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ECONOMIC STABILIZATION POLICIES: THE HISTORICAL RECORD, 1962–76

COMMITTEE ON THE BUDGET
U.S. HOUSE OF REPRESENTATIVES

JOINT ECONOMIC COMMITTEE
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NINETY-FIFTH CONGRESS

U.S. House of Representatives
COMMITTEE ON THE BUDGET
Washington, D.C. 20515

September 28, 1978

Honorable Robert N. Giaimo
Chairman
Committee on the Budget
U.S. House of Representatives
Washington, D.C. 20515

Dear Bob:

In response to a request by the Task Force on Economic Policy, two very useful studies have been made of the effect of fiscal and monetary policy on the economy from 1962 to 1976. Although there are many theoretical papers on the results of changes in fiscal or monetary policies, surprisingly no overall investigation has been made, after the fact, of the actual outcome of the changes over an extended period.

The studies were made on contract by two econometric firms, Data Resources, Inc., and Wharton Econometric Forecasting Associates; in addition, Alan Greenspan of Townsend-Greenspan & Co., Inc. and Arthur Okun of the Brookings Institution have commented on the work. The contract was jointly funded by the House Budget Committee, the Joint Economic Committee and the Congressional Research Service of the Library of Congress. The report is now approaching completion; all final manuscripts should be on hand by the end of September.

I think the report will be a valuable reference work for future Budget Committee deliberations and, for other policymakers and students of fiscal and monetary policies. I am writing to ask you to put before the next meeting of the Budget Committee a request that this study be printed and issued as a joint committee print.

Sincerely,

Thomas L. Ashley
Chairman, Task Force on
Economic Policy

NINETY-FIFTH CONGRESS

U.S. House of Representatives
COMMITTEE ON THE BUDGET
Washington, D.C. 20515

TO THE MEMBERS OF CONGRESS:

The Task Force on Economic Policy of the House Budget Committee was set up to undertake special studies of overall Federal economic and fiscal policies and the effectiveness of measures to achieve full employment and maintain price stability. It was discovered that, although there are many theoretical papers on the potential consequences of changes in fiscal or monetary policies, no sustained examination has been made of their actual effectiveness afterwards. New data that was not available at the time throw a different perspective on policies and actions of previous years.

To fill this large gap in our knowledge, the Task Force proposed that a study be made of the effectiveness of stabilization policies taken since the early 1960s. Joint funding was agreed on by the House Budget Committee, the Joint Economic Committee and the Congressional Research Service of the Library of Congress. A contract was signed for separate studies by two econometric research firms, Data Resources, Inc., and Wharton Econometric Forecasting Associates. Alan Greenspan of Townsend-Greenspan & Co., Inc., and Arthur Okun of the Brookings Institution have commented on the results of the studies.

The studies provide a useful perspective on the ability of policy-makers to maintain a stable economic environment. Members of Congress will find these studies supply valuable assistance in determination of fiscal policy and of national priorities. They are the source of much helpful information for the oversight of the economy.

Sincerely yours,

Richard Bolling
Chairman
Joint Economic Committee

Robert N. Giaimo
Chairman

Gilbert Gude
Director, Congressional
Research Service

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*Printouts and other technical details are available for examination in the offices of the House Budget Committee.

ECONOMIC STABILIZATION POLICIES

Introduction and Summary

The Problem

The Congress and the President face frequent policy decisions intended to influence the path of the economy. Yet, there has been no satisfactory retrospective examination of the effectiveness of the policy decisions taken over the past decade and a half. The Congress, the Administration and the Nation are in urgent need of a fair appraisal of the current capability--and limits--of economic policy actions.

In the 1960's, it was widely believed that fiscal policy actions were capable of counteracting cyclical and external shocks to the economy and could be effective in maintaining both stability and growth. By the 1970's, however, there was a substantial shift in public attitudes and perceptions about policy making. The persistence of inflation and the experience of the deepest post-World War II recession have reduced public confidence in the efficacy of traditional economic policy. Now, for example, opinions about the stimulative potential of fiscal policy range from the sceptical to the exuberant--from the view that a tax cut will merely induce a comparable increase in private saving, with little effect on the level of activity, to the view that, if large enough, a tax cut will provide the incentive for a self-reinforcing acceleration of real growth, without aggravating existing inflation.

The Questions

It is therefore of the greatest importance that policymakers be aware of the extent of leverage their fiscal and monetary policy actions can be expected to exert on the economy. Answers are needed to such questions as:

-- What are the impacts on the rate of growth of the economy, on employment, on prices and on interest rates of discretionary fiscal actions?

-- How quickly do these actions take effect, and how long is it before their impacts have substantially diminished?

-- Does the phase of the business cycle have some influence on the efficacy of policy actions?

-- Is there evidence that the response of the U. S. economy to these actions has radically changed over the past decade and a half?

-- What lessons are to be learned about the tradeoff between the growth rate of real activity and the rate of price inflation?

The Methods of this Study

There is no generally accepted approach to these questions and there are many difficulties in identifying the consequences of any specific action. The effects on the economy of fiscal and monetary policy actions are not easily separated from the impacts of chance events or from the systematic performance of the economy itself. The starting point, however, has to be the historical record, and the mass and complexity of the statistical data virtually compel the use of large econometric models.

There is a real dearth of knowledge about the actual effectiveness, in any but the short-run, of fiscal and monetary policy changes in the period since the early 1960's. This study is designed as a careful review of several major fiscal actions in these recent years. As a precaution against possible idiosyncracies of any one econometric model or of the analytical approaches used in simulations, two major econometric services, Data Resources, Inc. and Wharton Econometric Forecasting Associates Inc., were invited to perform independent studies on their own systems.

In addition, there was close consultation between Congressional staffs and the analysts of the two services on the methods used to identify the consequences of the specific actions under investigation. The models allow the analyst to examine the impact of one event at a time whereas in the real world many events are occurring simultaneously. This attribute of the models simplified separating out the effects of many other actions that might have neutralized or amplified the results.

For example, great care was taken to define the conditions for a neutral monetary policy, so that an attempt could be made to offset the simultaneous influence of monetary conditions on the course of the economy. It was also necessary to define precisely the meaning of neutral fiscal policy, so that it would be possible to compare, in retrospect, the actual historical result with what might have happened under stable framework policy.

The results of these analyses are to be regarded as dependent on the technical quality of the models, which is high, and on the care with which hypothetical conditions are applied, which is great. They remain, however, only estimates, but the best answers that are within present technical capabilities.

Scope of the Analysis

This study was intended to examine major fiscal policy activities between 1962 and 1976. A chronology of these events is contained in Appendix I. Both Wharton and DRI were asked to examine the entire period and compare it to a neutral Government policy. In addition, each research team was given certain specific short-run events to investigate with both teams examining the 1964 tax cut. By limiting the evaluation of specific policy events to a short period (two to three years), it is possible to compare them to a "no policy change" scenario as well as a "neutral policy" one. The "no policy change" scenarios are only useful for two to three years; beyond this point the simulated economy is so different from the real world that comparisons deteriorate.

This type of analysis allows one to address questions about the ability of fiscal policy to influence the economy. For example, we can say that in 1964 fiscal policy worked because the tax cut increased real gross national product by 2 percent. Fiscal policy worked again in 1968 when the surcharge helped to restrain personal consumption and business investment. And from 1966 through 1969 fiscal policy was working because the expenditures associated with the Vietnam war produced a more rapidly growing economy and higher inflation rates than would have occurred without these expenditures.

Definition of Neutral Policy

However, in order to answer the question, "What if we had not had the tax cut in 1964"?, we must know what policies would have been pursued in the absence of the tax cut. The "no policy change" and "neutral policy" scenarios are two alternative possibilities. However, providing a precise definition of a neutral policy proved exceedingly difficult. These difficulties were compounded by the need to consider both fiscal and monetary policies.

One possible definition states that policies should be consistent with the economy following its long-term growth path. For fiscal policy this was equivalent to saying the full employment budget deficit should be zero. In the case of monetary policy, no single standard was suitable over the entire period, but in most instances a stable growth in nonborrowed reserves was consistent with stable growth in the overall economy. As explained in more detail in the DRI and Wharton studies, changes in the economy from 1962 to 1976 required changes in the definition of neutral monetary policy.

Another definition of neutral policy argues that the economy responds to both private and Government policies. Government policy is neutral when the total movement of the economy depends only upon private behavior. This means that if one Government policy would have a positive impact on the economy, it must be counterbalanced by another policy with an equal negative impact.

This latter definition has a great deal of theoretical appeal but is extremely difficult to put into practice. The most serious problems result from two facts: (1) Government policies have impacts which extend over several periods of time and, (2) it is impossible to choose a starting point for the analysis without residual effects of earlier policies.

Alternative Approaches of the Two Studies

These difficulties force return to the steady-state approach of the first definition. In operational terms, the DRI and Wharton studies have interpreted the definition differently. Both studies begin with an economy growing at its long-run potential growth rate. In the DRI study fiscal policy variables are initially assumed to grow at a constant rate, passing through their actual values at the beginning and end of the time period examined. Minor adjustments are then made to achieve the balanced full employment budget condition. The criterion used for neutral monetary policy is stable growth in nonborrowed reserves.

The Wharton approach assumes Government purchases have a constant real share in the total gross national product (GNP). This assumption allows purchases and transfer payments, for example, to grow at different rates but does not allow composition of purchases to change. An equivalent approach is used for tax receipts.

Using these alternative approaches both Wharton and DRI have generated a neutral baseline against which the actual record of history can be compared. Although potential errors caused by differences between the model's results and actual history have been carefully eliminated, the usefulness of these results still depnds upon the model's ability to replicate the economy's response to a given economic policy.

Comparative Results of 1964 Tax Cut

A critical feature of the study was the two independent analyses of the 1964 tax reduction. Except for joint discussion of the definition of neutral fiscal and monetary policies, no constraints were applied to the methods that would be used by the two different models. Thus, the degree of difference in the estimated impacts of the 1964 policy would provide a rough guide to the extent to which the special features of the two models affected the outcome. Although the period of the mid-1960's was marked by relatively stable economic performance--and hence the econometric results do not provide evidence of their prospective performance in more disturbed times--the close comparability of the inferences of the two studies yields a well-based and robust estimate of the actual nature of the consequences of the 1964 tax cut.

The conclusions, however, were not always precisely the same. The Wharton analysis indicates that the 1964 tax cut increased real GNP by about $8 billion the first year and $18-$20 billion each of the following three years. The DRI study shows an impact of $7 billion the first year, $12-$13 billion the second and third years, and $9 billion in the fourth year.

In particular, the DRI analysis indicates "quick and sizable" response to the tax cut, characterized especially by increases in real disposable income, additional demand for consumer goods (especially durables) and a rapid improvement in the unemployment rate. In addition, there was a partial offset to the

reduction in Federal Government tax revenues by reflows resulting from higher levels of activity. Furthermore, the maximum impact of the tax cut on the economy lasted no more than two or three years; later effects were, to an increasing degree, no longer distinguishable from the performance of the private economy as a whole.

The Wharton analysis agrees that much of the benefits accrued to the household sector in the form of increases in personal disposable income and suggests that after two years the addition to consumer spending seems to stabilize. The associated increase in the desired new stock of capital goods is sustained only so long, but not indefinitely. The Wharton estimates of the reaction of nonresidential fixed investment, however, are substantially greater than those of DRI, and the Wharton estimates of residential fixed investment (a relatively small component of gross national product) substantially smaller.

In large part, the different composition of investment can be explained by the different conventions followed in defining neutral monetary policy. This raises questions about the impact of the tax cut on the pattern of interest rates, which are of primary importance in determining the course of residential investment.* But regardless of which study one wishes to rely upon, the broad conclusion is the same: the tax cut of 1964 provided a significant stimulus to economic activity for several years. The differences between the conclusions of the two research teams are differences of degree, not differences of direction.

A tabulation of the two systems' estimates of the impact of the 1964 tax reduction follows.

*Again this illustrates the difficulty of defining neutral monetary policy.

Estimated Impacts of the Revenue Act of 1964*

		DRI	WHARTON
		Billions of 1972 $	
Real GNP	1964	7.1	8.2
	1965	12.4	18.5
	1966	13.0	20.2
	1967	8.9	19.4
		Percent Difference	
Real GNP	1964	0.8	0.7
	1965	1.3	1.5
	1966	1.3	1.6
	1967	0.9	1.5
Real Consumption	1964	1.1	0.8
	1965	1.9	1.7
	1966	2.1	2.0
	1967	1.7	2.1
Real Non-Residential fixed investment	1964	0.6	0.9
	1965	1.3	3.0
	1966	1.5	4.2
	1967	1.2	3.8
Real Residential fixed investment	1964	0.8	0.4
	1965	1.3	0.5
	1966	2.7	-0.3
	1967	2.0	-0.1
		Difference in Rate of Growth	
Implicit price deflator	1964	0.1	0.0
	1965	0.4	0.02
	1966	0.5	0.3
	1967	0.5	0.6
Wholesale price index	1964	0.1	0.0
	1965	0.4	0.0
	1966	0.3	0.0
	1967	0.2	0.1
		Difference in Rate	
Unemployment rate	1964	-0.2	-0.4
	1965	-0.5	-0.5
	1966	-0.5	-0.2
	1967	-0.4	-0.0

*The figures for DRI are extracted from Table 2 of the DRI study; those for Wharton are calculated on the basis of Tables III 3, III 7, and III 6 of the Wharton study.

A Broad Summary of the Findings

Despite different standards of comparison, different definitions of neutrality and differences in the econometric models, the following conclusions emerge:

-- Fiscal policies do work and are effective as countercyclical measures.

-- The stage of the business cycle will influence the magnitude of a policy's impact.

-- The short-run impact of a given policy is not necessarily the same as the long-run impact.

-- It is important to implement policy promptly after the need is perceived; for example,the delay in implementing the 1968 surcharge carried a heavy cost.

-- Some policies work more quickly than others; some last longer than others. For example, the 1975 tax cut, whose largest single element was a rebate of personal tax liabilities, had a more rapid impact than could have been expected from changes in the withholding schedules.

-- Both econometric systems indicate the same order of magnitude for the impact of the 1964 tax cut.

-- Most discretionary fiscal actions appear to have achieved their major impact within three years of their implementation.

-- Even under neutral policy conditions, the hypothetical performance of the economy appeared to have a cyclical element; merely stabilizing the government sector is not in itself enough to ensure overall economic stability.

-- Stable policies are not able, in themselves, to make more than a small and slow improvement in the inflation/unemployment tradeoff.

-- Coordination of fiscal policy measures with monetary conditions was imperfect on several occasions; fiscal and monetary policies can, and sometimes have, offset each other. Better policy coordination can improve the total policy impact.

FISCAL POLICY:
The Scorecard between 1962 and 1976

A Study Prepared for
The Committee on the Budget of the U.S. House of Representatives
The Joint Economic Committee
The Congressional Research Service
by
Data Resources, Inc.
August, 1978

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FISCAL POLICY: The Scorecard Between 1962 and 1976

A Study Prepared For

The Committee on the Budget of the U.S. House of Representatives

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August, 1978

The decade-and-a-half between the inaugurations of President Kennedy and President Carter witnessed a dramatic array of modern stabilization policies. Measures ranged from traditional shifts in tax rates to liberalized depreciation allowances, an investment tax credit, and the unprecedented peacetime use of wage and price controls. Monetary measures were also far from dormant. Such an active pursuit of balanced growth, combined with the lingering fallout of the economic events of recent years, has long kept public debate over the efficacy of stabilization policies at center stage.

- Traditional stabilization theory views economic fluctuations as inherent to the private, capitalist economy, and focuses on measures to counteract them. One is to believe that without such measures the economy would be far less stable.

- The opposite view sees the government as a major source of instability. The private sector is presumed to settle on a stable growth path only if there is a stable fiscal-monetary framework.

Each diagnosis carries with it different implications. The following study evaluates these conclusions for selected major Federal fiscal policies implemented between 1962 and 1976, in particular: the 1964 Tax Reduction Act, the 1968 Tax Surcharge, the 1975 Tax Reduction Act, and a set of expenditure programs enacted in the early 1960s, including the Housing Act of 1961, the Public Works Acceleration Act of 1962, and the increase in Social Security benefits in 1965. This is done through simulations of the Data Resources Model of the U.S. Economy. Each episode is analyzed from two perspectives. First, what would have resulted if the particular policy had not occurred? Second, how does the given policy episode compare with one in which all policy parameters followed a stable path?[1]

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* This study was carried out by Dr. Robert A. Gough, Jr., Associate Director, National Economic Forecasting, Rosemary D. Marcuss, Managing Consultant, Washington Consulting Office, Stephen H. Brooks, Senior Economist, National Economic Forecasting, and Sarah M. Cleaver, Consultant, Washington Consulting Office.

[1] See Appendix A.

The results show that the policies were potent as countercyclical devices, achieving at least part of the macroeconomic goals set for them, but that timing, permanent effects on aggregate output, and coordination with monetary measures were often less than desirable.

- The 1964 tax cut helped to restore the economy to full employment in less than a year-and-a-half with only a moderate rise in prices. One year after enactment, real GNP was up 1.3% over what would have been the case without the cut, and 1.4% after two years. Increases in consumer prices averaged an extra 0.3% by the end of 1965. The fiscal drag of a $10 billion full-employment budget surplus in late 1963 was thus eliminated by late 1964.

- The acceleration in nondefense spending between 1962 and 1965 helped ease the impact of a slowdown in other Federal expenditures. The net result was a mildly stimulative effect, with the rate of growth of real GNP up 0.6% in 1962 over what would have occurred had spending growth continued at trend rates, and an average 0.1% between 1963 and 1965. The unemployment rate would have been an average 0.3 percentage point higher over the period without the expenditure buildup.

- The 1968 surcharge helped to restrain excess demand pressures, though by less than was expected. The impact on consumer and business spending was particularly disappointing, with the rate of growth of real consumption lower by 1.1% after the first year compared to a path without the surcharge; business fixed investment was slowed by 0.9% after one year. The belated enactment of the program and eased credit conditions in the second half of 1968 did not help.

- The 1975 tax cut helped to speed the recent recovery, raising real GNP by 1.0% in the first year over a no-tax-cut case, and an average 1.2% through 1977. The temporary nature of the largest single element of the cut, a rebate on personal tax liabilities, proved effective, contrary to the warnings of permanent income and life-cycle critics.

Comparing results with stable framework policies, however, shows that serious miscalculations were made. The long over-expansionary posture of fiscal policy after the 1964 tax cut contributed to the excess demand pressures of the mid-1960s: under the stable framework path, the unemployment rate dips below its full-employment equivalent between 1966 and 1968, but the drop is smaller than actually occurred. The excessively restrictive fiscal and monetary policies in the late 1960s were also a costly mistake: the run-up in the unemployment rate in the 1970 recession is less severe under stable framework policies. Finally, the 1974-1975 recession would not have been as painful had policy neutralized the inflation-induced surges in effective personal and corporate tax rates. The unemployment rate would have peaked at 7.2% compared to the actual peak of 8.8%.

The implications of the findings are clear. While most of the policies produced desirable short-term effects, a long-run perspective was lacking. Countercyclical stabilization policies have a role to play in maintaining an orderly macroeconomic environment. However, developing successful policies involves more than meeting traditional short-run criteria. It involves coordination of policies and a greater eye toward the long-term. Not to recognize these requirements is naive and self-defeating, reducing stabilization policies to brush-fire tools. The opposite view

that the economy is better off left to its own, is equally naive, and not supported by the present evidence. The stable framework path suggests that economic instability will not be solved by simply stabilizing the government sector.

A SHORT-RUN FRAMEWORK

The impact of each of the selected policies was initially assessed by simulating the DRI model for each episode on two alternative assumptions. First, actual values of the fiscal and monetary policy parameters were entered, including actual military purchases of goods and services, civilian purchases of goods and services, high employment social insurance payments, grants-in-aid to state and local governments, rates for the major types of taxes and the volume of nonborrowed bank reserves. The model estimates actual taxes and transfers, the revenues and expenditures of state and local governments, the actual money supply, interest rates and other monetary variables. Second, the model was solved again for each episode substituting "no policy" values for the actual policy record. "No policy" parameters were constructed for each episode by reversing the policies put into effect. For instance, in the period from 1964 to 1967, the first simulation used the actual tax rates that resulted from the Kennedy-Johnson tax cut. The second "no policy" simulation used the higher tax rates that would have resulted had the tax cut not taken place (see Appendix A). Results were also generated under varying monetary policy assumptions. Table 1 summarizes the expenditure and revenue implications of each policy measure.

TABLE 1
Revenue and Expenditure Implications
of Selected Fiscal Policies, 1962 to 1977
(billions of dollars)

	1964	1965	1966
1. Revenue Act of 1964			
Personal Tax Receipts	7.1	9.3	10.5
Corporate Tax Receipts	1.2	3.0	3.4
Total Receipts	8.3	12.3	13.9
(% of GNP)	(1.3)	(1.8)	(1.8)
	1962	1963	1964
2. Expenditure Growth, 1962 to 1965			
Nondefense Purchases	1.8	2.5	3.3
(% of GNP)	(0.3)	(0.4)	(0.5)
	1968	1969	1970
3. Revenue and Expenditure Control Act of 1968			
Personal Tax Receipts	6.6	9.0	4.7
Corporate Tax Receipts	3.9	3.9	1.0
Total Receipts	10.5	12.9	5.7
(% of GNP)	(1.2)	(1.4)	(0.6)
	1975	1976	1977
4. Tax Reduction Act of 1975			
Personal Tax Receipts	20.8	16.4	17.7
Corporate Tax Receipts	2.2	1.6	1.9
Expenditure Change	2.4	1.4	1.1
Total Impact	25.4	19.4	20.7
(% of GNP)	(1.7)	(1.1)	(1.1)

THE IMPACT PATTERNS

The results of the tax cuts in 1964 and 1975 and the expenditure buildup in the early 1960s are little different from what would have been expected. In each case, the initial response was a rise in personal disposable income and aftertax corporate profits, raising personal consumption, saving and investment. The increased demands, depleting inventories and speeding up production schedules to replenish them, provided an added increment to income through additional wage payments. The enhanced demands and lower corporate tax rates increased the profitability of prospective investment projects. This generated a secondary stimulus through new capital spending financed by the additional private savings. In the early stages after each policy was enacted, interest rates relevant to capital formation responded sluggishly; capital cost increases were therefore not an immediate deterrent.

After a while, however—typically six to eight quarters later—effects began to reverse themselves. Inventory investment declined as inventories adjusted to the new level of demand, and capital expenditure growth slowed in response to higher interest rates. The 1968 tax increase showed analogous but opposite effects. Detail of the individual policies point up some interesting contrasts.

The 1964 Tax Reduction

The Revenue Act of 1964 provided for both corporate and personal tax reductions. The act was proposed during a period of moderate economic expansion, but high residual unemployment. Real GNP grew at an annual rate of 4% in 1963 but unemployment averaged 5.6%, high by standards of the time. With the boom of the late 1950s a relatively weak one, and the effects of the mild recession in 1961 still being felt, the economy was operating substantially below capacity. The rate of expansion was not rapid enough to achieve a significant drop in the unemployment rate.

In March of 1964, the withholding rate for personal taxes was cut from 18 to 14%. The corporate tax rate was reduced from 52 to 50%, and to 48% in the following year. These provisions reduced tax payments by approximately $8.3 billion in 1964 and $12.3 billion in 1965. Table 2 and Chart 1 summarize the impact on the economy.[2] The response is both quick and sizable. At the end of 1964, total real output is up by $11.6 billion over the no-tax-cut path and by $13.2 billion at the end of 1965, a multiplier of 0.8 in the first year and 1.4 in the second. The lion's share is derived from additional consumer demand, fed by the increases in real disposable income of $12.1 billion in 1964 and $18.7 billion in 1965. Of the consumption categories, durable goods were affected the most (Table 3).

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[2]The results are consistent with those of earlier studies. For representative discussions, see Arthur M. Okun, "Measuring the Impact of the 1964 Tax Reduction," in Warren L. Smith and Ronald L. Teigen, Eds., Readings in Money, National Income, and Stabilization Policy, Richard D. Irwin, Inc., Homewood, Ill., 1970, pp. 345-358; Lawrence R. Klein, "Econometric Analysis of the Tax Cut of 1964," in J. S. Duesenberry, et al, eds., The Brookings Model: Some Further Results, Rand McNally, Chicago, 1969, pp. 459-472.

Table 2
The Impact of the Revenue Act of 1964
(Difference from Base Simulation)

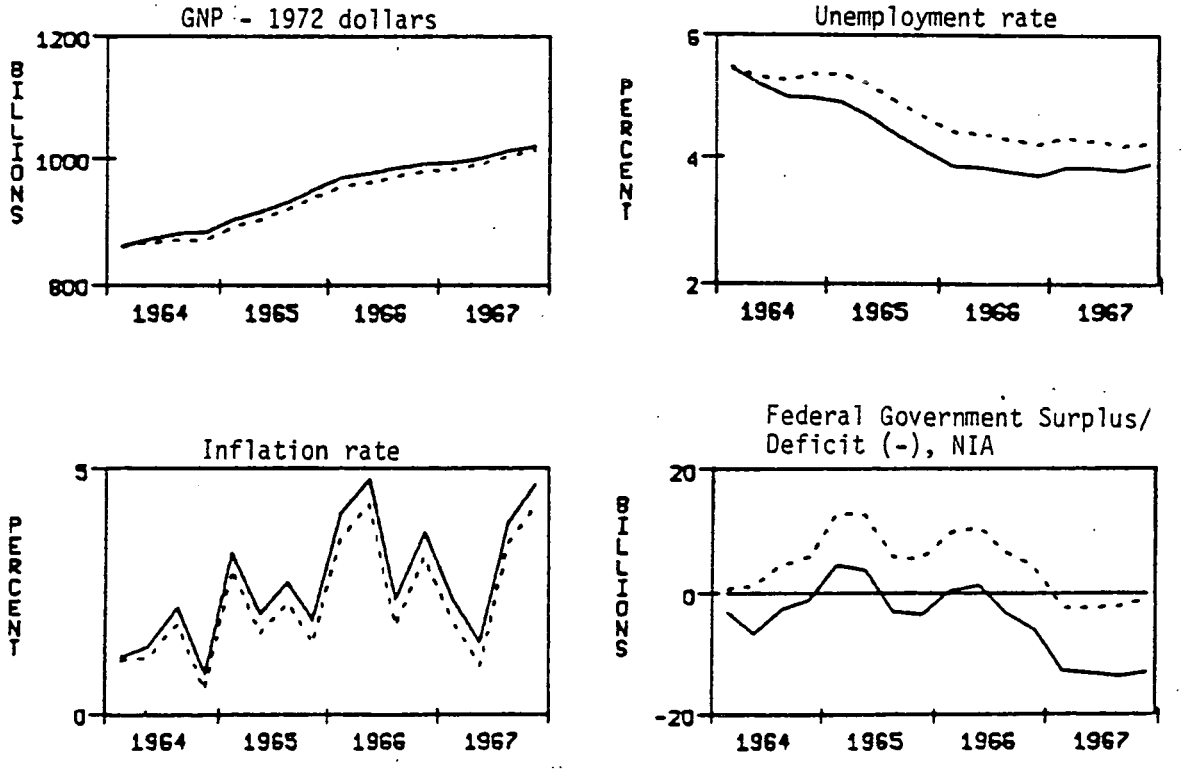
	1964	1965	1966	1967
Economy		(Percent Difference)		
Real GNP	0.8	1.3	1.3	0.9
Real Consumption	1.1	1.9	2.1	1.7
Real Nonres. Fixed Investment	0.6	1.3	1.5	1.2
Real Res. Fixed Investment	0.8	1.3	2.7	2.0
		(Difference in Level)		
Housing Starts (mil. units)	0.017	0.025	0.053	0.042
Automobile Sales (mil. units)	0.2	0.3	0.1	-0.2
Real Net Exports (billion $)	-0.2	-1.1	-2.0	-2.2
Savings Rate (%)	0.9	1.1	1.3	1.5
Inflation and Unemployment		(Difference in Rate of Growth)		
Implicit Price Deflator	0.1	0.4	0.5	0.5
Wholesale Price Index	0.1	0.4	0.3	0.2
Unemployment Rate*	-0.2	-0.5	-0.5	-0.4
Incomes		(Percent Difference)		
Real Disposable Income	2.1	3.1	3.4	3.2
Compensation Per Manhour**	0.1	0.4	0.5	0.6
Real Aftertax Profits	6.8	9.7	8.0	5.9
Interest Rates		(Difference in Rate)		
3-Month Treasury Bill	0.20	0.47	0.65	0.72
Federal Funds Rate	0.20	0.55	0.76	0.94
Prime Rate	0.09	0.33	0.41	0.64
New High-Grade Corp. Bond Rate	0.09	0.28	0.55	0.80
Federal Government		(Difference in Level)		
Receipts				
Personal Taxes	-6.5	-7.6	-7.8	-8.1
Corporate Taxes	-0.4	-1.9	-2.5	-3.0
Expenditures	-0.1	0.1	0.6	1.5
Fed. Budget Surplus (NIA)	-6.5	-8.8	-9.7	-11.3

*Difference in rate
**Difference in rate of growth

Table 3
Impact of the Revenue Act of 1964
on Selected Consumption Categories
(% difference from the no-tax-cut case)

	1964	1965	1966	1976
Total Consumption	1.1	1.9	2.1	1.7
Durables	2.5	3.6	2.8	1.5
Motor Vehicles and Parts	2.7	3.0	0.4	-2.5
Furniture	2.0	3.5	4.6	4.6
Nondurables	1.2	2.1	2.4	2.1
Clothing and Shoes	2.2	3.0	2.4	1.4
Services	0.6	1.3	1.6	1.3

Chart 1
The Impact of the Revenue Act of 1964



Line = History; Dot = No Tax Cut

The personal and corporate cuts each trace out different patterns of effect on final demand (Table 4). The corporate cuts took longer to have an impact than did the personal cuts, with nonresidential equipment expenditures in late 1966 and early 1967 only 0.6% above the no-tax-cut case, and expenditures on nonresidential structures 1.4% above. In the case of the personal tax cut, consumption expenditures peaked in 1966:1, 2.1% higher.

Table 4
The Impact of the 1964 Corporate and Personal Tax Reductions (billions of 1972 $).

Increase in Real GNP	1964	1965	1966	1967
Combined Impact	7.1	12.4	13.0	8.9
(% change from no-tax cut case)	(0.8)	(1.3)	(1.3)	(0.9)
Personal	6.9	11.7	11.6	7.4
(% change from no-tax-cut case)	(0.8	(1.3)	(1.2)	(0.7)
Corporate	0.4	1.5	2.1	1.6
(% change from no-tax-cut case)	(-)	(0.2)	(0.2)	(0.2)
Interaction	-0.2	-0.8	-0.7	0.1

Additional highlights include:

- The unemployment rate improved rapidly. Within four quarters of the tax cut, the unemployment rate was 0.4 percentage point lower than it would have been without the cut, and averaged 0.5 percentage point lower in 1965 and 1966. By the end of 1966, an estimated 600,000 new jobs were created.

- Prices responded to the increased demand pressures. However, the inflation-unemployment tradeoff was quite favorable, due to the slack in labor and product markets. By early 1965, the reduction in the unemployment rate was about 1.5 times as large as the increase in the rate of inflation. There was no tendency toward accelerating inflation, with the increment to the inflation rate, measured by the consumer price index, peaking at 0.4% in early 1966, two years after the initial cut.

- The tax reduction reduced Federal government revenues by an average $11.5 billion between 1964 and 1966. However, part of this was offset with revenue reflows coming from higher levels of activity.

- The improved performance of the economy increased pressure in the financial markets. With no change in monetary policy, short-term money markets experience the impact immediately and significantly. The Federal Funds rate is 55 basis points above the no-tax-cut case by early 1965. By 1967, the spread widens to 94 basis points. Long-term rates are also higher as they reflect not only demand for funds but, on the supply side, the expected levels of future short-term rates.

These results assume that monetary authorities allowed the increase in demand following the tax cut to raise interest rates and tighten credit markets. But what if the actual path of interest rates reflected an easing of monetary policy in coordination with the expansionary fiscal policy? The movement in interest rates would not have been as great. Appendix Table B.1 presents results under the assumption of accommodating monetary policy. The easing of monetary policy fuels additional investment and consumer credit demands. The overall results are more robust, with all final demands, overall output and inflation showing stronger responses.

The Expenditure Buildup of the Early 1960s

The impact of the expenditure buildup in the early 1960s is similar to that of the 1964 tax cut. Between 1960 and 1965, the growth in nondefense expenditures accelerated to an average 14.9% a year, after growing by only 8.6% per year between 1955 and 1960. Total civilian Federal employment increased by 143,000 jobs between 1960 and 1965 compared to an increase of 71,000 jobs in the previous five years. This came at a time when total expenditures, excluding nondefense purchases, decelerated from 5.9% a year between 1955 and 1960 to 5.6% per year between 1960 and 1965 (Table 5).

Table 5
Federal Government Expenditures, 1955-1965
(Percentage rates of growth)

	1955-1960	1960-1965
Total	6.2	6.6
Total (excluding nondefense purchases)	5.9	5.6
Defense purchases	2.8	3.4
Nondefense purchases	8.6	14.9
Domestic transfers	11.5	7.5
Foreign transfers	-3.0	3.7
Grants-in-Aid	14.7	11.5
Interest	6.3	3.8
Net Subsidies	15.7	13.6

Table 6 and Chart 2 summarize the impact on the economy of the acceleration in nondefense expenditures between 1962 and 1965.[3] The impact on GNP is significant. Real GNP was $4.5 billion higher in 1962 than it would have been without the expenditure buildup, and the real rate of growth was up 0.6 percentage point. Over the next three years, growth in real GNP averaged 0.2 percentage point higher, and the unemployment rate 0.3 percentage point higher. The combined relative tightness in both labor and capital markets increased the rate of

[3] In the "no policy" path, nondefense expenditures were reduced to their trend levels, assumed to be the growth rates observed between 1955 and 1960.

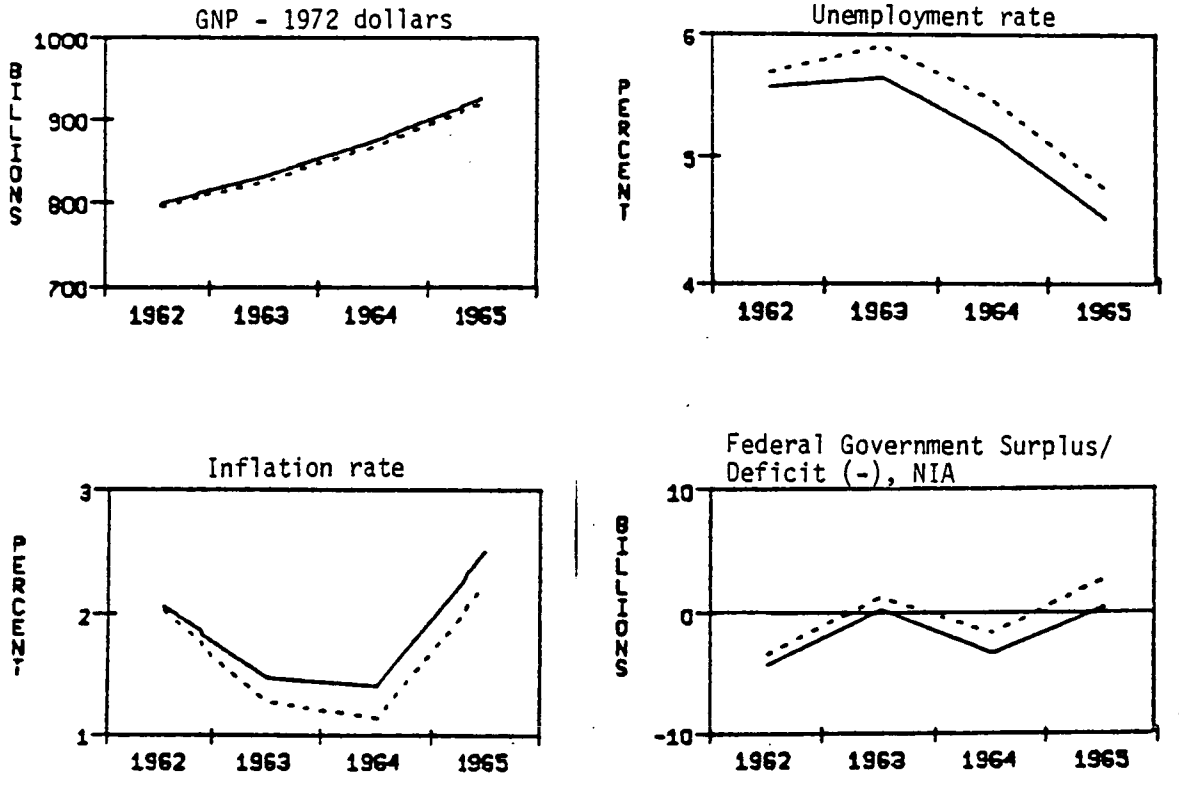
inflation. By 1965, the GNP deflator is growing at an annual rate 0.3 percentag point faster than would have been the case with lower expenditures. With th normal multiplier process at work, the Federal deficit was increased by less thc the expenditure buildup: transfers are lower and tax receipts greater under stronger economy. Federal employment gains resulting from the acceleration tot nearly 40,000 jobs by 1965.

Table 6
The Impact of the Expenditure Buildup
Between 1962 and 1965

	1962	1963	1964	1965
Economy		(Percent Difference)		
Real GNP	0.6	0.8	0.8	0.7
Real Consumption	0.2	0.4	0.5	0.3
Real Nonres. Fixed Investment.	0.3	0.7	0.7	0.3
Real Res. Fixed Investment	0.2	-0.2	-0.9	-1.1
		(Difference in Level)		
Housing Starts (mil. units)	0.002	-0.009	-0.019	-0.020
Automobile Sales (mil. units).	0.1	0.1	0.0	-0.1
Real Net Exports (billion $)	-0.1	-0.3	-0.5	-0.6
Savings Rate (%)	0.2	0.2	0.3	0.4
Inflation and Unemployment		(Difference in Rate of Growth)		
Implicit Price Deflator	0.0	0.2	0.2	0.3
Wholesale Price Index	0.0	0.1	0.2	0.2
Unemployment Rate*	-0.1	-0.3	-0.3	-0.2
Incomes		(Percent Difference)		
Real Disposable Income	0.4	0.7	0.8	0.7
Compensation Per Manhour**	0.1	0.2	0.3	0.3
Real Aftertax Profits	1.4	1.2	0.5	-0.3
Interest Rates		(Difference in Rate)		
3-Month Treasury Bill	0.06	0.18	0.25	0.28
Federal Funds Rate	0.06	0.26	0.38	0.42
Prime Rate	0.03	0.17	0.27	0.32
New High-Grade Corp. Bond Rate	-0.03	0.06	0.12	0.21
Federal Government		(Difference in Level)		
Receipts				
Personal Taxes	0.4	0.8	1.1	1.3
Corporate Taxes	0.3	0.3	0.2	0.1
Expenditures	1.8	2.5	3.4	4.2
Fed. Budget Surplus (NIA)	-0.9	-1.0	-1.7	-2.3

*Difference in rate
**Difference in rate of growth

Chart 2
The Impact of the Expenditure Buildup
Between 1962 and 1965



Line = History; Dot = No Expenditure Buildup

Comparison with the 1964 tax cuts offer some interesting highlights. The relative sizes of the programs were quite different. The 1964 tax cut was worth about 1.4% of GNP a year, whereas the expenditure change averaged less than 0.5%. The multipliers from both exercises also reflect different patterns (Table 7), but of opposite weight: the expenditure buildup shows the greater relative effect. The Manpower Development and Training Act of 1962, the Public Works Acceleration Act of 1962, and others proved effective policy measures. This is not surprising as an expenditure change increases demand directly through changes in purchases of goods and services; a tax cut works indirectly through increases in disposable income and aftertax profits.

Table 7
Comparison of the "Multiplier" between the 1964 Tax Cut and the Expenditure Buildup Period, 1962 to 1965

	Years After Policy Change			
	1	2	3	4
Relative Impact on Real GNP				
Expenditure Increase	1.6	1.8	2.0	1.7
Tax Cut	-0.8	-1.4	-1.5	-1.2

These results assume that the Federal Reserve would have allowed the average 30 basis point increase in short-term interest rates over the period to have occurred. Appendix Table B.2 presents results from a simulation in which the Fed accommodates all but the inflation-induced changes in interest rates. Similar to the case with the 1964 tax cut, all results are more robust.

Of separate interest is the 7% increase in Social Security benefits in 1965. The benefit increases plus the minor expansion of eligibility amounted to $1.5 to $2 billion. To assess the impact of the benefit increase, changes in Social Security tax rates in 1966—in part to pay for the additional benefits—must also be taken into account. It is difficult to calculate how much of the 1966 Social Security tax increase was earmarked for the benefit changes, particularly since tax rates were also increased in 1966 to pay for the new health insurance benefits under Medicare.

A separate simulation was thus performed which captures the impact of a $2 billion change in Social Security benefits financed by a $2 billion change in social insurance taxes. In the near term, the increase in transfers provided a mild stimulus to the economy, due largely to the benefit increases preceding the new taxes. Ultimately, however, the required increase in payroll taxes more than wipes out what small gains occurred. The upward pressure on prices plus the reduction in both disposable income and corporate profits are the causes of this mildly negative impact. On balance, the economy is little changed from these two offsetting changes.

The 1968 Surcharge

With the achievement of the long-sought 4% unemployment rate by the end of 1965, the first half of the 1960s marked the apparent triumph of discretionary stabilization policy. However, the rapid buildup of military expenditures in 1966 and 1967, and the failure of the Johnson Administration to control inflation, tarnished this new-found reputation. Restrictive tax policy measures were called for in 1968 for the first time in over a decade.

The Revenue and Expenditure Control Act of 1968 was the prescription offered. Passed in June, it provided for a 10% income tax surcharge retroactive to January 1 for corporations and April 1 for individuals. The withholding rates for personal taxes were increased on July 15, necessitating additional tax payments in early 1969 to cover the retroactive portion. Tax receipts from the personal and corporate income taxes increased by an estimated $10.5 billion in 1968 and $12.9 billion in 1969 due to the surcharge. The Act also placed constraints on Federal spending for fiscal year 1969. Expenditures were to be reduced $6 billion from the levels in the January budget. Vietnam expenditures, interest on the public debt, veterans' services and Social Security were excluded from the limitations.

