] orders . . ." etc. These effect the expectations of businessmen and may lead them to resist unions, with strikes resulting even before the peak. Once the peak is reached, the employers' pessimism "may be shared by some union leaders. and strikes fall off." The lag of strikes at the trough of the business cycle, and into the beginning of a recovery "seems to represent a 'wait and see' attitude on the part of union leaders who want assurance that the revival is geniune before risking the jobs of their members . . . ." [102]

In a study completed in 1965, F. S. O'Brien extended Rees' framework of analysis to the 1949–1961 years. While he questioned some of Rees' explanation of the trends, O'Brien found "a somewhat greater degree of symmetry and regularity" between the respective cycles than even Rees had demonstrated.[103]

An interesting attempt to fit "the behavior of trade unions" and strike activity "into the traditional theory of the firm" has been set forward by Ashenfelter and Johnson. They analyze the problem in a series of equations based on the following factors: the unemployment rate, the BLS Consumer Price Index, average wage rate movements and corporate profits. From this analysis they conclude ". . . it seems the aggregate level of strike activity is behaviorally related to the degree of tightness in the labor market and previous rates of change of real wages . . . ." (The larger the rate of wage change leading up to the potential moment of strike, the lower the propensity to strike.) [104]

The Ashenfelter-Johnson analysis seems to fit, largely, into the traditional business cycle, economic explanation of the strike, depending as it does so heavily on unemployment, price and wage movements, and levels of profits.

Michael Shalev has only recently made a critique of the A–J strike model, and noted that it, like many of its predecessors, makes "worker dissatisfaction with wages" to "central" in its analysis. Like the models of most economists it tends to neglect the element of power and power struggle in labor-management relations. Without minimizing the importance of wages, Shalev insists it must be incorporated into a larger model including institutional factors in union management relations, if a more durable explanation of the variations in strike activity is to be found.[105]

Unions, Employment and the Business Cycle

It is difficult to evaluate precisely how union policies and actions affect employment and layoffs, in the context of the business cycle. Richard B. Freeman has shown that by providing a better voice for discontented workers, which

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[101] Ibid., pp. 380–381.
[102] Ibid., pp. 381–382.
[103] F. S. O'Brien, "Industrial Conflict and Business Fluctuations: A Comment," Journal of Political Economy, Vol. LXXIII, No. 6, Dec. 1965. pp. 651–652.
[104] Orley E. Ashenfelter and George E. Johnson, "Bargaining Theory, Trade Unions and Industrial Strike Activity," *The American Economic Review*, Vol. LIX, No. 1, March, 1969, p. 47.
[105] Michael Shalev, "Trade Unionism and Economic Analysis—the Case of Industrial Conflict," *Journal of Labor Research*, Vol. I, Number 1, Spring, 1980. This article is also a useful source for much of the recent literature on strike activity.

may redress some of their grievances, unions help reduce the quit rate in unionized as compared to non-unionized firms.[106]

On the other hand when a firm's activity falls, and presumably this becomes generalized in the down-phase of the business cycle, unions are more resistant to wage cuts and reductions in work hours than is the case in non-unionized firms. In this sense unionized firms are more accepting of temporary lay-offs, and union members, whose reemployment and seniority rights are usually protected by collective agreements, tend "to return to their previous employer after a short spell of unemployment. . . ." As a consequence, James L. Medoff finds "management in unionized firms stores unneeded labor outside the firm until an upturn dictates its recall." In non-union firms cuts in wages and reductions in hours are a more common response to economic slack, and layoffs less frequent. While non-union firms use the layoff to a more limited extent, in "nonunion firms, employment adjustments are more likely to take the form of quits and new hires." [107]

According to Freeman and Medoff, it would, therefore, appear that unionized firms are likely to undergo greater employment declines in the downphase of a business cycle than is the case with their non-union counterparts. The latter are more likely and more able to resort to work sharing and wage cuts—devices which tend to keep their employment levels relatively higher.

Unions, Wages, Inflation and the Business Cycle

Most of the analysis of union effects on general economic trends takes as its point of departure the union influence on inflation. Since the latter for many years was generally associated with periods of expansion, this posed no special problem for union-business cycle analysis in the past. With the onset of stagflation since the 1970's, some of the rationale of this earlier analysis has been weakened.

The standard work on unionism and relative wage effects, by H. Gregg Lewis, found that in a period of years (1919–1958) the unions effect on wages was "greatest near the bottom of the Great Depression" and least during the periods of unusually "rapid inflation and low unemployment following both world wars. . . ." [108]

The union's ability to resist wage cuts, at least for some time, explained its strength (measured relative to non-unionized firms) in a downturn. On the other hand, the existence of collective bargaining agreements which ran for one and occasionally two years, often tended to make wage adjustments to rising production and employment slower in unionized than in some non-unionized firms.

As collective bargaining agreements came to be negotiated for even longer terms, usually for two or three years, these tendencies were accentuated. Rigidity in downward wage movements seemed to be increasingly characteristic of unionized establishments. In a sense unions acted countercyclically. Of course, when collective agreements expired, unions no doubt sought to take advantage of an economic expansion to increase wages and other benefits. To the extent, however, that union wages may react more sluggishly than wages in non-union establishments, most economists would argue this "will cause employment to be smaller than it otherwise would be . . ." if wages moved more competitively. This position does not hold that union-negotiated higher wages would necessarily lead to "declines in employment," for "in a rapidly growing industry or firm, employment will usually continue to grow, but not as much as it would have otherwise . . . ." [109]

The ability of unions to resist wage reductions even in the face of some economic decline has been reinforced by the tendency of macro-economic policy

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[106] Richard B. Freeman, "The Exit-Voice Tradeoff in the Labor Market: Unionism, Job Tenure. Quits and Separations," *National Bureau of Economic Research, Working Paper No. 242*, 1978.

[107] James L. Medoff, "Layoffs and Alternatives under Trade Unions in U.S. Manufacturing," *The American Economic Review*, Vol. 69, No. 3. June, 1979 pp. 393–394.

[108] H. G. Lewis, *Unionism and Relative Wages in the United States* (Chicago: The University of Chicago Press, 1903), p. 5. Robert Ozanne questioned the accuracy of Lewis' analysis on the grounds that the Lewis' data base was inadequate, and that he also ignored the many institutional factors such as government wage controls during World War II and the Korean War. See Ozanne's review in *The Economic History Review*, Second Series Vol. XVII, No. 3, 1965.

[109] Albert Rees. *The Economics of Trade Unions* (Chicago: The University of Chicago Press, 1977, Second Revised Edition), p. 82.

to react swiftly to any recession in most of the postwar period. Anticipating this strong and rapid macro-policy stimulus, even if some unemployment is experienced, union and non-union workers tend to refuse wage cuts as they do not expect "continuing low aggregate (nominal) demand" and unemployment for any long period. When he adds to this rigidifying effect of long-term union-management contracts, Jeffrey Sacks believes he has a prime explanation for the reduced importance today of the Phillips curve relationship between wages and unemployment.[110]

The general view of the way in which union wages behave over the business cycle has undergone considerable change in the current era of stagflation. In the first place, most unions have continued to negotiate wage increases on the expiration of their agreements, while many non-unionized employees have lagged behind with their wages. Moreover, while union wages still tend to be fixed in a longer term framework than is true of non-union wages, increasingly, union contracts have come to incorporate substantial deferred wage increases, unusually on an annual basis, which are aimed at preventing unionized employees from falling behind the cycle. Of great importance, too, is that many of these same collective agreements include cost of living escalator clauses designed to adjust wages in keeping with changes in the Bureau of Labor Statistics' Consumer Price Index. By 1980 such clauses directly covered 5.5 million workers,[111] with additional millions (white collar employees who worked in firms where blue collar workers were covered by such escalator clauses) also enjoying such benefits.

These long term agreements have often been sought by employers with their view towards greater stability, as well as by unions. In making them acceptable, however, employers by agreeing to periodic wage increases and escalator clauses during the life of the agreement, reinforce a tendency to reduce any downward flexibility in prices. This could build into the price structure such inflation as occurs.[112]

In terms of the typical, competitive model which economists have of the economy, this would mean that increased wage costs and the lack of price flexibility should have a depressing effect on employment. For example, such rigidity on the downside of the cycle should tend to depress employment even further. Union leaders, of course, would argue their resistance to any wage cuts bolsters demand, and thereby helps offset the downward cycle.

Government policy makers concerned with the effects of these escalator clauses are often of two minds about them in an inflationary era. In the absence of escalator clauses, on the expiration of their collective agreements unions will negotiate new agreements, and *may* proceed "on the assumption that prices will continue to rise at present peak rates" as President Nixon's Council of Economic Advisors noted in 1971. This could become "a recipe not only for permanent rapid inflation, but also for persistent unemployment, because the Government would be bound to try to check the inflation by generally restrictive policies." Under such circumstances, the Council concluded, "in some cases escalator clauses, which relate future wage changes to actual variations in the cost of living rather than to the expectation of continued inflation at its peak rate, may have a role to play during the adjustment to a more stable price level." [113]

On the other hand, there is the usual fear that such clauses have a ratchet like effect on inflation, and, as previously noted, build higher wages in as a "permanent" part of the cost structure. In an era of sustained, rapid inflation, of course the gap between those who are protected by escalators and those who are not raises difficult equity questions.

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[110] Jeffrey Sacks, *The Changing Cyclical Behavior of Wages and Price*, National Bureau of Economic Research, Working Paper No. 304, 1978, pp. 16–18.

[111] Edward Wasielewski, "Scheduled wage increases and escalator provisions in 1980," Monthly Labor Review, January, 1980, p. 9. A recent AFL–CIO survey suggests this is an understatement, and estimates that between 8 and 9 million union members are "covered by escalator clauses," with "varying effectiveness in how well they protect the buying power of wages." John Zalusky in *The AFL–CIO American Federationist*, Vol. 8, No. 8. August 1980. Zalusky estimates that under these varying clauses. "The average worker really only recovers 50 percent of purchasing power lost to price increases."

[112] This is the view of Joel Popkin, "Income Policies," in Clarence C. Walton, editor, Inflation and National Survival (Montpelier, Vt.: The Academy of Political Science, 1979), pp. 163–175.

[113] Economic Report of the President together with The Annual Report of the Council of Economic Advisers, 1971 (Wash., D.C.: U.S. Government Printing Office, 1971), p. 81.

VII. HOUSING

HOUSING CREDIT POLICY VERSUS MONETARY POLICY

By Leo Grebler*

> Federal housing officials and economic policy makers, fearing a decline in the housing industry, have met twice in the past week to explore ways to stimulate home building in the wake of Fed credit-tightening moves.
>
> The Wall Street Journal, November 8, 1979.

The news item tells in a nutshell what this essay is about: the potential and sometimes acute conflict between general economic stabilization policy and governmental efforts to shield housing from adverse effects of the policy. In the 50-year perspective of 1929–79, the conflict remained dormant until the period following World War II. The sharp decline of residential building in the late 1920s occurred when the federal government had no articulated concern with the housing sector. Housing legislation passed under the impact of the Great Depression appeared to be in perfect harmony with overall economic objectives. The Federal Home Loan Bank System, established in 1932 as a permanent credit reservoir for home financing institutions, could be expected to stimulate the meager flow of funds into mortgage loans without straining the financial system. The Home Owners' Loan Corporation (1933) aimed at clearing some of the debris of the depression by refinancing $1 billion of home mortgages in default; so did the reform of the savings and loan industry through authorization of federal charters, governmental purchases of S & L shares, and federal insurance of deposits. The FHA program of underwriting residential mortgage and rehabilitation loans (1934), again a permanent measure, was widely seen as a major short-run device to "get the economy going again." Similar hopes softened opposition to the public housing program of 1937.

After the hiatus of World War II, support of residential construction by the then existing federal agencies tallied neatly with the general economic goal of speedy conversion to a peacetime economy. The veterans home loan program of 1944, providing still more favorable credit terms than those of FHA, was viewed as an action dictated by considerations of equity and adopted without attention to its potential impact on total financial or real resource use.[1] In the late war

*The author is indebted to his colleagues, Leland S. Burns and Frank G. Mittelbach, for comments on a draft but bears full responsibility for the final paper.

[1] The "veterans emergency housing program" of 1946–47 attempted to establish some priority claims on resources through a mixture of materials allocation and production incentives. Thus, it contained seeds of policy conflicts. However, the program was abandoned after one year. To the author's knowledge, this episode has never been analyzed.

and early postwar period, a nation with fresh memories of the Great Depression was racked by fears of large-scale unemployment and was indifferent to problems of overexpansion.

