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INCENTIVE ANTI-INFLATION PLANS

A STUDY

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JOINT ECONOMIC COMMITTEE

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LETTERS OF TRANSMITTAL

APRIL 28, 1981.

To the Members of the Joint Economic Committee:

Transmitted herewith for the use of the Joint Economic Committee and other Members of Congress is a study entitled "Incentive Anti-Inflation Plans." The study was prepared by David Colander, associate professor of economics at the University of Miami, Coral Gables, Fla. The study examines and evaluates various solutions to the problem of controlling inflation, including plans that would provide a tax or market incentive to restrain wage and price increases.

The views expressed in this study are those of the author and do not necessarily represent my views or the views of any other member of the Joint Economic Committee.

Sincerely,

HENRY S. REUSS,
Chairman, Joint Economic Committee.

APRIL 23, 1981.

Hon. HENRY S. REUSS,
Chairman, Joint Economic Committee,
Congress of the United States,
Washington, D.C.

DEAR MR. CHAIRMAN: I am pleased to submit a study entitled "Incentive Anti-Inflation Plans" which was prepared by David Colander, associate professor of economics, University of Miami, Coral Gables, Fla. The study was supervised by Dr. William R. Buechner of the Joint Economic Committee staff.

Sincerely,

JAMES K. GALBRAITH,
Executive Director, Joint Economic Committee.

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INCENTIVE ANTI-INFLATION PLANS

By David Colander*

I. INTRODUCTION

How can something as simple as inflation be so difficult to solve? If inflation were simply a matter of "too much money chasing too few goods," then one would expect that the government could control the money supply and consequently control the inflation. The government has failed to act in this way and unless one subscribes to a sadistic theory of government, its failure suggests that there are non-monetary or "real" causes embedded in our political and economic institutions.

This study provides some insight into the nature of those real causes, and develops a strategy to combat inflation. Part of that strategy includes monetary restraint; however, to be politically acceptable, monetary restraint must be made more efficient. Some method must be developed to translate quickly a decrease in the growth of the money supply into a decrease in the price level, not into a decrease in employment and output.

The method suggested by this report is an incentive based incomes policy or incentive anti-inflation plan.[1] These policies minimize government intervention in the market economy while channeling restrictive monetary policy into anti-inflation incentives rather than into anti-production incentives. They provide the necessary supply side incentives to stop inflation.

Incentive anti-inflation plans take various forms.[2] Many of the arguments for and against such policies have incorrectly interpreted the methodology and goals of these policies. Specifically, these policies are not designed to solve inflation by themselves, but instead must function as complements to, rather than substitutes for, the appropriate monetary and fiscal policy. These proposals are not meant to replace the market with government regulation; they recognize the market's advantages and use market incentives to check inflation programs as strong as, and no stronger than, the pressures for inflation.

To function properly, incentive anti-inflation plans must be supported by an effective legal structure, an enforcement mechanism, and a general public acceptance that the plans are fair. These are difficult requirements but all markets need these foundations. There is a funda-

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[1] These policies have been previously called tax or market based incomes policies (Walich and Weintraub (1971); Colander (1979)). The use of incentive rather than tax or market broadens their scope and emphasizes the method through which they are designed to achieve their results.

[2] Chapter IV and the appendix to chapter IV presents some of the proposals. Others are referenced in the bibliography.

mental difference between the government's role in establishing a legal framework and its role in directly regulating market decisions. Anti-inflation incentive plans require only the former.

The Central Idea Behind Incentive Anti-Inflation Plans

The central idea underlying incentive anti-inflation plans is simple. Since prices rise when it is in sellers' interest to raise the prices they charge and when it is in the buyers' interest to pay these higher prices, incentive anti-inflation plans directly affect those interests. They provide incentives for sellers not to raise their price—and for buyers not to pay higher prices—while still allowing sellers and buyers the freedom to choose whether or not to do so.

Economic theory has not recognized the need for such incentives because its underlying framework is essentially *static*, whereas the inflation problem is dynamic. In the prevalent economic theory it is of no consequence what the nominal wage or price level is—only relative wages and prices matter. It is, in this theory, as easy to achieve a relative price change between two goods by lowering one price, as by raising the other. In a static model which considers only equilibrium relative prices, the two situations are identical. In a static model an anti-inflation incentive plan would stop inflation with no side effects by simply requiring that upward price movements be counterbalanced by downward price movements. All price changes would be relative, not absolute price level changes. Since in the static model we do not care about the absolute price level, almost no incentive is necessary. The plans easily weed out socially harmful inflationary elements of price increases while allowing socially useful relative price changes.

The "market" version of these plans makes this argument explicit. It establishes a law requiring that anyone who raises his "income rate" or "price" more than the growth in average productivity find another person or group of persons who will lower their "income rate" or "price" by an offsetting amount.[3] To accomplish this offset a market is established in which firms buy and sell the right to raise "prices." The price of the right to raise "price" is determined by the forces of supply and demand and reflects the overall inflationary bias in the economy. This price is the anti-inflation incentive; it gravitates to the precise level necessary to offset inflationary tendencies in the economy. If, as suggested by prevalent static economic theory, no inflationary bias exists, then no anti-inflation incentive would be needed—and the "price of the right to raise price" would be zero.

Bold New Initiatives

Numerous theoretical and practical questions still exist concerning incentive anti-inflation plans. For instance; why are anti-inflation incentives needed? Is it possible to define "price" in such a way that it is feasible to implement the incentive? What side effects will the plan's implementation have? And finally: The bottom line—are they worth the costs?

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[3] Abba Lerner's and my Market Anti-Inflation Plan (1980) is the most developed of these proposals.

These questions are not easily answered. Incentive anti-inflation plans are bold new initiatives. All new initiatives involve risks, difficulties, and unforseen problems. All too often, we face our problems with the foresight of myopic preprogrammed machines, demanding immediate perfection. This study should smother any hope that these plans are a panacea; they are not. They are tough and difficult policies that will neither be easily implemented, nor costlessly run. The bottom line depends on the costs of inflation and of the alternative means of combatting it. Thus, an important consideration in judging incentive anti-inflation plans is an assessment of others means of fighting inflation.