Despite the imposition of the surcharge, economic activity expanded relatively strongly in 1968.[4] Table 8 and Chart 3 summarize the impact patterns. In 1968, real growth was 0.3 percentage point below the no-surcharge rate, and 0.8 percentage point below in 1969. Although the surcharge reduced real disposable income by $18.4 billion after the first four quarters, real consumption was lower by only $9.6 billion, or 1.5%, as the high savings balances built up over the strong years of the mid-1960s were sufficient to sustain consumption patterns for several quarters. The announced temporary nature of the tax cut also delayed adjustment of consumption to the reduced disposable income.

The rate of growth of real business fixed investment was lower by 0.3% in 1968 and 0.9% in 1969, with a cumulative loss of $1.7 billion. Lower investment than in the no-surcharge case is attributable to the lower level of final demand and aftertax profits. Reduced costs of capital due to lower interest rates, however, partially offset these factors. The Federal funds rate peaked at 8.99% in 1969:3, 40 basis point below what it would have been without the surcharge. By 1970:4, the spread between the Federal Funds rate in the two simulations is 63 basis points. The new issue rate followed a similar pattern, peaking in 1970:2 at 8.88% compared to 9.20% without the surcharge.

In 1968, the unemployment rate is essentially unchanged, and rises from the no-surcharge value by an average 0.3 percentage point through 1969. Until 1970, the unemployment rate remains below its full-employment benchmark of 4%. As a result, inflation was not affected as much as anticipated. The rate of growth of the GNP deflator is lower by 0.3 percentage point by early 1969.

These results show the direct impact of the surcharge assuming that monetary policy would have been the same whether or not a tax surcharge had been enacted. The pattern of money supply growth during the last three quarters of 1968 suggests

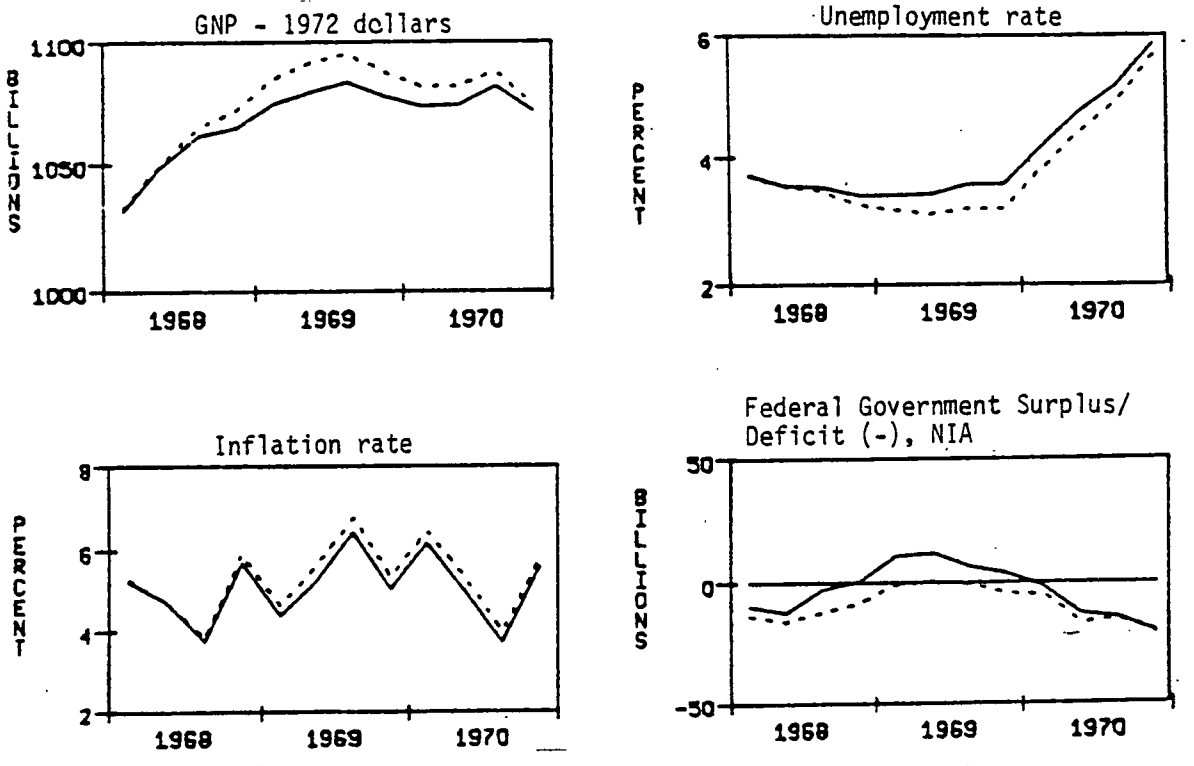
[4]The literature on this topic is vast. Important references include: Arthur M. Okun, "The Personal Tax Surcharge and Consumer Demand, 1968-1970," Brookings Papers on Economic Activity (1:1971), pp. 167-212; William L. Springer, "Did the 1968 Surcharge Really Work?," American Economic Review, September 1975, Vol. 65, pp. 644-659; Arthur M. Okun, "Did the 1968 Surcharge Really Work?: Reply," American Economic Review, March 1977, Vol. 67, pp. 166-169; William L. Springer, "Did the 1968 Surcharge Really Work?: Reply," American Economic Review, March 1977, Vol. 67, pp. 170-172; Lawrence R. Klein, "An Econometric Analysis of the Revenue and Expenditure Control Act of 1968-1969," in Warren L. Smith and John M. Colbertson, eds., Public Finance and Stabilization Policy, North Holland Publishing Co., Amsterdam, 1974, pp. 333-355.

Table 8
The Impact of the Revenue and
Expenditure Control Act of 1968
(Difference from Base Simulation)

	1968	1969	1970
Economy			
		(Percent Difference)	
Real GNP	-0.3	-1.0	-0.6
Real Consumption	-0.3	-1.3	-0.9
Real Nonres. Fixed Investment	-0.3	-1.2	-1.5
Real Res. Fixed Investment	-0.2	-0.6	1.5
		(Difference in Level)	
Housing Starts (mil. units)	-0.006	-0.008	0.029
Automobile Sales (mil. units)	-0.1	-0.3	0.0
Real Net Exports (billion $)	0.1	0.9	1.6
Savings Rate (%)	-0.4	-0.9	-0.2
Inflation and Unemployment			
		(Difference in Rate of Growth)	
Implicit Price Deflator	0.0	-0.2	-0.3
Wholesale Price Index	0.0	-0.3	-0.3
Unemployment Rate*	0.1	0.3	0.3
Incomes			
		(Percent Difference)	
Real Disposable Income	-0.7	-2.3	-1.1
Compensation Per Manhour**	0.0	-0.3	-0.3
Real Aftertax Profits	-10.5	-12.6	-2.1
Interest Rates			
		(Difference in Rate)	
3-Month Treasury Bill	-0.08	-0.36	-0.40
Federal Funds Rate	-0.03	-0.34	-0.57
Prime Rate	0.03	-0.03	-0.29
New High-Grade Corp. Bond Rate	-0.02	-0.17	-0.32
Federal Government			
		(Difference in Level)	
Receipts			
Personal Taxes	3.0	7.2	0.8
Corporate Taxes	3.7	2.9	0.8
Expenditures	0.0	-0.4	-1.5
Fed. Budget Surplus (NIA)	6.6	9.7	2.1

*Difference in rate
**Difference in rate of growth

Chart 3
The Impact of the Revenue and Expenditure Control Act of 1968



Line = History; Dot = No Tax Surcharge

that monetary policy may have neutralized some of the restrictive fiscal policy. The money supply, which had grown at an average 4.3% between 1966 and 1967, grew at 7.6% in the four quarters ending 1968:4. Not until mid-1969 did money growth slow considerably, supporting the original policy goals.

To assess the implications of an offsetting monetary posture during this period, another simulation was performed in which history is compared to a world in which the tax surcharge and the four-quarter acceleration in monetary policy were both removed. The results indicate that the expansionary monetary position neutralized approximately 25% of the fiscal policy effects in late 1968 and early 1969: in the fourth quarter of 1968, the surcharge alone reduced real GNP by $7.2 billion, but the acceleration in monetary policy added $1.8 billion; in the first quarter of 1969, a $10 billion reduction in GNP was offset by $2.5 billion. However, by late 1969, monetary policy worked in coordination with fiscal policy, and no additional perverse effects were found.[5]

[5]The implications of accommodating monetary policy throughout the period are summarized in Appendix Table B.3.

The 1975 Tax Reduction

In response to the worst economic setback since the early 1930s, fiscal policy turned stimulative again in 1975. The 1975 Tax Reduction Act cut both personal and corporate taxes. The largest single element was a personal tax rebate of 10% of 1974 tax liabilities up to a $200 ceiling, payable in the second quarter. An increase in the minimum standard deduction and a $30 credit against 1975 taxes for each taxpayer and dependent were reflected in lower withholding rates effective May 1. Other provisions affecting personal taxes included a 5% credit against taxes for the purchase of a new house, a credit for child care, and an earned income credit. The impact in the first year was an estimated $20.8 billion. Personal transfer payments were also increased due to the extension of the eligibility for unemployment benefits for thirteen weeks, an earned income credit for nontaxpayers and a $50 payment to Social Security recipients.

Corporate tax changes included an increase in the investment tax credit from 7 to 10% (from 4 to 10% for utilities), and an increase in the corporate surcharge exemption from $25,000 to $50,000. A 20% rate was applied to the first $25,000 of income and a 22% rate to the next $25,000. The repeal of the Oil Depletion Allowance and the limitation of foreign tax credits partially offset these elements. The net impact on corporate liabilities in the first year was estimated to be $2.2 billion. The combined corporate and personal income tax revenue reductions amounted to 1.7% of GNP in 1975 and 1.1% thereafter.[6]

Table 9 and Chart 4 display the impacts. The lower taxes increased real disposable income by $19.0 billion, or 2.3% in 1975, and by $21.1 billion or 2.4% in 1976. The peak effect of the tax change on consumption came quickly due to the tax rebate. Real consumption growth was up 6.7% at an annual rate in the second quarter, with durable goods affected the most. By almost any criteria, the rebate proved effective, with 36% spent by the end of the first quarter and 68% by the end of the second quarter.[7]

Strong end-market growth and improved investment incentives also boosted business expenditures. Growth in real business fixed investment was 1.2% higher in 1975 than under the no-tax-cut case. This difference increased to 4.5% in 1976 and 5.6% in 1977, pushing the ratio of investment to GNP to 9.5% in 1977, 0.4 percentage point higher than would have been the case without the cut. Investment in both structures and equipment were affected; investment in equipment rose substantially more due to the increased credit for equipment expenditures. In 1976, investment in producers' durable equipment was up $4.3 billion, or 5.7%, over the no-tax-cut case, and 7.3% in 1977. In contrast, investment in structures peaked at 2.2% above the no-tax-cut value in 1976.

With the tax cuts, the unemployment rate is 0.3 percentage point lower in 1975 than without them, and 0.5 percentage point lower in 1976: a gain of 300,000 jobs in 1975 and 500,000 in 1976. Over the four quarters ending in 1976:2, the unemployment rate averaged 0.5 percentage point lower than without the tax cuts.

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[6] This assumes extension of the provisions of the 1975 act that were scheduled to expire on December 31, 1975: the general tax credit and the increase in the standard deduction.

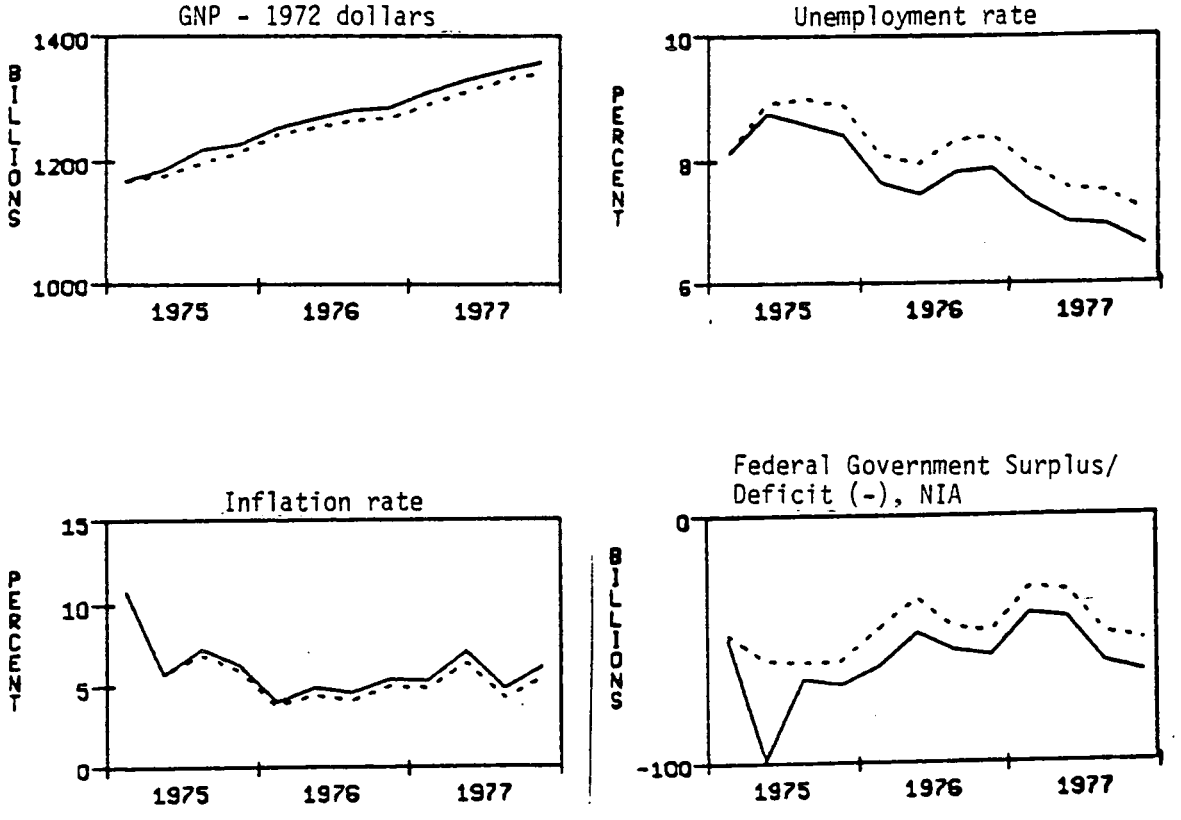
[7] For an alternative view, see: Franco Modigliani and Charles Steindel, "Is a Tax Rebate an Effective Tool for Stabilization Policy?" Brookings Papers on Economic Activity (1:1977), pp. 175-209.

Table 9
The Impact of the Tax Reduction Act of 1975
(Difference from Base Simulation)

	1975	1976	1977
Economy			
		(Percent Difference)	
Real GNP	1.0	1.2	1.3
Real Consumption	1.2	1.3	1.6
Real Nonres. Fixed Investment.	1.1	4.3	5.3
Real Res. Fixed Investment	1.4	1.0	0.3
		(Difference in Level)	
Housing Starts (mil. units)	0.023	0.009	0.000
Automobile Sales (mil. units).	0.3	0.2	0.1
Real Net Exports (billion $)	-0.9	-2.1	-3.4
Savings Rate (%)	0.9	1.0	0.8
Inflation and Unemployment			
		(Difference in Rate of Growth)	
Implicit Price Deflator	0.1	0.3	0.5
Wholesale Price Index	0.2	0.4	0.5
Unemployment Rate*	-0.3	-0.5	-0.6
Incomes			
		(Percent Difference)	
Real Disposable Income	2.2	2.4	2.5
Compensation Per Manhour**	0.1	0.4	0.5
Real Aftertax Profits	6.2	4.9	4.4
Interest Rates			
		(Difference in Rate)	
3-Month Treasury Bill	0.28	0.50	0.71
Federal Funds Rate	0.29	0.71	1.11
Prime Rate	0.13	0.49	0.88
New High-Grade Corp. Bond Rate	0.15	0.45	0.70
Federal Government			
		(Difference in Level)	
Receipts			
Personal Taxes	-13.8	-12.9	-12.0
Corporate Taxes	-0.6	0.7	0.4
Expenditures	1.7	1.9	3.1
Fed. Budget Surplus (NIA)	-14.9	-12.2	-11.6

*Difference in rate
**Difference in rate of growth

Chart 4
The Impact of the Tax Reduction Act of 1975



Line = History; Dot = No Tax Cut

The inflation-unemployment tradeoff proved not to be unreasonable: the implicit price deflator for GNP rises 0.1% faster in 1975 and 0.4% faster thereafter, about a one-for-one tradeoff. With events of the early 1970s still close at hand, the price expectations factor in the inflation process is more severe than was true in the early 1960s. Consequently, the impact of tax and expenditure changes on inflation has become more of a policy constraint.

The faster pace of the recovery also resulted in higher levels of interest rates. The Federal Funds rate is 66 basis points higher after four quarters and 126 basis points by the end of 1977. As was true in other episodes, long-term rates are less affected by the changed economic activity. By 1977, the new issue rate is 70 basis points higher.

Under the assumption that monetary policy accommodated the interest rate increases, the impact of the package is larger. The interest sensitive demand sectors, notably investment spending and consumption of durables, show the largest increases (Appendix Table B.4).

Comparing the tax packages of 1964 and 1975 shows that both exert a similar first year impact on economic activity; a comparison of later effects and of the two Acts' components, however, reveals some noteworthy differences. The permanent reduction in personal taxes in 1964 equaled approximately 1.4% of GNP per year. In contrast, the initial reduction in 1975 of 1.7% of GNP falls to 1.1% in 1976 and 1977. A comparison of results shows similar effects in percentage terms on consumption and GNP in the first year. However, the impact of the 1964 tax cut increases in 1965 and 1966, while the effect of the 1975 reduction essentially stays the same (Table 10).

Table 10
Comparison of the 1964 and 1975
Tax Reductions (% difference from
the no-tax-cut case)

	Years After Tax Cut		
	1	2	3
Impact of the Personal Tax Reductions			
Real GNP			
1964	0.8	1.3	1.2
1975	0.9	0.9	1.0
Real Consumption			
1964	1.1	1.9	2.0
1975	1.2	1.2	1.5
Impact of the Corporate Tax Reductions			
Real GNP			
1964	-	0.2	0.2
1975	0.1	0.4	0.5
Real Business Fixed Investment			
1964	0.1	0.3	0.7
1975	0.6	3.1	4.4

The relative strength of the corporate tax reductions is also different. The corporate tax cut in 1964 is 0.2% of GNP, rising to 0.4%. The 1975 revenue loss is 0.1% of GNP. Despite the relative differences, the 1975 corporate cut had a larger impact on investment and GNP than its 1964 counterpart. The 1964 Act lowered the corporate rate. The increased cash flow had a limited effect on investment as corporations made adjustments in other balance sheet items as well. More of the 1975 cut, however, was reflected in immediate increases in investment largely because of the investment tax credit.

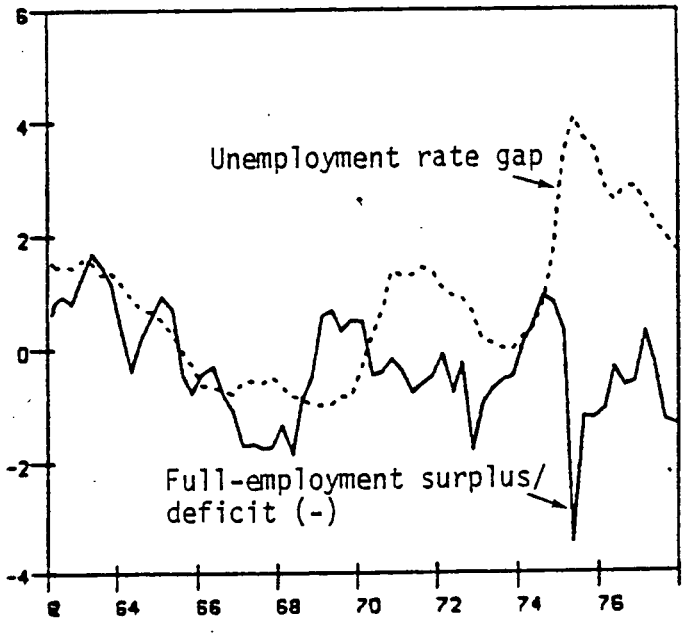
A LONGER-RUN PERSPECTIVE

What if we now step back and view the entire 16-year period 1962-1977? Were activist fiscal and monetary policies on balance stabilizing, or were these policies themselves responsible for some of the instability experienced over the period? A glance at one measure of discretionary fiscal policy, the full-employment budget, shows that while policy tended to move countercyclically, the timing was often wrong and there were some obvious and serious miscalculations (Chart 5). Several episodes suggest such errors.

- In 1964, the sharp drop in the full-employment surplus indicates the stimulative impact of personal and corporate tax cuts in that year. The unemployment rate dropped steadily following the policy change, dipping below its full employment equivalent by late 1965. However, fiscal policy continued an expansionary posture well into 1968, in spite of accelerating prices.

- Fiscal policy remained tight into 1970, despite the significant rise in unemployment during the previous year.

Chart 5
Fiscal Policy and the Economy, 1962-1977:
The Full-Employment Surplus or Deficit (-)
As a Percent of GNP Compared with the
Unemployment Rate Gap*

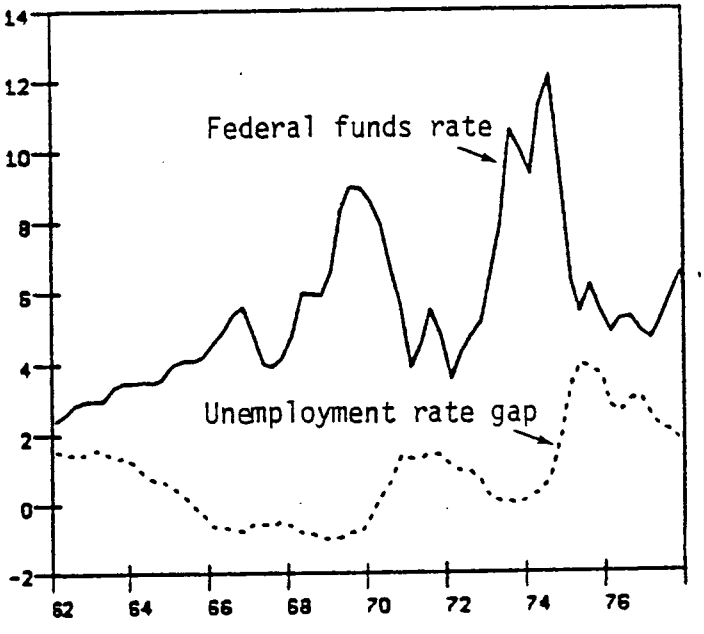


*The full-employment unemployment rate is based on the recently revised estimates of potential GNP from the Council of Economic Advisers. See Peter K. Clark "A New Estimate of Potential GNP," January 27, 1977 (Mimeo) and Peter K. Clark, "Potential GNP in the United States, 1948-1980" in "U.S. Productive Capacity: Estimating the Utilization Gap," Center for the Study of American Business, Working Paper #23, Washington University, St. Louis, December 1977.

- In the 8 quarters from the end of 1972 to the end of 1974, at the onset of the worst recession since 1930, the full-employment budget swung toward surplus by $33 billion, the most pronounced contractionary swing ever registered.

- Monetary policy was also far from perfect over the last two decades. The last two recession periods were both preceded by a significant run-up in interest rates (Chart 6).

Chart 6
Monetary Policy and the Economy, 1962-1977:
The Federal Funds Rate Compared with the
Unemployment Rate Gap



Though the evidence suggests that activist fiscal and monetary policy could have been improved, the precise degree to which policy succeeded or failed is difficult to quantify. Some insights can be gained by comparing the actual performance of the economy with what would have occurred if fiscal and monetary policy had provided a stable framework. To do this, the DRI model was solved once using actual fiscal and monetary results (see Appendix A) over the period 1962 to 1977, and a second time introducing stable policies.

A Stable Policy Framework

Fiscal Policy

Stable fiscal policy can be defined in several ways. It is defined here as balance in the full-employment budget. Although the concept is crude, sharp swings in the full-employment budget help to identify the direction of discretionary fiscal policy. The DRI full-employment budget model is used to calculate full-employment budget values in the stable policy simulation.[8] The basic procedure was to calculate a constant growth rate for each of the fiscal policy variables, subject to the constraint that each variable pass through its actual values at the beginning and end of the interval. Each series was inspected to ensure that the choice of the end points did not seriously bias the path of the smoothed variable.

The buildup of defense expenditures during the Vietnam War required special attention. It would be unreasonable to assume that a stable policy framework would have pacifying ramifications sufficient to prevent the war. Therefore, military spending was assumed to take on its actual values for the years 1966-1972, but smoothed values in the years 1962-1965 and 1973-1977. It was also assumed that the additional spending during the war period was paid for by increased taxes spread two-thirds personal and one-third corporate. The 1968 surcharge was thus ignored.

Other adjustments were less troublesome. The run-up in the effective social insurance tax rate between 1973 and 1974 was allowed to occur, but its path was smoothed. Since the increase in the tax rate was itself the result of increases in benefits that had occurred earlier, the run-up in benefits was also allowed to occur. All other transfer payments were smoothed along their trend line. The effective personal and corporate tax rates were smoothed along their trend paths, with appropriate adjustments for Vietnam War expenditures. The ratio of indirect business taxes to GNP was allowed to decline smoothly following historical experience. Finally, the real value of grants was adjusted to grow at an average annual rate of 8.4%, the average growth over the 16 year period. Since the model includes a behavioral state and local sector in which grants play an important role in determining expenditures and tax rates, no special changes were required. The sector responds endogenously to the changed pattern of grants.

With this preliminary set of stable policy variables, the model was solved for the period 1962-1977. At this point, the full-employment budget deficit was typically within $2 to $3 billion of the desired level for each year. To get the rest of the way to the balance criterion, personal taxes were adjusted.

Monetary Policy

Proper measurement of the impact of monetary policy is also ambiguous. Neutral monetary policy is often defined as steady interest rates. With inflationary expectations affecting interest rates, however, a neutral approach tends to produce

[8] See "Measuring Fiscal Policy: The DRI Full-Employment Budget Model," DRI Technical Documentation, (Mimeo).

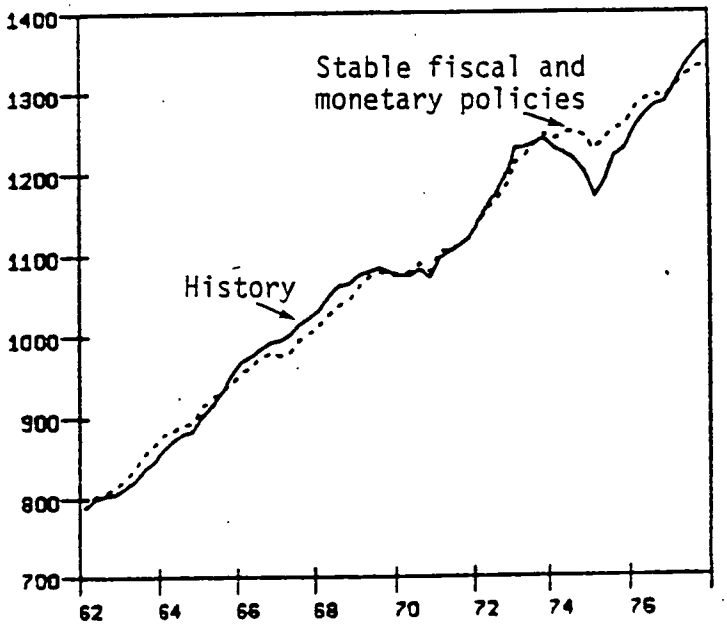
a totally accommodating monetary policy, with unreasonable variations in the rate of increase of the money supply. Neutral policy can also be defined in terms of controlling the rate of growth of various monetary aggregates. As no one measure can be said to be truly exogenous, both measures were employed.

The policy instrument chosen for the period 1962 to 1973 was nonborrowed reserves, a variable corresponding quite closely to the direct instrument of open market policy. During the first 6 years, 1962 to 1967, reserves were forced to grow at 3.8% a year, avoiding the stagnation of reserves in 1962 and 1963 and the tightness in 1966. Between 1968 and 1972, reserves were forced to grow at 5.4% a year, consistent with the rapid growth of reserves between 1966 and 1968 but avoiding the stringencies of 1969. Had nonborrowed reserves grown smoothly between 1973 and 1977, interest rates would have behaved much more erratically than they actually did. Therefore, during this final period, a policy of attempting to stabilize interest rates was followed. Appendix Table A.2 shows money and reserve growth rates as well as the path for the Federal funds rate under both the actual and stable policy paths.

The Scorecard

Chart 7, comparing the actual and stable policy levels of real GNP, shows that the growth in real GNP is much less volatile under the stable policy framework, and that some of the worst cyclical episodes are, if not avoided, made less severe. Between 1966 and 1968, the unemployment rate still dips below its full-employment equivalent under the stable policy framework, but the drop is smaller, indicating less tightness in labor markets and reduced price pressures. The big macro event of the period, the 1974-1975 recession, would have been much less severe, with peak

Chart 7
Gross National Product
(Billions of 1972 dollars)

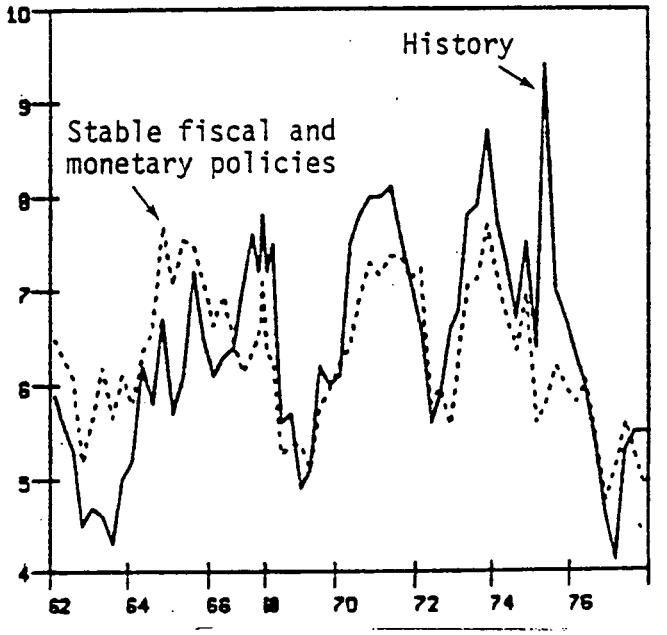


unemployment rates just over 7% instead of nearly 9%. Annual real GNP growth is 1.5% in 1974 and -0.1% in 1975 as opposed to the recorded growth rates of -1.4% and -1.3%. Getting out of the 1974-1975 recession would also have been a much less costly enterprise. Over the 3 years, 1975-1977, the cumulative Federal deficit under stable policies would have been $49.3 billion less than actually occurred, a 7% reduction in the 1977 Federal debt.

Table 11 and Charts 8-12 summarize the important differences between the stable and actual policy paths.

- Under stable policies, the growth in final demand over the period shows smaller variations around trend than actually occurred. The saving rate is considerably less volatile. The swings in disposable income are less severe, since rebates, surcharges and personal tax cuts are smoothed out. Interest rates also follow a more stable path; credit extensions and liquidations over the cycle are less severe and the carrying cost of consumer debt is far less destabilizing.

Chart 8
Savings Rate
(Percent)



The investment share of GNP under stable policies remains an average 0.2 percentage point above the historical share. During the period from 1969 to 1977, it exceeds the historical share by a full 0.3 percentage point. The stable path for interest rates, reduced Federal financing needs and more stable consumption patterns combine to produce this result. By 1977, the capital stock is 2.2% higher, increasing potential GNP by 0.6%.

Table 11
The Impact of Stable Policies
(Difference from Base Simulation)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Economy																
	(Percent Difference)															
Real GNP	0.5	1.9	1.4	0.3	-1.4	-1.9	-2.1	-0.7	0.4	0.2	-0.7	-0.6	2.3	3.5	1.2	-1.2
Real Consumption	0.8	1.9	1.2	0.2	-1.0	-1.8	-2.0	-0.5	-0.2	-0.5	-0.7	-0.9	1.3	2.4	0.2	-1.2
Real Nonres. Fixed Investment	0.3	1.7	2.6	1.2	-1.0	-1.4	-1.7	-2.6	3.0	7.8	3.5	-1.0	2.7	9.3	6.3	-0.1
Real Res. Fixed Investment	1.2	8.8	6.8	0.7	-4.4	-7.6	-10.6	-6.4	0.5	-4.3	-9.1	-1.5	14.7	17.1	-1.6	-11.9
	(Difference in Level)															
Housing Starts (mil. units)	0.030	0.214	0.121	-0.016	-0.076	-0.136	-0.196	-0.092	0.020	-0.138	-0.250	0.081	0.425	0.240	-0.094	-0.262
Automobile Sales (mil. units)	0.1	0.4	0.1	-0.5	-0.6	-0.5	-0.3	0.3	0.4	0.1	-0.1	-0.1	0.8	0.7	-0.2	-0.7
Real Net Exports (billion $)	-0.1	-0.9	-1.7	-1.5	-0.1	1.0	2.0	2.0	0.5	-0.4	0.7	1.5	-0.1	-4.0	-1.8	1.3
Savings Rate (%)	0.7	1.3	0.6	0.9	0.1	-0.8	-0.7	0.0	-0.6	-0.4	0.0	-0.8	-0.5	-1.5	-0.1	0.1
Inflation and Unemployment																
	(Difference in Rate of Growth)															
Implicit Price Deflator	0.1	0.3	0.5	0.4	0.0	-0.5	-0.7	-0.7	-0.4	-0.1	-0.1	-0.5	-0.4	0.7	0.7	0.1
Wholesale Price Index	0.1	0.3	0.4	0.2	-0.2	-0.6	-0.7	-0.5	-0.2	0.0	0.0	-1.0	-0.8	0.6	0.4	0.0
Unemployment Rate*	-0.1	-0.6	-0.6	-0.2	0.5	0.7	0.8	0.4	-0.1	-0.1	0.2	0.4	-0.5	-1.4	-0.6	0.4
Incomes																
	(Percent Difference)															
Real Disposable Income	1.5	3.1	1.7	1.1	-0.9	-2.7	-2.7	-0.5	-1.0	-1.0	-0.7	-1.8	0.6	0.7	0.2	-0.9
Compensation Per Manhour**	0.2	0.3	0.9	0.7	-0.8	-0.4	-0.6	-0.8	-0.2	-0.2	-0.2	-0.4	-0.2	0.9	0.5	0.1
Real Aftertax Profits	1.8	7.9	-1.1	-9.1	-9.0	-22.4	-15.0	2.6	11.9	7.8	-3.7	-2.1	13.6	2.5	-4.8	-14.5
Interest Rates																
	(Difference in Rate)															
3-Month Treasury Bill	-0.06	-0.68	-0.27	-0.27	-0.52	-0.12	0.02	-0.43	-0.13	0.75	0.86	-1.14	-1.42	0.67	0.80	0.61
Federal Funds Rate	-0.19	-1.21	-0.32	-0.21	-0.48	0.19	0.27	-0.64	-0.20	1.39	1.55	-1.84	-2.49	1.19	1.47	1.15
Prime Rate	-0.11	-0.77	-0.19	-0.02	-0.20	0.08	0.06	-0.33	-0.24	0.99	1.47	-0.93	-1.73	0.67	1.25	1.10
New High-Grade Corp. Bond Rate	0.02	-0.31	-0.46	-0.33	-0.34	-0.33	-0.28	-0.43	-0.43	0.09	0.42	-0.33	-0.51	0.47	0.75	0.25
Federal Government																
	(Difference in Level)															
Receipts																
Personal Taxes	-4.2	-4.3	2.2	0.4	4.1	8.7	6.3	1.0	5.9	6.4	-1.9	0.9	1.5	16.3	8.2	2.3
Corporate Taxes	0.8	2.2	2.1	2.0	0.1	3.4	1.7	-1.6	-2.2	-2.7	-2.3	-2.7	-3.9	5.3	-0.9	-4.9
Expenditures	0.4	1.9	4.3	6.0	1.5	0.7	-0.6	1.7	-2.1	-6.5	-11.1	-9.1	-4.4	-10.3	-2.6	-3.2
Fed. Budget Surplus (NIA)	-3.3	-4.2	1.0	-0.9	1.9	9.0	5.4	-6.3	3.7	7.7	5.9	5.7	1.1	34.2	13.2	1.9

*Difference in rate
**Difference in rate of growth

Chart 9
Real Business Fixed Investment
(Percent of real GNP)

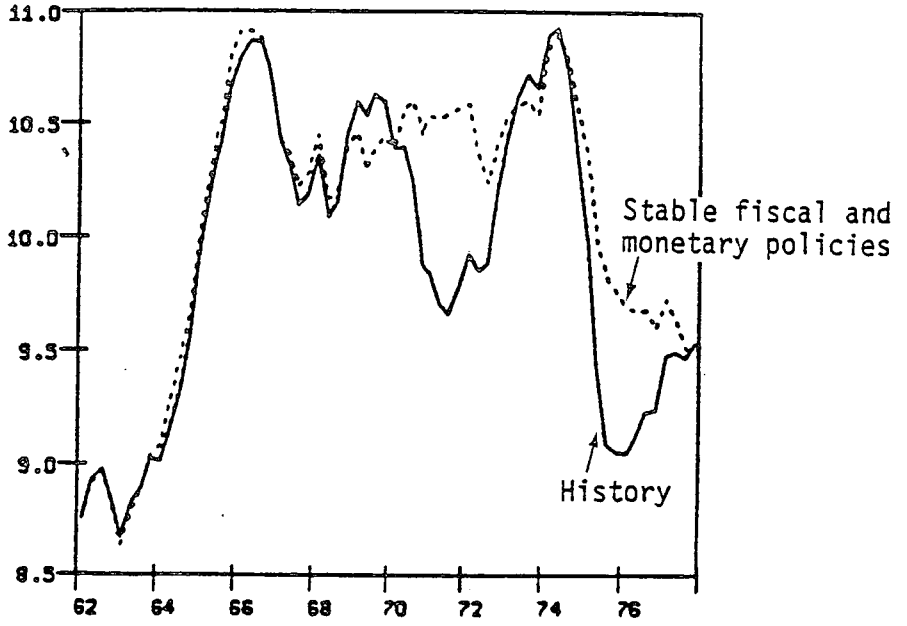
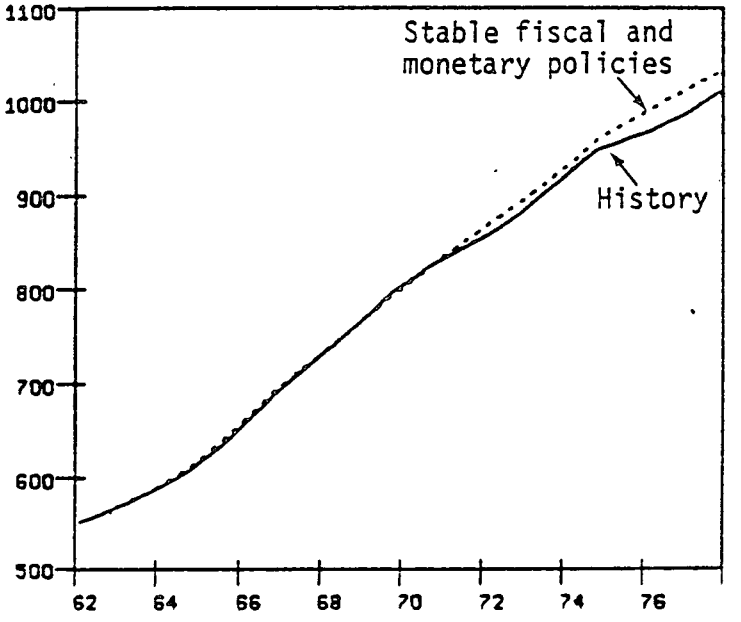


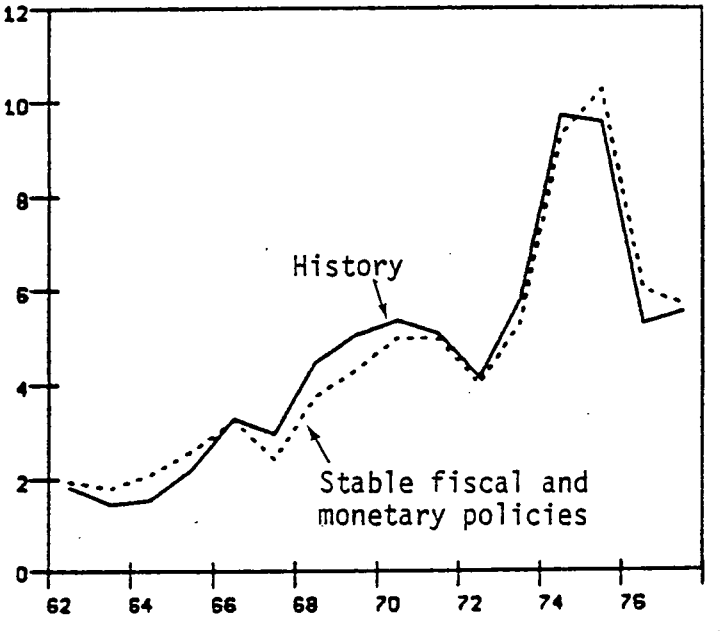
Chart 10
Total Capital Stock
(Billions of 1972 dollars)



- A smooth policy framework would have reduced the problems of bottlenecks in manufacturing. In 1966, during the Vietnam buildup, utilization rates average 3 percentage points below the actual peaks, and 2 percentage points below in 1973, the peak utilization rate year. Vendor performance, the percent of purchasing agents experiencing delivery delays, never reaches its 1973 highs of 90%.

- The price level would have risen close to 1% less under stable framework policies. Although the average rate of increase over the period is cut only 0.2%, from 4.7% to 4.5%, inflation rates from the mid-1960s to the early 1970s would have been over 0.5% a year lower. By the mid-1970s, however, the gap narrows fast, with inflation rates slightly worse under the stable policy path between 1975 and 1977. This is attributable to the stronger economy during 1974 and 1975.