The Emergence of Conflict

It was only in the 1950s that the relationship between housing credit and Federal Reserve policy became a matter of debate, concern, and controversy. The change occurred in response to several developments. The Employment Act of 1946 made promotion of stable economic growth a specific responsibility of the federal government. The Council of Economic Advisers as well as the Federal Reserve began to scrutinize changes in mortgage flows and their bearing on overall credit, while the Treasury monitored debt issues of the government housing agencies. The "Declaration of National Housing Policy" in the Housing Act of 1949 established an official goal of sector stability by requiring, among other things, the administration of federal programs "in such manner as will encourage and assist . . . the stabilization of the housing industry at a high annual volume of residential construction." The Treasury-Federal Reserve accord of 1951 restored a flexible monetary policy. At the same time, government credit aids to housing were growing to the point where they began to represent significant proportions of the total market.[2]

But perhaps the most potent factor in the emergence of conflicts between housing credit and monetary policies was the "discovery" of the so-called countercyclical fluctuations of residential construction, that is, housing cycles bear an adverse relationship to general business cycles. This interpretation will later be examined more closely but can be accepted in the interim. If housing construction increases when there is slack in the economy and declines when other business is expanding, policies aimed at general economic stability are greatly facilitated. Countercyclical behavior of residential building seems to offer the equivalent of an automatic stabilizer—provided that housing policies do not interfere with it. There is an element of truth in this even if one does not adopt the ludicrous image of misguided economists and government officials plotting to use the housing sector as "whipping boy" of general stabilization policy. According to the prevailing explanation of the distinctive housing cycles, they are mainly determined by changes in general financial conditions. When the economy-at-large is in the expansionary phase, business (and consumer) demand for loans increases and interest rates rise. The supply of funds for residential building and long-term mortgages is reduced, and their costs escalate through a combination of higher rates and restrictive non-interest terms of borrowing.

Housing investment is much more dependent on external financing than business investment and far more sensitive to its cost. Hence,

[2] Thus, the share of housing starts under the FHA program in total private starts increased from 10 percent in 1946 to 36 percent in 1949 and 1950. Federal Home Loan Bank advances to its member savings and loan associations were marginal until the late 1940s but rose to over $800 million outstanding in 1950–51 and $1.4 billion in 1955. Mortgage holdings of the Federal National Mortgage Association, established in 1938 as a secondary market facility for government-underwritten residential mortgages, were also marginal until they reached $1.8 billion in 1951, or 7 percent of the government-underwritten residential debt. See Leo Grebler, Housing Issues in Economic Stabilization Policy (National Bureau of Economic Research, Occasional Paper 72, 1960), Tables 3, 4, and 5.

housing starts decline sharply. In a general recession, business demand for loans falls, interest rates drop, funds for mortgages become more plentiful at lower cost, and residential building recovers from its slump. Thus, variations in the ease of credit result in cyclical reallocation of real resources in favor or disfavor of housing.[3]

In principle, the same conditions should have existed before the Federal Reserve System came into being. Cyclical alterations in money and capital markets presumably constrained residential building at some times and stimulated it at others. The pattern of housing cycles should have differed from that of business cycles. Historical data are too scanty to test this hypothesis.[4] In any event, the monetary policies developed since the early 1950s made it possible for builders and other housing advocates to blame the cyclical instability of residential construction on a more specific culprit than the impersonal credit market mechanism. Responsibility for credit conditions adverse to housing could now be placed on the doorstep of the Federal Reserve System which was assumed to have full control over the gyrations of financial markets. Hence, the debate became exacerbated by accusations that the housing industry was made "the handmaiden of monetary policy" or was used "as a balance wheel of economic stabilization policy." At the same time, the rapid growth of federal agencies with the implied mandate to act as mortgage market stabilizers reinforced the pressures and seemed to enlarge the opportunities for shielding the housing sector from restrictive effects of monetary policies.

For a while it appeared as if housing legislation itself could be blamed for the slump of residential building during business expansions. The inflexible legislative interest ceilings on FHA and VA loans, it was said, caused important multi-purpose lenders to withdraw from residential mortgage investment when yields on other assets were more attractive. In the tight-money periods of 1951–53, 1956–57, and 1959, nearly all the decline of housing starts occurred in the government-underwritten sector, then a large part of the market. This observation led to the fixed-rate theory of housing cycles

[3] This is a simplistic and synthetic restatement of analyses differing in detail. For some of these analyses, see Saul B. Klaman, "Effects of Credit and Monetary Policy on Real Estate Markets, 1952 1954," Land Economics, August 1956; and Warren L. Smith, "The Impact of Monetary Policy on Residential Construction, 1948–1958," Study of Mortgage Credit (Subcommittee on Housing of the Senate Banking and Currency Committee, 85th Congress, 2d session, Washington, Dec. 22, 1958). The latter volume includes several other papers on the subject. Also, Grebler, Housing Issues . . . , op. cit.; Jack M. Guttentag, "The Short Cycle in Residential Construction," American Economic Review, June 1961; and Sherman J. Maisel, "Fluctuations in Residential Construction Starts," American Economic Review, June 1963. Maisel's paper made an important contribution by stressing that fluctuations of starts are largely associated with fluctuations in builders' inventories and in vacancies, while cyclical variations in the final demand for new construction are far less volatile. The proposition that the volume of new housing depends on the availability of mortgage funds is denied by Allan H. Meltzer on the ground that money is fungible. In his view, fluctuations in the amount of mortgage borrowings are responses to changes in the demand for housing and the relative costs of debt and equity invested in housing. See Meltzer, Housing and Financing, a study prepared for the National Association of Homebuilders (November 1972, processed) and Arcelus and Meltzer, "The Markets for Housing and Housing Services," Journal of Money, Credit and Banking, vol. 5 (February 1973), pt. 1. See also Craig Swan's critique of Arcelus-Meltzer and their response in the same journal (vol. 5, November 1973).

[4] It is possible, however, that the impact of tight money on housing was dampened in the 19th Century and the early years of the current century because important sources of funds were rather isolated from the overall financial system. Much of the mortgage loan demand was met by individuals and by small savings and loan associations operating under plans linking savings accumulations of their members with eligibility for borrowing. Thus, the close cyclical relationship between housing credit and general credit conditions is at least in part the result of greater integration of the financial system.

at least to the extent that the failure to adjust ceiling rates to market rates contributed to anemic loan supplies and the attendant drop in residential building.[5] Subsequent events served to make the fixed-rate theory obsolete. In the 1960s the supply of conventional mortgages also became highly responsive to changes in general credit conditions. Further, the amplitude of housing cycles did not diminish when the statutory limitations on FHA and VA interest rates were replaced by discretionary authority (May 1968) and rates were more speedily adjusted to the market. Meanwhile the call for completely free rates for government-underwritten loans has remained on the agenda of proposed reforms.

The Record of Housing Instability

As a prologue to the discussion of policy issues, some questions concerning the cyclical movements in private residential construction warrant examination. To what extent is the sector's "countercyclical behavior" borne out by evidence? What has been the relationship between expansions and contractions in housing output and those in total output? Have the residential building cycles become less severe over time as federal support agencies increased in number and scope of operations? As is apparent from these questions, the analysis will stop short of a full-fledged review of residential building cycles.

Because private housing starts are so widely used as indicators of cyclical swings, Table 1 shows cycles in starts as well as those of residential construction expenditures in constant dollars. The latter are more relevant to our purpose because the cycles of construction expenditures lend themselves to comparison with GNP cycles in commensurate terms, and their analysis avoids distortions that result from starts leading expenditure flows.

There have been nine cycles in starts and eight in real expenditures during the 30 years 1948–1978. Their duration has tended to increase since the mid-1960s for starts and since the late 1950s for expenditures. More importantly, the amplitude of fluctuations, varying greatly from cycle to cycle through the mid-1960s, shows a steep rise thereafter. When amplitude is measured more precisely by percent changes per calendar quarter, the last three cycles of starts exhibit a severity unmatched by the previous cycles except the first (1948–1950), and *the last three cycles of expenditures show increasing severity.* Thus, the growing importance of federal housing credit programs has not served to dampen the amplitude of cyclical fluctuations. Of course, other factors impinging on housing demand and supply may have counteracted the more extensive federal agency support. Still, the *prima facie* ineffectiveness of the agencies in moderating the recent cycles remains a notable phenomenon.

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[5] For discussion by economists of the role of FHA and VA ceiling rates, see, among others, Klaman, "The Availability of Residential Mortgage Credit," in Study of Mortgage Credit, op. cit.; Grebler, Housing Issues . . . op. cit.; Jack M. Guttentag, p. cit., A. H. Schaff, "Federal Mortgage Interest Rate Policy and the Supply of FHA–VA Credit," Review of Economics and Statistics, November 1958. For econometric models that take account of the segmentation of residential mortgage markets by government-underwritten and conventional loans, see Eugene A. Brady, "A Sectoral Econometric Study of the Postwar Residential-Housing Market," Journal of Political Economy, April 1967; David Huang, "The Short-Run Flows of Nonfarm Residential Mortgage Credit," Econometrica, April 1966, and David Huang and M. D. McCarthy, "Effects of Different Credit Policies on Housing Demand," in vol. III of Study of the Savings and Loan Industry (directed by Irwin Friend), Federal Home Loan Bank Board, July 1969.

TABLE 1.—RESIDENTIAL BUILDING CYCLES, 1948–78

Cycle number	Calendar quarters[1] Peak	Trough	Peak	Seasonally adjusted annual rates[2] Peak	Trough	Duration (quarters)	Amplitude (percent Change)[3] Total	Per quarter
Private housing starts (million units):[4]								
1	II 1948	I 1949	II 1950	1.46	1.17	8	91.8	11.5
2	II 1950	IV 1951	IV 1952	2.01	1.35	10	43.2	4.3
3	IV 1952	III 1953	IV 1954	1.49	1.34	8	38.5	4.8
4	IV 1954	I 1958	I 1969	1.72	1.13	17	80.3	4.7
5	I 1959	IV 1960	III 1963	1.65	1.19	18	68.2	3.8
6	III 1963	I 1965	IV 1965	1.67	1.41	9	23.4	2.6
7	IV 1965	IV 1966	I 1969	1.52	0.93	13	119.4	9.2
8	I 1969	I 1970	IV 1972	1.68	1.24	15	121.4	8.1
9	IV 1972	I 1975	II 1978	2.42	0.98	22	173.9	7.9
Private residential construction expenditures (in billions of 1972 dollars):[5]								
1	II 1948	II 1949	III 1950	27.0	22.0	9	78.5	8.7
2	III 1950	III 1951	II 1953	35.2	25.5	11	39.0	3.5
3	II 1953	IV 1953	II 1955	28.4	27.2	8	36.6	4.6
4	II 1955	II 1958	II 1959	36.0	28.7	16	56.9	3.6
5	II 1959	IV 1960	I 1964	39.2	33.4	19	53.7	2.8
6	I 1964	I 1967	I 1969	46.4	32.7	20	67.7	3.4
7	I 1969	II 1970	I 1973	45.2	38.3	16	83.4	5.2
8	I 1973	I 1975	II 1978	64.4	35.4	21	127.0	6.0

[1] Based on quarterly averages of monthly data on seasonally adjusted annual rates. The designation of peaks and troughs involves some element of judgment when plateaus of activity are involved. Fluctuations with total duration of less than 8 quarters are ignored and incorporated in the previous or subsequent cycle depending on peak values.

[2] The peak of II–1978 was 2,100,000 units for starts and $60,900,000,000 for construction expenditures.

[3] Sum of percent changes from peak to trough and trough to peak, regardless of sign. Computed from unrounded data.

[4] As reported by U.S. Department of Commerce, exclusive of mobile homes. The series suffers from the adjustment of the nonfarm housing starts reported in the early years to total starts. Depending on adjustment procedures, somewhat different peaks and troughs appear in various analyses. Also inclusion of publicly financed starts would alter the timing of some peaks and troughs slightly.

[5] As reported in GNP accounts, inclusive of mobile homes. For differences in coverage and estimation procedures between residential construction expenditures reported in GNP accounts and in separate estimates of the U.S. Department of Commerce, see Value of New Construction Put in Place, Construction Reports C 30, May 1978 (Department of Commerce), p. 1.

TABLE 2.—CYCLICAL TURNING POINTS OF RESIDENTIAL CONSTRUCTION EXPENDITURES AND GROSS NATIONAL PRODUCT, 1948–78

[Based on data in 1972 dollars]

Residential construction expenditures (RCE)	Gross national product[1]	Lead of RCE over GNP (number of quarters)
Peaks:		
II–1948	IV–1948	2
III–1950	(2)	
II–1953	II–1953	0
II–1955	III–1957	9
II–1959	I–1960	3
I–1964	(2)	
I–1969	III–1969	2
I–1973	IV–1973	3
II–1978	(3)	(3)
Troughs:		
II–1949	IV–1949	2
III–1951	(2)	
IV–1953	II–1954	2
II–1958	I–1958	[4]–1
IV–1960	IV–1960	0
I–1967	(2)	
II–1970	I–1970	[4]–1
I–1975	I–1975	0

[1] Based on 6 cycles, the shortest of which had a duration of 10 quarters (P=III–1957, T=I–1958, P=I–1960).