The Failure of Past Attempts

Chapter II briefly considers the historical record of other attempts to fight inflation and their relevance to our present dilemma. The record is not encouraging. The weight of the historical evidence is clear:

Permanent mandatory wage and price controls are inconsistent with the market economy and have *always* broken down.

Restrictive monetary and fiscal policy may ultimately help fight inflation but the short run effects are extremely costly. It is unlikely that the government will, or should, use a sufficiently strong aggregate policy to solve inflation. Moreover, the costs in real output of such policies have been rising.

Jawboning provides little help, if any, and has significant costs in undermining the rule of law and the role of the market.

Voluntary controls have never withstood inflationary pressures, and have continually broken down.

These past failures create the need for a bold new initiative.

A Dynamic Theory of Inflation

Chapter III considers the theoretical nature of the inflation problem. The monetary theory and approach to inflation provides the initial model because it approaches inflation in the correct general equilibrium dynamic framework. The chapter explores the necessary "creative leap" monetarists make in their transition from a theoretical model of inflation to a set of practical policy prescriptions. That creative leap is based on certain questionable assumptions concerning the separability of equilibrium and disequilibrium analysis. These assumptions are unrealistic, at best.

If these assumptions do not hold, the nature of macro-economic equilibrium changes. The "real theory of inflation" outlined in Chapter III provides an alternative creative leap. In it the dynamic adjustment process places a prior constraint on the aggregate economy preventing the attainment of static supply/demand equilibrium. Whenever true full employment is approached, a dynamic upward pressure on prices is unleashed that quickly develops into an accelerating inflation as it becomes expected. To maintain equilibrium, this pressure must be offset.

Weak markets and unemployment can offset this pressure, but the government has specifically ruled out the use of unemployment as

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a tool against inflation.[4] Thus, government has placed itself in a dilemma. It is unwilling and unable to create the severe recession necessary to stop inflation and to maintain the unemployment necessary to prevent it from arising again. Thus, the inflation rate ratified by monetary policy steadily creeps upward.

Anti-inflation incentive plans provide a direct downward pressure on prices, reducing the need for weak markets. They offset the dynamic upward pressure by providing a synthetic dynamic competition to aid the actual competition in the society in maintaining a constant price level. Thus, in the real theory of inflation anti-inflation incentive plans play a necessary role and provide government with a new tool that allows the maintenance of full employment and a constant price level.

Rejecting the real theory of inflation does not eliminate the need for an anti-inflation incentive plan. In a monetary theory of inflation these plans can still play a temporary role eliminating the substantial expectational lag between changes in the money supply and prices. They make monetary policy more efficient by directly channeling restrictive aggregate policy into decreased inflation.

The Role of the Market in Society

Understanding incentive anti-inflation plans requires a thorough understanding of the market's role and functioning in society. The market is not costless. It is not something that anyone would choose to use as a means for allocating goods in an ideal society in which decisions could be costlessly made. The need for a market arises only because decisions are so difficult to make. Anyone who has been part of a group attempting to decide what movie to see or what to do on any particular day can easily understand the problem. There is no easy way to coordinate individuals' desires into a single plan acceptable to all, yet society must coordinate the activities of millions of individuals, every day.

If deciding were costless, or if we had infinite time, we might have giant society meetings where all individuals reach a consensus. Neither of these conditions prevail, and consequently a successful society must devise some method of reducing the number of decisions made to a manageable number. The market's function is to do precisely that. After reaching agreement about initial property rights through the political process, the market achieves the desired coordination without direct government involvement in those decisions, other than the enforcement of the property rights.

Generally, the market allocation in any one situation will not be particularly fair or equitable, but if everyone has roughly equal opportunity, the results may be tolerable. Over time, much of unfairness will even out. Market control allows maximum individual discretion in any particular instance—a significant advantage. No one is told directly what to do. Instead, if individuals want more than there is to go around, the market price tends to rise making the activity more costly to buyers and more attractive to sellers. This, in turn, discourages buyers and encourages suppliers. The process also works in re-

[4] The statement of this goal is embodied in the Humphrey-Hawkins Act (1978) and in many documents such as President Carter's Anti-Inflation Plan (1978).

verse. The coordination is achieved by an "invisible hand." Instead of commanding, the market nudges everyone slightly. It employs subtle methods which allow individuals to decide for themselves how much to produce and how much to consume—decisions which maintain (at least partially) illusions of freedom.

The above is not intended to suggest that individuals are really not free, or that their illusions are deluding them. Each individual is free; however, as a group, they are guided nonetheless since there is sufficient statistical regularity in their actions to produce, on average, the desired coordination. Control of the average, leaving each individual free to make his or her own decision, is the essence of market control; it is the process which reconciles individual freedom of action and aggregate control.

Market control clearly involves problems: it uses, and requires, time to function. Market control may be likened to a huge lumbering beast; it is extremely powerful, but is also quit sluggish. In the short run, changes in relative prices, the tools by which markets work, have little effect on the quantity supplied or on the quantity demanded, and instead, cause large variations in individuals' incomes (as the price they receive or pay changes). This short-run sluggishness is sometimes interpreted as an indication that markets are ineffective; that they cause problems without bringing about their desired end. This interpretation is incorrect: short-term market ineffectiveness does not imply that markets are ineffective but rather that they are predominantly long-term mechanisms of control achieved through short-run irritation and stimulation.

By providing short-term financial incentives to buyers and sellers, markets encourage individuals to change their actions so that they escape long-run difficulties. The recent rise in oil prices is an example. This rise created tremendous hardship for those of us who had to pay the higher prices. Individuals with gas-guzzling cars and automobile commuters found this rise especially onerous. However, the price rise achieved what exhortations and community spirit did not and what many believed could never be done: it changed the buying habits of the American public and made gas efficiency in cars a major consideration, while simultaneously encouraging individuals to live closer to their jobs. These and similar effects contributed to a decline in gasoline consumption. Besides decreasing demand, the price rise simultaneously encouraged additional exploration for oil and research into alternative energy sources. In the short run, therefore, market control creates irritations, and does not significantly affect quantities demanded or produced; its ends are achieved only over time. If more immediate responses are desired, market control is generally inappropriate and other, more direct, forms of control must be used.