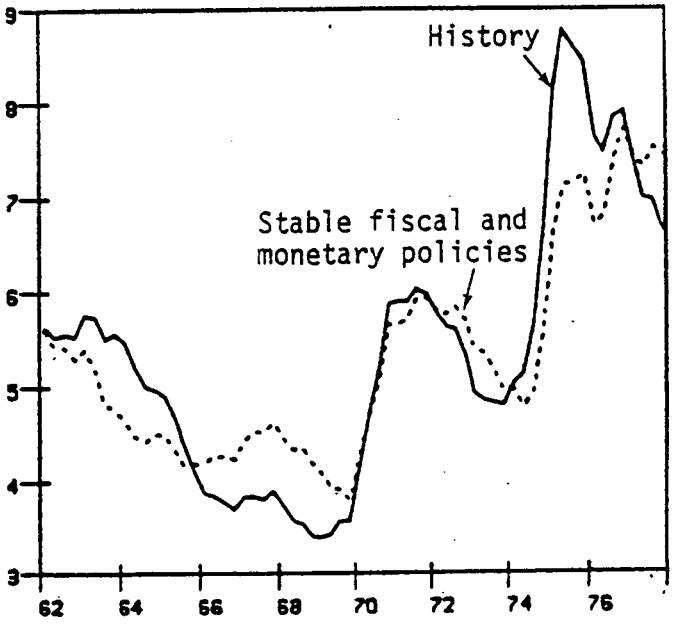
Chart 11
Implicit Price Deflator
(Annual percent change)



Stable policies would have produced about the same cumulative unemployment over the period but a far more stable pattern. Easier money and less fiscal restraint between 1962 and 1964 would have produced a quick drop in the unemployment rate from 5.6% in the first quarter of 1962 to 4.6% in the first quarter of 1964, 0.8 percentage point below the actual rate. From 1966 to 1969, major tax increases to pay for the war and smaller increases of bank reserves would have caused the unemployment rate to average 4.3%, 0.6 percentage point above the actual rate. In the early 1970s, both stable and actual policy paths produced rising unemployment because the reductions in defense spending have larger short-term multipliers than the associated

personal tax reductions. In most recent years, the actual swing toward fiscal restraint during 1973 and 1974 is avoided with stable policies. As a consequence, the 1974-1975 recession is much less severe than actually incurred: the unemployment rate peaks at 7.2% in the second quarter of 1975, 1.6 percentage points less than the actual peak.

Chart 12
The Unemployment Rate
(Percent)

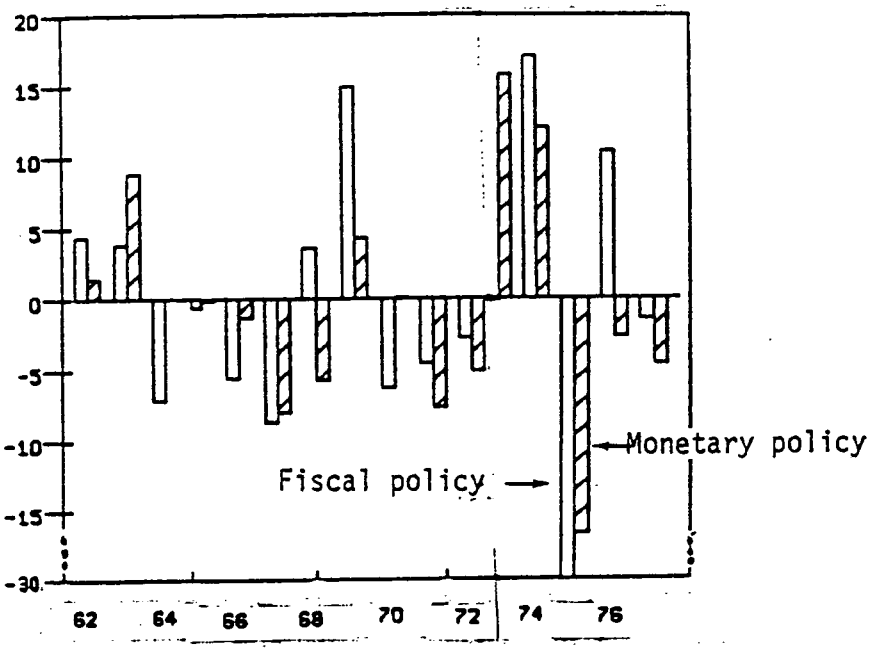


The stable policy framework also shows little evidence for the view that lack of coordination between fiscal and monetary authorities is often responsible for poor policy performance. Chart 13 presents two indices of policy direction: fiscal policy is summarized by changes in the full-employment budget, monetary policy by changes in nonborrowed reserves. In each case, values less than zero indicate a more stimulative position relative to the position of the previous year. In only two years can fiscal and monetary policies be said to have worked at cross purposes: 1968 and 1976. In both years, fiscal policy became more contractionary while monetary policy became more stimulative.

ALL THINGS CONSIDERED

The present analysis shows that stabilization policies over the last decade and a half have been potent as countercyclical measures, but that mistakes in timing and policy coordination were occasionally made. As a result, effects were often less than hoped for. The history of the period shows fiscal and monetary policy drifting away from the path defined by a stable policy framework. Although each of the episodes studied represents a sharp correction to this drift, it is suggested that

Chart 13
Index of Monetary and Fiscal Policy Coordination*



*Values greater than zero indicate a tightening from the previous year's position.

Fiscal policy = change in the full-employment budget surplus (billions of dollars).

Monetary policy = negative of the change in nonborrowed reserves from its stable policies path (billions of dollars).

better results could have been achieved with the stable framework policies than with the actual policies. While average unemployment would have been the same, the variations would have been milder. Real growth would have been smoother and the rate of inflation would have been less. The investment share of GNP would have been higher, and by the end of the period, manufacturing capacity would have been nearly 3% higher, providing a stronger base for continued growth through the 1980s.

Actual policies, however, cannot be entirely blamed for the cycles of the last 16 years. Even under the stable policy framework, considerable economic variation remained. The twin problems of inflation and unemployment would not disappear easily under stable policy rules. Even if they would, such policies are difficult to administer: they require precise information of political and economic conditions and meticulous variation of numerous policy instruments, a tall order even for the vigilant. The challenge for policymakers in the 1980s is not to produce a perfectly stable policy path, but to improve upon the policy record of the last 16 years.

APPENDIX A: Methodology

Two approaches were followed in analyzing the impact of each policy episode. The actual history of each episode was compared, first, with a dynamic simulation in which the policy in question had been removed, and second, with a stable policy simulation spanning the entire period.

I. Analyzing the Individual Episodes

In analyzing the individual episodes, the basic procedure was to remove the relevant policy from an historical simulation of the model, and to solve the model under the new assumptions. The results of the solution without the policy were compared with history to assess the impact of the policy change.

An historical solution of the model does not duplicate history exactly, since the model is not a perfect representation of the economy. When policy parameters are changed and the model re-solved, the observed differences between the model results and history reflect two influences: the impact of the policy change as well as the residual error of each equation. It would therefore be misleading to attribute the entire observed change to the policy in question.

To get around this problem, a null solution of the model was prepared for the interval 1962 to 1977. This consists of a solution of the model using actual values for the independent variables in each equation. The predicted values for each equation were subtracted from the actual values to calculate the residual errors. These residuals were then added back to the predicted values of the equations by adjusting the constant terms.[1] With this modification, the predicted values of the variables equal the historical values when the model is solved, and the simulation in which policy parameters are changed can then be compared directly to history to assess the impact of the policy change.

[1] Residual errors for selected variables are shown in Table A.1 below.

II. The Revenue Estimates

The procedure employed to derive the first-round revenue estimates for the personal tax reductions in 1964 and 1975 consisted of estimating a personal income tax equation for each episode, using a variety of plausible patterns for the timing of the revenue impact. The equation with the best econometric results was chosen in each case.

Equation 1, estimated over the period from 1960 to 1977, was employed to generate the revenue estimates for the 1964 tax reduction.

Equation 1

$$TPGF^{2} = AGI * (1+REBSUR) * EXP[\underset{(-36.2)}{-3.0} + \underset{(10.7)}{.49} * \log(AGI/EHH) - \underset{(-9.8)}{.159} * D64$$

$$\underset{(-4.3)}{-.080} * D69 - \underset{(-6.8)}{.116} * D75 + \underset{(3.0)}{.045} * D77 + \underset{(4.7)}{.036} * DUMMY7273 + \underset{(4.9)}{.017} * YSURNW]$$

[2] Equation estimated in logarithmic form.
t-statistics appear in parentheses below each coefficient

Estimation Interval: 1960-1977

$\bar{R}^2$ = .92
SEE = .017
DW = 1.64
Autocorrelation coefficient = .57

Abbreviations

AGI = Personal income - other labor income - government transfers + the employee share of social insurance contributions (billions of dollars)

REBSUR = The value of rebates and surcharges (percent).

TPGF = Personal tax and nontax payments (billions of dollars)

EHH = Household employment (millions)

D64 = Dummy for the Revenue Act of 1964

D69 = Dummy for the Tax Reduction Act of 1969

D75 = Dummy for the Tax Reduction Act of 1975

D77 = Dummy for the acceleration in gift tax payments in 1977:1

DUMMY7273 = Dummy to reflect the timing of tax payments in 1972 and 1973.

YSURNW = Nonwithheld personal income tax surcharge

Equation 2 was employed to generate the revenue estimates for 1975. It was estimated over the shorter interval 1965-1977.

Equation 2

$$TPGF^3 = AGI * (1 + REBSUR) * EXP[\underset{(-26.0)}{-2.97} + \underset{(7.2)}{.400} * \log (AGI/EHH)$$

$$\underset{(-4.3)}{-.081} * D69 + \underset{(2.3)}{.036} * D71 - \underset{(-6.2)}{.101} * D75 + \underset{(2.9)}{.045} * D77 + \underset{(3.9)}{.032} * DUMMY7273$$

$$+ \underset{(4.9)}{.018} * YSURNW]$$

Estimation Interval: 1965-1977

$\bar{R}^2$ = .91
SEE = .017
DW = 1.77
Autocorrelation coefficient = .49

[3]Equation estimated in logarithmic form.

The revenue change was calculated as the difference between the value predicted by the equation (with the timing dummy equal to the value used in estimating the equation) minus the predicted value with the dummy set equal to zero. The tax base used in both cases is the same. The no-tax-cut revenue estimates are based upon the level of income which actually occurred. They do not reflect the fact that the tax base as well as the tax rates would have been different if the tax cut had not occurred. However, the ultimate change in taxes calculated from the full model simulation reflects both the direct revenue impact as well as the indirect impact of the changes in the tax base.

The revenue impact of changes in the statutory corporate tax rate and in the investment tax credit were treated in a similar manner. In each case, the revenue impact was equal to the change in the tax rate multiplied by actual corporate profits before taxes.

The first round estimates for the 1968 surcharge were not derived from the same methodology as 1964 and 1975. The numbers presented in Table I of the text are those estimated by the Bureau of Economic Analysis.

III. Defining Accommodating Monetary Policy

Monetary Policy

The response of the economy to alternative fiscal policies depends in part upon the reaction of monetary authorities. Both accommodating and nonaccommodating monetary policy positions were considered.[4] For the purpose of this study, accommodation was assumed to mean the maintenance of real interest rates at their base level. The real rate of interest was defined as the nominal rate minus the expected rate of inflation. The expected rate of inflation was calculated as a function of past and recent changes in consumer prices. The Federal funds rate was used as the target of monetary adjustments.

[4]Results from the accommodating monetary policy exercises are contained in Appendix B.

IV. The Stable Policy Methodology

The stable policy simulation captured what would have happened if fiscal and monetary policies had followed smooth growth rules and if their net impact on the economy had been roughly neutral. The criterion used for neutral fiscal policy was a Full-Employment Budget deficit of zero. The Full-Employment Budget values were calculated from the DRI Full-Employment Budget Model. The criterion used for neutral monetary policy was stable growth in nonborrowed reserves, and in most recent years, stable interest rates.

Fiscal Policy

The basic procedure for smoothing policy was to calculate a series for each of the relevant fiscal policy variables which grew at a constant rate and passed through its actual values at the beginning and end of the interval: 62:1 and 77:4. There is room for considerable discretion here since if either the beginning or end of the interval were different, the entire series would have been different. This posed a

minor problem since 1977 was a year in which fiscal policy became quite stimulative, even more so than in 1976. The endpoints of the smoothed series were thus tagged to a period in which all of fiscal policy was somewhat "off trend." However, where necessary, each series was adjusted to insure that the choice of the end points did not seriously bias the path of the smoothed variable.

The Vietnam War buildup of defense expenditures was treated somewhat differently. Under the assumption that the Vietnam War would have occurred regardless of policy stance, one technique considered was to have removed the estimates of the cost of the Vietnam War, smooth the remainder, then add back the Vietnam defense purchases. Unfortunately, the data indicate that a large fraction of the spending on Vietnam was money that would have been spent anyway. Financing was borrowed from other defense requirements, notably European defense, in order to pay for Vietnam. With Vietnam expenditures removed, defense purchases take a noticeable dip in the period 1966 to 1972. The technique chosen therefore was to include actual defense spending for the years 1966 to 1972 and the smoothed spending levels in the years 1962-1965 and 1973-1977. It was assumed that the additional spending above trend was paid for by war taxes—spread two-thirds personal and one-third corporate—corresponding exactly to the buildup in defense spending.

A second problem concerned corporate taxes. Even with a stable effective corporate tax rate, full employment corporate tax revenues are exceptionally volatile, due to large swings in the inventory valuation adjustment (IVA), particularly between 1973 and 1975. This phenomenon is due, in part, to the structure of the Full-Employment Budget Model. The model uses smoothed values for the full employment income shares to calculate the income bases on which taxes are paid. Actual corporate taxes are based on book or accounting profits. However, this concept of profits is quite sensitive to short-term changes in the IVA and in various depreciation allowances. The Full-Employment Budget Model thus uses the national income and product accounts "economic" or "operating" definition of profits, which includes both inventory valuation and capital consumption adjustments. During periods when the IVA was extremely large, particularly between 1973 and 1975, the effective tax rate on corporate profits before tax (NIA basis) is considerably higher than the effective book profits tax rate. In these periods, the effective corporate tax rate on book profits was adjusted so that the pattern of taxes on the NIA basis was smoother.

Table A.2 shows the values of the policy variables under stable and actual policies.

35-458 O - 78 - 4

Table A.1
Percent Errors in Major Equations
(Actual - predicted as a percent of actual)

	1964:1	1964:2	1964:3	1964:4	1965:1	1965:2	1965:3	1965:4	1966:1	1966:2	1966:3	1966:4	1967:1	1967:2	1967:3	1967:4
Consumption																
Furniture	0.7	1.4	0.1	0.2	-2.0	-3.0	-2.9	-2.0	-2.0	-2.2	2.2	2.0	1.0	-0.9	-2.2	-0.5
Motor Vehicles & Parts	5.0	2.4	2.9	2.4	4.1	0.0	0.6	-3.4	0.8	-9.7	-4.8	-2.6	-9.8	-4.6	-5.9	-7.2
Other Durables	4.1	4.0	5.7	2.8	0.4	-2.3	-4.3	-2.6	-0.2	-2.0	-1.2	-1.3	-0.9	-0.3	-1.3	-0.9
Clothing and Shoes	1.2	1.1	0.8	0.8	0.2	-1.7	-2.1	-0.4	1.4	1.1	1.3	-0.4	-0.7	-0.2	-0.5	-1.3
Food	-0.1	0.3	0.5	0.0	-0.4	0.5	-0.1	1.8	1.6	0.8	0.5	-0.8	-0.8	-1.7	-2.0	-1.5
Gasoline and Oil	0.0	-0.5	0.2	-0.5	0.6	1.8	-0.3	0.6	0.7	0.7	0.6	-1.0	-2.6	-2.5	-3.1	-1.1
Fuel & Other Nondurables	-0.5	-1.5	0.5	-1.7	-1.0	-0.4	-1.4	0.0	0.7	1.8	1.7	1.0	0.6	0.8	-0.4	-1.4
Household Operation	-1.6	0.2	0.0	0.0	-1.7	-0.8	-1.2	-1.2	-2.7	-1.2	-0.1	0.5	0.6	1.5	-0.1	1.4
Housing	0.0	0.1	-0.2	0.2	0.1	0.3	0.0	-0.1	-0.4	-1.0	-0.8	-0.8	-0.5	-0.6	-0.6	0.0
Other Services	0.9	0.0	0.5	0.1	0.2	-0.3	-0.7	-0.2	-0.4	-0.7	-0.9	-0.9	0.0	0.2	0.8	-0.8
Transportation Services	1.9	1.1	0.5	-0.1	-1.2	-0.6	-0.9	-1.4	-2.0	-1.4	-1.7	-0.8	-0.6	-1.4	-1.2	-0.3
Investment																
Nonresidential																
Producer's Durable Equipment	-0.3	-0.7	-0.9	-0.5	-2.1	-4.1	-1.6	-2.1	0.6	2.4	0.8	1.1	-1.4	-0.9	-1.8	0.8
Structures	-5.4	-2.0	-1.6	-2.1	1.0	6.2	4.3	8.3	7.7	5.0	5.6	1.6	1.0	-2.2	-1.9	-4.3
Residential Structures	4.6	2.0	-0.1	-1.1	4.3	5.7	1.7	-1.8	1.3	-0.9	1.3	-2.4	-2.8	2.5	0.1	1.3
Government																
State and Local Purchases of Goods and Services	-0.8	-0.3	-0.9	-1.2	-1.4	-0.3	0.5	0.5	0.2	-0.3	-1.0	0.3	0.3	-0.1	-0.9	-0.7
International Trade																
Exports by End Use Category	5.7	4.5	5.9	8.1	-0.1	4.8	3.1	3.6	1.3	2.8	1.3	0.3	1.8	2.1	0.9	-2.5
Prices, Wages and Employment																
Consumer Price Index	-0.1	-0.1	-0.1	0.0	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Compensation per Manhour	1.0	0.5	0.4	-0.3	-0.6	-0.1	0.1	0.1	-0.3	0.3	0.2	0.1	-0.1	-0.1	-0.1	-0.3
Unemployment Rate*	4.4	2.9	1.2	-0.1	-0.5	-1.7	-3.3	-1.8	-1.2	2.8	3.8	2.4	5.1	1.8	0.0	1.9
Interest Rates																
Federal Funds Rate*	-0.1	-0.1	-0.1	-0.1	0.1	0.0	0.0	-0.2	-0.2	-0.1	-0.1	-0.1	0.2	0.4	0.0	-0.4
3 Month Treasury Bill*	-0.1	0.1	0.0	0.0	0.0	-0.4	-0.5	-0.3	-0.2	-0.3	-0.1	-0.2	-0.1	-0.3	0.1	0.1
New High Grade Corp. Bond Rate*	0.0	0.0	0.0	0.1	0.0	0.0	-0.1	0.1	-0.1	-0.1	0.4	0.1	-0.4	0.1	0.1	0.4

*Actual-Predicted

Table A.1 continued

	1968:1	1968:2	1968:3	1968:4	1969:1	1969:2	1969:3	1969:4	1970:1	1970:2	1970:3	1970:4	1971:1	1971:2	1971:3	1971:4
Consumption																
Furniture	0.6	0.0	3.3	0.8	0.7	1.9	0.4	1.1	2.1	1.9	-1.3	-0.8	-4.0	-2.9	-5.4	-2.7
Motor Vehicles & Parts	-4.9	-3.2	-2.2	-1.6	-1.5	-1.0	-0.4	-0.6	-6.0	0.5	6.5	-0.8	1.8	-1.9	-0.1	3.3
Other Durables	-3.4	-0.7	0.9	4.3	5.3	4.6	1.4	0.5	0.8	-2.3	-0.7	-0.6	-5.0	-2.9	-2.6	-2.1
Clothing and Shoes	-0.4	-0.9	1.1	0.6	1.1	1.2	0.9	0.2	-0.6	-1.5	-2.9	0.4	-0.9	-0.1	-0.3	-0.3
Food	-0.6	0.2	0.7	0.7	0.5	0.3	0.0	-0.1	1.6	2.2	2.1	2.1	0.3	0.2	-1.6	-1.8
Gasoline and Oil	-0.1	-0.8	-0.2	-0.1	0.8	0.9	0.8	0.3	0.0	1.2	1.0	2.3	2.0	0.0	0.8	1.0
Fuel & Other Nondurables	0.1	-0.4	1.3	1.7	1.1	0.4	-0.1	0.2	0.3	-0.9	0.1	1.1	-0.6	-1.7	-2.1	-2.0
Household Operation	0.8	0.3	0.5	0.1	0.8	0.0	1.3	3.3	0.7	1.4	2.1	0.9	1.1	-0.9	-1.0	-3.5
Housing	-0.2	-0.3	-0.6	0.1	0.1	0.1	0.2	0.5	1.6	1.7	0.9	-1.5	0.2	-0.2	-0.1	0.3
Other Services	-0.9	-1.0	-0.1	0.0	0.1	0.4	0.1	0.6	0.7	0.1	1.1	1.5	0.6	1.1	0.3	-0.9
Transportation Services	0.3	-0.1	-0.3	0.3	1.1	1.0	0.8	0.1	0.3	-0.1	-0.2	-0.5	0.6	0.4	0.4	-1.6
Investment																
Nonresidential																
Producer's Durable Equipment	0.2	-2.7	-1.7	-0.7	-0.1	-1.7	-2.1	-2.0	-2.4	-0.4	0.8	-2.7	1.4	0.6	0.0	2.4
Structures	-1.4	-3.8	-5.4	-2.7	-1.8	-1.7	1.2	0.1	-1.3	1.0	2.1	3.0	5.1	4.4	4.0	1.8
Residential Structures	-1.0	0.9	-0.9	-1.5	0.0	0.0	0.0	-2.6	3.6	-1.6	-2.8	-1.2	-2.3	-0.9	-0.4	-1.7
Government																
State and Local Purchases of Goods and Services	0.9	1.4	1.0	1.6	1.2	1.5	0.6	-0.1	-0.3	-0.7	0.3	0.6	0.3	0.2	0.0	0.4
International Trade																
Exports by End Use Category	-2.0	-0.4	7.0	0.0	2.8	5.4	3.8	0.5	0.3	1.2	-0.2	0.3	-3.6	-4.4	2.0	-2.1
Prices,Wages and Employment																
Consumer Price Index	-0.1	-0.1	-0.1	-0.1	0.0	0.0	-0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
Compensation per Manhour	0.8	0.0	0.0	0.1	-0.5	-0.5	-0.2	-0.8	1.1	-0.4	-0.1	-0.6	-0.4	-0.2	0.1	-0.7
Unemployment Rate*	-2.3	-3.1	0.1	-3.6	-3.3	-4.4	-4.4	-13.1	-8.9	-4.4	-1.1	3.2	0.8	0.2	1.9	0.6
Interest Rates																
Federal Funds Rate*	-0.3	0.1	0.5	0.4	-0.3	0.5	0.4	0.0	-0.1	0.2	-0.4	-0.3	-0.4	0.2	-0.1	0.0
3 Month Treasury Bill*	0.0	0.3	-0.2	0.0	0.2	-0.2	0.1	0.1	0.4	0.5	0.2	0.1	-0.8	0.0	0.1	0.0
New High Grade Corp. Bond Rate*	0.0	0.2	-0.3	0.0	0.1	-0.1	-0.3	0.1	-0.1	0.2	0.2	0.5	-0.6	0.2	0.2	-0.1

*Actual-Predicted

Table A.I continued

	1972:1	1972:2	1972:3	1972:4	1973:1	1973:2	1973:3	1973:4	1974:1	1974:2	1974:3	1974:4	1975:1	1975:2	1975:3	1975:4
Consumption																
Furniture	-1.9	-1.3	0.0	-0.5	-0.5	-0.3	0.5	0.2	2.4	2.5	2.7	-1.4	-1.0	-1.0	-0.7	0.8
Motor Vehicles & Parts	3.1	-1.3	-2.0	1.8	6.0	3.6	2.6	-3.3	-6.3	-2.7	4.6	-12.5	-4.9	-6.6	-3.0	2.2
Other Durables	-0.4	2.0	2.8	2.6	1.9	0.2	0.5	-1.5	-2.5	-1.4	-2.3	-3.8	0.9	1.0	3.0	2.8
Clothing and Shoes	0.0	-0.1	1.1	1.2	1.1	0.2	-0.1	-0.5	1.0	1.5	1.1	-2.2	0.4	0.8	1.0	1.5
Food	-1.8	-1.2	-0.9	-1.1	0.3	-0.7	-0.1	-2.2	0.3	-0.8	0.0	0.5	-0.3	0.5	-0.3	-0.9
Gasoline and Oil	0.6	-0.9	-1.6	1.3	0.8	-1.4	-1.7	-0.9	-4.8	2.6	1.7	4.0	0.8	-0.2	-4.7	-1.3
Fuel & Other Nondurables	-1.5	0.0	-0.1	0.7	-0.1	-0.3	0.3	-0.2	1.7	0.8	-0.3	-0.5	-0.6	-1.5	0.9	-0.2
Household Operation	-2.7	-1.9	-2.1	-1.4	-1.8	0.1	2.0	0.0	-0.5	-0.9	-2.6	-1.5	0.9	0.2	0.1	-1.7
Housing	0.8	-0.3	0.0	-0.3	-0.5	-0.1	0.3	0.4	0.4	0.2	-0.5	-1.2	-0.3	0.1	-1.1	0.0
Other Services	0.3	0.3	-0.2	-0.4	-1.0	-1.2	-2.1	-2.6	-1.6	-1.3	-0.3	0.2	0.2	-0.4	-0.7	-0.3
Transportation Services	2.2	1.1	1.9	1.7	0.5	-0.2	-0.9	-2.0	-0.5	1.4	0.9	-0.3	0.1	-1.0	-2.0	0.0
Investment																
Nonresidential																
Producer's Durable Equipment	1.8	-1.1	-2.8	-0.4	0.5	0.0	-0.3	-0.2	2.4	3.0	4.3	1.9	-0.3	-2.2	-2.2	-2.7
Structures	3.8	2.3	0.5	0.2	0.3	0.7	1.6	0.3	-1.3	-0.9	-5.1	-1.9	-4.3	-3.1	0.2	0.3
Residential Structures	0.8	0.8	-0.9	0.6	0.6	0.4	-0.6	1.6	0.0	-1.7	0.6	1.1	-0.8	1.9	1.7	1.6
Government																
State and Local Purchases of Goods and Services	0.5	0.5	0.7	0.4	-0.1	-0.5	0.2	0.1	0.1	0.7	0.1	-0.1	-0.1	0.8	1.1	0.8
International Trade																
Exports by End Use Category	-1.1	-5.1	-2.0	-6.1	-0.4	-0.6	-1.7	-0.6	-1.9	-0.2	-4.5	-1.4	-3.9	-4.5	3.4	7.4
Prices, Wages and Employment																
Consumer Price Index	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Compensation per Manhour	-0.7	-0.1	0.2	0.0	0.3	-0.5	0.1	0.4	-0.1	-0.1	-0.3	0.5	0.5	-0.1	-0.5	-0.5
Unemployment Rate*	-1.9	0.3	4.1	5.8	5.0	7.1	6.7	4.4	1.5	-5.9	-6.4	-1.0	4.3	4.7	2.5	1.1
Interest Rates																
Federal Funds Rate*	-0.1	0.2	0.4	0.0	-0.2	-0.4	0.3	0.2	0.0	0.3	0.1	-0.2	-0.7	-0.1	0.2	-0.3
3 Month Treasury Bill*	-0.6	0.0	0.0	-0.1	-0.3	-0.1	1.4	0.2	0.1	0.5	-0.5	-0.3	-0.3	0.1	0.8	0.1
New High Grade Corp. Bond Rate*	0.0	-0.2	0.0	-0.1	0.0	-0.1	0.3	-0.2	0.2	0.2	0.3	-0.3	-0.4	0.1	0.3	0.3

*Actual-Predicted

Table A.1 continued

	1976:1	1976:2	1976:3	1976:4	1977:1	1977:2	1977:3	1977:4
Consumption								
Furniture	0.1	0.3	0.8	1.5	-0.9	-0.9	0.6	2.7
Motor Vehicles & Parts	5.4	0.8	-3.7	-2.9	3.8	0.7	-5.6	-3.5
Other Durables	1.9	0.6	1.2	2.5	-0.6	-1.6	-1.0	3.9
Clothing and Shoes	0.4	-1.5	-0.6	2.1	-0.9	-2.3	-0.6	3.2
Food	-0.6	0.5	-0.3	0.8	1.3	2.1	0.7	1.8
Gasoline and Oil	0.9	-0.2	-2.3	2.8	1.4	0.0	-1.7	0.1
Fuel & Other Nondurables	0.0	1.1	0.2	1.4	1.0	-1.6	-3.0	-1.4
Household Operation	-0.3	-0.5	0.5	4.4	3.3	0.2	4.4	5.5
Housing	0.3	0.9	0.3	0.4	-0.1	-0.1	0.2	0.5
Other Services	-0.8	-1.2	-0.9	-0.8	0.1	0.5	-0.3	-1.0
Transportation Services	1.2	1.3	0.3	0.3	-0.4	-0.9	0.3	0.4
Investment								
Nonresidential								
Producer's Durable Equipment	-1.9	-1.4	-0.3	-2.5	2.6	2.1	1.6	1.7
Structures	1.8	0.9	-0.8	-1.6	-3.0	-0.1	1.0	1.8
Residential Structures	0.1	2.0	-2.9	0.6	-2.0	2.1	-3.0	-4.6
Government								
State and Local Purchases of Goods and Services	0.3	0.9	0.1	-1.0	-2.1	-1.0	-1.1	-1.3
International Trade								
Exports by End Use Category	3.6	6.8	7.5	5.8	1.4	1.9	3.2	13.1
Prices, Wages and Employment								
Consumer Price Index	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Compensation per Manhour	0.7	0.6	0.2	0.0	0.5	0.1	-0.2	-0.3
Unemployment Rate*	-6.7	-5.0	2.3	3.1	-2.1	-4.9	-2.8	-5.7
Interest Rates								
Federal Funds Rate*	-0.2	0.0	0.0	0.1	0.0	0.2	-0.2	-0.4
3 Month Treasury Bill*	-0.3	0.3	0.2	-0.1	-0.5	-0.2	0.0	0.3
New High Grade Corp. Bond Rate*	-0.3	-0.1	0.0	-0.1	0.1	0.0	-0.2	-0.1

*Actual-Predicted

Table A.2
Fiscal and Monetary Policy Variables
(Billions of dollars except as noted)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
FEDERAL GOVERNMENT EXPENDITURES AND RECEIPTS																
Defense Purchases																
History	51.0	50.3	49.0	49.4	60.3	71.4	76.8	76.2	73.5	70.2	73.5	73.5	77.0	83.9	86.8	94.3
Stable Policies	50.9	51.6	52.5	53.6	61.1	72.0	77.0	75.9	72.9	69.6	72.7	73.8	79.6	86.9	91.1	94.8
Nondefense Purchases																
History	12.7	14.3	16.2	17.8	18.5	19.5	21.1	21.2	22.1	26.0	28.6	28.6	34.1	39.4	43.3	51.2
Stable Policies	12.4	13.2	14.2	15.3	16.7	17.9	19.5	21.2	23.7	26.5	29.7	32.6	37.1	42.8	47.4	51.8
Domestic Transfers																
History	25.6	27.0	27.8	30.3	33.5	40.1	45.9	50.6	61.3	72.6	80.4	93.2	114.4	146.0	158.8	169.9
Stable Policies	26.1	28.3	30.9	34.1	38.2	42.5	47.6	53.3	60.8	69.5	77.8	87.9	107.0	135.4	150.8	168.0
Foreign Transfers																
History	2.1	2.2	2.1	2.2	2.3	2.3	2.1	2.0	2.2	2.6	2.8	2.6	3.3	3.1	3.2	3.2
Stable Policies	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.9	2.9	3.0	3.0	3.1	3.2
Grants-in-Aid																
History	8.0	9.2	10.4	11.1	14.4	15.9	18.6	20.4	24.4	29.0	37.5	40.6	43.9	54.6	61.0	67.6
Stable Policies	8.1	9.1	10.2	11.5	13.0	14.9	17.0	19.4	22.6	26.3	30.1	34.4	41.7	50.0	58.2	66.6
Net Subsidies																
History	4.3	3.9	4.5	4.5	5.5	4.7	4.5	5.2	6.3	6.2	7.8	8.2	5.3	6.7	5.9	7.8
Stable Policies	4.3	4.4	4.6	4.8	5.0	5.2	5.4	5.7	5.9	6.2	6.5	6.8	7.1	7.5	7.8	8.2
Interest																
History	6.7	7.3	8.0	8.4	9.1	9.8	11.4	12.8	14.2	14.0	14.5	18.2	20.9	23.3	27.2	29.6
Stable Policies	6.8	7.1	7.6	8.0	8.6	9.3	10.8	12.1	13.3	13.4	14.5	17.5	18.9	21.2	25.2	27.7
Personal Tax and Nontax Payments																
History	48.7	51.5	48.6	54.0	61.7	67.5	79.7	94.8	92.2	89.9	108.2	114.6	131.1	125.6	147.3	170.7
Stable Policies	44.4	47.2	50.8	54.4	65.8	76.2	85.9	95.8	98.1	96.3	106.3	115.5	132.6	141.9	155.5	173.0
Corporate Profits Tax Accruals																
History	22.5	24.6	26.1	28.9	31.4	30.0	36.3	36.2	30.8	33.5	36.6	43.0	45.9	43.1	55.8	58.9
Stable Policies	23.3	26.8	28.3	30.9	31.5	33.4	38.0	34.6	28.6	30.8	34.2	40.3	42.0	48.3	55.0	54.1

Table A.2 continued

Indirect Business Taxes																
History	14.6	15.3	16.2	16.5	15.6	16.3	18.0	19.0	19.3	20.4	20.0	21.2	21.7	23.9	23.3	24.8
Stable Policies	14.5	14.8	15.1	15.5	16.0	15.5	16.1	17.0	17.4	18.2	19.2	20.7	22.2	23.8	25.9	27.8
Social Insurance Contributions																
History	20.5	23.1	24.0	25.0	33.2	36.8	40.8	47.0	49.8	54.9	62.8	79.5	89.9	94.2	105.7	118.9
Stable Policies	21.1	23.3	26.0	28.7	31.9	35.1	39.5	45.0	49.7	54.6	62.5	78.3	88.5	96.7	106.4	117.2
Defense Purchases (billions of 1972 dollars)																
History	82.6	79.5	75.6	73.9	86.1	98.4	100.6	95.3	85.1	75.9	73.6	69.5	66.4	65.8	64.4	65.8
Stable Policies	82.3	81.2	80.1	79.0	86.1	98.4	100.6	95.3	85.1	75.9	73.6	70.8	69.9	68.9	68.0	66.5
Nondefense Purchases (billions of 1972 dollars)																
History	20.5	22.7	24.9	26.6	26.4	26.8	27.7	26.5	25.6	28.1	28.6	27.1	29.4	30.9	32.2	35.7
Stable Policies	20.0	20.8	21.7	22.6	23.5	24.5	25.5	26.6	27.7	28.8	30.0	31.3	32.6	33.9	35.4	36.3
Grants-in-Aid (billions of 1972 dollars)																
History	13.2	14.8	16.5	17.0	21.0	21.9	24.2	24.8	27.7	30.7	37.5	37.8	37.1	42.1	44.2	45.9
Stable Policies	13.4	14.6	15.8	17.2	18.7	20.3	22.0	23.9	26.0	28.2	30.6	32.7	36.1	39.2	42.6	45.5
OTHER POLICY VARIABLES																
Effective Investment Tax Credit on Equipment (percent)																
History	3.70	5.23	5.60	5.60	4.20	4.20	5.60	1.40	0.00	3.65	5.60	5.60	5.60	9.00	9.00	9.00
Stable Policies	3.18	3.40	3.64	3.90	4.17	4.46	4.77	5.11	5.46	5.85	6.26	6.69	7.16	7.67	8.20	8.78
Federal Funds Rate (percent)																
History	2.68	3.18	3.50	4.07	5.11	4.22	5.66	8.21	7.18	4.66	4.43	8.73	10.50	5.83	5.04	5.53
Stable Policies	2.49	1.97	3.18	3.86	4.63	4.40	5.93	7.56	6.98	6.06	5.98	6.89	8.01	7.02	6.51	6.68
Nonborrowed Reserves																
History	19.8	19.6	20.4	21.2	22.2	23.8	25.5	26.3	27.5	30.0	32.3	31.6	34.4	34.9	34.3	34.7
Stable Policies	19.9	20.7	21.4	22.2	23.1	24.0	25.1	26.3	27.5	29.3	31.0	31.9	35.9	34.7	33.8	33.8

APPENDIX B:

The Results Assuming Accommodating Monetary Policy

Table B.1
The Impact of the Revenue Act of 1964,
Accommodating Monetary Policy
(Difference from base simulation)

	1964	1965	1966	1967
Economy		(Percent Difference)		
Real GNP	0.9	1.5	1.6	1.1
Real Consumption	1.1	2.0	2.2	1.7
Real Nonres. Fixed Investment	0.6	1.6	2.3	2.5
Real Res. Fixed Investment	1.2	3.6	6.0	5.1
		(Difference in Level)		
Housing Starts (mil. units)	0.029	0.072	0.102	0.081
Automobile Sales (mil. units)	0.3	0.4	0.1	-0.2
Real Net Exports (billion $)	-0.2	-1.1	-2.2	-2.5
Savings Rate (%)	0.9	1.1	1.3	1.6
Inflation and Unemployment		(Difference in Rate of Growth)		
Implicit Price Deflator	0.1	0.4	0.6	0.6
Wholesale Price Index	0.1	0.4	0.4	0.3
Unemployment Rate*	-0.2	-0.6	-0.6	-0.5
Incomes		(Percent Difference)		
Real Disposable Income	2.1	3.1	3.5	3.4
Compensation Per Manhour**	0.1	0.4	0.6	0.7
Real Aftertax Profits	7.0	10.5	9.0	6.7
Interest Rates		(Difference in Rate)		
3-Month Treasury Bill	0.08	0.18	0.26	0.29
Federal Funds Rate	0.00	0.08	0.18	0.30
Prime Rate	-0.03	0.03	0.09	0.27
New High-Grade Corp. Bond Rate	0.07	0.23	0.50	0.77
Federal Government		(Difference in Level)		
Receipts				
Personal Taxes	-6.5	-7.5	-7.5	-7.7
Corporate Taxes	-0.3	-1.6	-2.1	-2.7
Expenditures	-0.1	-0.1	0.3	1.0
Fed. Budget Surplus (NIA)	-6.3	-8.1	-8.5	-9.8

*Difference in rate
**Difference in rate of growth

Table B.2
The Impact of the Expenditure Buildup, 1962-1965,
Accommodating Monetary Policy
(Difference from base simulation)

	1962	1963	1964	1965
Economy		(Percent Difference)		
Real GNP	0.6	0.9	1.2	1.1
Real Consumption	0.2	0.5	0.8	0.6
Real Nonres. Fixed Investment.	0.3	0.9	1.5	1.4
Real Res. Fixed Investment	0.3	0.9	0.9	0.7
		(Difference in Level)		
Housing Starts (mil. units)	0.007	0.016	0.015	0.009
Automobile Sales (mil. units).	0.1	0.2	0.1	0.0
Real Net Exports (billion $)	-0.1	-0.4	-0.7	-1.0
Savings Rate (%)	0.2	0.2	0.2	0.3
Inflation and Unemployment		(Difference in Rate of Growth)		
Implicit Price Deflator	0.0	0.2	0.3	0.4
Wholesale Price Index	0.0	0.2	0.3	0.4
Unemployment Rate*	-0.1	-0.3	-0.4	-0.4
Incomes		(Percent Difference)		
Real Disposable Income	0.4	0.7	1.0	1.0
Compensation Per Manhour**	0.1	0.2	0.4	0.4
Real Aftertax Profits	1.5	2.0	1.8	0.7
Interest Rates		(Difference in Rate)		
3-Month Treasury Bill	0.02	0.04	0.07	0.10
Federal Funds Rate	0.00	0.03	0.09	0.15
Prime Rate	0.00	0.03	0.09	0.17
New High-Grade Corp. Bond Rate	-0.05	0.01	0.08	0.19
Federal Government		(Difference in Level)		
Receipts				
Personal Taxes	0.4	0.9	1.3	1.7
Corporate Taxes	0.4	0.5	0.6	0.5
Expenditures	1.8	2.4	3.2	4.0
Fed. Budget Surplus (NIA)	-0.8	-0.6	-0.7	-1.0

*Difference in rate
**Difference in rate of growth

Table B.3
The Impact of the Revenue and Expenditure Control Act of 1968, Accommodating Monetary Policy
(Difference from base simulation)

	1968	1969	1970
Economy			
	(Percent Difference)		
Real GNP	-0.3	-1.1	-0.9
Real Consumption	-0.3	-1.4	-1.1
Real Nonres. Fixed Investment	-0.3	-1.3	-2.0
Real Res. Fixed Investment	-0.2	-1.7	-1.4
	(Difference in Level)		
Housing Starts (mil. units)	-0.007	-0.035	-0.024
Automobile Sales (mil. units)	-0.1	-0.4	-0.1
Real Net Exports (billion $)	0.1	1.0	1.8
Savings Rate (%)	-0.4	-0.9	-0.2
Inflation and Unemployment			
	(Difference in Rate of Growth)		
Implicit Price Deflator	0.0	-0.3	-0.4
Wholesale Price Index	0.0	-0.3	-0.4
Unemployment Rate*	0.1	0.4	0.4
Incomes			
	(Percent Difference)		
Real Disposable Income	-0.7	-2.3	-1.3
Compensation Per Manhour**	0.0	-0.3	-0.4
Real Aftertax Profits	-10.5	-13.2	-3.6
Interest Rates			
	(Difference in Rate)		
3-Month Treasury Bill	-0.06	-0.13	-0.09
Federal Funds Rate	0.00	-0.03	-0.10
Prime Rate	0.04	0.05	-0.06
New High-Grade Corp. Bond Rate	-0.02	-0.10	-0.25
Federal Government			
	(Difference in Level)		
Receipts			
Personal Taxes	3.0	7.1	0.4
Corporate Taxes	3.7	2.8	0.3
Expenditures	0.0	-0.3	-1.3
Fed. Budget Surplus (NIA)	6.6	9.3	0.8

*Difference in rate
**Difference in rate of growth

Table B.4
The Impact of the Tax Reduction Act of 1975, Accommodating Monetary Policy
(Difference from base simulation)

	1975	1976	1977
Economy		(Percent Difference)	
Real GNP	1.0	1.4	1.7
Real Consumption	1.3	1.5	1.8
Real Nonres. Fixed Investment	1.2	4.8	6.6
Real Res. Fixed Investment	1.9	3.7	4.0
		(Difference in Level)	
Housing Starts (mil. units)	0.037	0.069	0.091
Automobile Sales (mil. units)	0.3	0.3	0.2
Real Net Exports (billion $)	-1.0	-2.3	-3.9
Savings Rate (%)	0.9	1.0	0.9
Inflation and Unemployment		(Difference in Rate of Growth)	
Implicit Price Deflator	0.1	0.4	0.6
Wholesale Price Index	0.2	0.5	0.6
Unemployment Rate*	-0.3	-0.6	-0.7
Incomes		(Percent Difference)	
Real Disposable Income	2.2	2.5	2.7
Compensation Per Manhour**	0.2	0.4	0.7
Real Aftertax Profits	6.4	5.8	6.0
Interest Rates		(Difference in Rate)	
3-Month Treasury Bill	0.10	0.09	0.12
Federal Funds Rate	0.00	0.05	0.18
Prime Rate	-0.02	0.09	0.32
New High-Grade Corp. Bond Rate	0.14	0.46	0.77
Federal Government		(Difference in Level)	
Receipts			
Personal Taxes	-13.7	-12.4	-10.9
Corporate Taxes	-0.5	1.2	1.5
Expenditures	1.6	1.5	2.3
Fed. Budget Surplus (NIA)	-14.6	-10.4	-7.7