[2] RCE turning point not related to GNP turning point; see text.

[3] At this writing the GNP peak is indeterminate. Should it occur in I–1980 the lead of RCE over GNP would be 7 quarters.

[4] It should be noted that the GNP contraction leading to the trough lasted only 2 quarters.

Source: GNP accounts.

To elucidate the countercyclical behavior of housing, Table 2 lists turning points of residential construction expenditures (RCE) and of GNP. With eight cycles recorded for the former and only six for the latter, the first observation is the existence of four RCE turning points not related to GNP turning points. The housing fluctuations associated with these turning points were devoid of countercyclical pattern, although they may have affected the rate of GNP growth or decline. The six peaks that lend themselves to analysis show a lead of housing over GNP that varies between zero in one case and nine quarters in another. The most common lead ranges from two to three quarters. In other words, the expansion of residential building tended indeed to come to an end while GNP was still increasing. This finding is consistent with the proposition that the growing competition for funds by the business sector in the later stages of economic upswings has adverse effects on housing.

The six troughs that can be analyzed show a different pattern: a lead of residential building over GNP by two quarters in two cases, and no lead in four. Interpreting the data broadly, troughs in construction and total output and therefore the onset of recovery have coincided since the late 1950s. Of course, conditions for the procyclical recovery of residential construction expenditures have been generated earlier. Housing starts precede expenditure flows (see Table 1), commitments for construction loans precede starts, and an increase in both reflects largely the easing of credit during the previous business recession. For that matter, however, many business investments plans are also mapped and sites for new plants acquired before the recovery of GNP. Construction loan commitments and housing starts are early indicators of forthcoming output, and their timing is best compared with other early indicators rather than with GNP. The fact remains that housing and general business in the 1960s and 1970s have recovered at about the same time when a commensurate measure of output is used. Countercyclical behavior has appeared only in the truncated expansion of residential building on the upside of the general business cycle.[6] The evidence for the past two decades shows housing fluctuations to be far less distinctive than is often proclaimed.

How much have the fluctuations of housing contributed to those of total output? The answer appears in Table 3 for three types of cycle segments: those in which residential construction expenditures (RCE) and GNP were rising (overlapping expansion periods), those in which both were falling (overlapping contraction periods), and those of declining residential building and increasing GNP.

In the six overlapping expansion periods, the increase of RCE averaged nearly 14 percent of the growth of GNP. There were large variations, however, ranging from 7 percent in the 1951–53 period (which coincided with the Korean war) to 18 percent in 1958–59. In the most recent expansion ΔRCE accounted for only 11 percent of ΔGNP despite the boom in single-family house construction. In the

[6] This analysis, as well as the remainder of this section, is based on data not adjusted for trends in either GNP or residential construction expenditures in the 1948–1978 period. GNP shows a stronger upward trend than construction spending. Hence, the data involved a bias of minor proportions. Preliminary research based on trend-adjusted data for 1950–1978 indicates that the lead of residential construction expenditures over GNP was much smaller at troughs than at peaks. The average lead was 1.25 calendar quarters at troughs compared to 3.6 quarters at peaks.

six overlapping contraction periods, the decline of RCE averaged as much as 21.5 percent of the decrease of GNP. Here, the variations between periods were still greater, ranging from less than 3 percent to 54 percent in two successive contractions. The data reflect the familiar observation that each cycle phase shows strong individual characteristics with respect to the mix of total output.

TABLE 3.—CHANGES OF RESIDENTIAL CONSTRUCTION EXPENDITURES (RCE) RELATIVE TO CHANGES OF GNP IN THREE CYCLE SEGMENTS, 1948–78

[Based on data in 1972 prices]

OVERLAPPING EXPANSION PERIODS

Period	Number of quarters[1]	Increase (billions)		RCE gain as percent of GNP gain
		RCE	GNP	
III 1951 to II 1953	7	$2.9	$41.5	7.0
II 1954 to II 1955	4	6.7	45.2	14.8
II 1958 to II 1959	4	10.5	58.1	18.1
I 1967 to I 1969	8	12.5	80.4	15.5
II 1970 to I 1973	11	26.1	155.7	16.8
I 1975 to II 1978	13	25.5	234.1	10.9
Total		84.2	615.0	13.7

OVERLAPPING CONTRACTION PERIODS

Period	Number of quarters[1]	Decrease (billions)		RCE fall as percent of GNP fall
		RCE	GNP	
IV 1948 to II 1949	2	$2.0	$7.0	28.6
II 1953 to IV 1953	2	1.2	9.8	12.2
III 1957 to I 1958	2	0.6	22.2	2.7
I 1960 to IV 1960	3	4.8	8.8	54.5
III 1969 to I 1970	2	2.7	9.8	27.5
IV 1973 to I 1975	6	18.6	81.5	22.8
Total		29.9	139.1	21.5

PERIODS OF FALLING RCE AND RISING GNP[2]

Period	Number of quarters[1]	RCE decline (billions)	GNP increase (billions)	RCE decline as percent of GNP increase
III 1950 to III 1951	4	−$9.7	+$42.3	22.9
II 1956 to III 1957	9	−6.7	+34.8	19.2
I 1964 to IV 1964	3	−4.5	+22.8	19.7
II 1965 to I 1967	7	−11.4	+78.0	14.6
I 1973 to IV 1973	3	−10.4	+12.8	81.2
Total		−42.7	+190.7	22.4

[1] Omits trough or peak quarter.
[2] Periods of RCE expansion while GNP was declining were too short and intermittent to warrant analysis.

Source: GNP accounts.

The five periods of falling RCE and rising GNP, as against six overlapping expansions, indicate that increased housing output has not been a necessary condition for increased total output. The data for the five periods measure the "drag" on GNP growth that was statistically attributable to the housing sector. The decrease of RCE averaged over 22 percent of the increase of GNP. In 1973, the figure was of an altogether different magnitude—81 percent. The severe

slump of RCE following the housing boom of 1970–72 was a major contributor to the deceleration of GNP growth. The drag of 1973 or any other period in this listing should not be construed to suggest that it would have been appropriate policy to augment Federal aid to residential construction. In 1973 such a policy, if effective, would have interfered with the liquidation of the large overhang of unsold or unrented dwellings produced in the preceding expansion, and it would have reinforced the incipient inflation resulting in part from sharply rising oil prices following the embargo. Only a detailed examination of all relevant circumstances at a particular time could determine whether the social benefits of increased stimulation of housing would exceed its social costs.

Altogether, the data in Table 3 serve to quantify two well known phenomena: the volatility of the housing sector and its significance for general business fluctuations, especially when the large multiplier effects of residential building are taken into account. The magnitude of *changes* in housing output relative to *changes* in total output by far exceeds the sector's secular share in GNP. This share, computed from annual data, averaged 4.5 percent in the 1948–78 period and showed a long-term decline, continuing a trend observed since at least 1891.[7] On the face of it, policies to moderate the fluctuations in a small economic sector whose volatility exerts a relatively strong influence on total output hold considerable promise for overall stabilization. However, housing looms much larger in the financial system than in the real economy. According to the Flow of Funds Accounts, residential mortgage loans in 1948–78 averaged 27.5 percent of the total borrowings by nonfinancial sectors. Since the government's support of housing operates almost exclusively through mortgage market intervention it generates financial shifts of far greater magnitude than the small share of the sector in GNP suggests. As will be seen, the financial shifts affect not only the delicate relationship between housing and monetary policy but reduce the efficacy of federal housing credit programs.

Major Policy Issues

Conflicts between housing credit policies and general monetary policies involve the special position of housing among national priorities, the social cost of the volatility of residential construction, and the social cost to the rest of the economy of stable (or more stable) housing output.

Public Interest Vested in Housing

Legislation since the 1930s demonstrates clearly that housing has been vested with special public interest—a position attained earlier in most of the economically advanced European nations and now reached in many of the less developed countries as well. Housing ranks

[7] For the downward trend in 1891–1950, which was interrupted during the first half of the decade of the 1920s, see Leo Grebler, David M. Blank, and Louis Winnick, "Capital Formation in Residential Real Estate" (Princeton University Press for the National Bureau of Economic Research, 1956), Chapter IX. The factors generating the decline are summarized in the same chapter. For an analysis of the downward trend since World War II and its determinants, see Leo Grebler, "The Growth of Residential Capital Since World War II," scheduled for publication in the Journal of the American Real Estate and Urban Economics Association.

high among social priorities because it is considered a "merit good," or because its distribution among population groups fails to meet social criteria, or because market imperfections are believed to call for remedial or compensatory government intervention. The policy decisions stemming from the special status of housing have varied from country to country. Federal action in the United States has from the very beginning focused on the housing sector as a whole and on mortgage market interventions as the principal solutions to "housing problems." This orientation is perhaps explained by the genesis of U.S. housing policy during the Great Depression when residential building in all price classes was severely curtailed, defaults on mortgage payments reached massive proportions, and institutional defects of the financial system appeared in sharp relief. Other countries, notably the United Kingdom, have instead concentrated on the publicly funded supply of improved dwellings for the poorer segments of their population.[8]

The already mentioned "Declaration of National Housing Policy" in 1949 addressed itself to overall objectives, as did the numerical goals for new and rehabilitated dwelling units in the Housing and Development Act of 1968. After housing was recognized as a high-ranking social priority it seemed a logical step to extend its favored position to the issue of cyclical fluctuations. The housing sector was too crucial to national welfare, it was argued, to expose it to the vagaries of economic cycles and the disturbances of financial markets. As a U.S. Senator put it in 1955, "I do not feel that we should let the money market have complete power of decision as to the number of housing units we can build at any particular time." [9]

One of the questions about this view pertains to the permanence of social priorities. Critics of the housing advocates point up the inevitable changes of national objectives. Thus, environmental improvements and the development of domestic energy resources, both requiring huge capital inputs, have been added to the list of priority investments. In light of this competition and of the great advances in housing conditions since the early postwar years, it is doubtful whether residential construction still holds the special position of an earlier era. The change has been acknowledged by at least one leading housing official who recently referred to "the low place in which housing finds itself on the agenda of national priorities." [10]

Another question concerns the social benefits of greater macroeconomic stability versus those of greater housing stability. In the view of policymakers charged with the responsibility for seeking stable overall growth, the benefits of general economic stability exceed by

[8] For an inter-country comparison of housing policies, see Leland S. Burns and Leo Grebler, "The Housing of Nations: Analysis and Policy in a Comparative Framework" (London: Macmillan, 1977), Chapter 4. For more detail on the theory of housing intervention, see Chapter 5.

[9] Senator Sparkman, Mortgage Market Problems, Hearings before a Subcommittee of the Senate Banking and Currency Committee, 84th Congress, First Session, November 28 and 29, 1955, p. 102. For similar sentiments, see Leon Keyserling's statement at the same hearings, p. 65.

[10] Jay Janis, Chairman of the Federal Home Loan Bank Board, address on "Developing a National Housing Policy: An Imperative of the 1980s" at the 36th Annual Convention of the National Association of Home Builders, January 19, 1980. Before his appointment to the Board, Mr. Janis was one of the top officials of the Department of Housing and Urban Development.

far the benefits of sector stability. Hence, monetary policies should be pursued without concessions to housing objectives. Housing goals address themselves necessarily to the long term and are only temporarily modified by short-run restraints on residential building. To judge from Congressional testimony and other public statements, the Federal Reserve for a long time insisted that it conducts its policies without intent to favor or disfavor any private sector of the economy and that uneven impacts of its actions are unavoidable. This position was somewhat altered in the early 1970s by acknowledging that sectoral impacts, especially those on housing, cannot be entirely ignored. The change was reflected in a Federal Reserve staff report on "Ways to Moderate Fluctuations in Housing Construction" and a Board statement that recommended, among other things, Congressional approval of discretionary variations in the business investment tax credit. Timely use of variable tax credits would influence business expenditures for plant and equipment in such manner as to cushion the adverse effects of general credit restraint on residential building.[11] The proposal is one of several plans to smooth the housing cycle by modifying fiscal policy and thus relieve the burden borne by monetary policy alone in the attainment of general economic stability. These plans will be reviewed in the final section.