Markets often lead to unfair results; some people are luckv; others not; some use foresight; others do not. Most people would find it difficult to justify the market result in any particular instance. But it is inappropriate to judge the market on a case by case basis. The market is a system of rules and must be judged in reference to a large number of results. In a game of dice, if one individual rolls a 6 and another rolls a 1, the game is not unfair. Only a consistent bias that can be mitigated by some other practical system can be considered unfair.

Tax and Subsidy Incentives

Establishing property rights and the institutional framework within which a market can function effectively can be a long and costly process. In some areas the costs of coordination of any type are not worth the benefits. Many activities are inappropriate for market coordination. Thus, if coordination is to be achieved, regulation and other forms of incentives must be relied upon to achieve it. One such method is the use of tax incentives which can modify or analog market results.

Usually taxes are regarded as means of collecting money to support government activities, and subsidies as gifts to individuals. These notions are often correct. Nonetheless, when taxes are considered a form of coordination, it is another effect of taxes that one is most concerned with: one generally referred to as the incentive effect.

It has been long recognized that taxes have incentive effects in precisely the same way that market prices have incentive effects: the more a good or activity is taxed, the less of that good will be consumed or the more the taxed activity will be avoided. But this has generally been considered an incidental effect. In economists' recent writings, however, suggestions that taxes and subsidies should be used primarily for their incentive effects are becoming prevalent.[5] Their argument is that since taxes have the same effect as prices, they can be used as a means of control: a visible hand corresponding to the invisible hand of the market. They can direct individuals toward socially optimal activities while maintaining individual freedom of choice.

In technical terms, the formal value of coordinating action is the difference between the value of a fully cooperative game and a non-cooperative game.[6] Such gains can be substantial. Without cooperation, families, firms and nations soon fall apart; little progress can be made. Were every individual responsible for maintaining and protecting the property he could control, most income would be spent on defense and protection; very little would be left for consumption or leisure. Moreover, the specialization and division of labor necessary for modern industrial society would be impossible.

Unfortunately, the costs of coordination are also significant. Without a strong, fair government, coordination is impossible. Deciding when and how to coordinate individuals' actions is one of the more perplexing and important decisions facing our society. In making this decision we face conflicting goals—on the one hand to achieve a preferred position for ourselves, and on the other to maintain the necessary cooperation among all individuals. This conflict produces unrelenting social tension and requires constant vigilance in a system of checks and balances to achieve some semblance of equilibrium and consensus.

If individuals can easily avoid a tax (*i.e.*, demand is elastic) the tax is not an especially useful tool to collect revenue. However, tax avoidance is precisely the desired response to achieve a social goal since the goal is to change behavior rather than tax revenue. Because of these conflicting purposes of taxation, it is useful to distinguish taxing for revenue and taxing to achieve a social goal. Analysis of

[5] See for instance Charles Schulze (1977).
[6] For a discussion see Luce and Raiffa (1957) or Schelling (1960).

the latter should be focused upon the incentive effect of a combination tax and subsidy system that generates zero net revenue.

Incentive effects can be either positive or negative, depending on whether a tax encourages or discourages socially desirble activities. The incentive effects of the income tax are generally considered negative; that is, the tax discourages individuals' participation in the labor force and encourages consumption of non-market goods and activities. When taxes have negative incentive effects, the government should minimize them in a manner consistent with equity and revenue needs. Similarly, the government should maximize positive incentive effects.

Unlike the income tax, sumptuary taxes imposed on such items as tobacco, wagering, and liquor are believed to have positive incentive effects. Although they are primarily levied to collect revenue, they also reflect the view that their incidental side effects of discouraging these activities are socially beneficial and consistent with government policy of protecting general welfare. Used in this manner, tax and subsidy incentives parallel the market's incentives and thus provide coordination without direct regulation. However, rather than leaving the market free to determine the incentive, the government decides what level incentive to use.

Deciding on a Coordinating System

Deciding among market, tax and regulatory coordination is probably the most difficult policy decision facing government today. Each method has advantages and disadvantages. Our society uses the market to coordinate investment, employment and consumption decisions and in many cases modifies these decisions with tax and subsidy incentives. However, in dealing with inflation, our society has used no coordinating mechanism, relying upon competition to coordinate the multitudinous individual pricing decisions and maintain a constant price level. Inflation represents competition's partial failure in fulfilling this role. To save competition it now needs assistance in that coordinating role and the difficult decision facing society concerns the form of that assistance.

Tax and market anti-inflation plans are such coordinating plans, providing a helping hand to competition in holding down inflation. Although the plans are novel, the coordination they provide is not substantively different than other market and tax coordination roles.

Implementation

As with any policy, there are a variety of methods to implement the general concept; innumerable practical decisions must be made, as the theoretically ideal is moulded into the practically and politically possible.

Some of the almost infinite design variations of anti-inflation plans are discussed in Chapter IV in reference to their theoretical and administrative implementation problems. Advantages and disadvantages of these design characteristics are discussed. Two major controversial choices stand out: whether to use a tax or market incentive and what proxy for price to control.

The market incentive approach provides a guarantee that inflation will be stopped, but its novelty and definiteness make it politically difficult to implement. Tax incentives are somewhat easier to implement but may be set at an incorrect incentive level.

Whatever plan is implemented, the incentive will not be directed at output prices which are administratively too difficult to control. However, by controlling the value added or net sales of firms, making adjustments for changes in inputs, aggregate price control can be achieved without the administrative problems of controlling any specific price.