*Difference in rate
**Difference in rate of growth

	Years															
	1962	1963	1964	1965	1966	1967	1968	19[illegible]	1970	1971	1972	1973	1974	1975	1976	1977
GNP and Its Components---Billions of Dollars - SAAR																
Total Consumption	355.2	374.6	400.4	430.2	464.8	490.4	535.9	579.7	618.8	668.1	733.0	809.9	889.6	980.4	1093.9	1211.3
Nonres. Fixed Investment	51.3	53.6	59.6	71.3	81.4	82.1	89.3	98.9	100.5	104.0	116.8	136.0	150.6	149.1	161.9	185.4
Res. Fixed Investment	27.4	30.7	31.1	31.2	28.8	28.7	34.5	37.9	36.6	49.6	62.0	66.1	55.1	51.4	68.0	91.0
Inventory Investment	6.5	6.0	5.8	9.5	14.3	10.1	7.7	9.4	3.8	6.3	9.4	17.9	8.9	-11.5	13.3	17.4
Net Exports	5.4	6.3	8.9	7.6	5.0	4.9	2.3	1.7	3.9	1.6	-3.3	7.2	6.0	20.3	7.8	-10.1
Federal Purchases	63.7	64.6	65.2	67.3	78.8	90.9	[illegible]0	97.5	95.6	96.2	102.1	102.2	111.1	123.3	130.1	145.4
State and Local	54.3	59.0	64.6	71.1	79.8	89.3	100.7	110.4	123.2	137.5	151.0	167.4	191.6	215.6	231.2	249.5
Gross National Product	563.8	594.8	635.7	688.2	753.0	796.3	868.5	935.6	982.4	1063.4	1171.1	1306.6	1412.9	1528.7	1706.3	1889.9
Real GNP (1972 Dollars)	799.1	830.7	874.4	926.0	981.0	1007.7	1051.9	1078.9	1075.3	1107.5	1171.1	1235.0	1217.9	1202.1	1274.6	1337.4
Prices and Wages --- Annual Rates of Change																
Implicit Price Deflator	1.8	1.5	1.6	2.2	3.3	3.0	4.5	5.0	5.4	5.1	4.1	5.8	9.7	9.6	5.3	5.5
Fixed Weight Deflator	1.7	1.4	1.3	2.0	3.2	3.2	4.4	5.0	5.2	5.0	4.1	5.8	9.5	9.2	5.6	5.9
Consumer Price Index	1.2	1.2	1.3	1.6	3.0	2.8	4.2	5.4	5.9	4.2	3.3	6.2	11.0	9.2	5.7	6.5
Wholesale Price Index	0.2	-0.3	0.2	2.0	3.3	0.2	2.5	3.9	3.7	3.3	4.4	13.1	18.8	9.2	4.6	6.2
Compensation per Hour	4.0	3.7	4.7	3.5	5.9	5.7	7.4	6.4	6.9	6.4	5.8	7.7	9.4	9.8	8.7	8.8
Production and Other Key Measures																
Industrial Production (67=1)	0.721	0.766	0.817	0.898	0.977	1.000	1.063	1.112	1.078	1.096	1.197	1.297	1.293	1.178	1.298	1.371
Annual Rate of Change	8.3	6.2	6.7	9.9	8.8	2.3	6.3	4.6	-3.1	1.7	9.2	8.4	-0.3	-8.9	10.1	5.6
Housing Starts(Mil. Units)	1.459	1.589	1.541	1.469	1.167	1.285	1.504	1.487	1.434	2.035	2.361	2.045	1.332	1.161	1.541	1.966
Retail Unit Car Sales(Mil. Units)	7.0	7.7	8.1	9.4	9.1	8.4	9.6	9.6	8.4	10.3	11.0	11.4	9.0	8.7	10.1	11.2
Unemployment Rate (%)	5.6	5.6	5.2	4.5	3.8	3.8	3.6	3.5	5.0	6.0	5.6	4.9	5.6	8.5	7.7	7.0
Federal Budget Surplus (NIA)	-4.2	0.3	-3.3	0.5	-1.8	-13.1	-5.8	8.5	-12.2	-22.0	-17.3	-6.7	-10.7	-70.2	-54.0	-50.2
Money and Interest Rates																
Money Supply (M1)	150.4	156.4	163.4	170.5	175.5	186.6	200.7	208.5	218.7	233.3	252.9	268.7	282.3	294.5	311.1	334.1
Annual Rate of Change	1.4	4.0	4.5	4.3	2.9	6.3	7.5	3.9	4.9	6.7	8.4	6.2	5.1	4.3	5.6	7.4
New AA Corp. Utility Rate (%)	4.35	4.34	4.47	4.60	5.47	5.92	6.64	7.85	8.76	7.69	7.42	7.83	9.42	9.45	8.67	8.33
New High-Grade Corp.Bond Rate (%)	4.23	4.24	4.40	4.54	5.44	5.77	6.48	7.68	8.50	7.36	7.16	7.65	8.96	9.01	8.33	8.06
Federal Funds Rate (%)	2.68	3.18	3.50	4.07	5.11	4.22	5.66	8.21	7.18	4.66	4.43	8.73	10.50	5.83	5.04	5.53
Prime Rate (%)	4.50	4.50	4.50	4.53	5.62	5.63	6.28	7.95	7.91	5.70	5.25	8.02	10.80	7.86	6.84	6.82
Incomes---Billions of Dollars																
Personal Income	440.7	463.1	495.7	537.0	584.9	626.6	685.3	745.8	801.3	859.1	942.5	1052.4	1154.9	1253.3	1382.6	1536.6
Real Disposable Income (%Ch)	4.2	3.3	7.0	6.2	5.1	4.1	3.8	2.5	4.0	3.8	4.2	6.6	-1.5	1.8	3.9	4.5
Saving Rate (%)	5.3	4.6	6.0	6.4	6.5	7.5	6.5	5.6	7.4	7.7	6.2	7.8	7.3	7.4	5.6	5.1
Profits Before Tax	53.5	57.7	64.7	75.2	80.8	77.3	85.6	83.4	71.4	81.9	96.1	115.8	126.9	123.5	156.8	171.3
Profits After Tax	29.6	31.5	36.7	44.3	47.1	44.8	46.1	43.8	37.0	44.3	54.6	67.1	74.6	73.4	92.1	102.7
Annual Rate of Change	14.7	6.3	16.6	20.8	6.2	-4.8	2.9	-5.2	-15.5	19.7	23.3	22.9	11.2	-1.6	25.5	11.6
Composition Of Real GNP --- Annual Rates of Change																
Gross National Product	5.8	4.0	5.3	5.9	5.9	2.7	4.4	2.6	-0.3	3.0	5.7	5.5	-1.4	-1.3	6.0	4.9
Final Sales	5.1	4.0	5.4	5.5	5.4	3.3	4.8	2.4	0.3	2.8	5.5	4.9	-0.7	0.2	4.5	4.7
Total Consumption	4.5	3.8	5.5	5.6	5.0	2.9	5.0	3.5	2.1	3.4	5.9	4.7	-0.9	1.9	6.0	4.9
Nonres. Fixed Investment	8.2	3.7	10.2	18.0	10.9	-2.4	4.4	5.8	-3.7	-1.9	8.2	12.2	-0.3	-13.7	3.6	8.8
Equipment	10.6	6.6	11.7	17.4	13.5	-1.8	5.8	6.4	-4.3	-1.4	12.0	15.2	3.0	-13.2	4.2	11.1
Nonres. Construction	5.1	0.0	8.2	18.7	7.3	-3.3	2.1	4.9	-2.7	-2.6	1.9	6.9	-6.4	-14.8	2.2	3.6
Res. Fixed Investment	9.2	12.8	1.3	-1.4	-10.8	-3.4	15.1	1.0	-6.6	29.2	18.9	-3.7	-24.6	-13.9	23.1	19.2
Exports	6.9	6.5	13.2	2.8	5.1	5.1	7.8	6.3	7.9	1.2	7.0	20.3	6.4	-3.3	6.5	2.2
Imports	11.5	3.3	5.5	11.0	15.4	7.2	16.2	7.9	3.4	4.3	10.9	5.1	-3.4	-12.6	10.3	10.2
Federal Government	7.8	-0.9	-1.5	-0.1	12.0	11.3	2.5	-5.1	-9.1	-6.2	-1.7	-5.4	-0.8	0.9	-0.1	5.0
State and Local	3.2	6.1	7.0	6.8	7.0	5.4	6.4	3.0	3.4	4.3	3.8	3.3	3.8	2.7	1.0	1.1

[1]Based on pre-July 1977 revisions.

Table C.2
Solution Summary: No 1964 Tax Cut, No Change in Monetary Policy

	Years			
	1964	1965	1966	1967
GNP and Its Components---Billions of Dollars - SAAR				
Total Consumption	395.6	420.3	451.6	476.4
Nonres. Fixed Investment	59.2	70.0	79.4	80.0
Res. Fixed Investment	30.8	30.6	27.7	27.6
Inventory Investment	5.3	8.7	13.8	10.0
Net Exports	9.0	8.3	6.5	6.5
Federal Purchases	65.2	67.3	78.9	91.0
State and Local	64.5	70.5	78.3	86.9
Gross National Product	629.8	675.7	736.1	778.3
Real GNP (1972 Dollars)	867.3	913.5	968.0	998.8
Prices and Wages --- Annual Rates of Change				
Implicit Price Deflator	1.4	1.8	2.8	2.5
Fixed Weight Deflator	1.3	1.6	2.7	2.7
Consumer Price Index	1.3	1.3	2.6	2.4
Wholesale Price Index	0.1	1.6	3.0	0.1
Compensation per Hour	4.6	3.0	5.4	5.1
Production and Other Key Measures				
Industrial Production (67=1)	0.808	0.883	0.966	0.997
Annual Rate of Change	5.5	9.3	9.5	3.2
Housing Starts(Mil. Units)	1.524	1.444	1.115	1.243
Retail Unit Car Sales(Mil. Units)	7.9	9.0	9.0	8.6
Unemployment Rate (%)	5.4	5.0	4.3	4.3
Federal Budget Surplus (NIA)	3.2	9.3	8.0	-1.9
Money and Interest Rates				
Money Supply (M1)	163.4	171.2	176.9	189.7
Annual Rate of Change	4.5	4.7	3.3	7.3
New AA Corp. Utility Rate (%)	4.37	4.30	4.90	5.08
New High-Grade Corp.Bond Rate (%)	4.31	4.26	4.89	4.97
Federal Funds Rate (%)	3.30	3.52	4.35	3.27
Prime Rate (%)	4.41	4.21	5.22	4.99
Incomes---Billions of Dollars				
Personal Income	492.5	528.2	571.1	609.9
Real Disposable Income (%Ch)	4.8	5.1	4.7	4.2
Saving Rate (%)	5.0	5.3	5.2	6.0
Profits Before Tax	62.5	72.6	79.1	77.2
Profits After Tax	34.2	39.9	43.0	41.7
Annual Rate of Change	8.6	16.8	7.6	-3.0
Composition Of Real GNP --- Annual Rates of Change				
Gross National Product	4.4	5.3	6.0	3.2
Final Sales	4.6	5.0	5.4	3.7
Total Consumption	4.3	4.7	4.9	3.3
Nonres. Fixed Investment	9.6	17.1	10.6	-2.1
Equipment	10.9	16.6	13.2	-1.7
Nonres. Construction	7.9	17.9	7.0	-2.7
Res. Fixed Investment	0.5	-1.9	-12.0	-2.8
Exports	13.0	2.5	5.1	5.2
Imports	4.9	3.3	13.4	7.2
Federal Government	-1.4	0.2	12.5	11.8
State and Local	7.0	6.5	6.7	5.3

Table C.3
Solution Summary: No 1964 Tax Cut and Removal of Accommodating Monetary Policy

	Years			
	1964	1965	1966	1967
GNP and Its Components---Billions of Dollars - SAAR				
Total Consumption	395.5	419.8	450.8	475.5
Nonres. Fixed Investment	59.2	69.7	78.6	78.6
Res. Fixed Investment	30.7	29.9	26.6	26.6
Inventory Investment	5.3	8.5	13.6	9.7
Net Exports	9.0	8.4	6.6	6.7
Federal Purchases	65.2	67.3	78.9	91.0
State and Local	64.5	70.4	78.1	86.5
Gross National Product	629.5	674.0	733.1	774.5
Real GNP (1972 Dollars)	866.9	911.6	965.3	996.4
Prices and Wages --- Annual Rates of Change				
Implicit Price Deflator	1.4	1.8	2.7	2.4
Fixed Weight Deflator	1.3	1.6	2.6	2.6
Consumer Price Index	1.3	1.3	2.6	2.3
Wholesale Price Index	0.1	1.6	2.8	0.0
Compensation per Hour	4.5	3.0	5.3	5.0
Production and Other Key Measures				
Industrial Production (67=1)	0.807	0.879	0.961	0.991
Annual Rate of Change	5.5	8.9	9.2	3.2
Housing Starts(Mil. Units)	1.512	1.397	1.065	1.204
Retail Unit Car Sales(Mil. Units)	7.9	9.0	8.9	8.6
Unemployment Rate (%)	5.4	5.1	4.4	4.4
Federal Budget Surplus (NIA)	3.1	8.7	6.8	-3.3
Money and Interest Rates				
Money Supply (M1)	162.8	169.2	173.4	184.4
Annual Rate of Change	4.1	3.9	2.5	6.4
New AA Corp. Utility Rate (%)	4.39	4.36	4.95	5.11
New High-Grade Corp.Bond Rate (%)	4.33	4.31	4.94	5.00
Federal Funds Rate (%)	3.50	4.00	4.93	3.92
Prime Rate (%)	4.53	4.51	5.53	5.37
Incomes---Billions of Dollars				
Personal Income	492.4	527.5	569.6	607.9
Real Disposable Income (%Ch)	4.8	5.0	4.6	4.3
Saving Rate (%)	5.0	5.3	5.1	5.9
Profits Before Tax	62.3	71.9	78.1	76.3
Profits After Tax	34.1	39.5	42.4	41.2
Annual Rate of Change	8.4	15.9	7.3	-2.9
Composition Of Real GNP --- Annual Rates of Change				
Gross National Product	4.4	5.2	5.9	3.2
Final Sales	4.5	4.8	5.3	3.7
Total Consumption	4.3	4.6	4.8	3.4
Nonres. Fixed Investment	9.5	16.8	10.1	-2.6
Equipment	10.8	16.3	12.7	-2.2
Nonres. Construction	7.8	17.5	6.5	-3.2
Res. Fixed Investment	0.1	-3.7	-13.1	-2.5
Exports	13.0	2.5	5.1	5.2
Imports	4.9	8.0	13.1	7.1
Federal Government	-1.4	0.3	12.6	11.9
State and Local	6.9	6.5	6.6	5.3

Table C.4
Solution Summary: No Expenditure Buildup, No Change in Monetary Policy

	Years			
	1962	1963	1964	1965
GNP and Its Components---Billions of Dollars - SAAR				
Total Consumption	354.3	372.4	397.1	426.3
Nonres. Fixed Investment	51.1	53.1	58.9	70.5
Res. Fixed Investment	27.3	30.6	31.2	31.2
Inventory Investment	6.2	5.8	5.7	9.6
Net Exports	5.5	6.5	9.3	7.9
Federal Purchases	61.9	62.1	61.9	63.4
State and Local	54.2	58.7	64.0	70.1
Gross National Product	560.6	589.2	627.9	679.1
Real GNP (1972 Dollars)	794.6	824.3	867.0	919.7
Prices and Wages --- Annual Rates of Change				
Implicit Price Deflator	1.8	1.3	1.3	1.9
Fixed Weight Deflator	1.6	1.2	1.1	1.7
Consumer Price Index	1.1	1.1	1.1	1.4
Wholesale Price Index	0.2	-0.4	0.0	1.8
Compensation per Hour	4.0	3.6	4.4	3.2
Production and Other Key Measures				
Industrial Production (67=1)	0.718	0.760	0.812	0.897
Annual Rate of Change	7.8	5.9	6.9	10.4
Housing Starts(Mil. Units)	1.456	1.597	1.560	1.490
Retail Unit Car Sales(Mil. Units)	7.0	7.6	8.1	9.4
Unemployment Rate (%)	5.7	5.9	5.5	4.7
Federal Budget Surplus (NIA)	-3.4	1.3	-1.6	2.8
Money and Interest Rates				
Money Supply (M1)	150.1	156.1	163.4	170.8
Annual Rate of Change	1.2	4.0	4.7	4.5
New AA Corp. Utility Rate (%)	4.39	4.28	4.34	4.39
New High-Grade Corp.Bond Rate (%)	4.27	4.18	4.29	4.34
Federal Funds Rate (%)	2.63	2.91	3.11	3.65
Prime Rate (%)	4.47	4.33	4.23	4.21
Incomes---Billions of Dollars				
Personal Income	438.6	458.8	489.3	529.2
Real Disposable Income (%Ch)	3.8	3.0	6.9	6.2
Saving Rate (%)	5.2	4.4	5.7	6.0
Profits Before Tax	52.8	56.9	64.1	74.9
Profits After Tax	29.2	31.0	36.4	44.2
Annual Rate of Change	13.1	6.4	17.1	21.4
Composition Of Real GNP --- Annual Rates of Change				
Gross National Product	5.2	3.7	5.2	6.1
Final Sales	4.6	3.8	5.3	5.6
Total Consumption	4.2	3.6	5.4	5.7
Nonres. Fixed Investment	7.9	3.2	10.1	18.5
Equipment	10.1	6.1	11.5	17.9
Nonres. Construction	5.0	-0.4	8.2	19.3
Res. Fixed Investment	9.0	13.2	2.0	-1.1
Exports	6.9	6.3	13.1	2.9
Imports	11.0	2.6	4.8	11.2
Federal Government	4.7	-1.8	-2.5	-0.5
State and Local	3.2	5.9	6.9	6.8

Table C.5
Solution Summary: No Expenditure Buildup and Removal of Accommodating Monetary Policy

	Years			
	1962	1963	1964	1965
GNP and Its Components---Billions of Dollars - SAAR				
Total Consumption	354.2	371.9	395.5	424.1
Nonres. Fixed Investment	51.1	53.0	58.3	69.4
Res. Fixed Investment	27.3	30.3	30.6	30.5
Inventory Investment	6.2	5.7	5.4	9.4
Net Exports	5.5	6.5	9.4	8.2
Federal Purchases	61.9	62.1	61.9	63.4
State and Local	54.2	58.7	63.8	69.8
Gross National Product	560.5	588.1	625.0	674.7
Real GNP (1972 Dollars)	794.5	823.0	864.0	916.1
Prices and Wages --- Annual Rates of Change				
Implicit Price Deflator	1.8	1.3	1.2	1.8
Fixed Weight Deflator	1.6	1.2	1.0	1.6
Consumer Price Index	1.1	1.1	1.1	1.3
Wholesale Price Index	0.2	-0.4	-0.1	1.6
Compensation per Hour	3.9	3.5	4.3	3.0
Production and Other Key Measures				
Industrial Production (67=1)	0.717	0.758	0.807	0.890
Annual Rate of Change	7.8	5.7	6.5	10.3
Housing Starts(Mil. Units)	1.452	1.573	1.526	1.461
Retail Unit Car Sales(Mil. Units)	7.0	7.5	8.0	9.3
Unemployment Rate (%)	5.7	6.0	5.6	4.9
Federal Budget Surplus (NIA)	-3.4	0.9	-2.6	1.5
Money and Interest Rates				
Money Supply (M1)	149.9	155.0	161.1	167.6
Annual Rate of Change	1.1	3.4	3.9	4.0
New AA Corp. Utility Rate (%)	4.40	4.33	4.38	4.40
New High-Grade Corp.Bond Rate (%)	4.28	4.24	4.31	4.35
Federal Funds Rate (%)	2.68	3.14	3.41	3.93
Prime Rate (%)	4.50	4.47	4.41	4.37
Incomes---Billions of Dollars				
Personal Income	438.5	458.4	487.8	526.6
Real Disposable Income (%Ch)	3.8	3.0	6.8	6.2
Saving Rate (%)	5.2	4.5	5.8	6.1
Profits Before Tax	52.7	56.4	63.2	73.9
Profits After Tax	29.1	30.8	35.8	43.6
Annual Rate of Change	12.9	5.7	16.4	21.6
Composition Of Real GNP --- Annual Rates of Change				
Gross National Product	5.2	3.6	5.0	6.0
Final Sales	4.6	3.7	5.1	5.6
Total Consumption	4.2	3.5	5.2	5.7
Nonres. Fixed Investment	7.9	3.0	9.6	13.0
Equipment	10.1	5.8	11.0	17.4
Nonres. Construction	5.0	-0.5	7.7	18.9
Res. Fixed Investment	8.8	12.1	1.3	-1.2
Exports	6.9	6.3	13.1	2.9
Imports	11.0	2.4	4.4	10.7
Federal Government	4.8	-1.8	-2.4	-0.4
State and Local	3.2	5.9	6.8	6.7

Table C.6
Solution Summary: No 1968 Surcharge, No Change in Monetary Policy

	Years		
	1968	1969	1970
GNP and Its Components---Billions of Dollars - SAAR			
Total Consumption	537.7	588.3	627.0
Nonres. Fixed Investment	89.6	100.4	102.7
Res. Fixed Investment	34.6	38.3	36.3
Inventory Investment	8.2	10.8	4.0
Net Exports	2.2	1.0	2.7
Federal Purchases	98.0	97.8	96.2
State and Local	100.8	111.0	124.7
Gross National Product	871.2	947.6	993.6
Real GNP (1972 Dollars)	1054.8	1089.8	1081.4
Prices and Wages --- Annual Rates of Change			
Implicit Price Deflator	4.5	5.3	5.7
Fixed Weight Deflator	4.4	5.2	5.5
Consumer Price Index	4.2	5.5	6.2
Wholesale Price Index	2.5	4.2	3.9
Compensation per Hour	7.4	6.6	7.2
Production and Other Key Measures			
Industrial Production (67=1)	1.068	1.127	1.083
Annual Rate of Change	6.8	5.5	-3.9
Housing Starts(Mil. Units)	1.510	1.494	1.406
Retail Unit Car Sales(Mil. Units)	9.7	9.9	8.4
Unemployment Rate (%)	3.5	3.2	4.7
Federal Budget Surplus (NIA)	-12.4	-1.2	-14.3
Money and Interest Rates			
Money Supply (M1)	200.9	209.6	220.3
Annual Rate of Change	7.7	4.3	5.1
New AA Corp. Utility Rate (%)	6.67	8.03	9.10
New High-Grade Corp.Bond Rate (%)	6.51	7.85	8.82
Federal Funds Rate (%)	5.68	8.54	7.76
Prime Rate (%)	6.25	7.98	8.20
Incomes---Billions of Dollars			
Personal Income	686.8	754.7	811.8
Real Disposable Income (%Ch)	4.5	4.1	2.9
Saving Rate (%)	6.9	6.5	7.6
Profits Before Tax	86.8	86.2	71.7
Profits After Tax	50.9	49.4	38.0
Annual Rate of Change	13.6	-3.1	-23.1
Composition Of Real GNP --- Annual Rates of Change			
Gross National Product	4.7	3.3	-0.8
Final Sales	5.0	3.1	-0.1
Total Consumption	5.3	4.5	1.7
Nonres. Fixed Investment	4.7	6.7	-3.4
Equipment	6.1	7.1	-4.0
Nonres. Construction	2.6	6.1	-2.5
Res. Fixed Investment	15.3	1.4	-8.5
Exports	7.9	6.6	7.9
Imports	16.3	9.6	4.4
Federal Government	2.5	-5.1	-9.1
State and Local	6.4	3.2	3.6

Table C.7
Solution Summary: No 1968 Surcharge and Removal of Accommodating Monetary Policy

	Years		
	1968	1969	1970
GNP and Its Components---Billions of Dollars - SAAR			
Total Consumption	537.8	588.7	628.4
Nonres. Fixed Investment	89.6	100.6	103.4
Res. Fixed Investment	34.6	38.7	37.4
Inventory Investment	8.2	10.9	4.3
Net Exports	2.2	1.0	2.5
Federal Purchases	98.0	97.8	96.2
State and Local	100.8	111.0	125.0
Gross National Product	871.3	948.6	997.2
Real GNP (1972 Dollars)	1054.9	1090.8	1084.6
Prices and Wages --- Annual Rates of Change			
Implicit Price Deflator	4.5	5.3	5.7
Fixed Weight Deflator	4.4	5.2	5.6
Consumer Price Index	4.2	5.5	6.2
Wholesale Price Index	2.5	4.2	4.0
Compensation per Hour	7.4	6.6	7.3
Production and Other Key Measures			
Industrial Production (67=1)	1.068	1.129	1.089
Annual Rate of Change	6.8	5.7	-3.6
Housing Starts(Mil. Units)	1.511	1.521	1.458
Retail Unit Car Sales(Mil. Units)	9.7	9.9	8.5
Unemployment Rate (%)	3.5	3.1	4.6
Federal Budget Surplus (NIA)	-12.4	-0.8	-13.0
Money and Interest Rates			
Money Supply (M1)	201.0	210.6	222.5
Annual Rate of Change	7.7	4.8	5.7
New AA Corp. Utility Rate (%)	6.67	7.96	9.03
New High-Grade Corp.Bond Rate (%)	6.50	7.78	8.75
Federal Funds Rate (%)	5.66	8.23	7.28
Prime Rate (%)	6.24	7.90	7.97
Incomes---Billions of Dollars			
Personal Income	686.8	755.2	813.7
Real Disposable Income (%Ch)	4.5	4.1	3.0
Saving Rate (%)	6.9	6.5	7.5
Profits Before Tax	86.8	86.7	72.8
Profits After Tax	51.0	49.6	38.5
Annual Rate of Change	13.6	-2.6	-22.3
Composition Of Real GNP --- Annual Rates of Change			
Gross National Product	4.7	3.4	-0.6
Final Sales	5.0	3.2	0.1
Total Consumption	5.3	4.5	1.8
Nonres. Fixed Investment	4.7	6.3	-3.0
Equipment	6.1	7.2	-3.6
Nonres. Construction	2.6	6.2	-2.1
Res. Fixed Investment	15.3	2.4	-6.9
Exports	7.9	6.6	7.9
Imports	16.3	9.7	4.7
Federal Government	2.5	-5.1	-9.1
State and Local	6.4	3.2	3.7

Table C.8
Solution Summary: No 1975 Tax Cut, No Change in Monetary Policy

	Years		
	1975	1976	1977
GNP and Its Components---Billions of Dollars - SAAR			
Total Consumption	967.8	1076.0	1182.9
Nonres. Fixed Investment	147.2	154.0	173.6
Res. Fixed Investment	50.6	66.9	89.4
Inventory Investment	-13.2	12.4	16.8
Net Exports	21.8	10.8	-5.0
Federal Purchases	123.3	130.1	145.4
State and Local	215.2	229.3	245.4
Gross National Product	1512.9	1679.7	1848.5
Real GNP (1972 Dollars)	1190.5	1259.6	1319.7
Prices and Wages --- Annual Rates of Change			
Implicit Price Deflator	9.5	4.9	5.0
Fixed Weight Deflator	9.1	5.2	5.3
Consumer Price Index	9.1	5.5	6.1
Wholesale Price Index	9.1	4.3	5.7
Compensation per Hour	9.7	8.3	8.3
Production and Other Key Measures			
Industrial Production (67=1)	1.162	1.272	1.342
Annual Rate of Change	-10.2	9.5	5.5
Housing Starts(Mil. Units)	1.138	1.532	1.966
Retail Unit Car Sales(Mil. Units)	8.4	9.8	11.1
Unemployment Rate (%)	8.7	8.2	7.6
Federal Budget Surplus (NIA)	-55.3	-41.8	-38.6
Money and Interest Rates			
Money Supply (M1)	294.5	311.9	336.3
Annual Rate of Change	4.3	5.9	7.8
New AA Corp. Utility Rate (%)	9.29	8.19	7.60
New High-Grade Corp.Bond Rate (%)	8.86	7.88	7.36
Federal Funds Rate (%)	5.54	4.33	4.42
Prime Rate (%)	7.74	6.35	5.95
Incomes---Billions of Dollars			
Personal Income	1242.0	1362.9	1504.9
Real Disposable Income (%Ch)	-0.4	3.7	4.4
Saving Rate (%)	6.5	4.6	4.3
Profits Before Tax	119.2	150.9	165.0
Profits After Tax	68.7	87.2	97.2
Annual Rate of Change	-7.9	26.9	11.6
Composition Of Real GNP --- Annual Rates of Change			
Gross National Product	-2.2	5.8	4.8
Final Sales	-0.7	4.2	4.5
Total Consumption	0.6	5.9	4.5
Nonres. Fixed Investment	-14.7	0.2	7.6
Equipment	-14.4	0.0	9.5
Nonres. Construction	-15.4	0.7	3.7
Res. Fixed Investment	-15.1	23.6	20.1
Exports	-3.5	6.3	2.2
Imports	-13.9	16.6	8.8
Federal Government	1.1	0.2	5.5
State and Local	2.7	0.7	0.8

Table C.9
Solution Summary: No 1975 Tax Cut and Removal of Accommodating Monetary Policy

	Years		
	1975	1976	1977
GNP and Its Components---Billions of Dollars - SAAR			
Total Consumption	967.5	1074.3	1179.3
Nonres. Fixed Investment	147.2	153.1	170.8
Res. Fixed Investment	50.3	65.0	85.8
Inventory Investment	-13.2	12.0	15.9
Net Exports	21.8	11.2	-4.3
Federal Purchases	123.3	130.1	145.4
State and Local	215.1	229.0	244.6
Gross National Product	1512.1	1674.8	1837.6
Real GNP (1972 Dollars)	1189.9	1256.6	1314.2
Prices and Wages --- Annual Rates of Change			
Implicit Price Deflator	9.5	4.9	4.9
Fixed Weight Deflator	9.1	5.2	5.2
Consumer Price Index	9.1	5.5	6.0
Wholesale Price Index	9.0	4.2	5.5
Compensation per Hour	9.7	8.3	8.1
Production and Other Key Measures			
Industrial Production (67=1)	1.161	1.266	1.330
Annual Rate of Change	-10.2	9.1	5.0
Housing Starts(Mil. Units)	1.125	1.472	1.876
Retail Unit Car Sales(Mil. Units)	8.4	9.8	11.0
Unemployment Rate (%)	8.8	8.3	7.7
Federal Budget Surplus (NIA)	-55.6	-43.6	-42.5
Money and Interest Rates			
Money Supply (M1)	293.5	308.2	329.2
Annual Rate of Change	4.0	5.0	6.8
New AA Corp. Utility Rate (%)	9.30	8.19	7.53
New High-Grade Corp.Bond Rate (%)	8.87	7.87	7.29
Federal Funds Rate (%)	5.82	5.00	5.36
Prime Rate (%)	7.88	6.75	6.50
Incomes---Billions of Dollars			
Personal Income	1241.7	1360.6	1499.3
Real Disposable Income (%Ch)	-0.5	3.6	4.3
Saving Rate (%)	6.5	4.6	4.2
Profits Before Tax	118.9	149.4	162.0
Profits After Tax	68.5	86.3	95.4
Annual Rate of Change	-8.1	25.9	10.6
Composition Of Real GNP --- Annual Rates of Change			
Gross National Product	-2.3	5.6	4.6
Final Sales	-0.7	4.0	4.4
Total Consumption	0.6	5.7	4.5
Nonres. Fixed Investment	-14.7	-0.2	6.8
Equipment	-14.4	-0.5	8.6
Nonres. Construction	-15.4	0.2	2.7
Res. Fixed Investment	-15.5	20.9	18.8
Exports	-3.5	6.3	2.1
Imports	-14.0	16.2	8.3
Federal Government	1.1	0.3	5.7
State and Local	2.6	0.7	0.9

Table C.10
Solution Summary: Stable Fiscal and Monetary Policies

	Years															
	1962	1963	1964	1965	1966	1967	1968	1970	1971	1972	1973	1974	1975	1976	1977
GNP and Its Components---Billions of Dollars - SAAR															
Total Consumption	358.2	383.0	408.1	435.6	465.3	485.1	525.8	573.9	612.1	658.1	720.2	791.1	885.9	991.0	1088.1	1191.0
Nonres. Fixed Investment	51.5	54.9	62.0	73.5	82.0	81.7	87.7	95.4	102.3	111.7	119.7	132.2	151.1	161.8	171.7	184.1
Res. Fixed Investment	27.8	33.8	33.9	32.1	28.1	26.9	31.3	35.4	36.3	46.8	55.8	63.6	62.8	60.7	66.1	80.4
Inventory Investment	6.7	7.2	6.3	9.1	13.4	9.1	7.3	10.5	5.5	6.7	8.1	16.0	11.4	-7.8	12.0	12.4
Net Exports	5.3	5.7	7.8	6.6	5.1	5.7	3.7	3.2	4.1	1.0	-2.8	8.0	3.8	12.7	4.6	-8.4
Federal Purchases	63.3	64.8	66.7	68.9	77.8	90.0	96.5	97.1	96.7	96.0	102.3	106.4	116.8	129.7	138.5	146.6
State and Local	54.4	59.6	65.9	73.3	80.9	89.0	98.7	107.6	119.9	134.1	146.0	160.1	185.1	212.1	231.9	250.3
Gross National Product	567.2	609.0	650.9	699.2	752.6	787.4	851.0	923.1	977.1	1054.4	1149.4	1277.6	1416.8	1560.3	1712.8	1856.3
Real GNP (1972 Dollars)	803.2	847.0	886.7	928.4	967.8	988.7	1030.0	1071.1	1079.9	1110.1	1163.6	1228.1	1246.6	1245.2	1289.5	1322.2
Prices and Wages --- Annual Rates of Change																
Implicit Price Deflator	1.9	1.8	2.1	2.6	3.2	2.4	3.7	4.3	5.0	5.0	4.0	5.3	9.3	10.2	6.0	5.7
Fixed Weight Deflator	1.7	1.6	1.9	2.4	3.1	2.7	3.7	4.2	4.8	4.8	3.9	5.3	9.1	10.0	6.3	6.0
Consumer Price Index	1.2	1.4	1.7	2.0	3.1	2.4	3.6	4.8	5.6	4.1	3.2	5.9	10.7	9.5	6.2	6.8
Wholesale Price Index	0.3	0.0	0.6	2.2	3.1	-0.4	1.8	3.4	3.5	3.3	4.4	12.2	18.0	9.8	5.0	6.2
Compensation per Hour	4.2	4.0	5.5	4.1	5.2	5.2	6.7	5.6	6.8	6.2	5.5	7.3	9.2	10.7	9.2	8.8
Production and Other Key Measures																
Industrial Production (67=1)	0.726	0.791	0.839	0.903	0.959	0.974	1.038	1.103	1.096	1.116	1.190	1.287	1.350	1.256	1.320	1.333
Annual Rate of Change	9.1	9.0	6.0	7.7	6.2	1.6	6.5	6.3	-0.7	1.9	6.6	8.2	4.8	-7.0	5.1	1.0
Housing Starts(Mil. Units)	1.488	1.802	1.661	1.454	1.092	1.150	1.308	1.395	1.454	1.898	2.111	2.126	1.757	1.402	1.447	1.705
Retail Unit Car Sales(Mil. Units)	7.2	8.1	8.2	8.9	8.5	7.9	9.3	9.9	8.9	10.4	10.8	11.3	9.7	9.4	9.9	10.5
Unemployment Rate (%)	5.4	5.0	4.5	4.3	4.2	4.5	4.3	3.9	4.9	5.8	5.8	5.2	5.1	7.0	7.2	7.4
Federal Budget Surplus (NIA)	-7.5	-4.0	-2.3	-0.4	0.1	-4.1	-0.5	2.2	-8.4	-14.3	-11.3	-0.9	-9.6	-36.0	-40.8	-48.2
Money and Interest Rates																
Money Supply (M1)	151.6	164.9	173.8	180.9	184.3	191.1	200.5	208.4	220.6	232.0	246.1	268.3	291.4	306.6	317.9	333.9
Annual Rate of Change	2.3	8.8	5.4	4.1	1.8	3.7	5.0	3.9	5.9	5.2	6.1	9.0	8.6	5.2	3.7	5.0
New AA Corp. Utility Rate (%)	4.37	4.02	3.98	4.25	5.12	5.57	6.35	7.40	8.30	7.78	7.86	7.50	8.87	9.92	9.46	8.60
New High-Grade Corp.Bond Rate (%)	4.25	3.93	3.94	4.21	5.10	5.44	6.21	7.24	8.07	7.45	7.58	7.33	8.45	9.48	9.08	8.31
Federal Funds Rate (%)	2.49	1.97	3.18	3.86	4.63	4.40	5.93	7.56	6.98	6.06	5.98	6.89	8.01	7.02	6.51	6.68
Prime Rate (%)	4.39	3.73	4.31	4.51	5.43	5.71	6.34	7.62	7.67	6.69	6.71	7.09	9.07	8.53	8.09	7.92
Incomes---Billions of Dollars																
Personal Income	442.6	473.4	509.1	548.2	590.1	625.5	676.5	740.3	794.6	850.4	925.9	1023.7	1146.0	1264.1	1384.3	1518.6
Real Disposable Income (%Ch)	5.8	5.0	5.5	5.5	3.0	2.3	3.7	4.7	3.6	3.7	4.5	5.5	0.9	1.9	3.3	3.3
Saving Rate (%)	6.0	5.9	6.6	7.3	6.6	6.7	5.8	5.5	6.7	7.3	6.1	7.0	6.8	5.9	5.5	5.2
Profits Before Tax	54.9	62.8	66.9	74.2	77.5	72.7	81.1	82.6	73.9	82.5	91.0	110.4	133.2	129.9	150.7	151.6
Profits After Tax	30.1	34.3	36.7	41.3	43.8	37.0	40.1	44.6	41.5	47.5	52.1	64.6	84.5	74.1	87.1	89.0
Annual Rate of Change	16.8	13.7	7.0	12.6	6.1	-15.6	8.6	11.0	-6.8	14.4	9.6	24.1	30.7	-12.3	17.6	2.1
Composition Of Real GNP --- Annual Rates of Change																
Gross National Product	6.3	5.5	4.7	4.7	4.2	2.2	4.2	4.0	0.8	2.8	4.8	5.5	1.5	-0.1	3.6	2.5
Final Sales	5.6	5.4	4.9	4.4	3.8	2.7	4.5	3.7	1.4	2.7	4.7	5.0	1.9	1.3	2.4	2.5
Total Consumption	5.3	5.0	4.7	4.5	3.8	2.1	4.8	5.0	2.4	3.1	5.8	4.5	1.3	3.0	3.7	3.4
Nonres. Fixed Investment	8.5	5.2	11.2	16.3	8.6	-2.8	4.0	4.9	1.8	3.2	3.4	7.2	3.5	-7.5	0.3	1.9
Equipment	11.1	8.1	11.8	15.3	11.1	-1.7	5.9	4.8	2.9	5.8	5.8	8.8	6.6	-7.3	0.7	4.3
Nonres. Construction	5.2	1.4	10.4	17.7	5.1	-4.4	1.1	5.1	0.2	-0.9	-1.0	4.4	-2.5	-7.7	-0.5	-3.4
Res. Fixed Investment	10.6	22.1	-0.8	-7.5	-15.1	-6.4	12.0	5.0	-0.1	23.2	13.7	3.5	-10.3	-11.4	0.5	8.2
Exports	7.0	6.9	13.3	2.5	4.5	4.8	7.8	6.6	8.4	1.4	6.9	20.1	7.2	-2.4	5.8	1.5
Imports	12.0	6.1	7.6	9.7	10.7	4.7	14.4	8.5	6.5	5.9	9.1	3.9	-0.5	-6.3	13.1	5.3
Federal Government	6.9	-0.3	-0.1	-0.2	7.9	12.1	2.7	-3.4	-7.4	-7.3	-1.1	-1.3	0.3	0.4	0.5	-0.6
State and Local	3.4	6.5	7.0	7.0	5.6	4.4	5.6	3.6	3.7	4.6	3.1	2.7	5.3	3.7	2.0	0.8

A STUDY IN COUNTER-CYCLICAL POLICY

ABSTRACT

The revision in Congressional budgeting procedures has resulted in an increased legislative awareness of the impact of budgeting decisions on aggregate economic activity and an increased use of quantitative methods of evaluating fiscal policies. Testimony and reports, based on simulation results of econometric models have been brought to bear on major legislative proposals including the Humphrey-Hawkins bill, the 1977 tax rebate proposal and the energy bill.

Despite all of the testimony regarding the impact of any single proposal, it is often difficult to identify the aggregate impact of policy decisions. The question that the decison makers must face after all of the debate and discussion is what impact policy decisions in toto have had on the path that the U.S. economy has followed over the past fourteen years.

This report discusses:

(1) the impact of several episodes of discretionary fiscal policy, over the period 1964-76, in terms of sectoral impacts on demand and production

(2) the impact on the levels of economic activity and also on the cyclicality of the economy

In addition, the report summarizes the impact of the total federal sector on the cyclical behavior of the economy during the period 1964-1976.

I. RESEARCH OBJECTIVES

During the past fifteen years attitudes concerning the effectiveness and appropriateness of counter-cyclical policy have undergone a dramatic reversal. In the mid-60's, professional economists and policymakers joined in a celebration of the conquest of the business cycle. The belief that not only could macro-economic fiscal and monetary policy offset any cyclical tendency, but that improvements in measuring policy impacts and predicting their need provided an ability to "fine-tune" the economy, gained widespread currency.

During the last five years, the apparent inability of economic policy to maintain high levels of activity without high levels of inflation have led to questions concerning both the ability of traditional monetary and fiscal policy to deal with cyclical shocks to the economy and the appropriateness of attempting to offset those shocks using policy tools. The research described in this report is an attempt to evaluate the impacts of counter-cyclical policy over the period 1964-1976. The objectives of the research are to measure and to analyze the cyclical impact of the federal sector, whether intentional or not, on the economy.