The Cost of Housing Instability

Conflicting views about the implications of the special position of housing for stabilization policies are reflected more specifically in debates on the cost of instability. One argument for shielding residential construction from credit restraint emphasizes the effects of tight money on housing output. The output loss, or most of it, is held to be permanent and cannot be recouped. A counter-argument asserts that this point does not stand scrutiny. In contrast to perishable goods or others with short consumption spans, housing demand is deferrable, and most of the potential demand unmet in a period of financial constraint can safely be assumed to become effective in the subsequent period of credit ease. It is unlikely, therefore, that the low volume of building under adverse credit conditions affects the long-term level of housing output in any significant degree. True, reduced supplies and higher costs of mortgage loans at times of tight money have an especially severe impact on moderate-income households. The subsequent ease of borrowing, however, helps to bring such households back into the market. Moreover, the housing sector has obtained long-term privileges in the form of federal loan underwriting programs, federal credit agencies, and income tax benefits for homeowners. The adverse effects of tight money on the sector can be interpreted as a temporary modification of some of these privileges for the sake of overall economic stability.[12]

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[11] Federal Reserve staff study "Ways To Moderate Fluctuations in Housing Construction," December 1972. For the FRB statement, see Report of the Board of Governors of the Federal Reserve System on Ways to Moderate Fluctuations in the Construction of Housing, Federal Reserve Bulletin, March 1972.

[12] See Jack M. Guttentag, "The Federal Reserve and the Mortgage Market: Some Perspectives on the 'Crisis' of 1966." in Michael A. Stegman (ed.). *Housing and Economics—The American Dilemma* (MIT Press. 1970). p. 55. This section of the present essay draws on Guttentag's contribution, his paper "Quantifying the Social Costs of Cyclical Instability in Residential Construction," prepared for HUD (processed, no date), and on Leo Grebler, Housing Issues . . ., op. cit., pp. 98–99.

Another and potentially more cogent argument for protecting housing from credit restraint emphasizes efficiency losses associated with cyclical fluctuations. Large parts of the resources used in housing construction are disssipated during slumps; skilled work crews move to other jobs or become unemployed, equipment stands idle, and many merchant builders and subcontractors leave the housing field. When construction recovers, the "lost" resources must be reassembled. The stop-and-go pattern of activity raises construction costs and, according to one analyst, it increases the supply price of capital and discourages entry into the industry.[13] Cost impacts are reinforced by ratchet effects: costs rising in housing booms leave a permanent mark since price and wage rigidities prevent them from falling during housing recessions. Another point is the alleged inhibiting effect of cyclical variability on the development of industrialized construction and of large firms capable of major technological improvements.

The inefficiency argument applied uniquely to the housing industry has been contested, however. Some material and human resources, including subcontractors, shift to nonresidential projects when the residential sector declines (and procyclical business construction increases). Even merchant builders do not necessarily quit but employ their talent and a nuclear work force in alteration and modernization work, which tends to expand when new construction falls off; or they extend their activity into small nonresidential building.[14] Thus, resource mobility is greater than implied by those who consider the entire housing industry to be highly specialized. Consequently, resources can be geared to a revival of new building without much delay or bidding for production factors. The contention that cyclical fluctuations in the housing sector raise the supply price of capital for builders and therefore the cost of construction has not been demonstrated.[15] Further, there is no evidence that they have discouraged entry into the industry. On the contrary, observation suggests no reluctance whatever by entrepreneurs to enter or reenter the industry when they see potential for profit and opportunities for borrowing.

According to critics of the inefficiency argument, disproportionate cost increases in construction are generated by many forces including inflexible wages and materials prices, and the role of cyclical instability in the upward trend is indeterminate. Further, residential building is characterized by a small share of fixed costs. Other things equal, one would expect efficiency losses from cyclical variability to be far greater in industries with a large share of fixed costs, i.e., extensive investment in plant and equipment. Cyclical volatility has probably contributed to the failure to develop the off-site manufacture of dwellings more rapidly, but so have the seasonal fluctuations for on-site work needed

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[13] William E. Gibson, "Protecting Home Building from Restrictive Credit Conditions," *Brookings Papers on Economic Activity*, 3 :1973.

[14] See James Gillies and Frank G. Mittelbach, "Management in the Light Construction Industry: A Study of Contractors in Southern California" (UCLA, Real Estate Research Program), 1962. For evidence on construction labor mobility drawn from employment data, see Gibson, op. cit., pp. 667–672. Concerning materials inputs, Gibson shows widely varying shares of building materials absorbed by the residential sector. Most industries supplying the sector devote only a small portion of their total output to housing. One of the significant exceptions is the lumber and wood products industry.

[15] The evidence for increased supply price of capital appears in Gibson, op. cit., pp. 675–681, and is based on price-earnings ratios of a few building companies in 1969–1973. This part of the paper was heavily criticized in the published discussion (pp. 692–699) and was followed by Gibson's explanation that his analysis of price-earnings ratios had been "exploratory" (p. 698).

to place houses on prepared land and to complete utility connections, the high overhead and transportation expenses for industrialized housing, and the localization of housing markets. Besides, conventional construction methods have increasingly used component parts delivered to the site, and the efficiency of off-site assemblies of dwelling units compared to that of modern on-site techniques remains dubious. In any event, the "building envelope" represents a relatively small part of the total cost of the end-product including land. As for large firms, an analysis based on the rapid emergence of "giant" builders in the 1960s indicates no real economies of scale associated with major productivity increases or fundamental input transformations.[16]

Finally, there has never been a methodologically satisfactory estimate of the cost of inefficiencies solely attributable to the cyclical gyrations of residential building, nor have the cost reductions one might expect from a given moderation of the cycles been quantified.[17] Since land represents a large part of the final product cost and the effect of reduced fluctuations on land prices is not at all clear, any calculation of economies in construction alone would remain incomplete. On the whole, then, the *inefficiency argument lacks solid empirical support.*

Impact of Stable Housing on Other Economic Sectors

Assuming that stable housing output can be achieved and has the claimed beneficial impact on construction efficiency and cost, it would unquestionably moderate cyclical fluctuations in some types of construction employment and some segments of the building materials industries. The direct and indirect benefits may be obtained at the price of greater instability and efficiency losses elsewhere. Housing stability would presumably be sought by government action to assure a steady supply of construction and mortgage loans under conditions of general credit restraint, that is, in periods of expanding or booming business. When housing is given priority claim on loanable funds, other claimants will be disadvantaged at a given posture of monetary policy—an example of the financial shifts mentioned earlier. In all likelihood, those adversely affected would be sectors whose position in the competition for funds is relatively weak: state and local governments, whose capital projects are also sensitive to borrowing costs, and small business, including new firms. Thus, the price for greater housing stability would be greater discontinuity in public construction and in the development of small enterprises that remains essential for a dynamic economy. The alternative, of course, would be an increase of the money supply at such a rate that the claims of the housing sector could be met

[16] On industrialized housing, see "A Decent Home," Report of the President's Committee on Urban Housing, December 1968, pp. 115–121. For scale economies of large builders, see Leo Grebler, "Large Scale Housing and Real Estate Firms" (New York: Praeger Publishers, 1973), p. 158.

[17] See Guttentag's "Quantifying the Social Costs . . ." (note 12) for the virtually insoluble problems of such an estimate. Charles F. Manski and Kenneth T. Rosen, "The Implications of Demand Instability for the Behavior of Firms: The Case of Residential Construction," Journal of the American Real Estate and Urban Economics Association, Summer 1978, establishes a theoretical framework, but the empirical test is quite shallow. It may be mentioned, however, that a general illustrative model in Appendix A to the article shows that profits may be either higher or lower for an unstable than a stable industry while average price was higher in the unstable case. Further, a composite of building materials outputs fluctuated less than housing starts, and a composite of building materials prices also varied cyclically less than the construction cost of new single-family houses in the 1953–1968 period.

without negative impacts on others. But such a policy would compromise the purpose of credit restriction in periods of business expansion and therefore interfere with economic stabilization objectives. Some analysts have indeed asserted that the Federal Reserve has at times protected housing by opting for more moderate restraint than it would have adopted in the absence of concern over residential construction.[18]

The issue of housing credit policy versus monetary policy is complicated by the existence of federal and federally sponsored credit agencies outside of housing, serving, among others, agriculture, the export business, and TVA. Each of the sectors for which federal credit programs are available is presumably vested with substantial public interest, and the lending operations of all can be out of phase with Federal Reserve policy. Activities of the agencies have grown rapidly. Gross loans and loan guarantees outstanding came to $350 billion in late 1979, more than double the amount recorded ten years earlier.[19] Between 1955 and 1978 total agency debt increased at an annual rate of 17.5 percent as against only 4.4 percent for the U.S. Treasury debt. At the end of the period housing agencies accounted for 54 percent of the debt of all federal and federally sponsored credit agencies.[20]

Analysis of the benefits and costs of housing stability is encumbered by the vagueness of the housing objective. Does stable residential construction mean an "ever normal" output of dwelling units year in and year out? If so, how would such a goal take account of nonfinancial determinants of the demand for new housing? Or does stability refer to a long-term average of annual outputs determined after consideration of demographic variables, replacement needs, and "normal" vacancies, as in the Housing Goals of the 1968 legislation? The pronouncement of housing goals, it must be noted, was followed in 1973–74 by the worst slump in residential building since World War II; an objective of desired long-run levels of output obviously does not preclude severe cyclical fluctuations. More realistically, the question is what amplitude of fluctuations would be compatible with the notion of stability. The advocates of stable residential construction have never offered an answer. Yet, any rational comparison of benefits for housing and costs to the rest of the economy depends critically on the magnitude of temporal resource shifts.

Simulations by Pierce and Graves for various periods of the 1960s have estimated the impact on the efficacy of monetary policy of complete insulation of the housing sector from credit restraint. They conclude that cyclical swings in the level of short-term interest rates would have been far greater and that the influence of monetary policy on general economic stability would have been measurably reduced. "Substantially easier or tighter money—measured by short-run changes in either monetary aggregates or interest rates—would be required to impart a given degree of stability to aggregate demand."

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[18] See Gibson, op. cit., pp. 682–683.

[19] Statement of Nancy H. Teeters, member of the Federal Reserve Board, before the House Budget Committee, November 13, 1979. Federal Reserve Bulletin, December 1979, p. 963.

[20] For the 1955–1978 debt increase, see David H. Resler and Richard W. Lang, "Federal Agency Debt: Another Side of Federal Borrowing," Review of the Federal Reserve Bank of St. Louis, November 1979. For the share of housing agencies in total agency debt, see Federal Reserve Bulletin, December 1979, p. A35.

In addition, the impact of monetary policy on GNP would be somewhat delayed.[21]

Scope and Effectiveness of Housing Support Programs

The analysis of housing support programs focuses on:

1. The Federal Home Loan Banks which make credit available to savings and loan associations.
2. The Federal National Mortgage Association (FNMA), Federal Home Loan Mortgage Corporation (FHLMC), and Government National Mortgage Association (GNMA), which buy and sell residential mortgage loans and are here labelled "mortgage purchase agencies."
3. The residential mortgage pools underlying the issuance of mortgage-backed securities or participations which are guaranteed by GNMA, FHLMC, or the Farmers Home Administration (FmHA).

For the sake of brevity, the term "federal agencies" is used throughout the essay for all instrumentalities in this listing, ignoring the distinction between on-budget and off-budget programs or between federal and federally sponsored agencies. The FHL Banks, FNMA, and FHLMC are privately owned but they are creatures of federal legislation, are charged with public missions specified in law, and obtain a standing in the securities market reflecting quasi-governmental status. Both FNMA and the FHLB System also have access to the U.S. Treasury for emergency financing. Ownership and other distinguishing characteristics are not germane to our analysis except when they are specifically noted.[22]

All of the above programs have a common characteristic: they involve the issuance of agency debt obligations or guarantees of private securities. In fact, the federal credit agencies have been instrumental in providing housing with substantial access to the securities market, in contrast to the traditional dependence of residential financing on savings deposits and life insurance funds. This change appeared so dramatic that it was hailed in 1970 as a "new system of housing finance" introducing lasting improvements in funding the housing sector.[23] The prophecy seemed to be underscored by the subsequent

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[21] James L. Pierce and Mary Ann Graves, "Insulating Housing: Effects upon Economic Stabilization Policy," in Federal Reserve Staff Study, op. cit., pp. 337–344. The quoted passage is from p. 344. The results rest, of course, on the properties of the particular model used by the authors to simulate actual housing fluctuations and their model modifications to simulate complete absence of the fluctuations.

[22] Some detail on the agencies' operations should be mentioned. FHLB advances may be used by member institutions of the System to strengthen their liquidity as well as to expand their mortgage investment. Further, the System has influenced mortgage lending not only through advances but also through changes in liquidity requirements, but cyclical analysis of these changes would lead us too far afield. FNMA's mortgage purchases were originally limited to government-underwritten loans but extended in 1970 to conventional loans. The purchase authority of FHLMC,established in 1970, includes both types. The Government National Mortgage Association was created in 1968 to take over some functions performed by FNMA which was at the same time reorganized and transferred to private ownership. These functions—special assistance programs and the liquidation of FNMA's old mortgage portfolio—are federally financed. To provide funds for selected categories of FHA and VA loans, for FHA mortgages under subsidy programs, and for stimulating housing under adverse credit conditions, the GNMA–FNMA Tandem Plan has been devised. Under the plan, GNMA commits to buy or buys mortgages from private lenders below market prices and sells them to FNMA at market prices, with the difference charged to the federal budget. The plan minimizes the impact of subsidized lending on the federal budget. GNMA was also authorized in 1968 to pool residential mortgages for the issuance of mortgage-backed securities protected against loss through GNMA's guarantee.