Numerous other options are highlighted. Choices among them will reflect both theoretical and political considerations. Chapter V reviews a variety of proposals that have been suggested and discusses them as alternative methods of implementing the same idea, differing in a variety of design characteristics. Three detailed proposals are presented: (1) MAP: the market anti-inflation plan, (2) the Wallich-Weintraub TIP proposal, and (3) the Real Wage Insurance proposal. They provide a range of the variation around the central incentive theme. The political barriers to the plan's institution is considerable and a workable proposal can only be achieved through reasonable compromise and conciliation. The incentive anti-inflation plans are still merely skeletons and their final form will reflect the political process implementing them.

Chapter VI considers complementary pro-competitive proposals which will reduce the necessary anti-inflation incentive. Three types of proposals are discussed:

(1) Pro-competitive structural market reforms,
(2) Pro-competitive structural governmental reforms, and
(3) General pro-competitive reforms.

Many of these involve a reduction of governmental interference in the marketplace, although some involve a modification of the form that interference takes. Whatever role the government takes, it must reflect the underlying reality that there is no such thing as a free lunch. Continual vigilance must be maintained to prevent the government from being used as a tool for private interests and procedural reforms are discussed which may aid in achieving this goal. Many of these are merely "good government" proposals and, as such, manage to offend almost all.

The final chapter concludes the report, arguing that capitalism is at a major crossroads. The time has come to make major institutional changes. The question that remains is whether the political and economic system is equal to the task.

II. THE HISTORICAL RECORD AND THE PRESENT DILEMMA

Although inflation is not a new problem, the nature and dimensions of the inflation dilemma have changed dramatically. Until the 1930's inflation was, by definiton, a monetary phenomenon. As late as 1936, it was defined as an increase in the money supply; its present definition as a continued increase in the general price level was merely an interesting phenomenon, remarked upon but not inherent to its definition.[1] If the money supply rose by 10 percent but prices remained constant, there was 10 percent inflation. Today, economists' working definition is reversed; if the money supply rises by 10 percent but prices remain constant, there is no inflation.[2]

This radical reversal in definition reflects a variety of institutional changes which parallel the changing nature of the inflation problem. In the 1800's and early 1900's inflation was primarily concerned with what we now call "runaway inflation" or "hyper-inflation." A slow creep in the price level would not have been discerned because of the lack of sophisticated aggregate statistical measurement. Because of the cyclical instability and this lack of measurement, a steady upward movement in the price level would not become built into future expectations and would be totally swamped by cyclical swings. Such large movements in prices as were important were preceded by large movements in the money supply caused by discoveries of gold, the monetization of silver or extensive use of the printing press and therefore it was natural to associate inflation with the antecedent cause.

Although the exact timing is unclear, sometime during the 1940's, 1950's and 1960's, the nature and defintion of inflation changed.[3] Inflation became associated with a gradual but continued creep upward in the price level, initially 2 or 3 percent per year but more recently at higher levels. Cyclical swings declined; the financial system grew in sophistication as did the potential of measurement and control of the monetary base. Continual slight movements in the price level could now become built into expectations, accelerating the movement. This continual gradual rise in prices accelerated by expectations

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[1] Michael Bazdarich (1978) has noted this fact. He quotes the following definition of inflation from Webster's New International Dictionary, 2nd Edition, 1936.

"Inflation—Disproportionate and relatively sharp and sudden increase in the quantity of money and credit, or both, relative to the amount of exchange business. Such increase may come as a result of unexpected additions to the supply of precious metals, as in the period following the Spanish conquests in Central and South America or the period following the opening up of large new gold deposits: or it may come in times of business activity by expansion of credit through the banks; or it may come in times of financial difficulty by governmental issues of paper money without adequate metallic reserves and without provisions for conversion into standard metallic money on demand. In accordance with the law of the quantity theory of money, inflation always produces a rise in the price level."

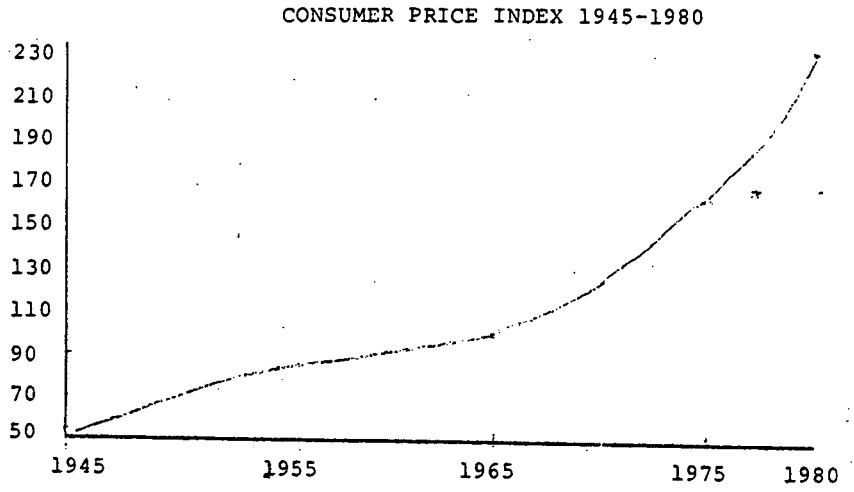
It might be noted that Webster's still uses essentially the same definition even though the popular usage is quite different.

[2] The definition economists now use is given by Robert M. Solow (1975). He defines inflation as a "substantial increase in the general level of prices."

[3] In 1940, F. Cyril James (1940) related inflation to changes in prices. He writes: "A mere increase in the quantity of money, which does not influence price levels cannot be regarded as inflationary" (page 628).

was a new dimension of the inflation problem presenting a new policy dilemma and was the catalyst for the evolving definition.

Whether there has or has not been a qualitative change in the nature of inflation can be debated; however its persistance in the post-war period can be seen in the graph below:



With few exceptions, inflation has been persistent and accelerating throughout the entire period.

Pressures for Inflation: A Look Ahead

The theoretical nature of inflation will be considered in the next chapter. However a brief preview of the argument is useful in providing a framework within which the history of inflation can be considered. Inflation is defined as a continually rising price level and thus any analysis of inflation must be an analysis of an index of prices at which some "average transaction" takes place. This index could be an index of average input prices—the goods we sell—wages, rents, and dividends—but has generally been an index of output prices—the goods we buy. The Consumer Price Index is an example.