Although the use of econometric models in policy analysis has gained widespread acceptance, the necessity of summarizing the overall impact of policy options has generally restricted analysis for policy purposes to a comparison of the paths of major economic aggregates with alternative policies. In addition to describing the responses of aggregate activity to public sector actions, the specific objectives of the study are to trace the broad outlines of causality as represented by the model structure. Detailed analysis will also indicate the major beneficiaries of policy actions. Finally, by analyzing the effects on the cycle of the interaction of policy, including both fiscal and monetary, we can attempt to isolate the effects of individual policy actions when other actions that neutralized or amplified them are controlled.[1/]

While other studies have attempted to measure the influence of policy by analyzing the direction in which policy instruments were moving before or during a cyclical episode most of these studies suffer from two major flaws. First, observations are taken on policy instruments rather than the impact of policy thus failing to account for either possible lags in cyclical impacts or interaction of the multiplicity of policy instruments. Second, these studies have concentrated on cyclical episodes. While analyzing those periods when counter-cyclical policy failed is not without its uses, it avoids the

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[1/] For a technical discussion of this issue, see Appendix I.

question of whether policy, in toto, has exacerbated or vitiated the cyclical behavior of the economy. Analyzing these pathological periods ignores the question of whether extended periods of non-cyclical behavior occurred in spite of or because of government policy actions.

The specific objectives of the research fall into two categories: (1) analysis of periods of major discretionary policy alterations and (2) analysis of the effects of fiscal and monetary actions over the entire period.

Under the first heading, the 1964 tax cut, the Vietnam war build-up and the period of fiscal restraint in the early 1970's are examined. The goal in each instance is to identify the effects of the policy on incomes, demand, production, employment and prices. While some attention is given to the impact of the policy on the cyclicality of the economy, the periods analyzed are, in general, too short to reach any firm conclusions concerning the effectiveness of policy on reducing the cyclical movement of the economy.

The analysis of the longer period reverses this emphasis. Rather than reporting on the effects of specific policy steps, the goal here is to reach conclusions concerning the effects of fiscal and monetary policy on the level and variation of economic activity.

II. RESEARCH STRATEGY

The research strategy consists of intensive examination of the impacts of several major policy episodes during the last fifteen years and a more extensive examination of fiscal effects for the entire period. The episodic analyses include:

(1) the 1964 tax cut (196304-196704)

(2) the Vietnam War build-up (196504-196904)

(3) the 1973 fiscal restraint (197104-197504)

For each of these episodes the strategy is to identify the major policy initiative of interest and measure its impact on both the level of economic activity and the cyclical behavior of major aggregates over the relevant period.

The array of monetary and fiscal policy actions to which one can attribute discernible macro-economic effects is remarkable for its length.[1/] When this list is lengthened to include policies

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[1/] See "Chronology of Major Fiscal and Monetary Policies (1960-1977)," Committee on the Budget, U. S. House of Representatives, January 1978.

which would affect major aggregates but may not be counted as macroeconomic policy, for example, alterations by regulatory agencies or the mix of expenditures including employment, etc., it is clear that evaluating the impact of these actions is a formidable challenge.

While a structural econometric model with enough disaggregation to exhibit a wide array of policy instruments and detailed final demand and output categories would appear to be a valuable tool for this type of analysis, two questions regarding the use of a model must be faced. Any analysis with an econometric model starts with the premise that the model accurately measures the response of the economy to policy initiatives and that at the appropriate level of aggregation it can capture all marginal policy changes within the policy vector represented in the model. Table II.1 provides a partial listing of exogenous public sector variables included in the Wharton Quarterly Model, Mark 5.0, used for this study. While quite detailed it is clearly not exhaustive. Fortunately, there is a methodology available which allows us to capture the impact of policies not included in the model policy set. This is to rely on the single equation errors from each behavioral relationship to capture the impact of policy variables not covered by the model. If the residuals from each behavioral equation are added to that equation as we solve the model through time, the solution values for the model will reproduce history. Altering the value of any policy variable then gives us a measure of the impact of that

Table II.1 Exogenous Public Sector Variables

Federal

TDBDG$ - U.S. Government Demand Deposits at Commercial Banks
GVGIA$ - Grants-in-Aid to State and Local Governments
GVPFD$ - Defense Purchases of Goods and Services
GVPFO$ - Non-Defense Purchases of Goods and Services
GVPTGDAV$ - Federal Government Purchases of Automobiles
GVSUBTF$ - Subsidies Less Currrent Surplus of Federal Government Enterprises
ITRA - Effect Investment Tax Credit Rate, by Industry
LNT - Effective Tax Life of Equipment and Structures, by Industry.
NEETTGVF - Federal Government Employees
NLM - Armed Forces
ORNACGD$ - New Orders for Defense Capital Goods
TEBGTEDOD$ - Exports Under U.S. Military Agency Sale Contract
TMBDE$ - Imports Direct Defense Expenditures
TRGFPRES$ - U.S. Federal Government Transfers to Persons Other than Unemployment Insurance Benefits
TXCBFOIL$ - Indirect Business Taxes on Crude Oil Imports
TXCSTP$/TXCSTT$ - Ratio of Employee Contributions of Social Insurance to Total
TXOPFEV$ - Statutory Exemption for Federal Personal Income Tax
TXOSMAXY$ - Maximum Earned Income Subject to Social Security Tax
TXRBTEFBC - Index of U.S. Import Duty Rate
TXRGF - Federal Tax on Gasoline per Gallon
TXRITE - Effective Corporate Tax Rate, by Industry
TXRITNF - Statutory Marginal Corporate Profits Tax Rate
TXRPTNFY - Personal Income Tax Rate, First Nine Brackets by Bracket
TXRSTEF - Effective Social Security Tax Rate
WBSGVFGDM$ - Military Wages and Salaries
WRCGVFG$ - Federal General Government Compensation Per Man Year, Including Military

Table II.1. (Continued)

State and Local

GVSUBTS$ - Subsidies Less Current Surplus of State and Local Government Enterprises
GVPS$ - State and Local Purchases of Goods and Services
NEETTGVS - State and Local Employees
TRGSP$ - State and Local Transfer Payments to Persons
TXRBTESRES - Effective Tax Rate for State and Local Indirect Business Taxes
TXRGS - State and Local Gasoline Tax
WRCGVSG$ - State and Local Compensation per Man Year

Monetary Authorities

FBFASSO$/O+B$ - Proportion of Federal Reserve Holdings of Other U.S. Securities to Total
FREN$* - Non-borrowed Reserves
FRMBPC - Maximum Interest Rate Payable on Passbook Saving Accounts
FRMCDC - Maximum Interest Rate Payable on Large Certificates of Deposit
FRMDNY - Discount Rate, New York Federal Reserve Bank
FRRED - Effective Reserve Requirement, Demand Deposits
FRRET - Effective Reserve Requirement, Time Deposits

Not Elsewhere Classified

XGVE$ - Output Originating in Federal, State and Local Enterprises

policy based solely on the structural representation of the model and assuming that all other policies remain the same. This procedure clearly opens us to the possibility that the residual error is at least partially attributable to misspecification or inaccurate measurement of the impact of the policy being investigated. In at least one instance, it was found necessary to modify the solution as a result of this type of problem.

III. THE 1964 TAX CUT

The Impact on Activity Levels

The first stage in evaluating the impact of the 1964 tax cut is a comparison of a model solution in which all exogenous variables assume historical values with a solution in which the model parameters describing the tax cut are set to values they would have assumed if taxes had not been cut.[1/] Table III.1 describes the estimated impact in terms of the major income effects after the effects of the tax cut have been allowed to work through the economy. As the table indicates, after the stimulative effects of the tax cut have worked their way through the economy, the reduction in personal taxes is estimated at about $8.3 billion in CY64 and rises to near $11.0 billion in CY67. But this estimated revenue loss includes the additional revenues collected as a result of the higher level of personal income. The personal income increase, resulting from the tax cut, rises to nearly $20.0 billion by CY67. At an average tax rate of about 10.4%, this represents $2.0 billion in additional collections at the post-tax cut rates. Without this additional revenue, the tax cut

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[1/] Appendix II contains a complete description of alterations in model variables for the simulations reported.

would have reduced collections by nearly $13.0 in 1967. For 1965, at an average tax rate of 9.75%, this increased revenue is only $0.75 billion.

Personal disposable income rises by the amount of the tax cut plus the extra personal income less additional taxes paid to states and localities and in the form of federal excise and social insurance contributions. As Table III.1 indicates, this latter category amounted to only $0.1 billion in 1964 but rose to $1.5 billion in 1967.

Table III.1

Estimated Impact of the 1964 Tax Cut on Tax Collections and Incomes. All Other Policies Constant. (Billions of Dollars)

	1964	1965	1966	1967
Federal Personal Income Taxes	-8.3	-10.7	-10.9	-10.9
Personal Income	2.0	7.4	13.3	19.6
Disposable Personal Income	10.2	17.8	23.4	29.2
Federal Corporate Profits Taxes	.6	-.1	-.2	-2.5
Corporate Profits Before Taxes	3.4	5.6	5.4	1.9
Corporate Profits After Taxes	2.7	5.6	5.4	4.3

Turning to the impact on the corporate side, the estimated impact on collections is actually positive in 1964 with an increase in collections of just over $0.5 billion as a result of a $3.4 billion

dollar increase in profits. The increase in before tax profits peaks in 1965 at $5.6 billion and declines to about $2.0 billion by 1967. This decline, while personal income continues to climb, is a result of more rapid compensation increases than would have occurred if taxes had not been reduced.[1/] While productivity increases are estimated to increase more rapidly as a result of the increased levels of activity in 1964 and 1965, productivity actually grows more slowly as a result of the stimulus in 1966 and 1967. This with higher compensation per manhour results in higher unit labor costs. The estimated price pass through is not great enough to make up for this increased cost.

After all of the effects of the tax cut have worked through the system, it is possible to estimate the effect on revenues, expenditures and the deficit. We have assumed that certain of these would not have been altered by the tax cut. If purchases of goods and services, including civilian and military employment; transfer payments other than unemployment compensation; grants-in-aid; and subsidies less surpluses had been the same, we estimate that without a tax cut the federal revenues for 1964 would have been $7.5 billion greater and expenditures approximately $0.3 billion greater. The difference between the $7.5 billion total and the $8.0 billion loss in revenue pictured in the table is accounted for by small increases in indirect

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[1/] It should be noted that this effect is largely a function of the low levels of unemployment reached as a result of the tax cut and would vary greatly if the tax cut had occurred when the rate was higher.

business taxes and social insurance contributions. Without the tax cut, expenditures on unemployment compensation would have risen while interest payments would have been lower. These two combine to yield the estimated increase. The increase in the deficit in 1964 as a result of the tax cut is $7.3 billion rather than the $7.7 billion directly estimated from the revenue loss of the two income taxes. By 1967, the deficit position is $14.8 billion more compared to a revenue loss of $13.4 billion from the two income taxes. This is primarily a result of an estimated increase in interest payments of nearly $6.0 billion.[1/]

Finally, we note that the benefits of the tax cut accrued very much to the household sector. Of a total after tax increase in income of $33.5 billion in 1967, more than 85% appeared as personal disposable income.

Tables III.2 and III.3 summarize the estimated impact of the tax cut on final demand. As is to be expected from the distribution of benefits, the major effect of the tax cut was an increase in personal consumption expenditures. Approximately 80% of the increase in Gross National Product is a result of increased consumption. A

[1/] While there is an increase in the accumulated deficit of approximately $44.0 billion, and an increase of nearly 40 basis points in the Treasury Bill rate by the end of 1967 when taxes are reduced, this does not seem sufficient to warrant the large increase. The outstanding Federal debt (not a model variable) in 1967 was $344.7. The change resulting from the tax cut and interest rate increases would be expected to be nearer $3.0 billion than the model estimate of $6.0 billion.

Table III.2

Estimated Impact of the 1964 Tax Cut on Final Demand,
All Other Policies Constant
(Billions of Dollars)

	1964	1965	1966	1967
Gross National Product	5.9	13.5	18.0	21.2
Personal Consumption Expenditures	4.6	9.8	14.2	17.6
Residential Investment	.1	.1	- .8	- .3
Non-Residential Investment	.9	2.9	4.1	4.2
Change in Business Inventories	.7	1.5	1.5	1.0
Net Exports	- .4	- .9	- 1.0	- 1.2

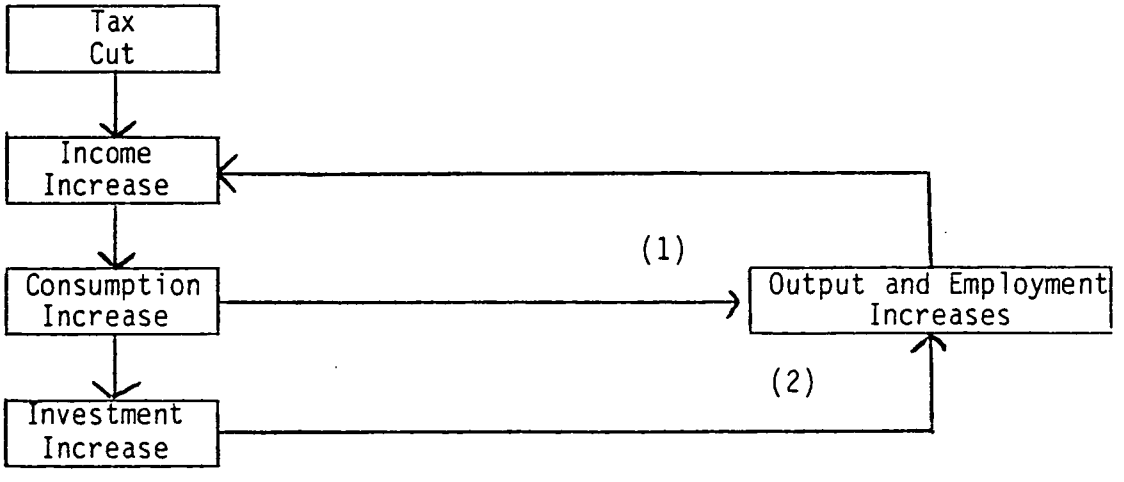
Table III.3

Estimated Impact of the 1964 Tax Cut on Final Demand,
All Other Policies Constant
(Billions of 1972 Dollars)

	1964	1965	1966	1967
Gross National Product	8.2	18.5	20.2	19.4
Personal Consumption Expenditures	6.3	13.4	16.6	17.6
Residential Investment	.2	.2	- 1.2	- .6
Non-Residential Investment	1.3	4.0	5.0	4.4
Change in Business Inventories	.9	1.9	1.8	1.1
Net Exports	- .5	- 1.1	- 1.5	- 1.9

comparison of the increases in disposable personal income in Table III.1 with the increases in personal consumption expenditures in Table III.2 illustrates the dynamics of the income-consumption-saving sector and is useful in illuminating the discussions concerning the increment to savings resulting from the tax cut. In 1964, the estimated increase in disposable personal income resulting from the tax cut is $10.2 billion. Personal consumption expenditures are estimated to have risen only by about 45% of this amount. The equivalent percentages for 1965-1967 are 55%, 61% and 60%. While the portion of the additional income generated by the tax cut which is spent rises from its initial level, it seems to stabilize at about 60%. This is below the average portion of disposable income devoted to consumption which tends to be about 90.0%. This pattern reflects the dynamics of the cyclical pattern set up by the tax cut. Figure 1 is a simplified flow chart of the successive impacts of the tax cut. The initial impact is an

Figure 1.



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increase in income which leads to an increase in consumption. As indicated by loop (1), this alone will stimulate output and employment leading to further increases in income. In addition, the increased consumption demand will lead to increases in investment which again, following loop (2), leads to increases in output, employment and income. Clearly, this process is reinforcing. Several things act to damp the system. First and foremost, not all of the additional income is spent on consumption. This means that on successive iterations through loop (1), the feedback becomes smaller. Secondly, many "leakages" appear in the real economy. Some of the increased consumption demand is channeled into imports which do not generate additional domestic output and employment. Some of the additional income is funneled off in the form of higher average tax rates as people move into higher brackets. In loop (2), a damping effect is produced through the "accelerator" mechanism. Very simply, the increased demand for consumption goods generates a demand for a larger stock of capital to produce these goods. This results in an increase in investment which is sustained until that new desired stock of capital is reached. Then investment declines.

Clearly, the process of the economy responding to this stimulus can take a great deal of time. During the period when investment is high, the total saving must remain high to fund the demand for resources. If these resources cannot be bid away from other sectors then investment must decline. This saving may be done by the public

or private sector, and in the latter case by the household, business or foreign segments of the private economy. During the 1964-67 period all of the incremental saving required to support the additional investment came from the private sector, with the increment split approximately 2/3 to 1/3 between personal savings and corporate retained earnings. The low portion of the incremental income devoted to consumption in the 1964-1967 period is attributable both to the time necessary to adjust consumption to higher income levels and the higher level of investment generated by the tax cut.

Tables III.2 and III.3 reflect the responses discussed above. The initial impact largely on consumption expenditures; followed by increases in non-residential investment and inventory accumulation which increase in 1965 and 1966 and begin to decline in 1967; increases in imports which damp the stimulus as they increase. Residential investment appears to behave oddly in view of the discussion and deserves special comment. Our estimate is that, while small increases in residential investment in 1964 and 1965 can be attributed to the tax cut, if other policies had followed their same course residential investment would have been higher in 1966 and 1967 without the tax cut.

This result is largely attributable to the convention followed in defining monetary policy. For purposes of this analysis, policy is defined in terms of non-borrowed reserves, a monetary aggregate directly controllable by the Federal Reserve.[1/] If this

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[1/] For a discussion of this convention, see the analysis of cyclical impacts below and Appendix III.

aggregate had followed the same path but taxes had not been cut, it is estimated that both short and long-term interest rates would have averaged 40 to 50 basis points lower in 1967 than the rates that actually prevailed. These lower interest rates would have led to higher levels of residential construction despite lower income levels prevailing in the absence of the tax cut.

Tables III.4 and III.5 are estimates of the changes in value added by industry resulting from the tax cut. This third view of the responses of the economy to the tax cut completes the National Income Accounts picture of income, final purchases and output as alternative descriptions of the economy. The estimated responses reflect the traditional view of the manufacturing sector of the economy as the most cyclical sector. More than 50% of the increase in GNP is in this sector. This is in contrast to an average share of GNP of 25-30% over this period. Wholesale and retail trade also exhibit a sizable increase in value added in response to the tax stimulus.

The largest beneficiaries of a tax cut on the production side are firms in the durable manufacturing sector. Over a third of the increase in output appears in this sector. The major forces which operate to produce this result are strong investment growth and a heavy concentration of consumption growth in the durable goods area in the incremental growth brought on by the tax cut.[1/]

[1/] Durable goods account for approximately 12.5% of consumer expenditures during this period, but 17.5-20.0% of incremental expenditures.

Table III.4

Estimated Impact of the 1964 Tax Cut on Output Originating, All Other Policies Constant (Billions of Current Dollars)

	1964	1965	1966	1967
Agriculture	.1	.2	.3	.3
Mining	.1	.1	.1	.1
Durable Manufacturing	2.1	5.1	6.5	6.2
Non-Durable Manufacturing	1.1	2.5	4.2	4.9
Transportation	.3	.7	.7	.8
Communication	.3	.5	.6	.7
Utilities	.1	.2	.3	.3
Contract Construction	.2	.5	.3	.7
Finance, Insurance and Real Estate	.6	1.0	1.1	1.1
Services	.4	.9	1.4	2.1
Wholesale and Retail Trade	.9	1.9	2.8	4.2

Table III.5

Estimated Impact of the 1964 Tax Cut on Output Originating, All Other Policies Constant (Billions of 1972 Dollars)

	1964	1965	1966	1967
Agriculture	.2	.3	.3	.4
Mining	.1	.1	.1	.1
Durable Manufacturing	2.8	6.7	7.1	6.6
Non-Durable Manufacturing	1.3	2.7	3.2	3.3
Transportation	.4	.9	1.0	.9
Communication	.3	.6	.8	.8
Utilities	.1	.3	.4	.4
Contract Construction	.3	.7	.4	.4
Finance, Insurance and Real Estate	1.1	2.3	2.6	2.4
Services	.6	1.3	1.5	1.3
Wholesale and Retail Trade	1.3	2.7	3.1	3.0

Table III.6

Estimated Impact of the 1964 Tax Cut on Labor Markets, All Other Policies Constant

	1964	1965	1966	1967
Civilian Labor Force (millions)	-.09	.02	.24	.38
Civilian Employment (millions)	.19	.68	1.07	1.19
Unemployment Rate	-.38	-.89	-1.10	-1.07

The stimulus to output from the tax cut is estimated to have resulted in an increase in employment of nearly 1.2 million persons by 1967. This did not, however, yield an equivalent reduction in the number of unemployed. The higher wages and greater job prospects attract additional participants to the labor force. These additional participants are estimated at nearly 400,000 by 1967. In combination, these two developments lower the average unemployment rate for 1967 by more than 1.0%. The evolution of the economy toward these totals from 1964 through 1967 is fairly steady with employment up about 200,000 in 1964, 700,000 in 1965, and just over 1,000,000 in 1966. There is an apparent anomaly in 1964 where the civilian labor force actually declines rather than increases. This is the result of a faster response to the increase in constant dollar per capita income, which acts to reduce participation, than to the increased real wages and employment opportunities which act to increase participation. As time passes, these latter effects overcome the income effect leading to higher participation rates than would have occurred in the absence of the tax cut.

Table III.7

Estimated Impact of the 1964 Tax Cut on Prices,
All Other Policies Constant

	1964	1965	1966	1967
GNP, Implicit Deflator	0.0	0.02	.3	.6
Consumer Price Index	-.1	-.1	.2	.7
Wholesale Price Index	0.0	0.0	0.0	.1

Table III.7 summarizes estimates of the impact of the tax cut on the aggregate price level. It is estimated that as a result of the tax cut, the price level exhibited almost no change in 1964 and 1965 or a small decline. This is followed by substantially greater price increases in 1966 and 1967 than would have occurred without the tax cut. The estimated inflation rates for the Consumer Price Index and GNP Implicit Deflator are 0.3 to 0.5 percent lower without the tax cut. These results are based largely on the responses of compensation per manhour and productivity to the fiscal stimulus. The unemployment rate was near 5.5% in late 1963 and early 1964 and had been hovering near this level for nearly two years. With the exception of brief periods in 1959 and 1960, the unemployment rate had not been below this level since 1957. Private compensation per manhour increased approximately 3.5% in 1963. With the stimulus of the tax cut, and a decline of nearly 0.5% in the average unemployment rate, this increase was greater than 4.5% in 1964. With labor markets becoming even tighter in 1965, the compensation increase fell back to less than 3.5%. This wage behavior is explicable only in terms of price expecta-

tions. This period of relatively high unemployment is also the period of greatest price stability since World War II. The implicit price deflator rose less than 2.0% in each of the years from 1960-1964. This experience offset much of the impact of tighter labor markets on wages in 1964 and 1965. It is estimated that the rate of increase in compensation was less than 0.1% greater in 1964 and 0.3% greater in 1965 as a result of the additional stimulus. This increase in wage costs was offset by productivity gains that are estimated to have been 0.6 percent greater in 1964 and .25 percent greater in 1965 with the additional stimulus.

By 1966, with the unemployment rate falling below 4.0% and productivity gains that are estimated to be lower than what otherwise would have occurred, the additional stimulus leads to both greater compensation increases (up 0.6% in 1966 and 1.1% in 1967) and greater price increases than what would have occurred.

The Cyclical Impact of the 1964 Tax Cut

Any counter-cyclical policy must, by its very nature, generate cyclical influences of its own. The concept of this type of policy is to set up cycles that will damp cyclical forces that are surfacing in the economy. Cycles may be developing because of a weakness in the private sector unrelated to government policy (a weakness in exports) or caused by policy either deliberately (reduced housing investment because of higher interest rates) or in the course of achieving other goals (reduced consumption brought on by higher social security

taxes). Clearly, perfect counter-cyclical policy will often necessitate offsetting government policies which were not designed with a cyclical impact in mind, but which have a cyclical effect. Thus, at any point in time, we will observe government policies being undertaken which have opposite cyclical impacts. The most obvious example over the post-war period has been increased social security taxes offset by reduced personal taxes.

No matter what the source of the cyclical forces, it is possible to examine the impact of any single policy or group of policies, assuming all other policies are constant in the sense of following their historical paths. This is what we have done above where we have estimated the impact of the 1964 tax cut on the level of economic activity including income, purchases, production, employment and prices. An alternative view of policy is what it does, not to the level of activity, but to the cyclical variance of activity. When the impact of a policy is evaluated in this framework, we may want to examine it not only under the circumstances of all other policies, following their historical paths, but also in terms of its cyclical impact if all other policies had been in some sense "cyclically neutral". By this we would mean that policies had not been contributing to either the amplification or damping of the cycle from the private sector.1/

1/ See Appendix III.

If policy were perfectly designed, it would exactly offset all cyclical forces. In this world, GNP could grow at a steady rate which would approximate the rate of growth of the labor force plus the rate of increase of productivity; prices would rise at a steady rate equal to compensation increases less productivity gains; and the unemployment rate and interest rates could be held constant. The role of fiscal and monetary policy would be to determine the rates of growth by choosing policies to generate the desired choices between investment (saving) and consumption.

This description of an economy in which all cyclical forces have been neutralized suggests an alternative for measuring the level and cyclical impacts of any given policy action. Rather than assuming all other policies follow historical paths, we might attempt to define the path they would have followed if no attempt were being made to affect the cyclical impact either of private sector developments or of other policies. The question of offsetting policy impacts seems particularly important with respect to the relationship between fiscal and monetary policy. Often in the past, major efforts at fiscal stimulus or contraction have been perceived to be countered by monetary policy. To the extent that this is true, the evaluation of the cyclical path of the economy, in the light of an alternative fiscal policy, should examine not only the course of policy when monetary policy follows its historical path, but also when monetary policy is defined in terms that do not allow for the possibility of deliberate attempts

to offset fiscal initiatives. Just as monetary policy, deliberately or otherwise, may amplify or dampen a fiscal stimulus, so other fiscal actions may act to increase or decrease the effect of the tax cut.

In order to compare measures of the impact of the tax cut with all other policies intact against the effect of the tax cut when other policies are cyclically neutral, we have simulated the historical path of the economy both when all policies follow a cyclically neutral pattern and when all other policies are placed on a neutral path but the tax cut occurs.[1/] Summary statistics for these simulations appear in Table III.8.

We have chosen to concentrate on growth rates for constant dollar GNP, the implicit deflator and personal disposable income and the level of the unemployment rate as measures of cyclical behavior. While other measures could be chosen, GNP, the implicit deflator and the unemployment rate are traditional measures and constant dollar disposable income is a very close measure of the economic well-being of the household sector abstracting from distributional aspects. The summary statistics are the mean, variance and coefficient of variation (= standard error/mean).

[1/] The adjustments made to the model to generate these simulations are detailed in Appendix II. There is an important element of arbitrariness in how neutrality is defined which should not be overlooked. The considerations on the basis of which adjustments were determined are discussed in Appendix III.

Table III.8

Average Annual Rate of Increase, 1964-1967
Gross National Product, Constant Dollars

	Mean	Variance	Coefficient of Variation *
History	4.81	6.42	.53
No Tax Cut	4.28	5.33	.54
Neutral Policy	4.07	6.77	.64
Neutral Policy/with Tax Cut	4.80	8.56	.61

Implicit Deflator, Gross National Product

History	2.68	1.39	1.21
No Tax Cut	2.49	1.18	1.11
Neutral Policy	2.40	.91	.98
Neutral Policy/with Tax Cut	2.62	1.95	1.43

Personal Disposable Income, Constant Dollars

History	5.55	8.09	.51
No Tax Cut	4.29	7.08	.62
Neutral Policy	4.09	7.94	.69
Neutral Policy/with Tax Cut	5.52	9.31	.55

Average Level, 1964-1967
Unemployment Rate

History	4.35	.46	.71
No Tax Cut	5.16	.12	.37
Neutral Policy	4.87	.16	.42
Neutral Policy/with Tax Cut	4.01	.46	.70

* For the unemployment rate and inflation rate, the denominator is 1-mean *.01 rather than the mean. This assists in the preference ordering discussed.

The appropriate measures for comparing two possible paths for an economy and indicating which is preferred is a subject which can be debated endlessly. From a conceptual point of view, the theory of economic policy solves the problem neatly by positing a function which can include the moments and/or levels of all variables of interest and a set of weights which allow choices to be made simply on the basis of the value of the function. Rather than attempt to specify such a function, it seems reasonable to discuss cyclical impacts in general terms. We feel that any ranking would a priori have to have the following characteristics:

1. For GNP, more growth is preferred to less and steady growth is preferred to variable growth.

2. For the implicit deflator, the closer inflation is to zero the better. Price stability is preferable to either inflation or deflation. Again, steady inflation (deflation) is preferable to variable inflation.

3. Less unemployment preferable to more.

4. More real income preferable to less.

As in the case of GNP and the deflator, less variance is preferable to more in the last two variables.

The problems, of course, arise when one must choose between less real growth and less inflation, or more growth only with more inflation; or, perhaps, between an economy with higher average growth and more variance in growth.

With these comments in mind, it is possible to attempt to do some ranking of the policies actually followed compared to the alternatives examined. If the historical path of the economy, History, is compared to the estimated experience without the tax cut but with other policies in place, No Tax Cut, we see:

1. Average growth in constant dollar GNP is nearly 0.5% greater with the tax cut;

2. Growth in real disposable income is 1.25% faster on average;

3. The average unemployment rate is 0.8 lower.

All of these seem to indicate that all other policies constant an economy with a tax cut is preferable to one without. However,

1. The average inflation rate increases 0.2%.

2. In the case of each of our four variables, the variance increases <u>with</u> the tax cut.

That is, not only do we have a higher inflation rate, the variability, quarter-by-quarter, of each of these variables is greater when taxes are cut.

Even if we are predisposed to accept the higher inflation to express a preference for one of these episodes over the other, we must be willing to state some preference for increased growth and employment vis-a-vis increased movement around the mean values.

The coefficient of variation is a simple measure of possible trade offs. It rises with an increase in variance and falls with an increase in mean value. If we use this as a ranking device, it implies approximate indifference between a 10.0% increase in the mean growth of GNP and a 10.0% decline in the variance of the growth rate.[1/] While this probably tilts rankings too heavily in favor of variance reductions, it is useful to examine the implications of such a ranking system on the tax cut vs. no tax cut choice.

The ranking problem with respect to GNP and disposable income vanishes. The coefficient of variation declines in each case. With respect to inflation, however, the tax cut produces a higher mean rate, a higher variance and a greater coefficient of variation. The unemployment rate continues to be ambiguous with respect to the mean and variance with a higher coefficient of variation with the tax cut. It is true in this case, however, that the increased variation is not due to movement around the mean so much as the steady fall in unemployment which is the desired goal of the tax cut. Variation of this sort is likely to be less objectionable than short term increases and

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[1/] This is only approximately true since 100/90 = 1.11 rather than 1.10.

decreases that result in uncertainty about job prospects. If one is willing to accept the small negative impact on inflation then one would conclude that, from a cyclical point of view, the tax cut was a successful counter-cyclical move.

We can, however, extend our analysis beyond this to the issue of whether the tax cut was more or less beneficial because of cyclical movements in other policies. By comparing the historical path of the economy, History in Table III.8, with estimates of the path the economy would have followed with the tax cut but with neutral cyclical effects from other policies, we can measure the interaction between the tax cut and other policies. With the exception of the unemployment rate, neutralizing all other policies results in little effect in the mean values for the variables in Table 8. The effect on the unemployment rate is almost entirely attributable to the assumptions concerning Federal government employment with respect to neutrality discussed in Appendix III and may largely be disregarded. With respect to the other variables, however, neutral policies would, on average, have resulted in 30.0% more variation than actually occurred.

Finally, based on a comparison of History and Neutral Policy results, it is possible to estimate the total cyclical impact of discretionary Federal policy during the 1964-67 period. As the simulation results indicate, policy actions on employment, expenditures, taxes and monetary policy contributed substantially to real growth in income, production and employment. It also increased the average rate

of inflation. Given that the tax cut is a substantial part of the discretionary policy during this period, it is not surprising that the overall impact of policy is expansionary.

The more interesting aspect of this view of the total Federal sector is its estimated impact on the measures of cyclicality. The variance of GNP and income growth rates are basically unchanged between neutral policy and history. Following the analysis above, the implication seems to be that the cyclical forces generated by the tax cut were basically offset by other policies and the innate cyclical tendencies of the economy unaffected except for a shift in the level of the growth path of the economy. Whether by accident or design, policy during this short cyclical episode seems to have impacted largely on the level of activity and not on its higher order moments. To the extent that it has affected variability, it would appear to have resulted in greater variance (prices and unemployment) rather than less.

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IV. THE VIETNAM WAR BUILD-UP, 1966-69

Evaluation of the impact of any policy decision requires that a benchmark be established against which one can measure. In the case of a policy which is embodied in legislation, such as a tax cut, a natural alternative is simply to assume that the legislation did not pass. Even in this case, however, certain caveats are in order. Many policy actions are complementary. Personal tax cuts might not have occurred without increases in social security taxes. Major expenditure programs might not have occurred without tax increases. When the desire is to evaluate a systematic policy that has not been embodied in legislation or is based on several pieces of legislation, such as the Vietnam conflict or the fiscal restraint of the early '70's, the choice of a benchmark becomes even more difficult.

While one could base evaluation of the impact of the war on estimates of direct military expenditures, this would ignore the fact that other expenditures were foregone because of the costs of the war, that some expenditures for maintaining and supplying the military which were attributed to Vietnam would have occurred in any case and that tax policy, particularly the surcharge in 1968, would undoubtedly have been different.

This is not to say that it is impossible to measure the impact of the war but simply to emphasize the need to be specific about the nature of the differences in direct actions being associated with an alternative path.

To evaluate the impact of Vietnam on the U.S. economy, decisions must be made concerning the appropriate alternate paths for defense expenditure related variables including defense purchases, military manpower, orders for defense capital goods and military compensation rates. In addition, some evaluation of non-defense expenditures and tax policy is required.

Initially, four alternatives were examined. The primary difference between the paths are the two measures of the reduction in defense expenditures in the absence of the Vietnam War presented in Table IV.1.

An element of arbitrariness must necessarily enter the selection of any "normal" rate of growth of defense purchases. The timing of the replacement of major weapons systems, expenditures on episodic occurrences which do not involve an extended military commitment and other peculiarities of this segment of the budget preclude any unique calculation. The WEFA assumption was that, in the absence of the Vietnam War, constant dollar purchases of defense goods and services would have grown at an annual rate of 1.25% from the fourth quarter of 1965 to the end of 1969. This is the average annual rate

Table IV.1

Alternate Estimates of the Increase in
Defense Purchases Associated with Vietnam

	OMB[1/]	WEFA[2/]
1966	13.0	6.1
1967	23.3	14.8
1968	27.6	16.6
1969	26.0	12.3

1/ Based on "Chronology of Major Fiscal and Monetary Policies, (1960-1977)," Committee on the Budget, U.S. House of Representatives, January, 1978. Fiscal year totals have been interpolated and rebased to calendar years.

2/ The WEFA calculation is based on the assumption that constant dollar defense purchases would have increased at a steady rate in the absence of the war. The rate used is 1.25% per year.

of increase over the period 1956 to 1962 when the end periods are calculated by averaging them with calendar years 1955 and 1963 respectively. This period was chosen in an attempt to eliminate the influence of both the Korean and Vietnam Wars. The end points were averaged to spread the base over longer time periods and eliminate any short-term movements. If the calculation had been based on the period 1955-63 without averaging, annual growth would have been 0.7%, while for 1956-62, growth was 1.6%.

This procedure attempts to benchmark evaluation of the war's impact against a "normal" path. The alternative is to eliminate those costs directly attributable to the war and assume no other expenditures would have been altered. This is the procedure followed when OMB estimates are deducted from the historical path.

In addition to altering defense purchases, the simulations allow for alterations in the level of military manpower, the path of new orders for defense capital goods, the level of non-defense purchases and the imposition of the 1968 income tax surcharge. Four alternatives are compared in Table IV.2.[1/] In simulation I, defense purchases of goods and services are lowered by the WEFA estimate from Table IV.1, military manpower is held constant at 2.7 million and new orders for

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[1/] For the details of the alterations to the model, see Appendix II, Section 3.

Table IV.2

Comparison of Base Simulations

Simulation	1966	1967	1968	1969
	GNP, 1972$, Percentage Change			
History	6.0	2.7	4.4	2.6
I	4.9	0.8	3.6	3.8
II	3.8	0.6	3.1	3.6
III	5.1	1.1	4.1	5.0
IV	4.1	0.8	3.5	4.6
	GNP Implicit Deflator, Percentage Change			
History	3.3	2.9	4.5	5.0
I	3.2	2.8	4.0	4.2
II	3.1	2.7	3.9	4.0
III	3.2	2.8	4.0	4.4
IV	3.1	2.7	3.9	4.0
	Unemployment Rate			
History	3.8	3.8	3.6	3.5
I	4.3	5.3	5.5	5.1
II	4.8	6.0	6.4	6.2
III	4.3	5.1	5.1	4.3
IV	4.7	5.8	6.1	5.4

I. WEFA Purchases Assumption, Growth in Defense Orders of 4.5% per year, military manpower constant at 2.7 million.

II. OMB Purchases Assumption, Constant Defense Orders, military manpower constant at 2.7 million.

III. The same as simulation I, plus elimination of 1968 surcharge and growth of constant dollar non-defense purchases of 6.0%.

IV. The same as simulation II, plus elimination of 1968 surcharge and growth of constant dollar non-defense puchases of 6.0%.

defense capital goods are allowed to rise at a steady annual rate of 4.5%. These latter alterations may be compared to historical paths in which military manpower rose to 3.5 million in 1968-9 and orders for defense capital goods grew at an average annual rate of 8.9% from the end of 1965 to the end of 1969. Simulation III contains the same alterations as simulation I but also eliminates the 1968 tax surcharge and allows for faster growth in non-defense purchases. While it is difficult to attribute an explicit reduction in non-defense purchases growth to the Vietnam War, these expenditures, measured in 1972 dollars, grew at an annual rate of 8.35% from calendar year 1963 to 1965 but were essentially unchanged from 1965 to 1969. Simulation III assumes that without the demands of the war expenditures constant dollar purchases would have grown at a steady 6.0% annual rate.

Simulations II and IV reduce defense purchases by the OMB estimates of the cost of Vietnam. In addition, II holds military manpower constant at 2.7 million and new orders for defense goods constant at $16.0 billion. This solution is the most restrictive in the sense of assuming that none of the Vietnam expenditures would have been replaced by additional expenditures in other sectors. Solution IV differs from II in the same manner that III differs from

I; elimination of the surcharge and increases in non-defense purchases. Simulations II and III seem to provide upper and lower bounds for the measurement of the effects of the war on the economy and the discussion that follows summarizes these two alternatives.

To distinguish between these two we will refer to them in the ensuing discussion by the source of the defense purchases assumption. Simulation II will be referred to as OMB and Simulation III as WEFA. It should be kept in mind that these two differ in details other than defense expenditures. In essence, the OMB scenario attempts to measure the impact of not having incurred Vietnam expenditures with nothing else altered. The WEFA simulation allows for "normal" behavior of other decisions concerning taxes and expenditures when no Vietnam episode occurs.

Tables IV.3-8 provide summaries of the impact of the war not having occurred on major economic magnitudes for both the OMB and WEFA scenarios.