[23] Warren L. Smith, "The Role of Government Intermediaries," *Housing and Monetary Policy*, Federal Reserve Bank of Boston, Conference Series No. 4, October 1970, p. 90 and pp. 95–97.

growth of mortgage-backed securities, a creature of the 1970s. The volume of agency-guaranteed securities, originally collateralized exclusively by FHA and VA loans, has risen at a spectacular rate. Moreover, increasing amounts of obligations backed by conventional as well as government-underwritten loans have been marketed in recent years by private institutions without the crutch of federal agency guarantee. The "new system" constitutes indeed a significant structural advance. As will be seen, it has not led to greater cyclical stability of mortgage investment.

The legislative history of the federal agencies indicates that moderation of housing cycles was one if not the foremost mission assigned to them. Only in the case of the FHLB System, however, does the record show clear evidence of such intent.[24] Among the other agencies, FNMA and FHLMC were established to provide "secondary market facilities," that is, acquire loans which primary mortgage lenders originated but could not or would not retain in their investment portfolio (or sell to private investors). This condition was most likely to occur in periods of general credit restraint. In other words, the secondary market operations were to cushion the impact of tight money on housing, as well as promote better functioning of the mortgage market. *However, the implied mandate to support the market under adverse credit conditions was not accompanied by an injunction to withdraw or reduce support at times of ample supplies of funds by private lending institutions.*

Our focus on selected agencies entails some minor omissions at the federal level.[25] We ignore also the growing housing finance activities of state and local governments and merely mention a recent, potentially significant development. This is the issuance of municipal tax-exempt bonds for residential mortgages made by private lending institutions at submarket rates of interest, often without restriction to borrowers of low or moderate income. At this writing, the U.S. Congress is considering legislation prohibiting or curbing this practice.

Magnitude and Variability of Operations

Between 1954 and mid-1979, holdings of residential loans by the federal mortgage purchase agencies have grown from $3 billion to nearly $55 billion. In only eight of the 24 years did their portfolio decline, and the reductions were concentrated in the first half of the 1960s. The accompanying chart shows that agency holdings as a percent of total residential loans outstanding fluctuated within narrow margins between 1954 and 1960, decreased in the 1961–64 period, rose sharply

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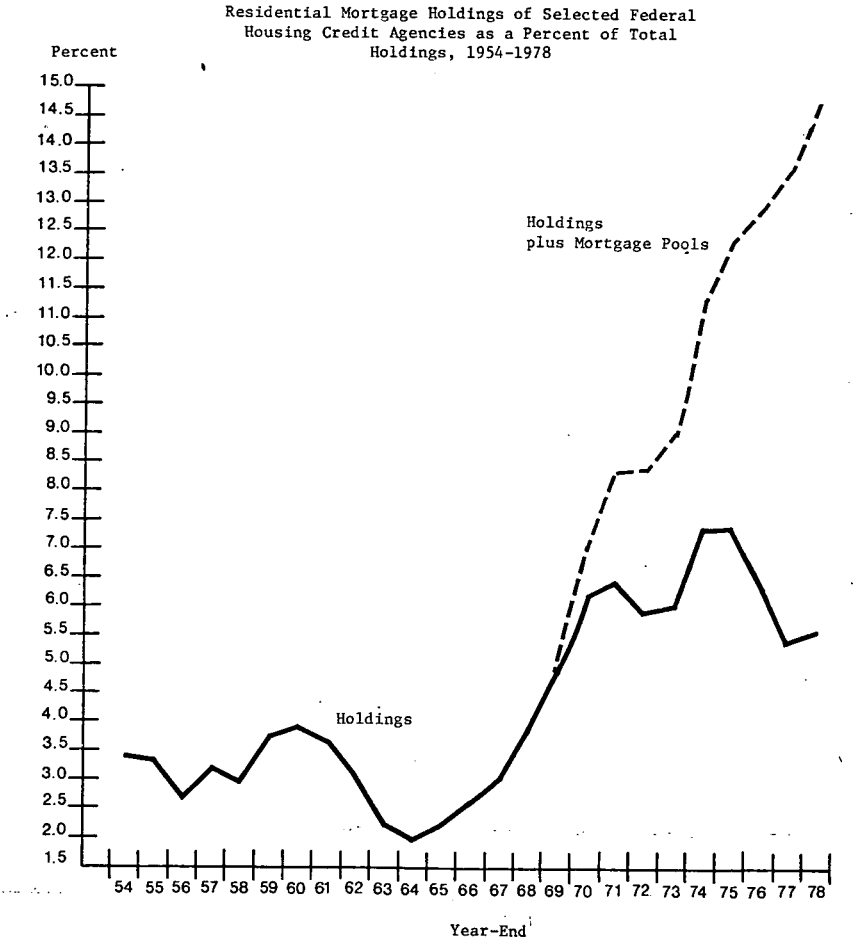
[24] A Congressional committee report charged the FHLBB with the responsibility to "regulate the supply of mortgage credit in a way that will discourage building booms and support normal construction year in and year out." Report No. 1418, U.S. House of Representatives. 72nd Congress, 1st Session, "Creation of not less than 8 and not more than 12 Federal Home Loan Banks," p. 10.

[25] The omissions include the FHA and VA loan insurance or guarantee programs. Changes in maximum allowable terms for government-underwritten mortgages may have influenced the course of housing cycles, but their main import lies in a long-term trend toward liberalization, usually associated with a similar tendency for conventional loans. Direct VA home loans, funded in the U.S. budget, and federal cash subsidies under the original public housing program are omitted because any policy of using them for stabilization purposes would have had minor effects. The more recent Section 8 provision for "lower-income housing assistance" is not included because it has shown the incipient growth typical of new programs. As for the various FHA subsidy programs, a large proportion of the mortgages originated by the private sector ended up in the portfolios of federal agencies included in the analysis while the interest rate subsidies came from U.S. Treasury funds.

thereafter through 1974, and declined again in recent years. (Formal trend analysis was found to add little to the inspection of direct observations.)



Note to chart.— Federal agencies include FNMA, GNMA, and FHLMC. Mortgage pools include GNMA, FHLMC and Farmers Home Administration. See also footnote 3 to Table 4. The final figures relate to June 1979.

A far stronger upward trend reaching from 1964 to 1978 is noted when the mortgage pools backing the securities guaranteed by GNMA, FHLMC, and FmHA are added to direct agency portfolios. This procedure indicates the overall role of the government intermediaries in the market much more adequately than the portfolio holdings alone. The funds for the acquisition of mortgage pools come from the private

sector but they would presumably not be available without the guarantee of securities.[26] Mortgage pools backing agency-guaranteed obligations plus direct agency mortgage holdings totaled $146 billion in June 1979, or about 15 percent of the aggregate residential mortgage debt. Even at this reckoning, the agency share in the total is not, or not yet, of overwhelming magnitude. As the author put it elsewhere, "one may paraphrase Mark Twain by saying that reports of the Federalization of the residential debt are premature." [27]

TABLE 4.—ANNUAL NET CHANGES IN RESIDENTIAL MORTGAGE HOLDINGS BY VARIOUS TYPES OF HOLDERS, 1955–78

[Dollar amounts in billions]

Year	All holders[1]	4 financial institutions[2]	Federal mortgage purchase agencies[3]		Col. 3 as percent of col. 1	Col. 3 and 4 as percent of col. 1	Memo—FHLB advances[4]
			Holdings	Mortgage pools			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1955	$13.4	$11.9	$ 0.4	----------	3.0	----------	$0.5
1956	11.3	9.9	−.3	----------	−2.6	----------	−.2
1957	9.0	6.8	.9	----------	10.0	----------	(5)
1958	11.6	9.6	−.1	----------	−1.0	----------	(5)
1959	15.0	11.6	1.7	----------	11.3	----------	.8
1960	12.1	9.8	.7	----------	5.8	----------	−.2
1961	14.4	12.0	−.1	----------	−.7	----------	.7
1962	16.3	14.9	−.2	----------	−1.2	----------	.8
1963	18.9	18.8	−1.3	----------	−6.9	----------	1.3
1964	19.9	18.7	−1.2	----------	−6.0	----------	.5
1965	19.0	17.8	1.1	----------	5.8	----------	.7
1966	13.9	10.5	1.5	----------	10.8	----------	.9
1967	16.0	12.9	1.8	----------	11.2	----------	−2.5
1968	18.6	14.2	2.5	----------	13.4	----------	.9
1969	20.4	14.2	4.4	----------	21.6	----------	4.0
1970	19.2	12.1	5.3	----------	27.6	----------	−1.3
1971	36.4	28.9	3.2	[6]$4.2	8.8	20.3	−2.7
1972	80.4	41.1	2.4	4.5	3.0	8.6	(5)
1973	54.3	37.6	4.1	4.1	7.5	15.1	7.2
1974	40.1	23.2	10.2	6.1	25.4	40.6	6.7
1975	42.0	25.4	3.2	7.8	7.6	26.2	−4.0
1976	69.7	53.5	−2.8	14.6	−4.0	16.9	−2.0
1977	107.3	77.1	−.1	19.6	−.1	18.2	4.3
1978	115.5	78.5	8.6	17.1	7.4	22.2	12.5

[1] Includes miscellaneous holders not shown separately.
[2] Commercial banks, mutual savings banks, savings and loan associations, and life insurance companies.
[3] Federal National Mortgage Association (FNMA), Government National Mortgage Association (GNMA), and Federal Home Loan Mortgage Corporation (FHLMC). Holdings of all Federal and related agencies are substantially larger for they include among others, direct loans made by the Veterans' Administration and Farmers Home Administration as well as Government-underwritten mortgages originating from property sales after foreclosure or deeds in lieu of foreclosure. None of these activities are designed to support the mortgage market. Mortgage pools include GNMA, FHLMC, and Farmers Home Administration. See text for the rationale for including the volume of mortgage pools backing agency-guaranteed securities.
[4] Shown separately because any changes in mortgage holdings associated with changes in FHLB advances appear in savings and loan associations, included in col. (2).
[5] Less than $100,000,000.
[6] Some of the loans reported under mortgage pools in a given year may have been originated in an earlier year.

Sources: Federal Reserve Board and Federal Home Loan Bank Board.

[26] In the absence of agency guarantees of mortgage-backed securities, a somewhat larger amount of loans might have been made directly by private sources of funds, but it is exceedingly difficult to estimate the volume of such loans. Of course, the attribution of mortgage pools to the federal sector does not mean that the position of agencies as guarantors of securities is legally or financially comparable to their position as mortgage holders. The guarantees represent potential contingent liabilities of the guarantee agencies.

[27] Leo Grebler, "The Role of the Public Sector in Residential Financing," in Resources for Housing, Proceedings of the First Annual Conference of the Federal Home Loan Bank of San Francisco, December 1975, p. 89. The data in this earlier study differ from those presented here because they were designed to show the size of the entire public sector whereas the present statistics refer only to the mortgage purchase agencies. See also footnote 3 to Table 4.

As for the cyclical variability of the mortgage purchase programs, the annual net changes in holdings (Table 4) provide insights sufficient for our purpose.[28] Substantial increases in net agency lending (column 3) were associated with large declines of net mortgage investment by the four principal private institutions (column 2) in 1957, 1960, 1966, 1970, and 1973–74. These six years were also periods of falling housing output (Table 1). Major decreases in net agency lending were associated with rapidly expanding net investment by the private institutions in another six years: 1962–64, 1971–72, and 1976. These coincided with recovery in the housing sector. Thus, in 12 of the 24 years included in Table 4 the direction of change in the mortgage purchase programs shows countercyclical behavior.[29] In five years, agency intervention was procyclical, that is, it was stepped up at times of growing or stable private lending activity (1959, 1968, 1969, 1978) or dropped together with private mortgage investment (1956). In the seven remaining cases, net changes were too small for cyclical interpretation, or annual movements may reflect largely agency loan purchases generated by earlier commitments. A decision of FNMA to increase its market support, for example, results in additional commitments followed by loan acquisitions some time after the policy change.