The trading or transactions price reflects the relative bargaining position of the general class of buyers relative to the general class of sellers. The offering price of the seller—the asking price—is as high as possible, but is held down by his fear that if he raises it still further, he will lose sales and income. The offering price of the buyer—the bid price—is as low as possible but is held up by his fear that if he lowers it still further, he will not be sold the goods and thus he will be worse off. The transaction price is some price between the bid and ask price and reflects the upward pressure placed on the price by the seller and the downward pressure placed on the price by the buyer. The price level will remain constant if, and only if, the upward and downward pressures on the average transaction price are equal.

By considering these dual pressures, we can understand inflation and neatly organize the attempts to control it. The existence of infla-

tion means that there is an imbalance between the upward and downward pressures on the price level, with the sellers' upward pressure overwhelming the buyers' downward pressure. Significant or even runaway inflation occurs when that imbalance exists unchecked. Inflation then becomes expected; sellers and buyers add on the expected inflation to their ask and bid prices. This leads to an inflation of the inflation rate, which itself becomes expected, and leads to runaway inflation. Thus, the balance is a precarious one, similar to a balance scale. The slightest imbalance will cause one side to drop significantly. Similarly a small inflationary imbalance that becomes expected can snowball into a runaway inflation. Because of this snowball effect, ultimately any inflation must be checked, and upward and downward forces of buyers and sellers balanced. (Deflation represents a converse imbalance with the buyers' downward pressure overriding the sellers' upward pressure.)

An Inflationary Bias in History?

Tracing the path of price levels throughout history is an almost impossible task since many currencies have been destroyed by inflation. The British pound is one of the few currencies that has maintained a continual existence at a roughly constant output price level. But even the British pound has now succumbed to inflation and recent British inflation rates have exceeded those in other countries. In U.S. history, the price level measured in terms of Federal dollars before 1940 also remained relatively constant, as can be seen in the chart below.

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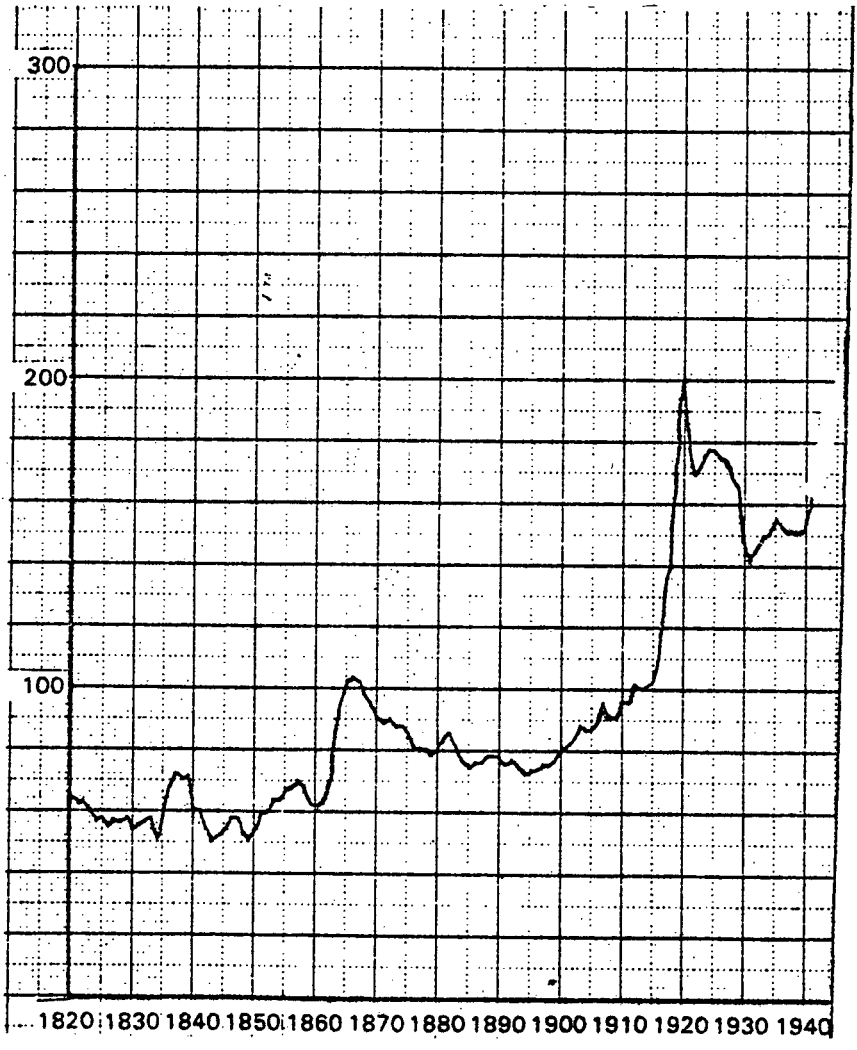
Inflation From 1820–1940 [4]



United States: Cost of living, 1820–1940

This history may, but does not necessarily, reflect a lack of an upward bias on prices before 1940, and an upward bias since then. In the 1800's there was a multiplicity of currencies—sometimes as many as 10,000 with almost every bank issuing its own currency. Because of this multiplicity, any upward bias on prices and toward ex-

[4] Data is obtained from the Hansen Cost of Living Index from 1820–1923 and from the Bureau of Labor Statistics from 1924–Present.

tending too much credit could have been vented in a variety of alternative ways and not into inflation.

The periodic bank failures, panics, and collapse of the banking system destroyed many of these currencies. If a composite unit of account of all currencies had been maintained, the measured rate of inflation would be significantly higher. The tremendous dislocation caused by these panics, together with the federal government's need to finance the Civil War, was responsible for the move to a national currency. This move may have focused the bias into an inflationary bias as measured in the national currency. Thus the historical bias may have existed, but may have caused failures and panics in a variety of currencies rather than inflation in a single currency.