Examining Table IV.3 reveals that using the OMB measure of expenditures, the war resulted in personal income increases of nearly $10.0 billion in 1966 and by 1969 was generating about $55.0 billion in additional income. If we attempt to adjust for normal expenditure

TABLE IV.3

ESTIMATED IMPACT OF NO VIETNAM WAR ON
TAX COLLECTIONS AND INCOMES

(billions of dollars)

	1966		1967		1968		1969	
	OMB	WEFA	OMB	WEFA	OMB	WEFA	OMB	WEFA
Federal Personal Income Taxes	-1.7	-.8	-4.4	-2.6	-8.2	-8.8	-10.9	-15.0
Personal Income	-9.6	-4.3	-24.0	-14.0	-41.0	-24.2	-54.8	-26.0
Disposable Personal Income	-7.2	-3.2	-18.1	-10.6	-30.2	-13.9	-40.5	-9.5
Federal Corporate Profits Taxes	-3.1	-1.1	-4.6	-2.3	-10.6	-1.2	-4.5	4.9
Corporate Profits Before Taxes	-8.4	-2.6	-11.2	-5.5	-11.3	-3.0	-2.0	11.5
Corporate Profits After Taxes	-4.6	-1.4	-6.4	-3.2	-6.3	-1.6	-.7	6.4

TABLE IV.4

ESTIMATED IMPACT OF NO VIETNAM WAR ON FINAL DEMAND

(billions of dollars)

	1966		1967		1968		1969	
	OMB	WEFA	OMB	WEFA	OMB	WEFA	OMB	WEFA
Gross National Product	-19.8	-7.4	-38.6	21.8	-55.3	-28.8	-59.4	-15.7
Personal Consumption Expenditures	-3.4	-1.6	-9.6	-5.7	-18.2	-9.7	-26.1	-8.5
Residential Investment	0.6	0.0	1.9	0.6	1.2	0.7	1.0	0.8
Non-Residential Investment	-2.5	-0.5	-5.9	-2.7	-9.5	-4.8	-9.6	-1.7
Change in Business Inventories	-1.5	-0.7	-0.3	-2.3	-0.4	-2.5	-2.2	0.6
Net Exports	0.9	0.4	1.9	1.1	3.1	1.5	3.4	0.8

TABLE IV.5

ESTIMATED IMPACT OF NO VIETNAM WAR ON FINAL DEMAND

(billions of 1972 dollars)

	1966		1967		1968		1969	
	OMB	WEFA	OMB	WEFA	OMB	WEFA	OMB	WEFA
Gross National Product	-23.7	-9.3	-45.6	-25.5	-58.5	-28.2	-48.7	-3.3
Personal Consumption Expenditures	-3.5	-1.5	-9.5	-5.2	-15.5	-6.6	-16.1	0.8
Residential Investment	0.8	0.1	2.4	1.0	1.5	1.1	1.5	1.4
Non-Residential Investment	-3.0	-0.5	-7.1	-3.1	-10.4	-4.8	-8.4	0.0
Change in Business Inventories	-1.9	-0.9	-4.0	-2.6	-4.8	-2.9	-2.5	0.6
Net Exports	1.6	0.5	3.3	1.4	5.7	2.1	6.5	1.7

TABLE IV.6

ESTIMATED IMPACT OF NO VIETNAM WAR ON
OUTPUT ORIGINATING

(billions of 1972 dollars)

	1966		1967		1968		1969	
	OMB	WEFA	OMB	WEFA	OMB	WEFA	OMB	WEFA
Agriculture	-0.1	0.0	-0.2	-0.1	-0.4	-0.1	-0.3	0.1
Mining	0.2	0.1	0.4	0.3	0.5	0.3	0.5	0.2
Durable Manufacturing	-11.9	-3.8	-22.8	-11.9	-28.7	-13.2	-23.6	-1.6
Non-Durable Manufacturing	-1.1	-0.3	-2.4	-1.3	-3.5	-1.4	-2.9	0.9
Transportation	-1.3	-0.3	-2.4	-1.2	-3.0	-1.3	-2.3	0.2
Communications	-0.2	0.0	-0.5	-0.2	-0.9	-0.3	-0.7	0.2
Utilities	-0.2	0.0	-0.4	-0.2	-0.4	-0.1	-0.4	0.1
Contract Construction	-0.4	0.1	-0.8	-0.2	-1.7	-0.3	-1.0	1.0
Finance, Insurance & Real Estate	-2.0	-0.4	-3.8	-1.6	-5.0	-1.7	-3.8	1.2
Services	-1.7	-0.4	-3.2	-1.4	-4.0	-1.4	-3.2	0.4
Wholesale and Retail Trade	-1.1	0.0	-2.6	-0.9	-3.9	-1.6	-3.3	2.4

TABLE IV.7

ESTIMATED IMPACT OF NO VIETNAM WAR
ON OUTPUT ORIGINATING

	1966		1967		1968		1969	
	OMB	WEFA	OMB	WEFA	OMB	WEFA	OMB	WEFA
Civilian Labor Force (millions)	.22	.28	.21	.41	-.11	.23	-.44	.09
Civilian Employment (millions)	-.59	-.14	-1.51	-.65	-2.39	-1.05	-2.58	-.54
Unemployment Rate	1.08	.54	2.19	1.33	2.91	1.60	2.68	.77

TABLE IV.8

ESTIMATED IMPACT OF NO VIETNAM WAR
ON PRICE LEVELS

(Base = 100)

	1966		1967		1968		1969	
	OMB	WEFA	OMB	WEFA	OMB	WEFA	OMB	WEFA
GNP, Implicit Deflator	-0.1	0.0	-0.3	-0.2	-0.7	-0.5	-1.6	-1.2
Consumer Price Index	-0.1	-0.1	-0.3	-0.2	-1.0	-0.8	-2.3	-1.7
Wholesale Price Index	-0.1	-0.1	0.0	0.0	-0.1	-0.1	-0.2	-0.1

patterns and use the WEFA scenario incremental income resulting from the war is approximately one-half of these amounts. The pattern on the profits side is substantially different. While the war is estimated to have resulted in higher profits in the period 1966-1968 under either scenario, the WEFA scenario would yield greater profits in 1969 in the absence of war expenditures. Moreover, even using the OMB measure, the additions to profits peak in 1968 and have declined by 1969. This phenomena is almost entirely accounted for by the labor force implications of the war. As pictured in Table IV.7, by 1969 the war results in an unemployment rate that is between 0.8% and 2.7% lower than it otherwise would have been. In the 3.5-4.0% range that the unemployment rate actually attained in the 1967-9 period, wage-price developments lead to a shift in income shares toward wages. Even though profits are lower in the OMB solution the profit share rises as a result of not experiencing the war. In the WEFA scenario not only does the profit share rise, but by 1969, when the loss in GNP is only $16.0 billion dollars, the absolute level of profits is higher than the historical experience.

In addition to the effects on incomes and taxes, the two scenarios present an interesting picture of the alternative path for the Federal budget surplus or deficit. During the period 1966-1969, the cumulative deficit for the Federal sector was $12.7 billion. If the war had not occurred, our estimates indicate that the cumulative deficit

would have been $6.0 billion using the WEFA scenario or a surplus of $30.5 billion with the OMB measure of the alternative path. Without the 1968 surcharge and with normal trends in federal purchases, the federal deficit position would have been much the same over the four year horizon (WEFA). If all that occurred was the reduction of war expenditures, with nothing else altered, the swing in the deficit position is nearly $45.0 billion (OMB).

Tables IV.4 and IV.5 present a similar picture of the effects of the war on aggregate final demand. The OMB scenario estimates that nominal GNP rose $20.0 billion in 1966 and was nearly $60.0 billion greater in 1969 as a result of the war. In 1972 dollars the impact is an increase of near $25.0 billion in 1966 and increases near $50.0 billion from 1967-69. A much different picture emerges from the WEFA scenario. Constant dollar GNP is estimated to be nearly $10.0 billion higher in 1966, $25.0-30.0 billion higher in 1967-8 but by 1969, GNP differs by less than $5.0 billion. Moreover, only the government sector of final demand is lower than historical experience by 1969. Despite the reduced stimulus of government purchases; slower growth in imports, lower interest rates, and the elimination of the surcharge result in higher net exports, more residential investment and greater consumer expenditures.

Table IV.6 indicates the heavy impact of the war on the durable manufacturing sector. In the absence of the war materiels expenditures, value added in this sector would have been reduced by approximately one-half of the reduction in GNP whether the OMB or WEFA measure of the impact is used. Moreover, if the WEFA measure of the alternative path of the economy is used outside of the durable area, the greatest reduction in the output in any sector in any year is a decline of less than $2.0 billion (1972) in 1968 in the Finance Insurance and Real Estate Sector.

Perhaps the most dramatic impact of the war and, in many ways, the source of the basic differences between the historical experience and the WEFA scenario by 1969 are the labor market developments pictured in Table IV.7. Both the OMB and WEFA no war scenarios result in a larger civilian labor force in 1966 and 1967 than the historical experience. With the WEFA assumptions the increase is above 400,000 for 1967. Much of this increase is attributable to the reduction of 750,000 in the number of military personnel--which is assumed to occur in 1967. Clearly, not all of the people who leave the military enter the labor force. This is partially a result of the lower employment ratio and partly attributable to lower real wages offered as a result of more slack in labor markets. Using the OMB measure of the no war scenario actually leads to a reduction in the civilian labor force in 1968 and 1969 despite the reduced military

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requirements. While a greater pool of manpower is available as a result of the reduction, the particpation of these individuals declines as a result of wage and employment effects. The higher demand in the WEFA scenario results in a greater civilian labor force throughout the 1966-69 period but the increase is down to less than 10,000 people by 1969. The substantial reductions in employment in both no war solutions, over 1.0 million in WEFA and near 2.5 million in OMB in 1968, combined with the labor force effects result in unemployment rate increases which peak in that year with the OMB alternate nearly 3.0% higher than historical experience and the WEFA alternate 1.5% higher. By 1969, the difference between the no war solutions and the historical declines in both solutions but for very different reasons. In the OMB solution, the decline in the unemployment rate is a result of the discouraged workers leaving the labor force; in the WEFA solution, the decline results from an increase in employment.

As Table IV.8 indicates, both of the alternate scenarios result in lower inflation rates until by 1969, the Consumer Price Index and the GNP implicit deflator are 2.0-3.0% lower than historical levels. In addition to this decline in the price level, the inflation rates have also declined by 0.5-1.5% by 1969. These slower inflation rates can be traced to the labor market effects in Table IV.7. The higher unemployment rolls lower the growth in compensation in 1969 by more than 2.0% in the OMB scenario and nearly 1.5% in the WEFA scenario. The two solutions yield similar inflation projections because of greater productivity increases in the WEFA case.

While the OMB and WEFA scenarios are likely to be of interest for different purposes, as a measure of the effect of Vietnam against the probable course of the economy without the war, the WEFA solution seems more accurate. It raises some interesting questions regarding the magnitude of any tax increase necessary to control aggregate demand to offset the war effects. Many of the calculations presented at the time were directed at merely offsetting the demand effects of the war expenditures. In retrospect, the labor force effects of the war may have been the crucial element. To support the war without inflation would have called for tax increases not only sufficient to offset the additional demand effects of the war expenditures, but also to have offset the impact on labor markets of the increased military personnel.

V. A PERIOD OF FISCAL RESTRAINT 1972-76

The period 1972-76 includes the sharpest cyclical episode the U.S. has experienced in the post-World War II period. The period began with a conflict between the Administration and Congress over the appropriate stance of fiscal policy. This battle with the Administration favoring a more restrictive stance to reduce demand pressures was largely carried by the Administration with a series of vetoes, program terminations and impoundment of funds. As monetary policy moved to a more restrictive stance in 1973, this position was partially eased with an enlarged tax refund of 1972 liabilities and increases in revenue sharing. Overlaying these moves was the move from Phase II to Phase III of wage and price controls in January, 1973 and Phase IV in July, 1973. OPEC moved to embargo oil shipments to the U.S. in October, 1973, and the initial stage of the energy price inflation was upon us. It has been argued that very little was gained in terms of reducing inflation by the restrictive fiscal and monetary policies followed during the 1972-4 period because the prime causes of price increases were not excess demand in the domestic economy but world developments in the energy and food areas. To evaluate this argument, we investigate one aspect of policy during this period--federal government purchases of goods and services.

Table V.1

Growth in Government Purchases

(Compound Annual Rate)

Current Dollars

Period	Total	Defense	Non-Defense
195504-196504	4.81	3.40	10.48
196504-197104	5.25	4.71	6.77
197104-197204	4.82	4.71	4.69
197204-197304	2.05	1.50	3.10
197304-197404	11.97	6.99	24.41
197404-197604	7.30	5.80	10.59

Constant Dollars

Period	Total	Defense	Non-Defense
195504-196504	1.96	0.61	7.50
196504-197104	-0.26	-0.77	1.17
197104-197204	-3.49	-3.54	-3.56
197204-197304	-5.32	-5.83	-4.35
197304-197404	1.48	-3.00	12.80
197404-197604	.94	-0.48	4.03

As Table V.1 indicates, the growth rates in purchases gyrated sharply in the late 60's and early 70's. In nominal terms, total purchases grew at an average annual rate near 5.0% for the periods 195504-196504 and 196504-197104. This rate of growth stayed near 5.0% in 1972, dropped to 2.0% in 1973 and then soared to nearly 12.0% in 1974. The movement was even more dramatic after adjusting for inflation. In 1972 dollars, total purchases grow at an average annual rate near 2.0% during the 1955-65 period. From the end of 1965 to the end of 1971, the average annual rate of growth was essentially zero, despite the run up in defense purchases during the Vietnam War. Purchases declined at a 3.5% rate during 1972 and declined at a rate in excess of 5.0% in 1973.

In 1974, the 12.0% growth in nominal purchases translated into a 1.5% increase in constant dollar purchases. If nothing else had been altered but government purchases had followed a steady growth path from the end of 1972 to 1976, what effect would this have had on the business cycle?

To evaluate this question, we allowed constant dollar purchases to grow at annual rates equal to the averages for the ten year period 195504 to 196504, 0.6% for defense and 7.5% for non-defense. Table V.2 contains the annual increases in purchases and the deficit resulting

Table V.2

Increase in Government Purchases with Steady Growth, 1973-6

Current Dollars

	Total	Defense	Non-Defense	Surplus/Deficit
1973	5.0	2.3	2.6	-1.6
1974	9.6	6.8	2.8	-6.0
1975	13.2	8.9	4.3	-6.9
1976	18.3	12.0	6.3	-9.8

Constant Dollars

	Total	Defense	Non-Defense
1973	4.7	2.2	2.4
1974	8.1	5.7	2.3
1975	10.0	6.7	3.2
1976	13.1	8.6	4.6

from following this policy. By 1976 total government purchases are approximately $18.0 billion higher than historical experience, an increase of 14%, with two-thirds of the increase in defense purchases. Tables V.3-8 summarize the major effects of the alteration in the path of purchases.

As might be expected, this realtively minor alteration in expenditures does not eliminate the cycle. Growth in constant dollar GNP remains negative in 1974 and 1975. The change in the path of purchases does, however, substantially vitiate the cycle at the cost of an increase in the deficit of less than $10.0 billion and no increase or a slight decline in prices.

The effects of the increased purchases are strightforward with the possible exception of the price effect which deserves some comment. It is traditional in policy discussions to assume that expenditure increases or tax reductions always have the effect of increasing prices while a tax increase or expenditure reduction is deflationary. Indeed, in the discussion of the 1964 tax cut and the Vitenam War, our estimates correspond to this point of view. To understand why the converse appears to be true in the present case, it is necessary to understand the model of price and wage determination used to represent the decision processes in the economy.

TABLE V.3

ESTIMATED IMPACT OF A CONSTANT GROWTH OF FEDERAL GOVERNMENT PURCHASES ON TAX COLLECTIONS AND INCOMES

(billions of dollars)

	1973	1974	1975	1976
Federal Personal Income Taxes	.1	1.1	2.3	3.7
Personal Income	.2	4.8	10.5	17.4
Disposable Personal Income	0.0	3.4	7.5	12.5
Federal Corporate Profits Taxes	2.9	2.0	3.3	4.7
Corporate Profits Before Taxes	7.5	5.4	8.7	12.1
Corporate Profits After Taxes	4.3	3.1	5.2	7.2

TABLE V.4

ESTIMATED IMPACT OF A CONSTANT GROWTH OF FEDERAL GOVERNMENT PURCHASES ON FINAL DEMAND

(billions of dollars)

	1973	1974	1975	1976
Gross National Product	6.1	12.4	20.0	29.9
Personal Consumption Expenditures	-.3	.8	3.1	6.2
Residential Investment	.3	-.8	-.8	-.2
Non-residential Investment	.9	2.6	4.5	6.1
Change in Inventories	.4	.7	1.8	2.1
Net Exports	-.2	-.6	-1.7	-2.3

TABLE V.5

ESTIMATED IMPACT OF A CONSTANT GROWTH OF FEDERAL GOVERNMENT PURCHASES ON FINAL DEMAND

(billions of 1972 dollars)

	1973	1974	1975	1976
Gross National Product	5.3	10.9	18.1	25.7
Personal Consumption Expenditures	-.2	1.1	4.4	6.2
Residential Investment	.1	-.7	-.4	-.2
Non-residential Investment	.7	2.2	3.7	6.1
Change in Business Inventories	.3	.5	1.3	1.9
Net Exports	-.4	-.4	-.9	-2.3

TABLE V.6

ESTIMATED IMPACT OF A CONSTANT GROWTH OF FEDERAL GOVERNMENT PURCHASES ON OUTPUT ORIGINATING

(billions of 1972 dollars)

	1973	1974	1975	1976
Agriculture	0.0	0.0	.1	.1
Mining	0.0	.1	-.1	-.2
Durable Manufacturing	2.9	5.7	8.7	11.8
Non-Durable Manufacturing	.2	.5	1.2	1.9
Transportation	.3	.7	1.0	1.3
Communication	0.0	.1	.3	.6
Utilities	0.0	.1	.1	.2
Contract Construction	.3	.4	.7	1.3
Finance, Insurance & Real Estate	.6	1.3	2.3	3.3
Services	.6	1.1	1.7	2.5
Wholesale and Retail Trade	.3	1.0	2.0	2.9

TABLE V.7

ESTIMATED IMPACT OF A CONSTANT GROWTH OF FEDERAL GOVERNMENT PURCHASES ON LABOR MARKETS

	1973	1974	1975	1976
ivilian Labor Force (millions)	.01	.05	.14	.27
ivilian Employment (millions)	.12	.36	.69	1.03
nemployment Rate	-.13	-.35	-.61	-.83

TABLE V.8

ESTIMATED IMPACT OF A CONSTANT GROWTH OF FEDERAL GOVERNMENT PURCHASES ON PRICE LEVELS

(base = 100)

	1973	1974	1975	1976
GNP Implicit Deflator	0.	-.1	-.3	-.4
Consumer Price Index	0.	-.1	-.5	-.6
Wholesale Price Index	0.	0.	0.	0.

Prices are assumed to be determined as a mark-up over unit labor costs and unit capital costs. It is possible to assume that there are no short-run effects on capital costs as a consequence of a stimulative policy move. In this case, the impact on prices is dependent on the change in unit labor costs. This, in turn, can be divided into the effects on productivity and compensation. Unfortunately, for the simple view of the effect of a stimulus on prices, the relative strength of the two responses is likely to vary over the business cycle. At a high level of economic activity, a stimulus will lead to attempts to extend employment when the unemployment rate is low and producers will find themselves bidding for employees who will, in general, have less experience, lower skill levels than those already employed. This is likely to yield compensation increases greater than any productivity increases resulting from increased output. Even if the mark-up is constant, this would lead to increased price pressures but, in addition, at high levels of activity, further increases in capacity lead to increases in the mark-up at the same time that unit labor costs are rising. At the other end of the spectrum, when activity levels are low, a stimulus is likely to lead to relatively small additions to wages when unemployment is high. This may be more than offset by increases in productivity by increased utilization of current employees. In addition, at low levels of capacity, an increase to normal operating levels may result in some reduction in the mark-up

as fixed costs per unit decline. This type of phenomena is built into the Wharton Model and results in the differing measures of the price effects of a stimulus that we have noted.

VI. NEUTRAL POLICY 1964-1977

In the preceding three sections, we have examined the impact of three specific episodes of fiscal policy. In addition to measuring the response of demand, output, employment and prices to various policy steps, we have raised some of the major problems and issues in evaluating counter-cyclical policy. These include the impact of contemporaneous policy moves; possible trade-offs between the level and variability of activity; and the cyclical variability of policy effects. Clearly, even if counter-cyclical policy decisions were clearly distinguishable, many of the problems of isolating policy effects would remain. In asking the retrospective question, "what would have happend if history had been different?", an element of arbitrariness must almost invariably enter the calculation in terms of defining the alternative.

In Chapter III, we attempted to evaluate the effects of fiscal and monetary policy on the economy during the early '60s. As we argued, one possible approach to this problem is to assume that any policy which had a cyclical effect was purposeful and to attempt to remove all of those actions. This is similar to adopting the monetary policy stance advocated by certain monetarists of steady

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growth in the monetary stock regardless of the business cycle except we extend it to the fiscal side of policy. To examine the effect of policy on the cyclicality and level of activity during the last fourteen years, we have followed the same strategy for the entire period 1964-77. However, rather than a constant growth we have benchmarked policies against the growth of potential GNP. Expenditures, taxes, transfers and interest rates were forced to follow this path.[1/]

What must be recognized about this measurement is that while it provides a standard against which to compare the historical policy path, it is based on selecting an abritrary starting point and limiting the growth of all programs to the increase in potential GNP. It does not allow a movement in policy that would set up any cycical or counter-cyclical effects.[2/] In many respects, the most interesting question this type of analysis can answer concerns the effect on the cycle of adherence to this type of constraint in budget decisions. As we have noted elsewhere, however, this is a global decision covering the entire gamut of policy decisions. If one policy area does not behave in this manner, then adherence in other areas may exacerbate the cycle.

[1/] The definition of potential GNP was taken from Economic Report of the President, 1977, p. 54. For the details of adjustments, see Appendix II.

[2/] As detailed in Appendix II, this is not strictly true. Both unemployment transfers and interest payments are allowed to respond passively to movements in the economy,as is the nominal interest rate and the money supply.

Table VI.1 summarizes the simulation results for the compound annual rate of growth of GNP and the implicit deflator and the level of the unemployment rate in terms of the average and standard deviation.

Table IV.1

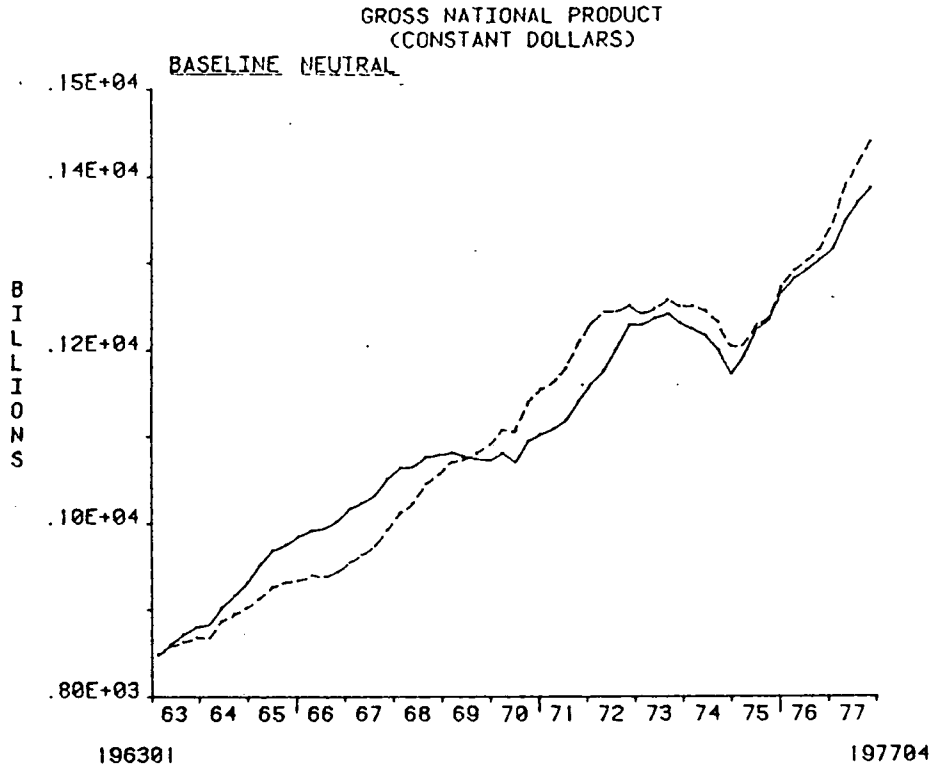
Neutral Policy Results

196304-197704

VARIABLE	MEAN		STANDARD DEVIATION	
	Base	Neutral Policy	Base	Neutral Policy
GNP, Percentage Change	3.67	3.95	4.18	4.13
Implicit Deflator, Percentage Change	5.04	5.71	2.56	3.28
Unemployment Rate	5.25	4.97	1.46	1.24

With respect to these gross measures, the cyclically neutral policy path matched to growth in potential GNP results in greater growth in constant dollar GNP, greater inflation and lower unemployment than the base path which follows historical policy patterns. In addition, it results in lower variance in the growth rate of GNP and the unemployment rate but higher variance in the inflation rate.

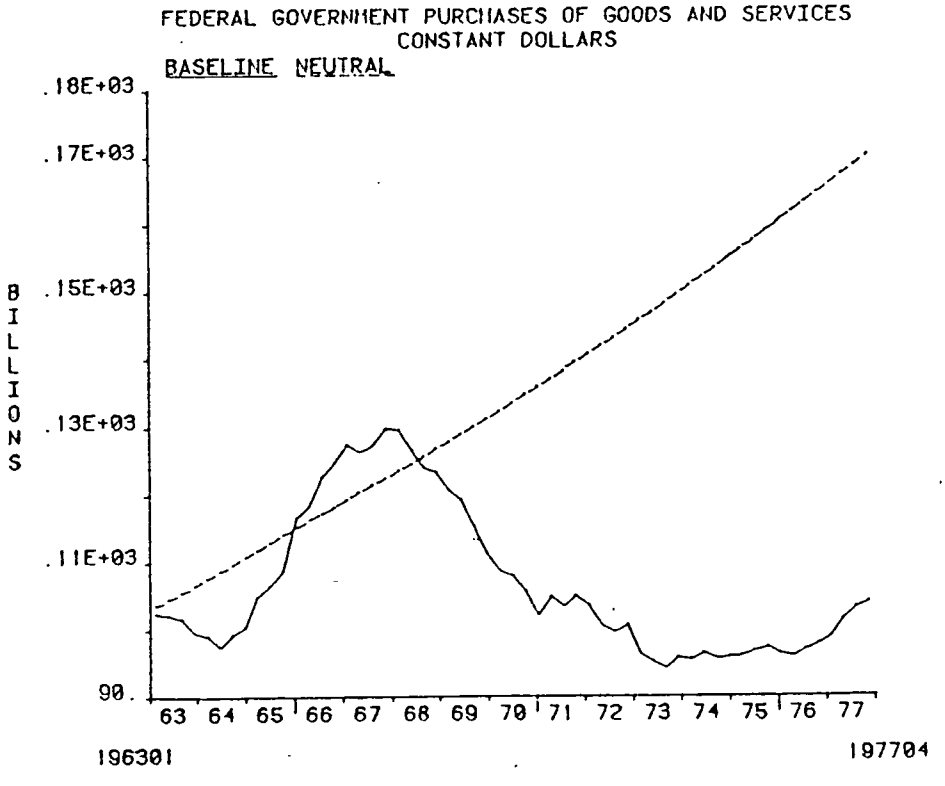
Figure 1



As Figure 1 illustrates, however, the greater growth and higher inflation rates are not steady over the period. From 1963 through mid-1969, the neutral policy path would have been expected to result in a growth path for constant dollar GNP below that generated by the actual path of policy. From mid-69, the neutral policy stance would have resulted in higher levels of GNP although the growth rates experienced would have been lower in 1972-3 and 1975. While a neutral policy would not have eliminated the '74 recession, it could have been expected to maintain much steadier growth from 1963 through the early 1970's and to have experienced less of a cycle in 1974.

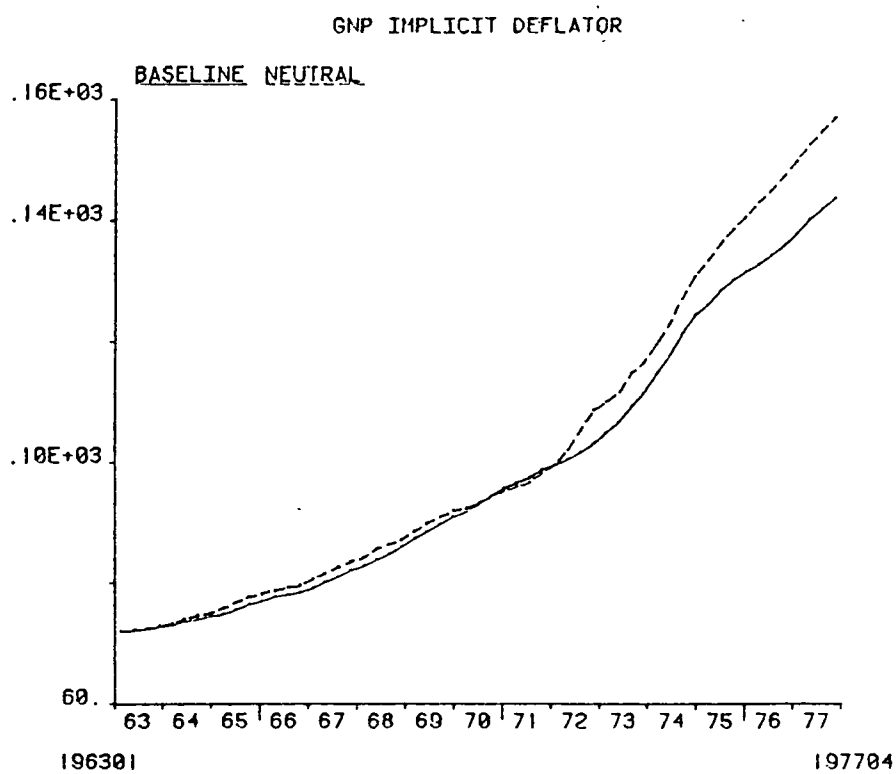
Figure 2 demonstrates that a great deal of the difference in these two paths is a function of the path of constant dollar purchases of goods and services by the federal government. In the neutral policy simulation, these purchases grow at the rate of potential GNP. The idea behind this is that real government purchases should be a constant portion of real output if it is to avoid setting up cyclical forces in the economy. As the figure illustrates, from 1963 to 1969 the actual growth in purchases cycled near this path; falling below it in the early '60's, rising above it during the Vietnam period. In early 1969, real purchases fell below the potential path and never returned to that level. By the late '70's, purchases in 1972 dollars were about $70.0 billion below the potential path. There is, of course, nothing sacred about the potential growth path for purchases

Figure 2



but if GNP is to grow at potential and the share that government purchases absorb is to decline then policies must be adopted which will result in an increase in the share of some other sector. This would require either that non-purchases type exenditures grow more quickly than along the potential path or that taxes grow more slowly. Other expenditures, particularly transfers and grants-in-aid did grow more quickly than the potential path and receipts grew more slowly. By 1977, total non-purchases expenditures were more than $50.0 billion greater than they would have been on the potential path, while tax collections were about $35.0 billion lower, but these changes were not sufficient to offset a level of purchases more than $100.0 billion below the potential path.

Figure 3



The other side of this fiscal policy stance which has resulted in growth below potential for ten years is the estimate that it has also resulted in lower inflation rates than would otherwise have occurred. As Figure 3 indicates, by 1977 the neutral policy results in a price level nearly 10.0% higher than that resulting from the policies actually followed. This deviation in the path of prices begins in 1972 and grows steadily greater.

In so far as a trade-off exists between the growth rate of real activity and the inflation rate, and this is the case in the Wharton Model, then the story illustrated by the neutral policy simulation is that the policy options chosen during the last fourteen years and, more specifically, during the last seven, successfully sacrificed lower and more volatile growth in an attempt to achieve lower and less volatile inflation rates relative to a policy keyed to growth in potential GNP.

APPENDIX I. Policy Interactions

The general non-linear model of the economy is written as:

$$f_i\ (y_{t1}, \cdots y_{tn}, y_{t-1,1} \cdots y_{t-p,n}, x_{t1} \cdots x_{tm}) = e_{ti} \quad (1)$$
$$i = 1, 2 \ldots n$$

where the model contains n endogenous variables, y_{ti}, with maximum lag p and m exogenous variables, x_{ti}, including any policy variables, and is subject to stochastic disturbances, e_{ti}. To analyze the expected impact of any policy action say, dx_{tk}, on any endogenous variable, dy_{tj}, we must take the total derivative of (1).[1/]
From (1)

$$[f_{ih}]\ [dy_h] + [f_{i1}]\ [dx_1] = 0 \quad (2)$$

where

$[f_{ih}]$ = nxn matrix of partial derivatives of f_i with respect to y_h

$[dy_h]$ = nx2 vector of dy_h

$[f_{i1}]$ = nxm matrix of partial derivatives of f_i with respect to x_1

$[dX_1]$ = mx1 vector of dx_1

and for convenience we have ignored the time subscript. Assuming $[f_{ih}]$ is non-singular.

$$[dy_h] = - [f_{ih}]^{-1}\ [f_{i1}]\ [dx_1] \quad (3)$$

[1/] For simplicity we concern ouselves only with contemporaneous impacts. Clearly we could also examine $dy_{t+s,j}$ for any s.

While for the special case of a linear model, the right hand side of (2) will be a constant, in general, for non-linear relations, the value will vary through time with alterations in the value of other variables in the system. Clearly, from (3), the influence of any single policy change, dx_{tk}, on any endogenous variable, dy_{tj}, will be dependent on the entire set of relations within the model and, in particular, on the partial derivatives f_{ih} and f_{il}. In a non-linear model, these will be influenced by the values assumed by other variables in the model. The difference in levels of activity in the economy measured by such things as real incomes, inflation rates and interest rates could result in a substantial shift in the impacts of policy between the early 1960's and mid-70's. Moreover, if dx_{th}, $h \neq k$, are not all zero, then estimates of dy_{tj}/dx_{tk} based on simulation results will be influenced by these other policy alterations. That is, in general, $dx_l \neq 0$ $l \neq h$.

In general, little attempt has been made to control for these impacts. In part, the lack of investigation of the latter effect is attributable to the fact that policy analysis is inevitably done on the basis of variations in a single instrument or policy rather than on a system basis. It also seems to be attributable to the notion that these impacts are likely to be small.

However, the former effect, simply reflects the shifting of multipliers over the business cycle. For example, it is generally accepted that price and quantity responses to fiscal stimulus will vary over the cycle.

APPENDIX II. Model Adjustments for Simulations

1. To Simulate the Economy Without the 1964 Tax Cut

Two sets of exogenous policy variables and the constant adjustment for personal tax collections must be altered.

a. Personal Taxes

The policy impact is measured by the decline in the personal tax rate in 1964.1 and again in 1965.1. To compensate for this, rates are set at their 1963 values throughout the simulation.

In addition to this, there appears to have been a substantial amount of under-withholding in the last three quarters of 1964 to offset the over-withholding, relative to post tax cut liabilities, in the first quarter. Since the econometric relationships for personal tax collections fail to account for the difference between tax rates and withholding rates, this effect shows up in excessively large residuals for these three quarters. (See Table AII.) We have estimated these excessively low collections, which would not have occurred in the absence of the tax cut, to amount to approximately $2.0 billion per quarter at an annual rate and, in addition to the rate changes, this amount has been added to the residual for each of these periods to remove the effects of the tax cut.

TABLE AII.1

Errors in Federal Tax Collections Forecasts
for Historical Data
(Billions of Dollars)

	1964.1	1964.2	1964.3	1964.4	1965.1	1965.2	1965.3	1965.4
Personal (TXCPF$)	1.9	-3.6	-3.3	-3.0	.2	-.4	-.2	-1.
Corporate (TXCCF$)	-.4	-.0	-.0	-.1	.1	.0	.1	.2

b. Corporate Taxes

For purposes of this study, the corporate tax cut is assumed to be fully described by the reduction in corporate tax rates. This is reflected in the shift in the effective corporate income tax rates in the Wharton Model. Since these are average rates, their level depends not only on legislated rates but on the level and distribution of profits across corporations. We have held these effective rates at their 1963 level in this solution. Given the alteration in the level of profits, this is likely to produce a small downward bias in collections estimates for the simulation period. The magnitude of the residuals for corporate tax collections seem to indicate that the other legislative changes contained in the 1964 Act were of minor importance.

2. To Simulate the Economy with Neutral Policy and the 1964 Tax Cut

The conceptual underpinnings of these alterations are discussed in Appendix III. Only the actual adjustments are discussed here. In addition to the changes to remove the tax cut:

a. Monetary Policy

The basic short term interest rate in the model is the 4-6 month commercial paper rate (FRMCP4M). In line with the analysis in Appendix III, this was held constant at a level of 4.0% throughout the simulation. In addition, the rediscount rate was set at 3.5%, this effects the spread between rates in the term structure and the level of free reserves.

b. Federal Purchases

Constant dollar Federal purchases of goods and services are assumed to grow at 4.0%. In order to accommodate the Vietnam War build-up, constant dollar defense purchases follow their historical path and the entire adjustment is forced onto non-defense purchases. With respect to employment, a similar procedure is followed. Allowing for the Vietnam build-up, total Federal employment including military is allowed to increase at a 4.0% rate but any discrepancy is buffered by civilian employment.

c. Transfers

Starting from the 196304 values, each transfer item was endogenized and set to a value that holds constant dollar per capita value constant, where deflation is based on the implicit deflator for consumer expenditures.

d. Grants-in-Aid and State and Local Purchases

Based on the increase in the implicit deflator for state and local purchases of goods and services, constant dollar grants-in-aid are allowed to increase at an annual rate of 4.0%. Substitution between Federal and local funds is set at .5 and purchases are increased or decreased by half the difference between the historical and simulated grants value.

e. Other Taxes

The parameters of all other taxes including rates, credits, etc. were held constant. This allows any automatic stabilizing effects to continue to operate but eliminates the effect of increases in the Social Security tax rate and base, alteration in the investment tax credit and other discretionary policies which occurred during this period.

3. To Simulate No Vietnam War

a. WEFA (Steady Growth in Purchases)

The number of people in the military are held constant at 2.7 million. New orders for defense capital goods are initialized at $16.0 billion in the fourth quarter of 1965 and grow at an annual rate of 4.56%. The value of defense purchases in 196504 is adjusted to reflect the smaller number of personnel, -$0.5 billion, the implicit deflator and constant dollar purchases for the initial period are recalculated to reflect this alteration. From this period, constant dollar defense purchases increase 1.26% at an annual rate each quarter.

b. OMB (Purchases Reduced by OMB Estimate)

Military personnel are held constant at 2.7 million. New Orders for defense capital goods are held constant at $16.0 billion. The level of nominal defense expenditures is reduced by the estimate published in "Chronology of Major Fiscal and Monetary Policies (1960-1977)", Committee on the Budget U.S. House of Representatives, January, 1978, p. 39. These fiscal year numbers were linearly interpolated.

c. WEFA - No Surcharge

In addition to the alterations described in section a, personal tax rates are set to the 196304 level through the simulation and the dummy variable, DUM691.692, for the surcharge is set equal to zero. Constant dollar non-defense purchases are assumed to grow at an annual rate of 6.0%.

d. OMB - No Surcharge

In addition to the alterations described in section b, the surcharge was eliminated as described in c, and nominal non-defense purchases grow at an annual rate of 10.0%.

4. To Simulate the No Fiscal Restraint

Constant dollar purchases of both defense and non-defense goods are initialized at 197204 values and then grow at 0.61% and 7.5% respectively.

5. To Simulate Neutral Policy 196304-197704

The conceptual basis for the adjustments for this simulation are discussed in Appendix III. Only the actual adjustments are discussed here. All references to potential GNP are based on estimates contained in Economic Report of the President, 1977, p. 54.

a. Monetary Policy

The basic short-term interest rate is set equal to 4.0% plus the annual rate of inflation.

b. Federal Purchases

Constant dollar federal purchases grow at the rate of potential GNP. Defense purchases are allowed to follow the historical path and any discrepancy is buffered by changes in non-defense purchases.

c. Transfer Payments

Constant dollar transfer payments to persons and to foreigners, deflated by the implicit deflator for consumer expenditures are allowed to grow at potential. As new programs are introduced, including food stamps and Medicare, the value in the initial period assumes that historical level and then grows at potential. This means that over the solution period total transfers excluding unemployment compensation, which is endogenous and allowed to respond to the business cycle, grow slightly faster than potential.

d. Grants-in-Aid

The constant dollar value of grants-in-aid, deflated by the state and local deflator, grows at the rate of potential. Half of the difference between the grants number and the historical path is assigned to state and local purchases. If, for example, the simulated value for grants is $10.0 billion greater than the historical value, an additional $5.0 billion is assumed to be spent by state and local governments.

e. Tax Collections

Constant dollar personal, corporate, social security and indirect business taxes are allowed to increase at the rate of potential GNP. Personal, social security and indirect taxes are deflated by the implicit price deflator. Profits taxes are deflated by the federal purchases deflator.

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Neither the average wage rate nor the number of federal employees was adjusted for this simulation. A strict adherence to the steady state analysis advocated in Appendix III would have resulted in federal wages growing at the same rate as private and federal employment remaining a constant proportion of the workforce. Examination of the simulation results indicates that little difference would have resulted from this adjustment and so wages were allowed to follow the historical path. On the employment side, the constant proportion rule would have resulted in a tripling of the federal civilian employees by 1977. It is true, however, that if military, federal civilian and state and local employment are considered together, employment remains a nearly constant proportion of the workforce. Acknowledging the increased use of the state and local sector as an expenditure agent of the federal government, we chose to allow employment to follow is historical path.

APPENDIX III. Some Issues in Policy Analysis

Conceptual Framework

Suppose we select a variable or set of variables which individually provide us with a scalar measure of the state of the economy. In the normal course of events, we would use some functional to combine variables into a scalar measure but for the moment assume that, X_t provides a full description of the economy and is measured in such a way that high values are preferred to low values and X is units free. The latter convention avoids problems involving changes in scale as the economy grows. Obvious candidates are the rate of growth of constant dollar GNP, and the negative or inverse of the inflation or unemployment rates.

Now suppose at any point in time, X_t can be represented as the sum of private sector activity, net of all direct and indirect policy activity, fiscal policy impacts and monetary policy impacts, say

$$(1) \quad X_t = P_t + M_t + F_t$$

Note that M_t and F_t indicate impact and not measures of policy variables.

Assume that all deviations (cycle) from average (trend) values in X_t originate in the private sector and that given "average" behavior in the private sector, say $\overline{P}$, $\overline{M}$ and $\overline{F}$ are selected to determine the desired value of X. Then defining

$$(2) \quad \Delta X_t + \overline{X} = \Delta P_t + \overline{P} + \Delta M_t + \overline{M} + \Delta F_t + \overline{F}$$

where $\Delta X_t \sim (0, \sigma_x^2)$ by construction, and similarly for P, M and F.

Now let us define

Global or Trend Neutrality = A set of fiscal and monetary policies which, if maintained, will result in $\overline{X} = \overline{P}$ and $\sigma_x^2 = \sigma_p^2$ That is, the first two moments of X are equal to the first two moments of P. This definition could be extended to cover all moments of the distributions of X and P.

Cycle Neutrality = A set of fiscal and monetary policies which, if maintained, will determine some desired level of $\overline{X}$, presumably greater than $\overline{P}$, but leave $\sigma_x^2 = \sigma_p^2$. Again, the definition could be extended to include all higher order movements.

Now since

$$(3)\quad \sigma_x^2 = \sigma_p^2 + \sigma_m^2 + \sigma_f^2 + \text{cov}(\Delta P, \Delta M) + \text{cov}(\Delta P, \Delta F) + \text{cov}(\Delta F, \Delta M)$$

a policy such that

$$(4)\quad \sigma_m^2 + \sigma_f^2 + \text{cov}(\Delta P, \Delta M) + \text{cov}(\Delta P, \Delta F) + \text{cov}(\Delta F, \Delta M) = 0$$

for any value of $\overline{X}$ would be cyclically neutral.

This general framework allows us to discriminate between policy effects that change the general level of activity and those that affect the variability of activity. As we have defined our terms, global neutrality would require that any impact of government policy on aggregate measures of activity, in terms of means and variances (and higher moments, if so desired), be exactly offset by other policies. Such a goal might be the result of restricting economic policies to distributional decisions. Cyclical neutrality would encompass any set of policies designed to affect the mean level of activity, say for example, average rate of growth of GNP or average rate of inflation without affecting the higher moments of the distribution which measure variability about the mean.

Almost invariably, analysis of any policy alternative is based on its effect on mean levels and higher order moments are ignored.[1/] As part of the general analysis of the impact of policy, it is useful to examine measures of variability. This aspect of policy is likely to be particularly important with respect to the impact of uncertainty on decisions when economic activity becomes subject to great variability.

Measurement Problems

Within this framework and confining analysis to the first two moments of the distribution of any variable we select for analysis, the problem is to measure the impact on both mean levels of activity and variance in the absence of the policy of interest.