Again, the findings for the 1970s are substantially altered when the rapidly growing mortgage pools backing agency-guaranteed securities are considered. Inclusion of the pools raises the level of federal agency support, reaching a peak of nearly 41 percent of total net lending in 1974, and modifies its cyclical behavior. Instead of the decline in direct agency lending from 1970 to 1972 and net agency sales of loans in 1976–77, the sum of lending and mortgage pools shows increasing amounts of market support throughout the 1971–78 period, except for 1975 (columns 3 and 4 of Table 4). On this reckoning, agency activity in the 1970s did not meet countercyclical objectives. *The issuance of guaranteed securities backed by mortgages became a major expansionary force.*

As for Federal Home Loan Bank advances, expansions have been followed by large payments, notable especially in 1967, 1971, and 1975–76. At the end of 1976, advances outstanding, at $15.9 billion, were just slightly above the level of year-end 1973 at $15.1 billion. In 1977–78, however, borrowings from the Banks were allowed to increase procyclically as apprehension over disintermediation at S & L associations was growing and the inflow of savings failed to match the institutions' requirements for meeting the huge volume of earlier commitments.[30]

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[28] More detailed analysis would require unwieldy quarterly data; even so the results would be marred by lack of seasonal adjustment factors. It should be added that Table 4 shows the final results but not the process of agency intervention. The process has increasingly involved the issuance of mortgage purchase commitments which precede acquisitions and are crucial in enabling private loan originators and builders to proceed with their plans.

[29] Throughout the analysis the chain of causation is held to run from changes in net lending by the private institutions to changes in net lending under the federal mortgage purchase programs. A reverse causation is theoretically possible but most unlikely. As will be seen in the discussion of the effectiveness of agency intervention, the great majority of econometric studies shows that negative impacts of the intervention on private lenders appear not in the short run but only after the lapse of at least one year.

[30] For more detailed analysis of the cyclical variability of Federal Home Loan Bank advances and of FNMA operations in 1965–74, see Leo Grebler, "The Role of the Public Sector . . . ," op. cit., pp. 86–89 and Appendix E.

Studies of Effectiveness

In the context of this essay the crucial question of policy effectiveness of the federal credit agencies applies only to their capacity to moderate the housing cycle. Other criteria of effectiveness, notably the agencies' impact on the long-run level and distribution of residential construction or the size and distribution of the housing stock, must be ignored.

Numerous econometric studies have addressed themselves to the agencies' net influence on cyclical variations in housing output and total residential mortgage lending, as distinguished from their gross contributions measured in the preceding section. Most of the analyses pertain to FHLB advances and FNMA loan purchases. A review of 11 studies available in 1975 showed widely varying results reflecting the characteristics of particular models, the selection and specification of variables, and the chosen time period. Allan Meltzer, a strong exponent of the "money is fungible" concept, found empirical support for his thesis that changes in the availability of mortgage funds have at most a temporary and insignificant impact on the housing market. The other analysts concluded that increased activities of both agencies or at least one of them had positive short-run but no long-term effects (beyond about one year). On the whole, FHLB advances seemed to be more potent than FNMA mortgage purchases.[31] A separate analysis by the present author also found Bank advances to be more responsive to general credit conditions than were FNMA's loan acquisitions. The greater response of Bank advances to a given change in commercial bank reserves was mainly explained by large repayments in periods of credit ease following the expansion of advances in periods of credit stringency. In contrast, the FNMA portfolio had with few exceptions kept on increasing, though the pace of loan acquisitions accelerated under tight-money conditions.[32]

The limited effectiveness of federal agency support results from private-sector reactions to expanding agency operations. An increase of, say, $2 billion in loan purchases by a federal intermediary generates a net addition to mortgage supplies that is far smaller and diminishes over time as indirect effects of the $2 billion injection percolate through the system. In the first place, the agency securities issued to finance mortgage acquisitions raise interest rates on all debt obligations, and the higher yields attract investors away from savings deposits, and diversified financial institutions away from mortgage lending. When the yield differentials favor securities by a large margin, disintermediation reduces the mortgage investment capacity of private lenders, especially savings and loan associations and mutual savings banks. The innovation of longer-term savings certificates at

[31] For the annotated list of the 11 studies, see Leo Grebler, "The Role of the Public Sector . . . ," op. cit., Appendix C. The results are discussed on pp. 78–79. A study not included in the list shows a longer-lasting impact of FNMA activity on residential building by simulating the effects of reduced purchases. A simulation for 1969–70, holding FNMA net loan acquisitions to the 1966 level instead of their actual increase during the period reduces residential construction substantially for a little over two years. See James Duesenberry and Barry Bosworth, "Policy Implications of a Flow-of-Funds Model," The Journal of Finance, May 1974 (Papers and Proceedings of the 32nd Annual Meeting of the American Finance Association), pp. 343–345. For Meltzer's position, see footnote 3 of this essay.

[32] Grebler in "The Role of the Public Sector . . . ," op. cit., pp. 86–89 and Appendix E.

higher interest rates helped to contain disintermediation in 1973–74 when agency securities were issued in large amounts. The additional innovation of short-term T-bill accounts in mid-1978 had a similar effect until late 1979. As a rule, however, increasing spreads between yields on market instruments and savings deposits caused substantial investment shifts to the former, and security offerings of housing credit agencies contribute to the outcome. Second, stepped-up loan purchases by federal agencies exert temporary downward pressure on mortgage interest rates. In response, private institutions with multiple investment powers prefer the acquisition of non-mortgage assets including the agency obligations issued on behalf of the housing sector. The various financial shifts sketched here prevent the initial increase of residential mortgage supplies through federal agency action from becoming an equivalent permanent addition to the supplies.

The early econometric research tended to stress the absence of lasting effects of federal agency intervention. Positive short-run impacts were interpreted as merely "temporary," and their importance in tight-money periods was insufficiently recognized. A recent study, designed especially to measure short-run contributions of housing credit agencies to the net flow of mortgage funds, has modified the earlier emphasis. It concludes that the agencies "have a substantial short-term impact on the level of housing and mortgage market activity." Moreover, the effects are greatest in periods of tight mortgage markets, an important finding when the potentials of countercyclical action by the federal credit agencies are considered. Even so, the net loan supplies from agency intervention fall far short of the gross amounts furnished.[33]

The issue of benefits to housing versus costs to other sectors of the economy reappears in this context. Since the activities of federal credit agencies are financed by debt obligations, all issuers of securities bear the cost of increasing yields needed to attract investors, especially in periods of credit restraint when agency intervention is greatest. For example, if a gross injection of $2 billion of agency funds raised in the securities market results only in $400 million of net funds channelled to the housing sector in the short run, the question is whether the housing benefits warrant the cost to corporations and governments. The question becomes even more critical when one considers the unequal terms at which the security issues of credit agencies compete with those of the private sector. The cost of obligations floated for housing purposes reflects the superior status of federal instrumentalities or of the debt they guarantee and thus contains an element of non-cash subsidies.

[33] Dwight M. Jaffee and Kenneth T. Rosen, "Estimates of the Effectiveness of Stabilization Policies for the Mortgage and Housing Markets," The Journal of Finance, June 1978 (Papers and Proceedings of the 36th Annual Meeting of the American Finance Association). The quoted passage and the statement on net effectiveness are from p. 944. The analysis departs from the earlier econometric works in the following important respects. The model from the mid-1960s to 1976 is monthly while the previous models were quarterly or annual. The authors distinguish between commitments and mortgage purchases by the federal agencies, on the correct assumption that the former provide the main stimulus to housing. The structure of the model differentiates between mortgage credit rationing or disequilibrium periods and periods of equilibrium since agency intervention is more pronounced in the former. The agencies included in the analysis are FHLBanks, FNMA, FHLMC, and GNMA, but guaranteed mortgage-backed securities are excluded on the ground that the mortgage-pool programs are basically long-term in perspective. This is an arguable point. The activity of the private issuers of mortgage-backed securities could also have significant short-term or cyclical aspects associated, among other things, with changes in the yield on mortgage-backed securities versus the yield on mortgages or with general conditions in capital markets.

Credit Policy and the Recent House Price Inflation

Monetary policy in the past few years has had the avowed objective of combating inflation, culminating in the Federal Reserve actions of early October 1979. While this is not the place for joining the debate over the policy's general effectiveness, some comment is warranted on the role of housing finance in the credit expansion since 1975 and specifically in the inflation of house prices. The share of residential mortgages in the total borrowings by nonfinancial sectors rose from 20 percent in 1975 to about 30 percent in 1977 and 1978, and from 34 percent of net long-term investment funds to well over 50 percent.[34] These data reflect, of course, the vigorous expansion of homebuilding. In addition, however, the increasing proportion of housing credit resulted from rapid growth of transactions in the market for both existing and new one-family dwellings. Between 1975 and 1978, household acquisitions of single-family houses increased from 3.37 million units to 5.27 million, or by 56 percent in three years. The buying spree, reinforced by speculative home purchases in some local areas, was accompanied by sharply rising prices. In mid-1979 average prices of existing single-family houses were about 85 percent above the 1974 level as against 47 percent for the CPI. According to a recent analysis, the surge of purchases and prices was only in part explained by conventional variables. Another determinant was the growing importance attached to the owner-occupied home as an investment, associated with the search of a large part of the public for real assets as hedges against inflation. Inflationary expectations thus came to bolster the credit demand for housing, by tradition a highly leveraged investment. As would be expected, the boom's intensity varied locally but it was spreading so rapidly that it reached nationwide proportions.[35]

The financial system responded by providing ample funds to accommodate the growth of homebuying at rising prices. Financial institutions, especially savings and loan associations, experienced large increases in savings deposits through 1978 and felt under pressure to invest the incremental funds speedily. The flow of savings into financial institutions during 1978 was kept up by public regulation in midyear permitting 6-month money market certificates yielding returns geared to those on Treasury bills. The reduced mortgage purchases by federal housing credit agencies in 1975 and their net sales in 1976–77 (Table 4) were more than offset by the expansionary influence of the growth of agency-guaranteed mortgage-backed securities. Overall net additions to the mortgage debt on 1- to 4-family houses rose from $41.4 billion in 1975 to $105.3 billion in 1978, or by 154 percent in the course of only three years. The FHLBB reports on non-interest loan terms for conventional mortgages by major types of lenders provide no evidence that average downpayment requirements were raised or average maturities shortened.

In contrast to the usual complaint over "underallocation" of credit to housing, the 1974–1978 data suggest the probability of an "overallo-

[34] For total funds, Flow of Funds Accounts of the Federal Reserve, 1st quarter of 1979, p. 3. The total excludes equities. For investment funds, Bankers Trust Company, Credit and Capital Markets 1979, pp. T–10 and T–1.

[35] Based on Leo Grebler and Frank G. Mittelbach, The Inflation of House Prices (Lexington Books, 1979) and extension of the published data. See also John Tuccillo, "Housing, Inflation, and Investment: Theory and Evidence," a paper presented at the Annual Meeting of the American Real Estate and Urban Economics Association, December 1979 (processed).

cation" that supported the surge of house prices and contributed to misdirection of real resources. A general monetary policy sufficiently restrictive to moderate the boom in the single-family house market would have had disastrous macroeconomic effects. Rising nominal interest rates did not seem to deter homebuying before mid-1979. In view of the potential influence of federal credit agencies on the market, the question is whether *housing* credit policies could have been used to contain the boom. There is no record of public cautionary statements or restrictive measures by the supervisory agencies, except the Federal Home Loan Bank of San Francisco which in April 1977 hoisted a warning signal against the hectic and partly speculative activity in the area under its jurisdiction.[36] Since mortgage-backed security issues depended largely on agency guarantees their growth might have been slowed by rationing the volume of guarantees. The annual reports of the Government National Mortgage Association reveal no such action but rather a great deal of satisfaction over the increasing market acceptance of the securities. Both FNMA and GNMA could have sold larger amounts of loans in their portfolios to sop up funds available for residential mortgage investment. Finally, the conditions prevailing in 1976–1978 might have called for selective credit controls reducing maximum loan-value ratios and maximum maturities of home loans. Authority for such controls exists under the Credit Control Act of 1969 which empowers the President to authorize the Federal Reserve Board to regulate and control any or all extensions of credit . . . "for the purpose of preventing or controlling inflation generated by the extension of credit in an excessive volume." The language of the Act seems to fit the credit and price developments in the house market quite closely.

All of the possible policies of restraint have shortcomings. Cautionary statements of supervisory authorities may go unheeded or may even have perverse effects on potential homebuyers. The prospect that the various types of lenders would be sufficiently alarmed by exhortation to join in voluntary credit control was poor. Rationing of governmental guarantees for mortgage-backed securities might have rechanneled some funds to other mortgage investors. Larger sales of loans from the GNMA and FNMA portfolios would have entailed capital losses. In the case of GNMA, losses would have been a charge to the federal budget. In the case of the privatized FNMA, however, the losses would have had adverse impacts on the agency's earnings and equity base, difficult to reconcile with its responsibilities to shareholders.[37] This condition, pervading the history of FNMA since 1968, points up the contradiction between legitimate concerns of a corporation with its stockholders and the optimal performance of the agency's public mission to contribute to mortgage market stability. As for the support of deposit flows by authorization of T-bill accounts, the alternative was seen as disintermediation and its consequence of curtailed institutional lending capacity. With hindsight it appears that some-

[36] The Bank raised its interest rates on advances by a full percentage point and suspended the variable-rate provisions for long-term advances. The statement explaining these actions was widely publicized. For detail, see Grebler-Mittelbach, op. cit., p. 2 and footnote 3 to Chapter 1.