A second difficulty in interpreting whether an inflationary bias existed is that the inflationary bias depends upon the state of aggregate demand; since no measure of the relative states of today's aggregate demand compared to earlier demand exists, relative comparisons at a given level of aggregate demand are impossible. The currently used measure of aggregate demand—unemployment statistics—were not systematically collected—and even if they had been, comparison would be questionable since unemployment rates reflect institutional factors along with the state of aggregate demand.

A third difficulty is that there is no one price level that should be used for the measurement of prices. Where there is productivity growth, costs of production decrease, causing output prices to decrease unless factor input prices rise. Since productivity has increased by about 2 to 3-percent per year, the constant output price index is consistent with a continually increasing factor-price index—with wage rates the most important component. Thus a constant output price index means that the economy has experienced a continual inflation measured by an input price index.

Such considerations were raised by earlier writers, before the output price index was arbitrarily chosen as the index for inflation. For example, over the period 1924–29 wholesale commodity prices were declining, and yet a number of monetary authorities argued that the period was inflationary because productivity advances were lowering costs of production to a much greater extent.[5] Thus the input price index was rising.

An argument in favor of the historical inflationary bias is that even the periods of significant depressions were not always characterized by falling wage and price levels. For example in the great depression there was an initial uneven fall in prices, with agricultural prices falling by more than 50 percent while steel prices fell by only 20 percent. But this fall did not persist. Despite the high levels of unemployment, wages and prices actually rose from 1934 onward.

Because of the lack of data and changing institutions, discerning a pre-1940 inflationary bias is difficult and only an indepth study could reach a reasonable tentative conclusion. Since the 1940's, however, there has been a continued steady rise in both input and output price levels, which strongly suggests an inflationary bias.

[5] See, for instance, the discussion in James (1940).

Offsetting the Inflationary Bias: Past Attempts To Fight Inflation [6]

The precise institutional changes which have brought about this steady inflation are unclear. Candidates include: the development of a sophisticated financial system; a change in the political climate; government assistance programs; an increase in the wealth and standard of living, and a governmental commitment to full employment. Its existence, however, is clear and it implies that the upward pressures on prices and credit have overwhelmed downward pressures. Both the money supply and the price level have increased as a result of this imbalance.

Attempts to fight inflation can be seen as attempts to restore the balance. These attempts fall into three general categories:

(1) Wage and price controls—Placing direct controls on the price levels;

(2) Monetary control—Placing controls on the amount of credit in society; and

(3) Incomes policies—Using (1) and (2) simultaneously.

The first provides a direct downward pressure on prices. It stops the inflation but does not stop the expansion of credit, creating unfulfilled demand and black markets, and finally the breakdown of controls. The second provides an indirect downward pressure on prices. As long as the money supply growth (and hence total credit growth and nominal income) is limited, inflation cannot continue. If it continues temporarily, unemployment and buyers markets are created that will ultimately end the inflation. The third type provides simultaneous downward pressure on both credit and prices. While theoretically sound, its practical implementation leaves numerous questions.

The Historical Record of Direct Controls

If a bias can be detected by the attempts to offset it, an upward bias on prices existed for centuries. As early as 4,000 years ago in Babylon, strict wage and price controls were in effect. Despite the fact that controls generally create numerous jobs for economists, most economists have never been even mild supporters of controls. Price controls, without simultaneous control of spending, destroy the market mechanism by removing the markets' function of determining prices. Permanent controls create an irreconcilable tension between the law and market. If they are not effective, they destroy the respect for the law. If they are effective, they allow society not to face up to the difficult issues of shortages which brought about the rising prices.

These criticisms of controls could be significantly expanded but the following, somewhat polemic but nonetheless instructive, tales of price controls, recounted in R. Schuettinger's "Survey of Wage and Price Controls in 50 Countries" (1976) provide a sufficient flavor of economists' comparison of the market approach with the "direct controls" approach.[7]

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[6] Only a brief overview of past efforts will be presented here. For more complete discussions, See M. Kosters (1975), Jerry E. Pohlman (1976), Arnold Weber (1973), Craufurd Goodwin, ed. (1975), and Arnold Weber and Daniel Mitchell (1978).

[7] Quoted from Robert Schuettinger (1976), pages 68 and 69.

In the sixteenth century misplaced economic controls were decisive in determining the fate of the most important city in what is now Belgium. From 1584 to 1585 Antwerp was besieged by Spanish forces led by the Duke of Parma who was intent on maintaining the rule of the Hapsburg Empire in the Lowlands. Naturally, during a siege, food quickly becomes a scarce commodity and prices accordingly rise. The City Fathers of Antwerp reacted as many others in their position have done before and since: they passed a law fixing a maximum price for each item of food. Severe penalties were prescribed for anyone who attempted to charge the market price. According to the historian John Fiske, the consequences of this policy were twofold:

> "It was a long time before the Duke of Parma, who was besieging the city, succeeded in so blockading the Scheldt as to prevent ships laden with eatables from coming in below. Corn and preserved meats might have been hurried into the beleaguered city by thousands of tons. But no merchant would run the risk of having his ships sunk by the Duke's batteries merely for the sake of finding a market no better than many others which could be reached at no risk at all. . . . If provisions had brought a high price in Antwerp they would have been carried thither. As it was, the city by its own stupidity, blockaded itself far more effectually than the Duke of Parma could have done.
>
> "In the second place," Fiske concludes, "the enforced lowness of prices prevented any general retrenchment on the part of the citizens. Nobody felt it necessary to economize. So the city lived in high spirits until all at once provisions gave out . . . ."

In 1585 the city of Antwerp surrendered and was occupied by the forces of Spain.

Bengal

An even worse disaster, made more costly still by government bungling, occurred in the Indian province of Bengal in the eighteenth century. The rice crop in 1770 failed completely and fully a third of the population died. A number of scholars attribute this disaster primarily to the rigid policy of the government which was determined to keep the price of grains down rather than allowing it to rise to its natural level. A price rise, of course, would have been a natural rationing system permitting the available food to be stretched out until the next harvest. Without this rationing system, the reserve supplies were quickly consumed and millions died of hunger as a direct result.