Superficially, the analysis becomes trivial within the confines of an econometric model with a fully articulated policy sector. The analysis simply calls for solution of the model with historical policy and historical disturbances to be compared to a solution in which historical policy is replaced by an alternative policy path which is an "estimate" of policy in the absence of the action we are examining. For certain policy episodes such as the 1964 tax cut, it is indeed relatively straightforward to follow this procedure. Only minor alterations in variables describing the parameters of the personal and corporate income taxes and some alteration in disturbances due to

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[1/] The exceptions are those analyses based on control theoretic approaches to policy or derivatives of this approach based on locating an extremum of some function.

withholding schedule alterations are necessary. For other policy episodes such as the Vietnam War build-up, this problem becomes more problematic because of the ambiguity involved in defining "policy".[1/] Moreover, even in the event that an unambiguous definition of policy is available, this approach involves the maintained hypothesis that the model correctly measures the policy response.

The strategy described above is followed in Chapter III and VI of the report. However, as we demonstrate in Appendix I, the measures of activity responses derived are not independent of coincident policies. In addition to measuring the impact of the policy when all other policies follow historical paths, we have endeavored to design an approximation to what we have defined as a globally neutral policy to measure the impact if no cyclical policies are undertaken elsewhere in the system. This provides two measures of both the cyclical and level impact of the policy alteration.

A brief consideration of the problem of defining "neutral" policy leads to the conclusion that we are unlikely to be able to postulate a path which is satisfactory in all respects. Particularly difficult is the problem that we are concerned with the impact of policy and not the policy variables themselves. For short analyses, the lags in the impact of past policies are likely to be particularly important as policy actions taken prior to the starting point of the analysis affect the economy.

[1/] See, for example, estimates of Vietnam expenditures in "Chronology of Major Fiscal and Monetary Policies (1960-77)," Committee on the Budget, U. S. House of Representatives, January 1978.

Rather than attempting to arbitrarily offset these effects, we have attempted to define neutral policy in terms of long-run steady state characteristics of the economy relevant to the period being analyzed. For this purpose, we have postulated the following steady-state characteristics for the periods under analysis:

1. Constant dollar GNP to grow at 4.0% or potential.
2. Constant share of government purchases in GNP (constant dollars).
3. Constant real per capita transfers or constant real share.
4. Constant real share of grants-in-aid in GNP.
5. Constant short-term interest rate or constant plus inflation.

Several other characteristics that were considered were modified for the analysis conducted. These related to the handling of taxes and employment. Steady-state employment by government would seem naturally to be defined in terms of some constant portion of the labor force, but this implies that government purchases shift toward goods through time, and either government output declines as a portion of GNP, or productivity grows at the private sector rate. Alternatively, employment growth could be at the rate of increase in GNP with government taking an ever larger share of employment but preserving the goods-services balance and assuming no productivity growth. We have followed the latter course in our simulations partly because when the Vietnam War build-up is allowed for, the former course would have resulted in substantially greater reductions in civilian government employment.

The final issue is taxes. In an appropriate steady-state context, the total revenue collections would be a constant proportion of GNP. While for a longer run analysis it would be necessary to adjust for this, for the four year solution it was felt sufficient simply to stabilize the parameters of the various revenue functions. This procedure results in a change in the ratio of government receipts to GNP of less than 0.2% to the simulation horizon.

The Brookings Institution

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Economic Studies Program

November 9, 1978

TO: The Committee on the Budget of the U.S. House of Representatives
The Joint Economic Committee, United States Congress
The Congressional Research Service of the Library of Congress

FROM: Arthur M. Okun, Senior Fellow

Some time ago, I promised Nancy Teeters to look over the DRI and WEFA studies evaluating countercyclical fiscal policy, and to transmit some reactions to their work. In general, these are valuable and stimulating analyses, and the Committee on the Budget should be congratulated for its sponsorship of such high-quality policy-oriented research.

The studies tell us something both about the behavior of the economy and about the capabilities and limitations of macro-economics and econometric models. First of all, the results underline the important influences of fiscal policy -- sometimes for better and sometimes for worse -- on the performance of the economy during the recent era. I fear that economic experts fall into two categories -- those who need no convincing and those who cannot be convinced. But those non-experts who are on the fence may be influenced by the persuasive evidence that taxes and expenditures do matter a lot for the stability and growth of our economy.

Second, the fact that a statistical post-mortem of economic history attributes a plausible part of the cyclical process to fiscal actions indicates that the models have captured the salient features of the real world.

Third, one must still attach a fairly wide range of uncertainty to some of the quantitative results. There are, as I see it, a few obvious reasons for that sort of limitation. One is that most relationships that can be incorporated into an econometric model have to be linearized in some fashion. Thus, they usually tell us that a double dose of any medicine (or of any poison) will have double the effect. I am convinced that there are important non-linearities in the system -- thresholds and cliffs -- that are missed in a linear model. So we must be especially careful about doubling or halving the dosages we have used in the past.

A second limitation of our existing models for fiscal analysis is that they cannot relate actual policy measures to the expectations about policy previously held by the public. Sometimes this limitation is converted into a thesis that only unanticipated policy actions can effect economic activity. That thesis is utterly wrong; the valid point is that policy actions that are expected with any confidence by the public can have effects on the economy before they are actually adopted. Indeed, I read the record as suggesting that the prospects of the 1964 tax cut began to influence economic activity late in 1963; similarly, once Vietnam spending began to escalate late in 1965, the private responses seemed to project further large increases with unfortunate accuracy.

The very existence of a countercyclical strategy can make a difference. People believe that the government will act in the event of any serious recession, and that conviction serves as an insurance policy against the worst downside risks in many significant business decisions. In that sense, the 15-month delay in antirecessionary fiscal action during the 1973-1975 recession was restrictive, and not merely neutral -- when the government did nothing in a situation where people had every reason to expect vigorous policy action, the downside risks grew in importance.

The builders of the DRI and WEFA models have brought econometric art to its present level, and we look to them for the new breakthroughs that can bring non-linearities and policy expectations into econometric analyses. And we will continue to look to the Committee on the Budget for further encouragement to these valuable efforts.

ALAN GREENSPAN
ONE NEW YORK PLAZA
NEW YORK, N. Y. 10004

To: The Committee on the Budget of the U. S. House of Representatives
The Joint Economic Committee, United States Congress
The Congressional Research Service of the Library of Congress

FROM: Alan Greenspan, Townsend-Greenspan & Company, Inc.

SUBJECT: Policy Simulations of DRI and Wharton

DATE: October 23rd, 1978

Both the DRI and Wharton simulations of fiscal and monetary policies of the past fifteen years are interesting technical exercises. While there are differences in approach, they arrive at essentially similar conclusions. This is not surprising since the construction of both these models is quite similar, and, while differing in detail, reflect the same underlying theory of economic processes. However, in my judgment the analysts assume the models from which they are drawing their conclusions to be more accurate representations of economic reality than is justified. Accordingly, their conclusions are stated with a degree of certainty which does not square with the accuracy of any of the econometric models.

I would subscribe to DRI's general point that policies have been too short-term oriented and the secondary longer-term consequences of any particular fiscal/monetary policy mix are not being appropriately evaluated. But this type of conclusion rests more on a broad economic judgment than on sophisticated econometric simulations, even though the analysis is couched in econometric terms.

Obviously, the validity of any conclusions derived from simulations of alternate monetary and fiscal policies depends on the extent to which the particular model is a valid abstraction of reality. If these econometric models truly capture the underlying forces which generate aggregative economic behavior (as well as its detail), then an alternate policy scenario is clearly a simple experiment, equivalent to an experiment in the physical sciences. The policies that existed historically are altered in the model and the consequences are simulated. In short, the evaluation of whether policies were effective or ineffective, both in the short-run or in the long-run, depends almost wholly on the accuracy of the particular model which is being employed. It depends on whether the model's particular abstracting of reality captures the fundamental forces which make the United States economy function.

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ALAN GREENSPAN
ONE NEW YORK PLAZA
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Subject: Policy Simulations of DRI and Wharton

Both the DRI and Wharton studies are based on the presumption that the models they employ for their simulations correctly capture the appropriate forces governing the American economy. Yet were this the case, the history of forecasting accuracy of these models (and others) would have been far superior to their actual performance. Our econometric models (and forecasters generally) for example, failed to capture the extraordinary acceleration of inflation in the 1970's, and have great difficulty accounting for the persistence of inflation today in the context of high unemployment. In the most recent period, none of the models (to my knowledge) have successfully captured the extent of the rise in interest rates (numerous "judgmental" forecasters and financial analysts, however, have).

Even so, the true test is not even the forecasting accuracy of the models. To a substantial extent, the accuracy of a forecast depends upon how the forecaster adjusts the model's output: what he does to his "add-ons" and how he structures a number of the optional relationships which can be superimposed on any particular econometric forecast. The real test of the accuracy of these models for policy simulation purposes is how well they run as a forecasting tool "unattended." Under these rigid conditions, they clearly do poorly. Obviously, if the forecasting capability of these models is inferior then the accuracy of any simulation using the same econometric structure must be appropriately flawed. Any model which forecasts with a high degree of accuracy, especially without any intervention by judgmental adjustments, must be presumed to have captured the key forces underlying economic activity. It can then be appropriately manipulated for simulation purposes in a manner similar to a physical experiment where, for example, the conditions of temperature, pressure, light, etc. can be controlled.

Econometric simulations, however, are particularly questionable recently, since two of the major relationships embodied in "Keynesian type" models (such as DRI and Wharton) have gone astray: the Phillips curve (relating unemployment and inflation) and Okun's Law (relating real growth and changes in unemployment).

Of course, being unable to have a perfect simulation does not preclude the possibility of a considerable amount of knowledge being derived from less than perfect, or even partly flawed, models.

In fact, my own impression is that the conclusions drawn by DRI and Wharton concerning the impact of monetary and fiscal policies of the past are probably more right than wrong, although surely stated with a degree of certainty which the available techniques cannot sustain.

ALAN GREENSPAN
ONE NEW YORK PLAZA
NEW YORK, N. Y. 10004

Subject: Policy Simulations of DRI and Wharton

The basic problem with econometric modeling is that no matter how elaborate the structure of the models we employ, they invariably fail to be more than a very modest abstraction of the real world. This has become a particularly difficult problem in recent years since, while inflationary forces have always been a very significant factor in economic processes, during the 1950's and 1960's they were sufficiently subdued, but latent, so that, for all practical purposes, they did not matter much one way or the other in macro-economic forecasting, or simulation. We built up during that period an unfortunately mistaken belief that our econometric structures really did capture the major elements of economic reality and, as a consequence, surely overestimated our capacity to use complex econometric models to forecast the economy overall and, as a collateral benefit, simulate the impact of different economic policies.

We always presumed that inflation had a role in macro-economic developments, but our evaluation of its impact, in retrospect, has been significantly underestimated. Hence, when inflation did surge in the 1970's, our models were ill-equipped to capture its extraordinary complex and, in certain respects, unexpected effects. In recent years model builders have endeavored to fine tune inflation forecasting techniques, but we still have clearly not been overly successful. As a consequence, when we now apply our models to the current environment they are a far less effective tool for forecasting and simulation than we had presumed they were a decade ago.

Hence, while there is no question we do learn something from the types of simulations created by DRI and Wharton, one must be very careful in employing the results. More importantly, we must recognize that the types of policy information we learned from the simulations of the 1960's and perhaps even the 1970's, while of considerable academic interest, do not add very much to our judgments about alternative policy positions in the future.

We must not be beguiled by the seeming "scientific" aura of the econometric techniques employed in simulating the consequences of various tax and spending proposals. Recent history suggests a very large element of error in such simulations.

[COMMITTEE PRINT]

CHRONOLOGY OF MAJOR FISCAL AND MONETARY POLICIES (1960–1977)

COMMITTEE ON THE BUDGET
U.S. HOUSE OF REPRESENTATIVES

PREPARED BY THE

TASK FORCE ON ECONOMIC POLICY

JANUARY 1978

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LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES,
COMMITTEE ON THE BUDGET,
Washington, D.C., December 2, 1977

Hon. ROBERT N. GIAIMO,
Chairman, Committee on the Budget,
U.S. House of Representatives,
Washington, D.C.

DEAR MR. CHAIRMAN: Transmitted herewith is a chronology of major fiscal and monetary actions from 1960 through 1977. A variety of annual publications were utilized:

The Budget of the United States Government,
Economic Report of the President,
Congressional Quarterly Almanac,
Banking and Monetary Statistics 1940–1970,
Annual Statistical Digest, 1971–1975, Federal Reserve Board,

Appropriate monthly publications were also used:

Federal Reserve Bulletin,
Survey of Current Business,
Economic Indicators,

Several books provided additional information:

Bach, G. L., "Making Monetary and Fiscal Policy," Brookings Institution, Washington, D.C., 1971,

Goodwin, Craufurd D., Editor, "Exhortation and Controls, The Search for a Wage-Price Policy," 1945–1971, Brookings Institution, Washington, D.C., 1975,

Diamond, J. J., Editor, "Issues in Fiscal and Monetary Policy," DePaul University, Chicago, Ill., 1971,

Pechman, Joseph A., "Federal Tax Policy," Brookings Institution, Washington, D.C., 1971.

To the best of our knowledge a comprehensive chronology of fiscal and monetary policy has not been compiled before. This chronology was developed to provide the information needed to formulate a series of research projects to evaluate the impact of fiscal and monetary policies. However, the chronology itself has turned out to be very informative and interesting. Research groups, other than those working directly with the Task Force on Economic Policy are interested in using the chronology for similar purposes. I strongly recommend publication of the chronology in order to increase the knowledge of Members of Congress about past policies and to facilitate the research as to the economic impact of those policies.

I would like to express my thanks to Wendy Rayack of the staff of the Committee on the Budget who developed the chronology under the supervision of Nancy H. Teeters, our Chief Economist.

Sincerely,

THOMAS L. ASHLEY,
Chairman, Task Force on Economic Policy.

CHRONOLOGY OF MAJOR FISCAL AND MONETARY POLICIES

Five major economic indicators are given for each year and for each quarter within the year. Those indicators are:

GNP72 = Gross national product adjusted for inflation (real GNP) annualized rates of change.
CPI = Consumer price index annualized rates of change.
UR = Unemployment rate.
M_1 = Basic money supply (currency plus checking accounts).
i = Interest rate on the 3-month Treasury bills.

These indicators are followed by a chronology of economic events and policy actions. This chronology was developed to facilitate the study of the economic impact of various fiscal and monetary policies.

Economic conditions (percent)

Period	GNP72	CPI	UR	M_1	i
1960	2.3	1.5	5.5	−0.1	2.9
1960: I	8.2	.5	5.1	−1.8	3.9
1960: II	−.1	2.4	5.2	−.7	3.0
1960: III	−1.7	.2	5.5	3.3	2.4
1960: IV	−2.1	2.7	6.3	.8	2.3

Stabilization Policy and Budget Developments

At the outset of 1960 the economy had barely left behind the recession of 1958. The beginning of the year was marked by a high rate of unemployment inherited from the previous downturn, Despite a first quarter growth spurt, the economy soon fell back into recession. The initial growth surge of 8.2 percent was followed by three quarters of declining GNP. By the end of the year real growth was falling at an annual rate of 2.1 percent and the unemployment rate had risen to a fourth quarter average of 6.3 percent.

Expenditures rose by 2.3 percent to $93.1 billion. Revenue rose by 7 percent to $96.1 billion. Worried by the lagging growth of the late 1950's, both the Republican and Democratic parties, in 1960, endorsed the goal of faster growth. Agreement could not be reached, however, on an appropriate cure for the economic slump. Throughout the year economic policy was caught up in the debate between the so-called "spenders" and "savers" in Congress. Enough power existed on both sides to block any clearly directed stabilization policy in this year.

June.—The Federal Reserve lowered the discount rate from 4 to 3½ percent.

August.—The discount rate was lowered from 3½ to 3 percent.

Economic conditions (percent)					
Period	GNP72	CPI	UR	M_1	i
1961	2.5	1.1	6.7	2.1	2.4
1961: I	2.6	.7	6.8	1.7	2.4
1961: II	6.9	−.1	7.0	3.4	2.3
1961: III	5.3	1.6	6.8	2.3	2.3
1961: IV	9.9	.6	6.2	4.0	2.5

Stabilization Policy and Budget Developments

With little help the economy pulled slowly out of the 1960 recession. A 2.6 percent annualized growth rate in the first quarter of the year rose to a high 9.9 percent rate by the final quarter. Inflation, which the Committee on Price Stability and Economic Growth had decided was no longer a pressing problem in April 1960, remained low during 1961 averaging 1.1 percent. While the unemployment rate did drop somewhat from its first quarter rate of 6.8 percent, it still hovered stubbornly above 6 percent in the final quarter of the year.

Expenditures rose by 9.5 percent to $101.9 billion. Revenue rose by 2 percent to $98.1 billion and the social security tax rate was raised from 5 percent to 6 percent. A number of "antirecession" programs were authorized yet very little stimulus was actually pumped through the system as battles continued over the shape and size of desired programs. The two major economic policy acts were the acceleration of tax refunds and the increase in social security benefits.

January–March.—Tax refunds were accelerated. Taxpayers eligible for refunds were requested to file returns early. In the first 3 months of 1961, refunds totaled about $2.1 billion.

May.—The Area Redevelopment Act was signed. The law lacked economic impact, however, with a total authorization of only $394 million and no subsequent appropriation in this year.

June.—The Social Security Amendment of 1961 was passed. An additional $815 million became available to social insurance beneficiaries in the first 12 months of the program. Its major provisions included:

—lowering of retirement age,
—increased minimum benefits,
—larger number of individuals covered,
—increased benefits to widows.

The Housing Act of 1961 was also passed in June, but like the Area Redevelopment Act, it carried little economic impact. The total of $4.9 billion authorized, but not appropriated, was intended to provide for:

—an increase in urban renewal,
—additional public housing,
—low interest mortgages and housing loans,
—additional funds for FNMA.

Economic conditions (percent)					
Period	GNP72	CPI	UR	M_1	i
1962	5.8	1.2	5.6	2.2	2.8
1962: I	5.9	1.6	5.6	2.4	2.7
1962: II	5.3	1.5	5.5	1.8	2.7
1962: III	3.0	1.1	5.6	−.8	2.8
1962: IV	.7	1.0	5.5	2.4	2.8

Stabilization Policy and Budget Developments

The first half of the year looked promising with a strong rate of growth, a low rate of inflation, and a slight drop in the unemployment rate. The extra push that the economy needed, however, never materialized. Growth slowed considerably during the second half of the year dropping to a low 0.7 percent rate by the final quarter.

Expenditures rose by 8.3 percent to $110.4 billion. Revenues rose by 8.3 percent to $106.2 billion and the social security tax rate was increased from 6 percent to 6.25 percent. The administration initially set course for a balanced budget in 1963, but this goal was abandoned when the economy appeared weaker than expected and began to deteriorate in the second half of the year. Again actual appropriations and program implementation proved minor compared to the fanfare of authorizations and program planning. However, two major tax changes were implemented, a revised schedule of depreciation allowances and a new investment tax credit of 7 percent.

March.—The Manpower Development and Training Act was passed, but only $70 million was appropriated for the 1963 fiscal year.

July.—Revised guidelines for determining depreciation schedules for tax purposes were issued by the Treasury Department. The revisions increased the rate at which businesses could write off plant and equipment. Lives of machinery were made 32-percent shorter. The change resulted in an estimated $4.7 billion or 17 percent increase in business depreciation allowances.

July.—The Public Welfare Amendments of 1962 were passed. These amendments were expected to cost only $303.6 million in 1963 despite the broad changes enacted:

—a 75-percent Federal sharing of welfare services costs,
—an increase in aid to the aged and disabled,
—increased aid to dependent children,
—expansion of child welfare services,
—allowance for OAA earnings.

September.—Congress authorized $900 million for an immediate public works acceleration program but later appropriated only $400 million for this purpose. (See October 1962.)

October.—The Revenue Act of 1962 was completed. The act provided an investment tax credit of 7 percent on new and used property other than buildings. The full year revenue loss was approximately $0.2 billion.

Congress appropriated $400 million to initiate the Public Works Acceleration Act.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1963	4.0	1.2	5.6	2.9	3.2
1963: I	3.9	1.2	5.8	3.8	2.9
1963: II	5.1	.7	5.7	4.0	2.9
1963: III	7.5	2.4	5.5	3.9	3.3
1963: IV	3.9	1.2	5.6	4.2	3.5

Stabilization Policy and Budget Developments

The growth slowdown at the end of 1962 left the unemployment rate high again at the outset of 1963. The year began with a first quarter unemployment rate of 5.8 percent. In addition, policymakers were troubled by a worsening in the United States balance of trade. Despite the legislative delays which resulted in a virtual absence of stabilization policy in this year, the economy held to a moderate rate of growth averaging 4.0 percent for the year. The unemployment rate declined by 0.2 percentage points from the first quarter to the last.

Expenditures rose by 3.4 percent to $113.2 billion. Revenues rose by 7.7 percent to $114.4 billion and the social security tax rate was raised from 6.25 percent to 7.25 percent. At the outset of the year, the President noted that the "overshadowing" domestic need was for a tax cut to stimulate economic growth. Delayed in Congress, the tax cut did not get passed until the following year.

January.—The President proposed a broad program of tax reduction which was not passed until March 1964.

July.—The discount rate was raised from 3 to 3½ percent.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1964	5.3	1.3	5.2	4.0	3.5
1964: I	6.9	1.6	5.5	2.4	3.5
1964: II	5.2	.7	5.2	3.9	3.5
1964: III	4.0	.8	5.0	6.7	3.5
1964: IV	1.6	1.9	5.0	5.0	3.7

Stabilization Policy and Budget Developments

The economy was already in the midst of an expansion as 1964 began. With the passage of the Revenue Act in March an extra boost was added to the expansion. Growth averaged 5.3 percent for the year. The rate of unemployment, which had fallen in 1963 from 5.8 percent to 5.6 percent, continued to drop in 1964 reaching an average of 4.9 percent by the final quarter. The inflation rate, however, remained moderate during this year of expansion averaging 1.3 percent.

Expenditures rose by 3.5 percent to $118.2 billion and revenues rose by only 0.4 percent to $114.9 billion. The major stabilization policy carried out in this year was the Revenue Act, proposed by the President in 1963 and finally enacted in 1964. Other major steps taken in this year were the passage of the Economic Opportunity Act of 1964 and the expansion of the Food Stamp program. The first did not go beyond the authorization stage in this year, and the second was made permanent for the first time but was supplied with only minimal funds.

March.—The Revenue Act of 1964 was enacted cutting personal income tax liabilities by approximately $6.3 billion in 1964 and $9.5 billion in 1965, and cutting corporate profits tax liabilities by approximately $1.3 billion in 1964 and $2.2 billion in 1965.

August.—The Interest Equalization Act was passed creating a retroactive tax on the purchase by Americans of foreign securities.

The Food Stamp program was made permanent.

November.—The Federal Reserve increased the discount rate from 3½ to 4 percent.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1965	5.9	1.6	4.9	4.3	3.9
1965: I	8.9	1.3	4.5	2.7	3.9
1965: II	6.1	2.6	4.7	3.2	3.9
1965: III	7.1	1.3	4.4	4.7	3.9
1965: IV	8.7	2.0	4.1	6.8	4.2

Stabilization Policy and Budget Developments

This year brought the economy nearly to "full employment," as it was then defined at 4.0 percent. Industrial capacity was, by historical standards, fully utilized at 90 percent, and the pace of growth for the year was unexpectedly strong. In addition to the stimulus provided by the previous year's Revenue Act, extra push was created by the ending of the 1964 auto strike, the midyear reduction of excise taxes, the implementation of the medicare program, the increase in social security benefits, and the unplanned stimulus of the Vietnam war. By the end of 1965 unemployment had dropped to 4.1 percent. While inflation averaged a moderate 1.6 percent for the year, prices, as the year progressed, were beginning to respond to the booming economy. At the same time interest rates were beginning to climb responding to Federal Reserve Board efforts to pull back on the availability of funds.

Expenditures rose by 4.7 percent to $123.8 billion. Revenues rose by 8.2 percent to $124.3 billion. The year was one of extensive legislative action on the domestic front. Medical insurance for the aged and medical aid for the poor were initiated after 20 years of disagreement over the shape such programs should take. Social security benefits were increased at the same time. A 5-year program of grants to secondary and elementary schools was authorized and manpower development and training was expanded. Despite high growth rates at the start of the year, a schedule of excise tax reductions was passed. The year was also one of far-reaching military decisions. Working through the May supplemental for 1965 and the defense appropriation bill for 1966, Congress gave its support to the gearing-up of the Vietnam war. Meanwhile the Federal Government attempted to hold back prices by applying pressure to major industries. The Federal Reserve Board, also worried about inflation, increased the discount rate from 4.0 to 4.5 percent in late 1965 taking a first step toward the full-fledged tightening of monetary controls which was attempted in 1966.

In February, the 3-month Treasury bill rate rose to 3.93 percent. From 1947 to 1964 the bill rate had averaged only 2.08 percent per year. The beginnings of the money supply cutback could be detected. By February the money supply had grown by only 2 percent from the December 1964 average.

April.—Congress authorized a 5-year program of grants to elementary and secondary schools.

The Manpower Development and Training Act was extended from June 1966 to June 1969.

May.—The first supplemental for the Vietnam war was signed providing $700 million for mounting U.S. military operations.

From February to May the money supply grew by only 3 percent.

June.—The Excise Tax Reduction Act was enacted calling for $4.6 billion of reductions in several stages through 1969. The first stage took place in mid-June reducing taxes by $1¼ billion at an annual rate. In 1966 these reductions were reversed. (See March 1966.)

July.—Between the second and fourth quarters of 1965 there was an unexpected increase of $2.8 billion in defense spending. In July, the President requested additional funds for defense and indicated that further increases would be required in January of 1966. Military outlays rose by approximately $2 billion per quarter in late 1965 and early 1966.

The Medicare and Medicaid programs were established providing health care for the aged and poor, increasing social security benefits, and expanding public assistance programs. The estimated cost was $6.5 billion in the first year.

September.—Old age benefits were increased retroactive to January. Back pay of $885 million was distributed in September. Transfer payments were raised by an estimated $2 billion annually.

Congress cleared the $47 billion defense appropriation bill for fiscal year 1966 which included an additional $1.7 billion appropriation for Vietnam operations.

November.—Throughout the year the administration continued to place emphasis on wage-price guideposts. Although compliance was voluntary, the administration sometimes applied direct pressure. In November, aluminum producers raised prices above the guidepost limits. The administration threatened to sell stockpiled aluminum and the price increase was rescinded. Later in the year, two major steel producers announced an increase in prices which was considered inflationary by Government officials. A shift in Government purchases to firms offering lower prices was made. The price of steel did rise but by less than originally proposed.

December.—The Federal Reserve Board increased the discount rate from 4 to 4.5 percent in an effort to control inflation. The new rate was the highest since March 1930.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1966	6.0	3.0	3.8	4.6	4.9
1966: I	7.6	3.8	3.9	6.8	4.6
1966: II	2.8	3.7	3.8	5.0	4.6
1966: III	3.8	3.4	3.8	−.5	5.0
1966: IV	3.0	3.3	3.7	.5	5.2

Stabilization Policy and Budget Developments

From the third quarter of 1965 through the first quarter of 1966, the rate of inflation registered a large increase of 2.5 percentage points. The new inflationary trend in the economy and the spiraling outlays on the Vietnam war dominated the economic scene. The year began with unemployment low at 3.9 percent and the inflation rate up to 3.8 percent. Capacity utilization was pushed even higher than the year before averaging 91 percent for the year. Tax changes enacted throughout the year attempted to moderate the rate of inflation, but these measures did not carry enough restrictive impact in the face of the full-employment economy and the 16-percent increase in Federal expenditures. Meanwhile, the Federal Reserve Board continued to tighten monetary controls. The shrinking of the money supply and the increasing of interest rates resulted in a full scale credit crunch in 1966. While the inflation rate improved slightly over the year, the housing market was devastated. Housing starts fell by 9 percent in the first quarter, 8 percent in the second, 15 percent in the third, and 14 percent in the fourth.

Expenditures rose by 16 percent to $143.6 billion. Revenue rose by 14.1 percent to $141.8 billion. The social security tax rate was increased from 7.25 percent to 8.4 percent and the ceiling on wages subject to tax was increased from $4,800 to $6,600. In an attempt to dampen the new inflationary pressures exacerbated by the buildup of military operations in Vietnam, the Government, early in the year, passed a number of tax bills. These were designed to accelerate certain tax payments, increase excise taxes and suspend investment incentives so as to offset the stimulus provided by the war. Fiscal policy actions, however, proved too weak to hold back the economic boom that was in progress. The Federal Reserve Board thus decided to fight the battle on its own. By keeping the discount rate high at 4.5 percent and by holding back on the money supply, the Federal Reserve Board attempted to play the restrictive role that fiscal policy had shied away from.

January.—The proposed 1967 Federal Budget sent to Congress in late January assumed the war in Vietnam would end by June 30, 1967. Fiscal year 1967 expenditures for Vietnam were officially estimated at $10.3 billion.

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March.—The Tax Adjustment Act of 1966 was passed for the dual purpose of raising revenues for the Vietnam war and for holding down domestic inflation. Revenue from the act was expected to total $1.13 billion in fiscal year 1966 and $4.8 billion in fiscal year 1967. The major provisions of the act were:

—a speedup of corporate income tax payments bringing in an estimated revenue of $4.2 billion,

—a 2-year suspension of recently instituted cuts in telephone and automobile excise taxes bringing in an estimated revenue of $790 million and $480 million respectively,

—an increase of tax withholding on most individual's income taxes through the implementation of six graduated rates to replace the original 14-percent category,

—an increase in the personal exemption from $600 to $700.

The second supplemental for the Vietnam war was signed providing $13.1 billion in supplemental appropriations for 1966.

May.—From May to August the money supply grew by only 1 percent.

Spring.—Through late spring and early summer the money supply continued to shrink causing severe strains in the money markets. While Federal Reserve Board restrictions continued, private demand for funds soared in fear of worsening inflation.

June.—Defense expenditures for Vietnam for fiscal year 1966 which had been officially estimated at $4.6 in January were actually $5.8 billion.

July.—Contributions to the new supplementary medical insurance program began.

The Board of Governors of the Federal Reserve System took two actions designed to moderate further growth of bank credit and deposits:

—reserve requirements were increased from 4 to 5 percent,

—shorter term promissory notes and similar instruments were brought under the regulations governing reserve requirements and payment of interest on deposits.

Housing starts dropped by 15 percent.

August.—From August to November the money supply grew by only 1.1 percent.

The Federal Reserve Board raised the reserve requirement from 5 to 6 percent to "reinforce the anti-inflationary effects of overall monetary restraint."

In September the 3-month Treasury bill rate rose to 5.36 percent, its highest rate since March of 1921.

A letter was released by the Federal Reserve Board encouraging "moderation in the expansion of loans . . . " but assuring "credit assistance to member banks to meet appropriate seasonal or emergency needs . . ."

The Federal Reserve Board issued a statement asserting that the Board would ease the credit situation if actions of the President and Congress served to moderate inflation.

Fall/Winter.—Expenditures were restrained in an effort to offset inflationary pressures of the war. A total of $1.1 billion in obligational authority for the States was cut back from the 1967 authorizations. Budget authority of $5.3 billion was cut from Federal programs for fiscal year 1967. Actual outlays were cut by $3.0 billion.

In October the rate on prime bankers acceptances peaked at 5.72 percent. Free reserves hit a low of −$431 million. Housing starts dropped by 14 percent.

November.—The Investment Tax Credit was suspended by Congress. By this action the 7-percent tax credit on purchases of machinery and buildings and the existing accelerated depreciation allowance for industrial and commercial buildings were suspended through 1967. The suspension was meant to prompt delays or reductions in large scale investment plans. Revenue effects were thought to be minimal.

The effective rate on Federal funds peaked at 5.77 percent.

By the end of the Congressional session the Vietnam war was costing approximately $2 billion per month.

In December the rate on prime commercial paper peaked at 6 percent.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1967	2.7	2.8	3.8	4.0	4.3
1967: I	.6	1.3	3.8	3.9	4.5
1967: II	2.8	2.2	3.8	5.9	3.7
1967: III	5.0	4.1	3.8	9.5	4.3
1967: IV	3.2	4.0	3.9	6.1	4.7

Stabilization Policy and Budget Developments

As 1967 began the economy was sluggish reflecting the remains of an inventory correction from late 1966, a hesitation in consumer spending and major strikes in the auto, steel, and copper industries. Due to the slow first half of the year, annual real growth in GNP averaged only 2.7 percent in 1967, down substantially from the high growth rates of the previous 5 years. In the second half of the year, however, growth picked up and inflation was renewed averaging 4.0 percent by the final quarter. To compound the economic problems, the British devaluation of the pound sterling caused U.S. gold outflows to increase sharply for a period. In the final quarter of 1967, the U.S. balance of payments, which had been worsening throughout the year, fell into deficit.

Expenditures rose by 14 percent to $163.7 billion. Revenues rose by 6.1 percent to $150.5 billion, and the social security tax rate was increased from 8.4 to 8.8 percent. Worried by the consequences of the 1966 credit crunch, Federal Reserve Board policy fluctuated in 1967. The reserve requirement and the discount rate were eased in the sluggish first half of the year and then raised again in the second half when the balance of payments deficit became a major problem.

January.—Expenditures for Vietnam were officially estimated at $19.4 billion for fiscal year 1967, $9.1 billion more than estimated in January 1966. For fiscal year 1968, Vietnam expenditures were estimated to total $21.9 billion.

March.—Another supplemental for the Vietnam war was signed providing $4.5 billion.

The Fed reduced the reserve requirement from 4 to 3 percent making additional funds available for loans.

Early 1967.—The Fed began making substantial open market purchases on Government securities, placing additional money in circulation.

April.—Bureau of the Budget released $1.1 billion in funds previously withheld of which $1.0 billion was for highways.

The Fed lowered the discount rate from 4.5 to 4.0 percent to stimulate borrowing from the Federal Reserve banks.

Another supplemental for the Vietnam war was signed providing $12.1 billion.

June.—The investment tax credit, suspended in 1966, was restored.

Vietnam expenditures totaled $20.1 billion for fiscal year 1967, almost double the original $10.3 billion which was the estimate of January 1966.

August.—President's recommended 10-percent surcharge was rejected.

September.—Agreement was achieved at Rio de Janeiro on the eventual establishment of special drawing rights (SDR's).

Late 1967.—The Federal Reserve Board tightened the money supply in an attempt to respond to the British devaluation.

November.—The discount rate was raised from 4 to 4.5 percent.

December.—The Federal Reserve Board announced a 0.5-percent increase in the reserve requirement.

Congress cleared the largest school aid bill in the Nation's history authorizing appropriations of $9.2 billion in fiscal year 1969–70.

The appropriation for OEO was passed providing $1.8 billion for the poverty program in fiscal year 1968.

Congress approved a 13-percent across-the-board increase in benefits for some 23.8 million persons receiving social security payments. The bill also provided for major revisions in the operation of public welfare programs and lesser changes in medicaid and medicare programs. The estimated cost of the social security and welfare changes was $3.7 billion for the first year.

The U.S. balance of payments position worsened reaching a fourth quarter deficit of $7 billion.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1968	4.4	4.2	3.6	7.1	5.3
1968: I	3.9	4.3	3.7	5.5	5.0
1968: II	7.2	4.0	3.6	8.0	5.5
1968: III	4.8	5.3	3.5	8.3	5.2
1968: IV	1.1	5.3	3.4	8.4	5.6

Stabilization Policy and Budget Developments

The 1968 economy was troubled by excessive demand, rising prices, a deteriorating trade performance, and growing financial pressures. In March an international financial crisis developed as faith in the international monetary system established at the end of World War II began to crumble. The Federal Reserve Board's increase in the discount rate and a concurrent rise in credit demands in the first half of the year pushed interest rates to record high levels in May. Rates began to decline again only after passage of the Revenue and Expenditure Control Act in June. The Control Act, however, had been preceded by another boost in defense outlays and was followed by a rapid growth in the money supply. Despite a substantial slowdown in real growth the inflation rate rose again in the second half of the year and interest rates, by late November, were moving upward again past 5.5 percent. While unemployment remained very low in the final quarter of 1968, real growth averaged only 1.1 percent, consumer prices rose by an average of 5.3 percent, and the rate on 3-month Treasury bills averaged a high 5.6 percent.

Expenditures rose by 10.3 percent to $180 billion. Revenues rose by 16.1 percent to $174.7 billion, and the ceiling on wages subject to social security taxes was increased from $6,600 to $7,800. Despite the economic troubles which marked the beginning of the year, fiscal policy action by Congress was delayed. The proposal for a 5-percent surtax on income, first submitted by the President in 1967 and resubmitted as a 10-percent surtax later that year had still failed to clear its way through the Ways and Means Committee by early 1968. In the first two quarters of the year, while debate continued over whether to cut expenditures or to increase taxes or to proceed with both, Federal purchases rose by $4.8 billion reflecting a renewed acceleration of defense spending. Meanwhile, the Federal Reserve Board, responding to quickly rising credit demands, the inflationary trend, and the foreign trade situation, raised the discount rate from 4½ to 5 percent and held it above 5 percent throughout the year. Any containing influence that this might have created was offset by a rapid growth in the money supply throughout the final three quarters of the year. In June the Revenue Expenditures and Control Act was finally passed. The act's effectiveness in holding down inflation, however, was diluted by provisions exempting Vietnam war expenditures, social security benefits, and veterans benefits from controls.

January.—Expenditures for Vietnam for fiscal year 1968 were officially estimated at $24.5 billion, an increase of $2.6 billion above the January 1967 estimate. For fiscal year 1969, Vietnam expenditures were estimated at $25.8 billion.

Early 1968.—From the fourth quarter of 1967 to the second quarter of 1968 Federal purchases rose by $6.5 billion at an annual rate reflecting renewed acceleration of defense spending, primarily in response to the TET offensive.

March.—The scheduled increase in social security benefits took effect adding $3.0 billion to transfer payments for 1968.

The British closed the London "Gold Pool", the daily world auction market for gold.

The Federal Reserve Board raised the discount rate from 4½ to 5 percent.

April.—Excise taxes were lowered according to schedule. (See March 1966.)

The Federal Reserve Board increased the discount rate from 5 to 5½ percent. Regulation Q was changed to allow higher interest rates on certificates of deposit.

Interest rates moved sharply upward and peaked in May. They began to fall again only after the tax surcharge began to clear its way through the House.

June—Expenditures for Vietnam totaled $26.5 billion for fiscal year 1968, $4.6 billion above the original estimate of $21.9 billion made in January 1967 and $2.0 billion above the January 1968 estimate.

The President signed the Revenue and Expenditures Control Act of 1968 providing for:

—a 10-percent surcharge made retroactive to January 1 for corporations and to April 1 for individuals.

—an increase in the withholding rate on July 15. This forced many people into higher final payments at the end of the year. Over $10 billion was thus added to withheld tax collections in the second half of 1968.

—a limitation on Federal budget outlays for fiscal year 1969. Exempt from the limitation were Vietnam operations, interest on the public debt, veterans service and benefits, and social security.

Growth of bank credit accelerated sharply after midyear as expectations of further monetary easing spread.

July.—The second supplemental appropriation bill was passed containing $3.7 billion for defense operations in Southeast Asia.

August.—The discount rate was reduced from 5½ to 5¼ percent.

Late 1968.—During the second half of the year Federal purchases rose by only $2 billion and other expenditures by only $3 billion.

October.—The Office of Economic Opportunity received an appropriation of $1.9 billion, the largest antipoverty funding in the history of the program up to this point.

The defense appropriation bill for fiscal year 1969 was cleared providing approximately $25.5 billion for Vietnam-related operations.

December.—In mid-month the discount rate was restored to 5½ percent from the previous 5¼ percent.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1969	2.6	5.4	3.5	6.0	6.7
1969: I	3.8	4.7	3.4	7.0	6.1
1969: II	1.8	6.5	3.4	4.1	6.2
1969: III	1.4	5.7	3.6	2.3	7.0
1969: IV	−2.2	6.0	3.6	2.3	7.4

Stabilization Policy and Budget Developments

The inflationary trend of 1968 continued on into 1969. A policy of budgetary and monetary restraint throughout the year succeeded in slowing the growth rate during the first three quarters of the year. This led to an absolute decline in GNP in the final quarter. Prices, however, continued to rise in the first half of the year, and slowed only moderately in the second half. Despite Government promises to reduce inflation, further inflation was anticipated and credit demands rose sharply. As rising credit demands met with the strict policy of monetary restraint, interest rates soared. They continued to climb progressively throughout the year as growth in the money supply continued to slow. By the end of the third quarter, the housing industry was in trouble. Housing starts were down by 22 percent from the first quarter average. By the end of the fourth quarter the economy was in a downturn with inflation still high at 6.0 percent.

Expenditures rose by 4.3 percent to $188.4 billion. Revenues rose by 12.8 percent to $197.0 billion. The social security tax rate was increased from 8.8 percent to 9.6 percent adding about $3 billion to 1969 collections. In this year the administration declared an all-out campaign against inflation. Adopting a slogan that is attributed to William McChesney Martin, then Chairman of the Federal Reserve Board, the administration set out to "disinflate" the economy without "deflating" it. The stated plan was to slow the growth in Federal spending, reduce the growth in the money supply, and maintain a moderate budget surplus. This proposed budgetary and monetary restraint was achieved. Federal purchases grew by only 0.2 percent in 1969. Both the discount rate and the reserve requirement were increased and growth in the money supply was slowed considerably. Aided by the August extension of the 10-percent surtax, a moderate budget surplus was maintained throughout the year. The administration had promised and delivered a year of restraint but had not anticipated the economic response that became apparent in the fourth quarter of the year. Real growth was negative and prices were still high. In the administration's own words, "output reacted somewhat more and prices somewhat less than might have been expected from past experience." While the administration was carrying out its policy of restraint, Congress was working on a tax reform measure that was far from restrictive. Spurred by warnings of a taxpayers' revolt against

tax inequities the Congress produced, and in December, passed the Tax Reform Act of 1969. Effective January 1, 1970, the act cut revenues by $2.5 billion a year and increased social security benefits by an additional $4.4 billion.

January.—Expenditures for Vietnam were estimated at $28.8 billion for fiscal year 1969, $3.0 billion above the January 1968 estimate. Expenditures in fiscal year 1970 were estimated at $25.4 billion.

March.—The President recommended retention of the excise taxes on automobiles and telephone services. He also asked to have the income tax surcharge extended until June 30, 1970, but asked that it be reduced to 5 percent starting January 1970.

April.—The investment tax credit was eliminated.

The Fed increased the discount rate from 5½ percent to a record high level of 6 percent.

The rate of growth in the money supply declined steadily from May to August and remained low for the rest of the year.

June.—Congress repealed the scheduled freeze on the number of participants allowed in the AFDC program.