[37] For an analysis of this problem, written from the viewpoint of FNMA as a private corporation, see "Financial Goals of the Federal National Mortgage Association," issued by the Association in May 1978, Volume One, pp. 26–27.

what less generous yields on T-bill certificates would have been sufficient to avert major deposit withdrawals. There is indeed evidence that the public response to the certificates exceeded by far official expectations.[38] Turning to selective housing credit controls, the experience of two earlier programs of this kind, during the Korean war and in 1955–56, was not encouraging.[39] Political and administrative problems would have been confounded by the incidence of restrictive credit terms on homebuyers of moderate income whose access to the market was already diminishing. The demand for exemptions by house price or borrowers' income criteria might have been irresistible.

Despite all these drawbacks of any policy of constraint, one cannot help being impressed with *the failure to use the substantial federal powers in the residential mortgage market for countercyclical action when conditions clearly called for it.* As on other occasions, policymakers opted for keeping the housing sector going. True, unrestricted homebuilding increased the supply of dwellings and thus helped to contain the housing inflation. But this was at best a marginal influence compared to the effects of the huge extensions of mortgage credit on house prices. The objection that selective restraint would have affected a "socially desirable" activity did not hold. It is difficult to equate the house production of 1976–78, at annual average prices ranging from about $50,000 to $65,000, with the kinds of dwellings needed by lower-income people. A restrictive housing credit policy could have left the so-called Section 8 program, the mainstay of subsidized housing, untouched.

Proposals for Reducing the Severity of Housing Cycles

The problems considered in this essay have evoked a plethora of policy proposals to moderate the cyclical fluctuations in residential construction more effectively. Some of the recommended measures are of a general nature although they are expected to yield, among other things, more stable housing output. Others are designed to operate directly on variables affecting the sector's instability. The major proposals are summarized below.

1. *Flexible fiscal policies.*—With the exception of "monetarists," there is widespread agreement on the need for fiscal policies that are more systematically oriented to economic stabilization objectives.

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[38] According to Anita Miller, member of the Federal Home Loan Bank Board, "the Money Market Certificate experience . . . taught us humility regarding our ability to anticipate precisely how the financial players, system, and markets will respond to new circumstances. In truth, Washington totally misjudged the MMC's potential popularity. Optimistic projections of its success made in June 1978 . . . anticipated only a tiny fraction of the $179 billion that have since been attracted to it." Journal of the Federal Home Loan Bank Board, November 1979, pp. 6–7.

[39] Selective controls during the Korean war restricted the terms of loans for the construction and purchase of residential buildings (Regulation X of the Federal Reserve) together with those for the purchase of specified consumer goods (Regulation W). See R. J. Saulnier, "An Appraisal of Selective Credit Controls," American Economic Review, Proceedings, May 1952. Regulation of housing credit in 1955 involved more restrictive maximum terms on FHA and VA home mortgages together with restraints on FHLB advances and with Federal Reserve warnings against expansion of mortgage "warehousing loans" by commercial banks. These policies were relaxed and then abandoned in 1956–57. See Leo Grebler, Housing Issues . . . , op. cit. The reasons for rather moderate short-term effects of these two actions are succinctly stated by Jack M. Guttentag, Selective Credit Controls on Residential Mortgage Credit, in Ira Kaminow and James M. O'Brien (eds.) Studies in Selective Credit Policies (Federal Reserve Bank of Philadelphia, 1975), pp. 51, 53. It should be noted that the circumstances described by Guttentag were not applicable to conditions in 1976–78.

Proposals toward this end fall into two categories. One of these seeks to reduce if not eliminate federal budget deficits and achieve a surplus when total resources approximate full utilization. In the past two decades, a surplus was recorded in just one fiscal year. Government borrowings to finance deficits, it is argued, add to demand pressures for funds, especially at times of high employment, and thus curtail the supply of mortgage loans and raise their costs. A countercyclical fiscal policy would enable the Federal Reserve to reduce the sharp interest rate fluctuations of the past and maintain a more even flow of credit.[40] In a related version, it is asserted that increased deficit financing causes the Federal Reserve to augment the money supply at a greater rate than it would do otherwise, contributing to inflation. Another set of proposals advocates the use of automatic or discretionary fiscal stabilizers, such as a variable business investment tax credit or a variable income tax surcharge. Legislative action for these purposes would take too long for timely effects, and anticipations developing during Congressional debates would cancel much of the intended benefit. The Congress has so far opposed any waiver of its traditional prerogatives in tax matters. Nevertheless, the demand for more flexible fiscal policies has been gaining so much support that they may yet be initiated in one form or another. A mortgage interest tax credit has been recommended by the Hunt Commission to stimulate mortgage (and other "social priority") investment. However, this direct fiscal device for the support of housing was considered a permanent feature, not one to be varied cyclically.[41]

2. *Overall quantitative credit controls.*—To augment the flow of funds into mortgage investment during periods of financial restraint, the "big stick" of overall quantitative credit control has been proposed by at least one housing advocate.[42] The purpose would be to restrict borrowings for uses that have low social priority. This approach involves a comprehensive system of selective credit policies. Critics have pointed out that such a system could significantly reduce the efficiency of resource allocation throughout the economy and possibly the total output of goods and services as well. The social costs would in all likelihood be far greater than the benefits accruing to the housing sector; the latter would be quite small because so many other activities could claim social-priority status at least equaling the position of housing.[43]

3. *Removal of regulatory constraints on mortgage lenders.*—The principal restraints affecting the cyclical variations of mortgage lending are (*a*) the specialization of savings and loan associations and, to a lesser extent, mutual savings banks; (*b*) the regulatory ceilings on savings deposit rates; and (*c*) state usury laws limiting the return on mortgage loans. Each of these calls for brief review.

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[40] For this line of argument, see, for example, U.S. Commission on Mortgage Interest Rates, Report to the President of the United States and to the Congress (Washington, D.C.: U.S. Government Printing Office, August 1969), p. 21, and Committee for Economic Development, Financing the Nation's Housing Needs, April 1973, p. 14.

[41] Report of the President's Commission on Financial Structure and Regulation, p. 78, Recommendation 10. For an analysis, see John A. Tuccillo, The Mortgage Interest Tax Credit, the Behavior of Financial Intermediaries, and the Housing Market. Chapter 5 of Capital Markets and the Housing Sector (ed. by Robert M. Buckley, John A. Tuccillo, and Kevin E. Villani). Cambridge, Mass., 1977.

[42] Henry B. Schechter, Comments on the Public Sector's Role in Providing Financial Resources for Low- and Moderate-Income Housing, Resources for Housing, op. cit., p. 281.

[43] For extensive discussion of overall credit allocations, see Federal Reserve Staff Study, op. cit., pp. 57–61, and Eleanor J. Stockwell, "Quantitative Controls," ibid., pp. 420–431.

(*a*) *The specialization of mortgage lenders* exposes them to severe impacts of rising interest rates. When mortgage rates increase sharply, the institutions find themselves locked in with an asset portfolio yielding less than the return on current loans. On the other hand, so long as their deposits are mainly short-term, they must pay currently competitive rates on all savings. Incomplete adjustment of savings returns to market requirements induces disintermediation which in turn inhibits new mortgage investment. During much of the past decade this condition was alleviated on the *liability* side when the deposit mix was allowed to change in favor of longer-term, higher-yield savings certificates. It has recently been aggravated, however, by the extraordinary growth of T-bill accounts. This experience serves to place greater emphasis on proposals to change the *asset* mix of nonbank financial intermediaries, which are under Congressional consideration. By permitting the institutions to extend short- and intermediate-term credit, mainly in the form of consumer loans, it is expected that the impact on their operations of cyclical interest rate fluctuations and of the unbalanced maturity structure of assets and liabilities will be lessened. Fears of housing advocates that such a change might reduce the institutions' capacity for mortgage investment are held by some analysts to be groundless; the growth of savings deposits associated with broader lending powers will lead to an expansion of total loan portfolios. It remains uncertain, however, to what extent the savings institutions can generate consumer credit business in competition with the traditional, highly developed sources of funds for this purpose. Another approach is the *de facto* though not formal shortening of mortgage loan maturities by more widespread use of variable-rate mortgages or by adoption of the Canadian rollover program of 3- to 5-year loans. In all likelihood these reforms would only make a modest contribution to greater cyclical stability of the housing sector, although they may improve the structure of financial institutions.[44]

(*b*) *The ceilings on savings deposit rates* constitute in effect a selective credit policy. They were originally believed to benefit housing by restraining the competition of commercial banks for savings accounts and channelling more funds to the mortgage lending specialists. Housing advocates also assumed that submarket costs of funds would hold down mortgage interest rates. In terms of cyclical impacts, however, the limits on deposit returns reduce the mortgage lending potential of savings institutions in periods of high interest rates as investors switch from deposits to other financial assets. This inhibiting effect has been lessened but not removed by permitting higher returns on special accounts which now represent the bulk of savings deposits. Gradual

[44] For more extensive discussion, see Federal Reserve Staff Study, op. cit., pp. 25–36, and James L. Kichline, "Prospects for Institutional Reforms of the Major Depository Intermediaries," ibid., pp. 282–299. An analysis of portfolio and liability changes that may result from the Financial Institutions Act of 1975, by Patric H. Hendershott, does not address itself to cyclical impacts. See Capital Markets and the Housing Sector, op. cit., Chapters One to Four. Dwight M. Jaffee, in his comment "The Extended Lending, Borrowing, and Service Function Proposals of the Hunt Commission Report," Journal of Money, Credit, and Banking, November 1972, presents the results of an econometric study and concludes that the long-run effects of the proposals on savings deposit growth and short-term lending powers would be clearly positive. "The short-run, or cyclical, effects, on the other hand, are open to more question" (p. 998). Jaffee also finds that the short-term lending powers will have no long-run adverse impact on the institutions' capacity to make mortgage loans since the growth of deposits will allow increased expansion of the total loan portfolio (p. 994). Some mutual savings banks have already been authorized by state law to make consumer loans.

elimination of the ceilings, desirable for many other reasons, would allow deposit rates to be adjusted more freely and perhaps more frequently to market conditions. Apart from positive transitional effects. however, the impact of deregulation on the cyclical performance of residential construction is unclear.[45]

(*c*) *Usury laws* in many states have impeded homebuilding (and transfers of existing properties) in periods of high interest rates when housing production is generally declining. They have thus reinforced the slump and led to geographic distortions of mortgage flows and housing activity. If lenders are making mortgage loans at or below ceiling rates of interest, they typically restrict nonprice credit terms so drastically that demand is greatly curtailed. Upward adjustments of maximum charges have usually been too late or insufficient to correct this condition. Various Congressional bills provide for a permanent federal override of state usury ceilings, but this approach raises serious questions about federal preemption of state law. One can only hope that an acceptable formula will emerge from the current consideration of the problem by the U.S. Congress.[46]

4. *Differential bank reserve requirements.*—This proposal is designed to soften the disproportionate effects of monetary restraint on housing by differential bank reserve requirements on various types of assets. Required reserves would be lowered for residential mortgages, increasing expected net returns on this investment, and presumably raised for other assets, reducing their profitability. Reserve requirements or credits could be altered over the housing cycle. The proposal has met with considerable criticism. It would induce member banks of the Federal Reserve System, but not other financial institutions, to give preferential treatment to a "socially desirable" investment and penalize them for not doing so. To extend the plan to other institutions would hinge upon the imposition of reserve requirements akin to those for member banks, opening up a Pandora's box of problems affecting the structure and competitive position of nonbank intermediaries. If residential mortgages are initially singled out for preferential treatment in bank portfolios, loans for other social-priority purposes will soon augment the list and dilute the anticipated benefits for the housing sector. Even without competition by other priority users of funds,

[45] The U.S. Senate has voted to phase out the deposit rate regulation. According to an econometric simulation of the effects of complete deregulation in 1969 for all deposit institutions, deposits and mortgage loans at savings and loan associations in 1970 and 1971 would have been moderately larger than in the "standard simulation" approximating the historical data during this period of credit restraint. See Dwight M. Jaffee, "Eliminating Deposit Rate Ceilings: A Study of the Effects on S&L's." Federal Home Loan Bank Board Journal, August 1973. Two other studies of the effects of raising deposit rate ceilings by 50 and 100 basis points, respectively, estimate a more substantial increase of deposit flows and residential mortgage lending. See the simulation for 1969–71 by James Duesenberry and Barry Bosworth, op. cit., pp. 338–340, and the estimate for 1970–72 by Gary Fromm and Allen Sinai, A Policy Simulation Model of Deposit Flows, Mortgage Sector Activity, and Housing (processed, February 1975). Income tax benefits for limited amounts of interest earnings, proposed for various structural purposes, are under Congressional consideration. Cyclical impacts of such action on housing could be expected during the transition period but are likely to be insignificant thereafter.