For once in human history, however, government did learn by experience. Ninety-six years later the province of Bengal was again on the verge of famine. This time the procedure was completely different, as William Hunter relates:

> "Far from trying to check speculation, as in 1770, the Government did all in its power to stimulate it. . . . A government which, in a season of high prices, does anything to check speculation acts about as sagely as the skipper of a wrecked vessel who should refuse to put his crew upon half rations. . . . In the earlier famine one could hardly engage in the grain trade without becoming amenable to the law. In 1866 respectable men in vast numbers went into the trade; for the Government, by publishing weekly returns of the rates in every district, rendered the traffic both easy and safe. Everyone knew where to buy grain cheapest and where to sell it dearest and food was accordingly bought from the districts which could best spare it and carried to those which most urgently needed it."

The experience of Bengal, which had two failed harvests of major proportions within a century, provided a laboratory for testing the two policies. In the earlier case, price-fixing was enforced and a third of the people perished; in the latter case, the free market was allowed to function and the shortage was kept under control.

Some Qualifications About the Usefulness of Direct Controls

The market's solution of rising prices in the face of shortages is neither pretty, nor fair, but it is effective. The problem it presents is a distributional one—maintaining sufficient commitment to the law and market when some individuals are gaining or "profiteering" at the expense of others. When the belief that some individuals are profiteering

becomes widespread, the commitment to law and private property—necessary prerequisites of the market—fail, creating political and social pressures to remove the market. The effective social use of the market is an art requiring the maximum use of the market's control but also recognizing when the effects of market control would themselves destroy the market.

When supported by popular opinion, price controls, rather than destroying the market, can actually preserve the social cohesion necessary for its long run survival. The price controls instituted during World War II provide an example. Significant sacrifices in foregone consumption were required to finance the war. Almost all goods would have been in short supply, unless the government had been willing to increase tax rates beyond what was considered politically acceptable. Moreover, war-induced relative price changes would have created tremendous gains and losses. The resulting complaints of war profiteering and unfairness could have undermined the popular support of the war effort. Thus, for the period of the war, most economists considered price controls and the rationing and shortages they would have entailed a necessity. Their success is evidenced by the following statement made by President Truman: [8]

> I think that our price control and stabilization program has been one of the most remarkable achievements of this war. Had it not been for OPA and the stabilization program we would have had run-away inflation. In other countries, run-away inflation has sown the seeds of tyranny and disorder. In this Country, we have kept inflation under control....

The World War II controls succeeded in large part because of the patriotism accompanying the war. Soon after the war, with the patriotic fervor no longer propping up the controls, they were eliminated. Craufurd Godwin (1975) writes: [9]

> Certainly most segments of society yearned for an end to restrictions. Union leaders were anxious to return to conditions of normal collective bargaining and were confident they could make substantial gains thereby. Businessmen, on the other hand, believed that they deserved higher profits and knew that firms which returned to producing consumer goods first would do best. Everyone was optimistic about how he would come out in the scramble. In essence, then, the VJ-day decision was to implement immediately many of the reconversion plans that planners had intended to unfold gradually, in particular removal of controls on wage increases that seemed unlikely to affect prices.

The war experience suggests that mandatory controls, when supported by strong popular opinion, can be temporarily successful. Used as an emergency tool to temporarily slow inflation as a society developed a long run strategy to fight inflation, they may have an important role to play. However, their temporary role must be kept in mind to avoid the problems to which their longer run imposition could lead.

The Historical Record of Restrictive Demand

A second method of providing a downward pressure on prices is to maintain a downward pressure on total credit through restrictive monetary and fiscal policy. If maintained tight enough, inflation can-

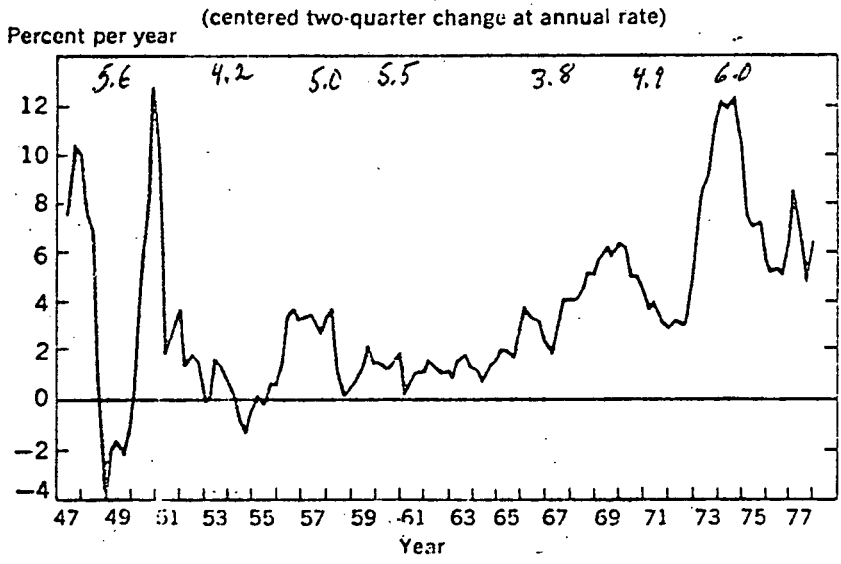
[8] As cited in Craufurd Goodwin (1975), page 12. The quote comes from Statement by the President commending the Office of Price Administration, May 1, 1945.
[9] Craufurd Goodwin (1975), page 14.

not continue. This "old time religion" is a necessary ingredient of any anti-inflation plan. The upward inflationary pressure is on both prices and credit; without a corresponding downward pressure on credit, a downward pressure on prices cannot be maintained. Moreover, almost everyone agrees that—eventually—the downward pressure on credit will be reflected in a downward pressure on prices. The question is the length and duration of unemployment that will accompany it and whether the required unemployment can and will be maintained by our society. The historical record in this regard is not encouraging.