No official estimate of expenditures for Vietnam was released. Unofficial estimates by the Brookings Institution (which were calculated in a somewhat different way than at OMB), showed an increase of only $100 million in fiscal year 1969 expenditures over fiscal year 1968 expenditures.[1] On an OMB basis, Vietnam expenditures totaled $28.8 billion for fiscal year 1969, the same as the January 1969 estimate but $3.0 billion above the January 1968 estimate.

July.—An expenditures ceiling of $191.9 billion was placed on Federal expenditures for fiscal year 1970.

The second supplemental appropriation bill for fiscal year 1969 was passed containing $1.2 billion in funds for Vietnam operations.

August.—The 10-percent surcharge was extended for 6 months to be followed by a 5-percent surcharge.

Extension of the surcharge at 10 percent for the last 6 months of 1969 was signed into law.

Interest rates rose sharply in the third quarter reaching 7.1 percent by September. Housing starts which had declined by 7.9 percent in the second quarter fell by 8.7 percent in this quarter and by another 7.0 percent in the final quarter.

November.—Food stamp appropriations were raised from $340 million to $610 million.

The discount rate was lowered from 6 percent to 5¾ percent.

December.—The defense appropriation bill for fiscal year 1970 was passed. This bill was unofficially said to contain approximately $23.2 billion in fiscal year 1970 appropriations for the Vietnam war.

The surcharge was scheduled to continue at a 5-percent rate for the first 6 months of 1970.

The discount rate was lowered from 5¾ to 5½ percent.

A $4.8 billion appropriation was cleared for public works expenditures.

HUD received an appropriation of $4.8 billion.

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[1] The estimate of actual expenditures for Vietnam for fiscal year 1968 published by OMB in the 1970 budget is $26.5 billion. The estimate of actual expenditures for fiscal year 1968 published by Brookings in 1971 is $24.1 billion. The Brookings estimate for fiscal year 1969 is $24.2 billion. See the addendum on p. 39 for various estimates of the Vietnam war.

Congress increased the monthly benefits under the old-age survivors and disability insurance program by 15 percent across the board effective January 1970. This was incorporated into the Tax Reform Act of 1969.

The Tax Reform Act of 1969 was passed. Major provisions included:

—a low income allowance of $1,000,
—an increased standard deduction,
—reduced tax rates for single persons,
—a maximum tax rate of 50 percent on earned income,
—repeal of the 7-percent investment credit,
—extension of the surtax at 5 percent for first 6 months of 1970.

This produced an increase of $3.7 billion in revenues in fiscal year 1970 and $2.7 billion in fiscal year 1971. Including the social security increase, the revenue gain was only $1.9 billion in fiscal year 1970 and was estimated to produce a net revenue decline of $1.6 billion in fiscal year 1971.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1970	−0.3	5.9	5.0	3.9	6.4
1970: I	−1.4	6.7	4.2	3.6	7.2
1970: II	.2	5.9	4.7	5.4	6.7
1970: III	3.0	4.3	5.2	5.2	6.3
1970: IV	−3.9	5.7	5.9	5.4	5.4

Stabilization Policy and Budget Developments

The 1970 economy contained the worst of three worlds. For the first time a high rate of inflation was coupled with a negative real growth rate and a rising unemployment rate. The downturn that marked the final quarter of 1969 continued on into the first quarter of 1970. Two quarters of meager growth followed until real growth dipped again falling to 3.9 percent in the final quarter of the year. With normal economic expansion at a standstill unemployment rose steadily throughout the year from 4.2 percent in the first quarter to 5.9 percent in the last. Despite the economic stall, the inflation rate continued high, averaging 5.9 percent for the year and 5.7 percent in the final quarter.

Expenditures rose by 8.4 percent to $204.2 billion. Revenues fell by 2.5 percent to $192.1 billion. The budget shifted from a surplus of $8.5 billion in 1969 to a deficit of $12.2 billion in 1970. At the beginning of the year the CEA set out "to reduce the rise of prices and to revive the growth of output." To achieve these goals the administration proposed another year of "moderate" monetary restraint and a "modest" budget surplus. The year began with the scheduled increase in social security benefits and the scheduled reduction in the income tax surcharge. The complete lifting of the surcharge took place as scheduled in July. Monetary policy remained slightly restrictive with money supply growth averaging only 3.9 percent for the year and with a slight easing of the discount rates in November and December. Throughout the year the President waged a major antiexpenditures war with Congress by vetoing a number of large appropriation bills. Federal purchases of goods and services declined by $1.8 billion. However, with the increase in social security benefits, the gradual elimination of the surcharge, the halt in real growth and the rise in unemployment, transfer payments skyrocketed while revenues declined causing a deficit which expanded throughout the year. With inflation continuing to trouble the economy, Congress, in mid-August, granted the President authority to freeze wages and prices. However the authority remained unused in 1970 as the President continued to pursue a policy of restriction.

January.—The 15-percent increase in social security benefits became effective.

The President vetoed a $19.7 billion appropriation for the Department of Labor, HEW, and OEO for fiscal year 1970.

The surcharge on income was lowered according to schedule to 5 percent for the first 6 months of 1970.

June.—Expenditures for Vietnam during fiscal year 1970 as estimated by Brookings totaled $16.7 billion. Adjusted to an OMB basis, expenditures were approximately $6.0 billion below the original OMB estimate for fiscal year 1970 made in January of 1969.

The ceiling on expenditures for fiscal year 1970 was raised to $199.9 billion and a ceiling of $200.8 billion was established for fiscal year 1971.

July.—The 5-percent surtax on income expired.

August.—Unemployment compensation was extended to about 4.8 million additional workers.

The President vetoed a $4.4 billion appropriation for programs administered by OEO, but the House overrode the veto.

The President vetoed an $18.0 billion fiscal year 1971 appropriation for HUD, VA, NASA, and the House sustained the veto.

In the Economic Stabilization Act of 1970, the Congress granted the President authority to freeze wages, salaries, prices, and rents. The President in response repeated his opposition to controls.

September.—A 3-month strike against General Motors began.

November.—The Federal Reserve Board lowered the discount rate from 6 to 5¾ percent.

December.—Congress overrode the Presidential veto and appropriated $3.3 billion for HUD, $1.2 billion of which was for urban renewal.

The Federal Reserve Board lowered the discount rate from 5¾ to 5½ percent.

In a news conference, the President declared that Government had done its share in holding down inflation by restricting its budget. It was now up to labor and management, he suggested, to quit betting on inflation and to start fighting inflation.

Congress cleared a $66.6 billion defense appropriation, the smallest defense appropriation since 1967.

Congress cleared a bill extending excise taxes on telephone service and automobiles for 2 years and speeding up collections of estate and gift taxes (as proposed by the President in his 1971 budget message).

Congress cleared a bill providing free food stamps to families of four with monthly incomes under $30. The bill required recipients to register for and accept employment as a condition for receiving the stamps. The bill included authorizations of $1.75 billion for fiscal year 1971 and an open ended authorization for fiscal year 1972–73.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1971	3.0	4.2	6.0	6.7	4.3
1971: I	9.2	3.4	5.9	7.0	3.8
1971: II	3.0	4.2	5.9	10.4	4.2
1971: III	2.8	3.8	6.0	6.8	5.0
1971: IV	3.5	2.4	6.0	2.6	4.2

Stabilization Policy and Budget Developments

Even before the implementation of price controls late in the year, price behavior had improved by 1971. In the first three quarters of the year prices advanced by only 2.0 percent. This improvement, however, was at the cost of growth and employment. Despite a growth spurt of 9.2 percent in the first quarter, real growth for the year averaged only 3 percent. The rate of unemployment which had averaged 5 percent in 1970 rose to 6 percent in 1971. An additional problem was presented by the balance of trade. Continued overvaluation of the American dollar threatened to worsen an already large American trade deficit.

Expenditures rose by 8 percent to $220.6 billion. Revenues rose by 3.4 percent to $198.6 billion and the social security tax rate was raised from 9.6 to 10.4 percent. While low growth and high unemployment troubled the administration, price behavior remained the primary concern. Throughout the year, an incomes policy slowly developed with jawboning finally giving way to full-fledged wage, price, and rent controls on August 15. Announced along with the wage-price freeze were the decisions to halt convertibility of the dollar and to cut Federal revenues. In August, the United States suspended its commitment to redeem foreign-held dollars, and in December the President signed the Revenue Act into law.

January.—In his January budget message the President set the goal of a 4.5-percent unemployment rate by mid-1972.

A 12½-percent price hike was announced by Bethlehem Steel Corporation and was met by a letter of sharp criticism from the President. The price hike was finally rolled back to conform with United States Steel's 6.8 percent increase.

The discount rate was lowered from 5½ to 5 percent.

February.—The discount rate was lowered to 4¾ percent.

March.—Congress cleared a bill granting a 10-percent across-the-board increase in benefits to 26 million social security recipients.

The Economic Stabilization Act, giving the President the power to freeze wages and prices was extended to April 1972. This time the President made no public objections to the authority.

The President issued an Executive Order establishing a review mechanism for wages and prices.

The money supply expanded rapidly.

July.—The discount rate was raised from 4¾ to 5 percent.

August.—A 90-day freeze of wages, prices, and rents was announced.

The United States suspended convertibility of the dollar into gold or other reserve assets.

The President proposed a program of tax cuts and expenditure cuts. The net effect was intended to be stimulatory.

November.—The discount rate was lowered from 5 percent to 4¾ percent.

The President implemented Phase II of wage-price controls, ending the freeze.

Growth in the money supply slowed considerably.

December.—The President signed the tax bill into law:

—the personal exemption was raised from $625 to $675 in 1971 and to $750 in 1972,

—the standard deduction was increased to 15 percent starting January 1 with a $2,000 maximum,

—the low income allowance or minimum standard deduction was raised from $1,000 to $1,300 starting January 1972,

—the 10-percent excise tax on light trucks was repealed,

—the 7-percent auto excise tax was repealed,

—the 7-percent investment tax credit was reinstituted.

The full year revenue loss associated with these changes was estimated at $8 billion.

The Smithsonian Agreement was signed which provided for devaluation of the dollar and a general realinement of exchange rates among the major countries.

The Congress cleared the President's Economic Stabilization Act extending the Presidential wage-price control power through April 1973 and granting the President standby powers to control dividends and interest rates.

The Social Security Act was amended to require certain welfare recipients to register for work incentive programs.

Unemployment benefits were extended for an additional 13 weeks for individuals in high unemployment States.

The discount rate was lowered from 4¾ to 4½ percent.

The President vetoed a $6.3 billion 2-year OEO extension, and the Senate sustained the veto.

Period	GNP72	Economic conditions (percent) CPI	UR	M_1	i
1972	5.7	3.3	5.6	7.1	4.1
1972: I	7.6	3.7	5.8	7.6	3.4
1972: II	7.9	2.8	5.6	8.2	3.8
1972: III	5.3	3.4	5.6	8.5	4.2
1972: IV	8.5	3.8	5.3	9.4	4.9

Stabilization Policy and Budget Developments

Economic growth picked up in 1972 averaging 5.7 percent. With the resumption in growth the unemployment rate declined gradually over the year from 5.8 percent in the first quarter to 5.3 percent in the last. Price behavior also improved over the year with inflation averaging 3.3 percent for the year, down from the 4.2-percent rate of 1971. However, food shortages pushed the prices of farm products up in November. This began to have a noticeable impact on the CPI in early 1973.

Expenditures rose by 10.9 percent to $244.7 billion. Revenues rose by 14.6 percent to $227.5 billion. The ceiling on wages subject to social security taxes was raised from $7,800 to $9,000. The year began with Congressional approval of the President's requested dollar devaluation. For the rest of the year, however, Congressional and administrative fiscal policy action remained at odds. The President continued to pursue a path of budget restriction while Congress raised aid to individuals and attempted to expand existing programs. Social security benefits were sharply increased and were provided for the first time with a built-in cost of living adjustment. Emergency aid to the unemployed was extended. Defense spending was increased by 4.7 percent and the first installment of revenue sharing money was distributed. These stimulative actions, however, were countered by Presidential vetoes of a number of large expenditure bills and by a large overwithholding of personal income taxes.

January.—The revenue changes legislated in December 1970 became effective.

March.—Congress approved the President's request for legislation authorizing the Secretary of the Treasury to implement the dollar devaluation. The official price of gold was increased from $35 to $38 an ounce.

Collections data for the withheld individual income tax for January and early February indicated that the Tax Reduction Act of 1971 had been offset by a seemingly technical adjustment in the withholding tables. Most of the economic impact of the $8 billion tax cut was delayed until the spring of 1973 when refunds of overwithheld taxes rose by $7.4 billion.

June.—Congress increased social security benefits to be paid in September by 20 percent across the board and provided for an automatic increase whenever the cost of living rose more than 3 percent in a calendar year. Congress also increased the social security tax to 11.7 percent effective in 1973 with a $10,800 wage base and to 11.7 percent effective in 1974 with a $12,000 wage base.

The Education Amendment of 1972 was passed authorizing $19 billion in aid to post-secondary education through fiscal year 1975 and providing $2 billion in emergency aid to desegregating school districts.

The Emergency Unemployment Act of 1971 was extended for 6 months authorizing the continued disbursement of funds to any State with an unemployment rate exceeding 6.5 percent.

October.—The revenue sharing plan was passed by Congress establishing a 5-year program to share $30.2 billion in Federal revenues with State and local governments. The program was made retroactive to January 1.

The defense appropriation bill of $74.4 billion for fiscal year 1973 (a record level appropriation) cleared Congress.

New medicare provisions made 1.7 million social security disability beneficiaries under age 65 eligible for medicare.

The Congress authorized Federal takeover of the welfare system for the aged, blind, and disabled effective January 1, 1974.

Congress denied the President the requested authority to limit Federal spending to $250 billion in fiscal year 1973.

The Congress raised the widows' and widowers' social security benefits from 82.5 to 100 percent of deceased spouse's benefits. The amount that beneficiaries under age 72 could earn while still receiving full benefits was raised from $1,680 to $2,100. Persons who worked in covered social security employment for over 30 years were provided with a minimum monthly benefit of at least $170.

After the Congressional session was over the President vetoed 12 bills including the $30.5 billion appropriation for the Department of Labor, Department of Health, Education, and Welfare, the Public Works and Economic Development Act of 1972, the Flood Control Act of 1972, the Rehabilitation Act of 1972 and the Veterans Health Care Expansion Act.

December.—The first installment of revenue sharing money was distributed.

Over the year the full employment deficit of $4 billion was more than offset by overwithholding of personal income taxes amounting to $7.5 billion.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1973	5.5	6.2	4.9	7.5	7.0
1973: I	9.5	6.5	4.9	7.8	5.7
1973: II	.4	8.9	4.9	6.2	6.6
1973: III	1.7	8.4	4.8	5.6	8.3
1973: IV	2.1	9.8	4.8	5.3	7.5

Stabilization Policy and Budget Developments

Rising food prices began to affect the CPI very early in the year. After averaging 3.8 percent in the final quarter of 1972, the rate of inflation jumped to 6.5 percent in the first quarter of 1973. The price situation worsened further as the oil embargo took effect in October. By the fourth quarter of the year the CPI was rising at an average annual rate of 9.8 percent. Restriction of Federal expenditures and tightening of monetary controls meanwhile constricted the rest of the economy. While prices and interest rates moved upward, real growth slowed considerably. One sector that felt the disruptive economic pressures early was the housing market. Housing starts fell into a decline that was to last for nine quarters. By the end of 1973, housing starts had already dropped by 13.4 percent.

Expenditures rose by 8.3 percent to $265 billion. Revenues rose by 13.5 percent to $258.3 billion. The social security tax rate was raised from 10.4 to 11.7 percent and the ceiling on wages subject to the tax was raised from $9,000 to $10,000. Throughout the year the administration attempted to stabilize the deteriorating price situation. Forced by rising prices into continued reliance on controls, the executive branch remained less than enthusiastic about the program it administered. The incomes policy that developed, therefore, changed continually in form and forcefulness throughout the year. Congress meanwhile battled with the administration over impounded funds and vetoed appropriations. The numerous vetoes, program terminations, and impoundments which were handed down by the President in 1972 set the stage for Congressional action in 1973. Yet Congress in this year seldom assembled the votes necessary to counter the Presidential actions. Despite a great deal of Congressional disapproval, a good many of the administration's restrictive measures remained in force. Restrictive fiscal policy was paralleled by a tightening of the monetary controls. The Federal Reserve Board, freed from its foreign trade responsibilities by the dollar devaluation in February and the switch to floating exchange rates in March, focused its attention on the rising consumer prices. A rapid series of increases in the discount rate (from 4½ percent at the start of the year to 7½ percent by the end of the year) were implemented in an attempt to hold down inflationary credit demands. The general policy of fiscal and monetary restraint in 1973 was partially offset by an enlarged March refund of 1972 tax liabilities, the release of a second installment of revenue sharing funds in January, and a new boost in social security benefits to become effective in 1974.

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January.—Phase III of wage and price controls began. Mandatory wage and price controls for most sectors of the economy were removed. Controls were left in force in three "particularly troublesome" areas: food prices, health costs and the construction industry. For the rest of the economy there were largely voluntary guidelines backed by the threat of Government intervention.

The second installment of revenue sharing was distributed. This was the first full year of revenue sharing. The estimated cost was $6 billion to $6.5 billion in grants-in-aid each year through 1976.

The discount rate was increased from 4½ to 5 percent.

The Commerce Department announced a merchandise trade deficit of $6.9 billion in 1972.

February.—The United States devalued the dollar by 10 percent.

The discount rate was raised from 5 to 5½ percent.

March.—The President ordered the implementation of price ceilings on meat for an indefinite period. These ceilings were removed by stages with beef left under the ceiling until September 9.

Fixed exchange rates were abandoned. All major currencies were allowed to float.

The President vetoed the Vocational and Rehabilitation Act which would have extended grants to States for aid to the handicapped. (Senate sustained.)

From March to April an enlarged refund of 1972 tax liability was paid. Approximately $5.0 billion of overwithheld tax payment were returned to the income stream.

The dollar dropped 11 percent against most European currencies and 5 percent against the 14 major industrialized countries.

March.—The President vetoed a bill extending the Agriculture Department Rural and Sewer Grant Program.

April.—Congress granted the President's request for a 1-year extension of his authority to impose wage and price controls.

May.—The President ordered new price controls on the Nation's largest business firms.

The discount rate was raised from 5½ to 6 percent.

June.—Phase III–B of price controls was implemented. The President ordered a 60-day freeze on prices on all goods except unprocessed food products at the farm level. Wages remained under existing Phase III controls and rents were left free from Federal control.

The discount rate was raised from 6 to 6½ percent.

The President vetoed a supplemental appropriation bill for fiscal year 1973 providing $2.8 billion for several departments and agencies. (House sustained.)

The international value of the dollar began to rise and by the end of the year was approximately back to its February, post-devaluation level.

July.—Phase IV was implemented. Mandatory controls were again put into effect backed by civil penalties:

—The freeze on food prices, except for beef, was lifted and a two-stage program of food-price controls was begun.

—Other economic sectors were left under the freeze until August 12. The health industry was excepted.

—Advances of 5.5 percent were allowed for wages and 7 percent allowed for benefits.

—After August 12 a number of industries were freed of controls completely; the lumber industry, public utilities, long-term contracts, rents, and security and commodity brokerage fees.

The discount rate was raised from 6½ to 7 percent.

August.—Congress cleared a $20 billion highway and mass transit bill allowing the highway trust fund to be used for mass transit funding.

The Organization of Petroleum Exporting Countries embargoed all shipments to the United States in late October.

Oil prices rose at an average annual rate of 8.2 percent during the fourth quarter.

December.—The administration decided to release $1.5 billion of impounded health and education funds for fiscal year 1973.

An impoundment compromise was reached. The President was allowed to impound up to $400 million of Labor-HEW funds for fiscal year 1974. He in turn, agreed to a $32.9 billion Labor-HEW appropriation for fiscal year 1974.

The Defense Department appropriation of $73.4 billion was passed, second only in size to the fiscal year 1973 appropriation.

Congress cleared legislation increasing social security benefits by 11 percent in two installments over a 3-month period in fiscal year 1974. A 7-percent benefit rate in March and a 4-percent rate in June were to replace the previously scheduled June increase.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1974	−1.4	11.0	5.6	5.5	7.8
1974: I	−3.9	12.5	5.0	6.3	7.6
1974: II	−1.8	11.6	5.1	5.3	8.2
1974: III	−2.5	12.2	5.6	4.3	8.2
1974: IV	−5.5	12.1	6.7	4.3	7.4

Stabilization Policy and Budget Developments

By 1974 the slowdown of 1973 had developed into a severe downturn, but the severity was not fully recognized until late in the year. With the oil embargo still in effect through the first quarter, prices soared, real income declined, demand slumped, and production fell. In the first quarter of the year the Gross National Product, in real dollars, fell by a full 3.0 percent and continued to drop throughout the year. Unemployment rose rapidly reaching 6.7 percent by the final quarter of the year. The wholesale price of oil rose 51 percent between December 1973 and December 1974. With interest rates remaining high, the housing market continued its precipitous drop. Housing starts fell over the year by nearly 35 percent. Inventory buildup which had begun in 1973 continued into 1974 leading to a sharp inventory correction early in the following year.

Expenditures increased by 13.1 percent to $299.7 billion. Revenues rose by 11.6 percent to $288.2 billion, and the ceiling on wages subject to social security taxes was raised from $10,800 to $13,200. Anticipating a slow first half of the year followed by an upturn, the administration did little to reverse the downward trend. The economy was expected to pull itself out of the downturn with an improvement in the housing market predicted for midyear. This confidence was in part due to a considerable underestimation of the inventory buildup. Preliminary inventory figures had caught only a small portion of the actual inventory accumulation. The true size of the inventory problem was not apparent until mid-1974. In addition, the Federal budget for fiscal year 1974 turned out to be even less stimulative than planned as an inflation rate averaging 11 percent caused an unintended boost in Federal revenues. Further downward pressure was created by monetary policy. Monetary policy became extremely tight, with short-term commercial interest rates peaking above 12 percent in late August and early September. An increase in the discount rate was implemented in April and was only partially reversed in December. Money supply growth, at the same time, remained well below the rate of inflation.

In this year the Congress passed the Congressional Budget and Impoundment Control Act. This legislation set up a new process of budget review designed to help Congress deal more effectively with fiscal policy and budgetary matters. President Nixon resigned in August. On September 5, President Ford convened the first of the Conferences on Inflation. In all, 12 conferences (on various aspects of the economy) were convened. A final joint conference was held on October 8 when President Ford announced his Whip Inflation Now (WIN) program and requested a 5-percent increase in taxes.

Short-term Treasury bill rates fluctuated around 7½ percent.

Oil prices rose at an average annual rate of 20.6 percent during the first quarter. The OPEC oil embargo was lifted in late March.

April.—The discount rate was raised from 7½ to 8 percent.

OASDHI benefit payments were increased by 7 percent.

Phase IV came to an end. Wage and price controls were terminated.

June.—The House passed a $33.2 billion appropriation for DOL, HEW, and related agencies for fiscal year 1975. This was below the President's requested appropriation level.

Short-term Treasury bill rates rose to an average of 8.2 percent for the quarter. Rates paid on short-term business loans at banks averaged 11.15 percent for the quarter.

The Congressional Budget and Impoundment Control Act of 1974 was passed. Spurred by Presidential impoundments and by feelings that Congressional control over budget matters had been slipping continually over the years, the Congress, for the first time implemented a process for considering the Federal budget as a whole. The act spelled out a timetable for Congressional actions affecting the Federal budget. A preliminary budget resolution, recommending revenue and spending targets, was to be followed by a second budget resolution setting a revenue floor and an expenditures ceiling. Legislation violating these limits could be ruled out of order in the House or the Senate. All budget decisions were to be reviewed in light of their impact on overall fiscal policy. Priorities were to be spelled out by allocation of the budget total over the various spending categories. House and Senate Budget Committees were created to supervise the new process.

Oil prices rose at an average annual rate of 15.3 percent in the second quarter.

July.—The Elementary and Secondary Education Act was amended extending most programs authorized under the 1965 Act for 4 years through fiscal year 1978. The act authorized more than $25 billion in appropriations.

OASDHI benefit payments were increased by 4 percent.

August.—Congress gave the President the authority he requested to monitor wage and price increases.

The President vetoed a $13.6 billion appropriation for agricultural, environmental, and consumer protection programs.

September.—The 12 conferences on inflation were held.

The Defense Department appropriation bill was passed. It was $82.1 billion, the largest appropriation bill ever approved by Congress up to that time.

Although the Tresaury bill rate stabilized, the rate on short-term bank loans averaged 12.4 percent during the quarter.

Oil prices rose at an average annual rate of 9.5 percent in the third quarter.

October.—The combined conference on inflation was held October 8. The President requested a 5-percent surcharge on corporate and individual incomes above $7,500 to fight inflation and an increase in the investment tax credit from 7 to 10 percent.

December.—The discount rate was lowered from 8 to 7¾ percent.

The short-term Treasury bill rate fell to an average of 7.4 percent during the quarter. Rates on short-term bank loans to businesses averaged 11.64 percent during the quarter.

Oil prices rose at an average annual rate of 3.3 percent in the fourth quarter. The unemployment rate rose rapidly as massive layoffs, particularly in the automobile and related industries began in late October.

	UR
October	*6.1*
November	*6.7*
December	*7.2*

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1975	−1.3	9.2	8.5	4.2	5.8
1975: I	−9.6	8.7	8.1	.7	5.8
1975: II	6.4	6.2	8.8	7.2	5.4
1975: III	11.4	8.0	8.6	7.2	6.3
1975: IV	3.0	6.3	8.4	2.5	5.6

Stabilization Policy and Budget Developments

The economy declined sharply in the first quarter, making this recession the worst since the 1930's. The gross national product declined by another 9.6 percent in the first quarter of the year and began to climb upward again only after passage of the Tax Reduction Act in March. A $23.5 billion inventory correction meanwhile took place from January through June, clearing the way for expanding production. While inflation still averaged 9.2 percent for the year, price behavior improved as the year progressed. The labor market, on the other hand, continued to suffer the effects of the recession. After averaging 6.7 percent in the final quarter of 1974, the unemployment rate rose to 8.8 percent in the second quarter of 1975 and remained at 8.4 percent in the fourth quarter of the year.

Expenditures rose by 19.4 percent to $357.8 billion. Revenues fell by 0.6 percent to $285.5 billion, and the ceiling on wages subject to social security taxes was raised from $13,200 to $14,100. The need for fiscal stimulus led to enactment of the Tax Reduction Act in March. This measure was followed by further legislation in December extending the 1975 tax cuts into 1976. With the unemployment rate holding stubbornly above 8 percent throughout the year, Congress took a number of actions extending further emergency aid to the unemployed. The Federal Reserve Board, meanwhile, eased the credit situation by implementing a series of cuts in the discount rate.

January.—The discount rate was lowered from 7¾ to 7¼ percent.

The President signed a $4.5 billion appropriation to provide extended unemployment insurance and public service jobs.

February.—The Congressional Budget Office was formed completing the structure of budget review that was legislated in the Budget Reform Act of 1974.

The Supreme Court ruled that the President had exceeded his authority when he refused in 1972 to allocate to the States $9 billion in water pollution funds.

The discount rate was lowered from 7¼ to 6¾ percent.

The price of food stamps was frozen.

March.—The Tax Reduction Act of 1975 was enacted providing for an approximately $22 billion tax cut in 1975. Its major provisions included:

	Billions
Refunds of fiscal year 1974 income taxes	$−8.1
Reduction in withholding	−7.8
Allowances and deductions	(−2.6)
$30 credit and $750 exemption	(−5.2)
Increase fiscal year 1975 refund	−2.2
Earned income credit	(−1.5)
Increased child care credit	(−0.1)
Home purchase credit	(−0.6)
Decrease in fiscal year 1975 individual tax liability	−10.0
Reduction in fiscal year 1974 and fiscal year 1975 liability	−18.1
Reduction in business tax liability	−3.8
Reduced payments in calendar year 1975	−1.8
Corporate tax rate change	(−1.5)
Increase in Investment tax credit	(−0.3)
Reduced payment in fiscal year 1976	−2.0
Tax reduction	−21.9
Tax increases	2.0
Net tax reduction	−20.0
Expenditure increases	1.9
Bonus to social security beneficiaries	(1.7)
Emergency unemployment benefits	(0.2)

The discount rate was lowered from 6¾ to 6¼ percent.

April.—The Senate adopted a resolution forcing the release of $9.1 billion in Federal highway funds that had been impounded by the President in 1974.

May.—The tax refund was paid and withholding rates lowered by more than the reduction in individual income tax liability in order to compensate for the 4 months of higher withholding before the tax cut became effective.

The President vetoed a $5.4 billion jobs fund.

Farm price supports were vetoed as too costly.

The First Concurrent Resolution on the Budget for Fiscal Year 1976 was passed recommending Federal revenues of $298.2 billion and Federal expenditures of $367.0 billion.

The discount rate was lowered from 6¼ to 6 percent.

June.—The House sustained the President's veto of an appropriation bill aimed at creating jobs in both the public and private sectors.

The President vetoed a $1.2 billion housing bill and the House sustained the veto.

The President signed a bill providing for extended unemployment compensation from June 30 to the end of the year.

December.—Congress cleared emergency legislation providing for extended unemployment compensation for 1 year and 3 months more.

Three months behind schedule the Second Concurrent Resolution on the Budget for Fiscal Year 1976 was passed. A ceiling of $374.9 billion was set on outlays and a floor of $300.8 billion was set under revenues. The revenue floor took into account the expected extension of existing tax cuts.

Congress cleared an $8.4 billion, 6 months' extension of the tax cuts that were scheduled to expire December 31.

The President signed the new energy bill granting the President new powers to control the flow of energy supplies and materials; providing standby authority in an energy emergency; creating a national strategic reserve of oil against a future oil embargo; setting mandatory fuel efficiency standards for automobiles; continuing Federal controls on the price of domestic oil for at least 3 years; and authorizing Government audits to verify information submitted to Federal agencies by energy producers and distributors.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1976	6.0	5.7	7.7	5.1	5.0
1976: I	8.8	5.2	7.6	2.9	4.9
1976: II	5.0	4.9	7.5	8.5	5.2
1976: III	3.9	5.7	7.8	4.4	5.2
1976: IV	1.2	4.3	7.9	6.6	4.7

Stabilization Policy and Budget Developments

The recovery took a leap forward in the first quarter of 1976 and then seemed to falter. Few considered the first quarter growth surge of 8.8 percent sustainable. In fact most analysts considered a less booming rate of growth more desirable. However, the three quarters of slowing growth that followed the initial surge raised concerns about the durability of the economic recovery. Real growth slowed first to 5.0 percent in the second quarter then to 3.9 percent in the third and 1.2 percent in the fourth. The unemployment rate, which had edged downward from January to May, began to rise again in June. By November the unemployment rate was back up to 8.0 percent. Inflation meanwhile, had slowed. After rising by an average 9.2 percent in 1975, consumer prices rose by only 5.7 percent in 1976 and by only 4.3 percent at an annual rate in the fourth quarter of that year.

Expenditures rose by 8.7 percent to $388.9 billion. Revenues rose by 15 percent to $330.3 billion. The ceiling on wages subject to social security taxes was raised from $14,100 to $15,200. With the recovery underway, the President again focused on inflation and attempted, by power of the veto, to hold down Federal spending. Congress, on the other hand, centered its attention on the high rate of unemployment and the "spurt-pause" pattern of the economic recovery. Over Presidential veto, the Congress passed a $56 billion HEW appropriation and a $3.7 billion public works employment measure. In late 1976, the Tax Reform Act was enacted extending the 1975 tax cuts through fiscal year 1977. Congress also approved a $25.6 billion extension of the President's Revenue Sharing Program, authorizing it through September 1980. In September the first full cycle of the new Congressional Budget Procedure was completed with the passage of the Second Concurrent Resolution on the Budget for Fiscal Year 1977. Noting the uncertainty of the economic recovery, the budget resolution suggested the possible need, in early 1978, for passage of a third, more stimulative budget resolution. In late 1976, debate on fiscal policy was complicated by a shortfall in Government spending which became apparent in September.

January.—The $8.4 billion tax cut extending the tax reduction for 6 months and passed in December 1975 was in effect. Withholding rates were kept at May through December levels, thus increasing the size of the tax cut.

The discount rate was lowered from 6 to 5½ percent.

February.—The President vetoed a $6.2 billion bill for job-creating work programs. The House overrode but the Senate sustained the veto. (H.R. 5247.)

May.—The First Concurrent Resolution on the Budget for Fiscal Year 1977 was passed recommending Federal revenues of $362.5 billion and Federal expenditures of $413.3 billion.

June.—The fiscal year 1975 tax cut was extended until September 30, 1976.

July.—The President vetoed a $3.95 billion public works jobs bill but the Senate and House overrode the President's veto.

September.—The President vetoed the $56 billion appropriation bill for Department of Labor, HEW, and related agencies but Congress overrode the veto.

The Second Concurrent Resolution on the Budget for Fiscal Year 1977 was passed setting a revenue floor of $362.5 billion and expenditure ceiling of $413.1 billion. Due to the slowdown in real growth the Budget Committees left open the option of a third, more stimulative budget resolution in early 1977.

Congress cleared a $3.7 billion public works jobs bill.

Congress passed a $25.6 billion extension of Federal revenue sharing for 3¼ years from January 1977 to September 1980.

Due to the shift in the fiscal year, the traditional June end-of-year spending by agencies was expected to take place in September. This final spending surge did not occur, however, and shortfall in Government spending became apparent.

October.—The Tax Reform Act of 1976 was passed providing an extensive redrafting of the Nation's tax laws and further extension of existing tax cuts. The tax revisions, including extensions, lowered revenues by approximately $15.7 billion in 1977. (Tax reform resulting in a $1.6 billion revenue increase and tax extensions resulting in a $17.3 billion revenue loss.) The Reform Act was expected to lower 1978 revenues by approximately $6.2 billion. Major provisions of that act:

—Sought to restrict the use of tax shelter investments,

—Made changes in the taxing of gifts and estates, the first major changes in more than 30 years,

—Continued the personal and corporate income tax cuts passed in 1975,

—Increased taxes on the very wealthy,

—Tried to simplify income tax preparation for individuals.

Congress approved legislation amending the Bretton Woods Agreement Act. The amendment included:

—Official acceptance of "floating" currency exchange rates,

—Elimination of the gold standard, and

—Reallocation of quotas among IMF member countries.

A temporary increase in Federal unemployment tax rates was enacted to become effective January 1, 1977.

November.—The discount rate was lowered from 5½ to 5¼ percent.

Period	Economic conditions (percent)				
	GNP72	CPI	UR	M_1	i
1977[p]	4.9	6.5	7.0	6.7	5.3
1977: I	7.5	8.4	7.4	4.4	4.6
1977: II	6.1	8.8	7.0	8.7	4.8
1977: III	5.1	5.3	7.0	9.7	5.5
1977: IV[p]	4.9	4.2	6.6	7.0	6.1

[p] Preliminary.

Stabilization Policy and Budget Developments

January–February.—A wave of cold weather and fuel shortages temporarily cut back employment and production. As the weather eased, output rose strongly. The new Carter Administration proposed a "package of economic stimulus programs" including a $50 per capita rebate that was later dropped. By the end of the year, the housing industry had completely recovered from the recession as housing starts reached 2.3 million units in December. Short-term interest rates (91-day Treasury bills) rose from 4.36 percent in December 1976 to 6.1 percent in December 1977. The rate of growth in the money supply accelerated during the summer and fall.

January.—The social security taxable wage base rose, as scheduled, from $15,300 to $16,500.

The temporary tax-rate increase for Federal unemployment insurance became effective raising the rate from 0.5 to 0.7 percent. The amount of wages subject to this tax was also raised permanently from $4,200 per worker to $6,000 per worker. Coverage was extended to about 9 million workers.

The outgoing President sent Congress a proposed budget for fiscal year 1978 with outlays of $440 billion and estimated receipts of $393 billion.

The President-elect announced the broad outlines of his fiscal stimulus plan. The stimulus was designed to span fiscal year 1977 and fiscal year 1978 and was to cost between $25 and $32 billion.

The incoming administration filled in the details of its fiscal stimulus plan in late January. For fiscal year 1977:

$10.6 billion reduction in taxes:
- $8.2 billion in $50 rebates,
- $1.5 billion reduction due to enlarged standard deduction,
- $0.9 billion reduction in corporate taxes.

$5.1 billion increase in expenditures:
- $3.2 billion in $50 payments to nontaxpayers,
- $0.7 billion for expanded public service employment,
- $0.3 billion for expanded training and youth programs,
- $0.2 billion for accelerated public works,
- $0.7 billion for increased countercyclical revenue sharing.

For fiscal year 1978:

$7.9 billion in reduced taxes:
- $5.7 billion for reduced individual taxes,

$0.5 billion for business tax credits,
$1.8 billion for reduced corporate taxes.
$7.9 billion in increased expenditures:
$0.2 billion for refunds in excess of tax liability,
$3.4 billion for public service employment,
$1.6 billion for training and youth programs,
$2.0 billion for accelerated public works,
$0.7 billion for countercyclical revenue sharing.

February.—The Third Resolution on the Budget for Fiscal Year 1977 was reported out of the committee. The Resolution set a ceiling of $418.8 billion on outlays and a floor of $348.5 billion under revenues allowing room for further stimulus of the economy and almost doubling the increase in direct spending recommended by the President. The revenue level recommended by the committee incorporated the tax reductions proposed by the President.

The House Ways and Means Committee voted to approve a stimulative tax cut package for individuals and businesses. For fiscal year 1977 the package recommended tax cuts plus payments to nontaxpayers of $12.7 billion (compared to the President's $13.8 billion), and for fiscal year 1978 the package recommended cuts plus payments of $9.1 billion (compared to the President's $8.1 billion).

The new President sent his version of the fiscal year 1978 budget to Congress proposing outlays of $459.4 billion and revenues of $401.6 billion.

March.—The Third Concurrent Resolution on the Budget for Fiscal Year 1977 was passed setting a revenue floor of $347.7 billion and an expenditure ceiling of $417.5 billion. The 1975 tax cuts were continued through 1978. The resolution assumed a stimulus package of $17.5 billion providing for:

—The full Carter tax package plus additional $1.5 billion in expenditures,
—Countercyclical assistance to State and local governments (+$225 million),
—Accelerated public works programs (+$200 million),
—Public service job programs (+$15 million),
—Employment training and youth programs (+$300 million),
—Job opportunities program (+$60 million), for older Americans (+$30 million),
—Railroad and highway construction (+$200 million) and job-creating programs in parks (+$300 million),
—Emergency assistance for higher fuel bills (+$200 million).

March.—The Senate Finance Committee approved the $50 rebate of 1976 taxes.

The Senate passed an amendment supporting the water projects which the administration had recommended cutting.

April.—Congress cleared legislation to extend for 7 months, through October 31, and then to phase out an emergency program of jobless benefits for long-term unemployed.

President abandoned his rebate proposal and his previously proposed business tax credits.

The Senate agreed to drop the rebate provisions from its stimulus plan but voted to retain the business tax credits. The stimulus package was reduced by $11.4 billion—$8.2 billion in tax refunds and $3.2 billion in payments to nontaxpayers. The total program for fiscal year 1977 was reduced from $17.2 billion to $5.8 billion.

Congress cleared a $28.9 billion supplemental appropriation bill for fiscal year 1977.

May.—Congress cleared a $20.1 billion supplemental appropriations bill for fiscal year 1977 containing funding for jobs programs and other elements of the stimulus plan included in the Third Budget Resolution. The major appropriations were:

—$7.9 billion for public service jobs in State and local governments, including funding for fiscal year 1978,

—$4.0 billion for public works jobs programs,

—$1.4 billion for youth employment and training programs, and $59.4 million for community service employment for older Americans,

—$0.6 billion for antirecession aid to State and local governments.

Congress cleared the First Concurrent Resolution on the Budget for Fiscal Year 1978 setting an outlay target of $460.95 billion and a revenue target of $396.3 billion.

Congress completed action on the final major element of the President's stimulus package passing a 3-year, $34.2 billion tax cut bill, including extension of the 1975 tax cut until December 1, 1978.

The countercyclical aid program, established in 1976, was extended through fiscal year 1978. Funds for 1977 had been provided in the supplemental appropriation bill cleared in early May.

June.—The President signed a bill extending the Comprehensive Employment and Training Act (CETA).

The increase in the standard deduction became effective a month later than originally planned, reducing the fiscal year 1977 stimulus program by another $500 million.

July.—Congress cleared a $10.3 billion appropriation for public works funding.

August.—The Federal Reserve Board raised the discount rate from 5¼ to 5¾ percent.

September.—The Second Concurrent Resolution on the Budget for Fiscal Year 1978 was passed setting a revenue floor of $397 billion and an expenditure ceiling of $458.3 billion.

Congress cleared the fiscal year 1978 appropriation bill of $69.4 billion for HUD, the Veterans Administration, and other independent agencies.

Rapid increases in the money supply began to occur around mid-August.

October.—The Federal Reserve Board raised the discount rate from 5¾ to 6 percent.

December.—The Labor-HEW appropriation bill finally passed after a long controversy about the provisions on abortion. Two other bills, D.C. appropriations and foreign aid, were also enacted after the beginning of the fiscal year. The Energy Conference Committee was unable to resolve the differences between the House and Senate versions of the National Energy Plan.

ADDENDUM

Various estimates of expenditures for the Vietnam War

[Fiscal years; in billions of dollars]

	Office of Management and Budget			
	1st [1] estimate	2d [2] estimate	Actual [3]	Brookings [4]
1965			0. 103	
1966		4. 635	5. 812	
1967	10. 335	19. 419	20. 133	
1968	21. 900	24. 531	26. 547	24. 100
1969	25. 784	28. 812	28. 800	24. 200
1970	25. 397		23. 000	16. 700
1971			14. 700	11. 000
1972			9. 400	6. 800
1973			6. 300	3. 500
1974			3. 100	
1975			1. 400	
1976			. 300	

[1] The "1st estimate" of the cost appear in the 1967 budget sent to Congress in January 1966. That budget also contained a "2d estimate" for fiscal year 1966, although no 1st estimate for that year is known to exist.

[2] The "2d estimate" appears as the middle column of the subsequent year's budget—i.e., a reestimate of the fiscal year that is in progress when the budget documents are submitted.

[3] The "actual estimates" appear in the budget documents for the fiscal year dated 2 years later. The 1969 budget contains the final numbers for fiscal year 1967, for example. Estimates from 1969–76 are unpublished DOD estimates.

[4] Schultze, Fried, Rivlin, Teeters, *Setting National Priorities, the 1973 Budget*, Brookings Institution, p. 75, Washington, D.C. 1972.

NOTE.—OMB printed estimates of the cost of the Vietnam War in the 1967, 1968, 1969, and 1970 budgets.