[46] For quantitative studies of the effects of usury ceilings on mortgage lending and residential building, see Philip K. Robins, "The Effects of State Usury Ceilings on Single Family Homebuilding," Journal of Finance, March 1974, James R. Ostas, "Effects of Usury Ceilings in the Mortgage Market," Journal of Finance, June 1976, and Robert Schaefer and Gary Reid, "Impact of Usury Ceilings on Mortgage Lending," MIT–Harvard Joint Center for Urban Studies, Working Paper 60, October 1979. See also the statement by Frederick H. Schultz, Vice Chairman of the Federal Board, before the U.S. Senate Committee on Banking, Housing, and Urban Affairs, December 17, 1979. The problem of federal intrusion on state laws may be eased by enabling state legislatures to reject the removal of usury ceilings through federal statute.

these benefits are likely to be quite small; commercial banks account for a much lower proportion of total residential mortgage lending than do the savings institutions. On the other hand, the conduct of general monetary policy would be greatly complicated and entail stronger restraint on nonpreferential credit at a given growth rate of the money supply.[47]

5. *A control budget for federal credit agencies.*—Under this proposal, outlined by the Carter Administration, annual limits would be placed on the total gross lending activity of federal agencies making or guaranteeing loans and on each individual program. The limits would be included in the Presidential and Congressional budget *process*, although they would not be incorporated in the unified budget. The now perfunctory control of agency credit by the Administration and Congress would thus be considerably strengthened. If adopted, this measure could materially affect the cyclical performance of the programs to support the mortgage market, as well as their magnitude.[48]

6. *A new monetary policy.*—Some economists have argued that there *need* not be conflict between the goals of housing sector stability and macroeconomic stability. The adoption of monetary policies different from those conducted in the past could meet both objectives. Support for this assertion comes not from any new monetary theory but from simulation experiments for selected periods of the past, which may or may not be applicable to other circumstances.

(*a*) Cooley and Corrado have undertaken a large number of such experiments, with results that vary quite widely. On the whole they conclude that an easier monetary policy at times of past credit restraint would have benefited the housing sector and the general economy as well. In most but not all periods studied, the rate of inflation would have been no greater than the actual rate. In the end, however, the authors call for a mix of easy money and relatively tight government spending as the best means of promoting recovery from recessions, a hardly revolutionary position in light of the first of the proposals reviewed here. The combination is not included in their simulations, however. Concerning the technical features of their experiments, Cooley and Corrado concede that the outcome depends on the properties of their particular model, the periods studied, and the time horizons chosen for tracing the effects of altered monetary policies. Some time horizons are quite short and may not fully reveal delayed system responses such as inflationary impacts. FNMA commitments for loan purchases are treated as exogenous, and it remains unclear whether the authors argue for altered monetary policy plus retention of housing credit agencies or *in lieu* of these. Among the noteworthy results is the finding that constant growth rates of the money supply, of themselves, would not have stabilized either the economy or the housing sector. Cooley and Corrado show proper caution by offering their conclusions

[47] For more extensive discussion of the proposal, see Andrew F. Brimmer, Statement before the Subcommittee on Financial Institutions of the U.S. Senate Committee on Banking, Housing, and Urban Affairs, April 7, 1971; Federal Reserve Staff Study, op. cit., pp. 50-57; the paper by Richard H. Puckett and James L. Pierce in the same volume; and the Report of the Hunt Commission, pp. 68–69.

[48] For the Administration proposal, see Budget of the United States, Fiscal Year 1980, pp. 26–27. For endorsement by the Federal Reserve, discussion of the proposal's rationale, and the additional suggestion of a Credit Control Office in the Congressional Budget Office, see the statement of Nancy H. Teeters, member of the Board of Governors, before the House Budget Committee, Federal Reserve Bulletin, December 1979.

as tentative and suggestive for further research.[49] Yet, a Task Force established by the U.S. Department of Housing and Urban Development has associated their findings with the extravagant recommendation that the HUD Secretary and the Federal Home Loan Bank Board join with the Federal Reserve Board "in helping to set national monetary policy." [50]

(*b*) Andrew Brimmer's simulations for 1966–68, 1969–71, and 1972–73 combine new monetary policies (defined as altered growth rates of the money supply) directly with flexible fiscal policies (the investment tax credit in effect during some of the study periods and a 10-percent income tax surcharge). Each simulation indicates that tighter fiscal policies offset by "more money in the system" lead to greater savings flows and larger residential construction expenditures. "This result would occur at any time and not just in periods of monetary restraint." According to Brimmer, residential construction would have carried less, and the corporate sector more, of the burden of restraint if stabilization policies had taken a different course. However, inflationary impacts would have been greater than those calculated by Cooley and Corrado. In 1966–68 and 1969–71, Brimmer's version would have accelerated inflation; for 1972–73 the price controls in effect since mid-1971 made it impossible to trace the inflationary potentials of the simulated fiscal and monetary measures. Brimmer's findings on a constant growth rate of money supply during his test periods are even more negative than those of Cooley and Corrado. Here again, one of the many assumptions bearing on the analysis concerns the activities of federal housing credit agencies. These are held to be uninfluenced by the effects on housing of the alternative monetary and fiscal policies. Thus, the author leaves the implications of his policy mix for agency support of the market unexamined.[51]

(*c*) A study by Tolley and others of housing stability and monetary policy does not use simulations but attempts to trace hypothetical effects of a great variety of monetary policies on housing fluctuations. The study deals with so many policy variables combined with alternative assumptions on the mobility of funds that the results become indeterminate.[52]

Summary and Conclusions

I. The conflict between housing credit policies and general monetary policies, the main theme of this essay, has remained unresolved. The federal agencies which are the principal vehicles for the conduct of housing credit policies have tended to expand their support of the mortgage market when the Federal Reserve shifted to general credit restraint as a means of promoting macroeconomic stability. To the extent that they succeeded in shielding residential construction from

[49] Thomas Cooley and Carol Corrado, Competing Goals of Stabilization Policy: A Reassessment of Policies toward Housing, M.I.T. and Harvard Joint Center for Urban Studies, Working Paper No. 53, July 1978.

[50] U.S. Department of Housing and Urban Development, Final Report of the Task Force on Housing Costs, May 1978, p. 59.

[51] Andrew F. Brimmer, Monetary/Fiscal Policies and the Cost of Housing, The Cost of Housing. Proceedings of the Third Annual Conference of the Federal Home Loan Bank of San Francisco, December 1977. Quoted portions are from p. 72 and p. 52, respectively. For two critical comments on Brimmer's paper, see The Cost of Housing, op. cit., pp. 127–139.

[52] G. S. Tolley and others, Housing Policy and Monetary Policy: Costs and Benefits (processed), prepared for the U.S. Department of Housing and Urban Development, December 1976.

the effects of tight money, they reduced the stabilizing potentials of Federal Reserve policies or caused wider cyclical swings in other sectors. The benefits for housing and the cost to the rest of the economy, especially to the investment programs of local governments and to small business, have so far eluded adequate measurement. The fact remains, however, that neither housing advocates nor the Federal Reserve System are satisfied with the results of policies pursued in the past. The former urge still greater federal agency support while the latter chafes under the weight of carrying virtually the entire burden of economic stabilization.

II. According to a widely held view, both housing and overall stabilization objectives can be met more adequately if monetary policies are combined with fiscal policies that avoid the accumulation of federal budget deficits and obviate large-scale government borrowings competing with private-sector demands for credit. Alternatively, discretionary tax changes could be used to help stabilize the economy. Without expressing any judgment on the merits of one approach or the other, or a combination of both, it can be said that fiscal policies adapted to economic stabilization needs would facilitate a less restrictive Federal Reserve posture in periods of sharply rising demands for funds. A tight fiscal position together with an easier monetary stance would thus mitigate the past impact of changing financial conditions on the housing sector.

III. To judge from evidence accumulated over the past decade, the net effectiveness of the federal housing credit agencies in augmenting the supply of mortgage funds has been far smaller than the impressive gross amounts they channeled into the market would suggest. The benefits of agency support are diluted by higher interest rates in the securities market where the federal intermediaries raise funds and by temporary downward pressures on mortgage interest rates when they expand their loan commitments and purchases. Both result in a lower volume of private mortgage investment, offsetting a large part of the agency support even in the short run. Further, the growing agency activity has not been associated with a moderation of residential building cycles. On the contrary, cyclical fluctuations have shown increasing amplitude possibly caused by non-monetary as well as monetary forces. On the other hand, the massive demands of the federal agencies on the securities market have created financial costs to other economic sectors. The weak net effects of past agency operations combined with the adverse impact on other segments of the economy raise the perennial question whether the light is worth the candle. The adoption of effective and properly timed countercyclical fiscal policies should make it possible to reduce the scale of countercyclical intervention by housing credit agencies. Together with a more accommodative monetary stance, the outcome promises an abatement if not the elimination of conflicts between housing and macroeconomic stabilization objectives.

IV. The findings of this essay suggest the need for considering some substantial reorientation of housing credit agencies. The mortgage purchase programs have not been conducted in a truly countercyclical manner. The so-called secondary market facilities over the past 30 years have kept on acquiring mortgage loans but, with few exceptions, have shied away from sales in any significant amount. As a result,

their portfolios have grown at a fast rate. The agencies' purpose has remained unclear. If it is their function to support the mortgage market when primary lenders cannot meet the demand for loans, mortgage purchases should be approximately balanced by sales over the cycle. Among other things, the potential financial losses from sales in this type of operation (and large actual losses under foreseeable conditions) make private ownership of secondary market facilities problematical. On the other hand, if the federal intermediaries have the purpose of permanent supplementation of private-sector funds (though varying in different phases of the housing cycle), their mandate rests on the unproven hypothesis of a chronic "shortage" of residential mortgages provided through the market, and it has yet to be specified in legislation. The credit operations of the Federal Home Loan Banks have shown clearer countercyclical performance; large increases of FHLB advances when mortgage funds were scarce have been followed by large repayments when funds were plentiful. Hence, programs that make repayable credit available to private institutions may be more suitable for countercyclical support of residential mortgage investment than are the loan purchase programs.

V. The reform of regulatory constraints on mortgage lenders, described in Proposal 3 of the previous section, is desirable for its own sake. However, it seems unreasonable to expect *major* contributions to cyclical stability in the mortgage and housing markets from a somewhat better match of maturities for the assets and liabilities of savings institutions, more widespread use of variable-rate or "rollover" mortgages, the elimination of ceilings on savings deposit rates, or the removal of state usury ceilings on interest rates.

VI. Through the guarantee of mortgage-backed securities, federal intermediaries have played a strategic role in broadening the sources of funds for residential mortgage investment. In the 1970s, the first decade of experience with this device, the approval of guarantees has been guided by growth opportunities rather than its potential for influencing the course of housing cycles. Yet, restraint on the volume of guaranteed security issues at times of adequate alternative flows of mortgage funds could help avoid overexpansion. Restraint would also serve to minimize the cost to non-housing sectors of the economy that results from large amounts of guaranteed obligations offered in competition with other long-term debt instruments.

VII. The failure of federal housing credit policies to contain unsustainable expansions in mortgage lending and residential construction was strikingly demonstrated during the home-buying spree and the associated house price inflation of recent years. General monetary policy sufficiently restrictive to cope with this condition would have had disastrous effects on the economy as a whole. Hence there was a clear case for specific credit constraints in the 1976–78 period. While our analysis acknowledged the difficulties of each method of constraint the inaction highlighted once more the government's reluctance to use housing credit policies for moderating booms as well as slumps. The opportunity for restrictive measures vanished in mid-1979 when the surge of home purchases subsided and the rate of house price inflation began to decline. There was no point in locking the barn after the horse had been stolen.

VIII. Finally, recent simulation studies of alternative monetary policies have so far not yielded dependable guideposts. The claim that easier credit alone would have moderated housing recessions as well as cyclical declines in general business activity, without generating inflationary pressure, is yet to be substantiated. Reliance on credit stimulation was a workable approach in the depression of the 1930s when large parts of the nation's human and material resources were unemployed and expansionary policies were possible without significant price increases. The same prescription would not hold for the much milder contractions experienced since World War II, and not for an economy encumbered by rigid prices and wages and by inflationary expectations. The case is far stronger for the combination of flexible fiscal policies with a more accommodating posture of the Federal Reserve. Because this policy mix promises to cushion the adverse effects of tight money on residential buildings and promote the objective of stable economic growth as well, it deserves to be put to the test of experience after the fiscal-monetary crisis of early 1980 is resolved.

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