Perhaps the most obvious lesson from history is that there are no easy lessons to be learned. The price level has risen in periods of high unemployment as it did in the second part of the 1930's when the price level rose by 14 percent with unemployment at 14 percent; and it has risen at low levels of unemployment. Thus, there seems to be no one level of unemployment at which we can be assured that inflation will decline.

Phillip Cagan, in his discussion of the effect of slack demand on inflation presented the following graph: [10]

QUARTERLY RATE OF CHANGE OF CONSUMER PRICE INDEX, 1947–1977



In each area, I have added the average unemployment figures for that period. It is obvious from this data that, as Cagan states, "The rate of inflation is not to be explained simply by the amount of slack in the economy." Any simple interpretation must be made cautiously. The data are especially hard to interpret because of immeasurable

[10] This chart is reproduced from one by Phillip Cagan (1978), page 18.

lags, expectations and institutional rigidities. By intertwining these immeasurables with the empirical data in varying ways, the data can be interpreted to fit numerous radically different relationships.

Perhaps the most disheartening periods for present purposes are the 1970 and 1975 recessions. In 1970 unemployment rose from 3.5 percent to 4.9 percent in a direct attempt to stop inflation. Inflation rose from 5.4 percent to 5.9 percent during that period. Soon thereafter, President Nixon chose to implement controls. In 1974, with the elimination of controls, the inflation rate had reached 11.0 percent with unemployment at 5.6 percent. In 1975, the unemployment rate increased to 8.5 percent while the inflation was reduced to 9.1 percent.

Estimates for the Future: How Long and Deep Must the Recession Be?

Otto Eckstein (1980), in a recent study for this committee, Phillip Cagan (1978) in the previously mentioned study, and George Perry (1978) have all made estimates of the effect of slack demand on inflation, making a distinction between the "core" or "underlying" inflation rate and the actual inflation rate. The most optimistic estimates are put forward by monetarists such as Cagan (1978). He suggests that the effect of a 1 percentage point average unemployment in excess of the level at full employment, maintained over a typical 4-year business cycle will be somewhere between 1½ and 3 points off the inflation rate. Since he estimates the normal full employment level at 6 percent, this would mean that to reduce a core inflation rate of 12 percent to zero would require the maintenance of an unemployment rate of between 10 percent and 14 percent for 4 years.

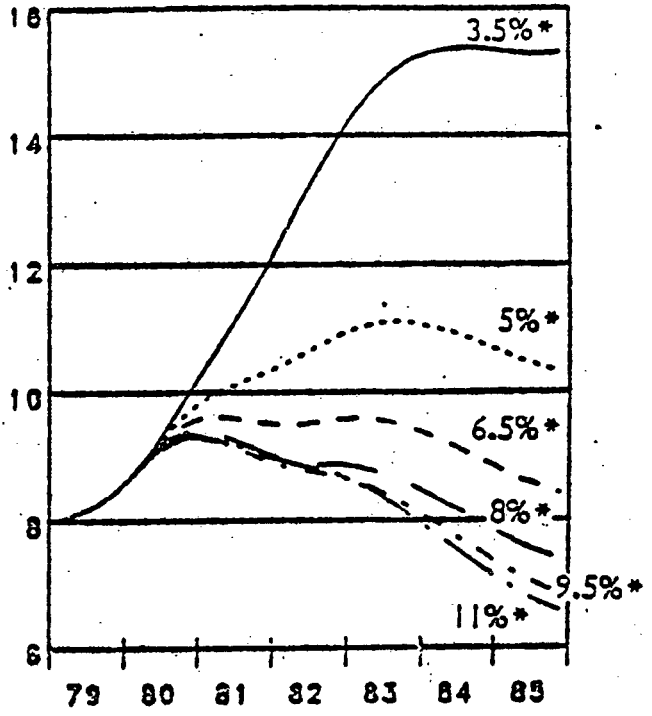
The less optimistic estimates come from the Keynesians such as Arthur Okun or George Perry. Their estimates suggest that the unemployment inflation split will be 80/20 with 80 percent of the restraint channeled into unemployment and a reduction in output and 20 percent into a reduction in the inflation rate. Extrapolated this implies that reducing the core inflation rate from 12 percent to 0 percent by demand restraint would require either reduction in real output of 48 percent, or almost half the GNP for a year or a 12 percent reduction maintained over a 4-year period. Although such extrapolations fail to account for possible underlying shifts in the dynamics of the system, they provide a sense of the difficulty.

A third set of estimates based upon the DRI macroeconomic model was recently made by Otto Eckstein (1980). He suggests that the trade-off between unemployment and core inflation is 2 to 1 after 5 years and simulates a number of possible strategies. The chart below reproduces his stimulation: [11]

[11] This chart is reproduced from one by Otto Eckstein (1980), page 39.

The effect of demand management on core inflation

Core inflation rate under different economic conditions



*Average unemployment rate, 1980–85.

In the model, the maintenance of an 11 percent unemployment rate for the next 5 years would only reduce the inflation to 6.8 percent. And even this chart may underestimate the problem. Recent inflation has been proceeding at a 10–12 percent core rate, much higher than predicted by the simulation. Moreover, the recent upward movement of the unemployment rate has had little affect in slowing that upward rise.

The Government's Commitment to Full Employment

Even if it were clear that restrictive aggregate policy would work, it is not clear that it would be allowed to. Since 1946 the government has been committed to "promoting maximum employment, production and purchasing power." The precise meaning was unclear and and as events have unfolded the politically acceptable unemployment rate

has increased to 6.5 percent and possibly higher. What seems clear, however, is that without a major change in political sentiment, the politically tolerable rate is below even the optimistic estimates of the rate necessary to achieve price stability. Thus, the search for a better way is more necessary than ever.

The Historical Record of Incomes Policies

The dilemma posed by the preceding policies has not been lost on policymakers and the search for a better way has occupied much of the recent history of anti-inflation policy. The search has been for a policy that provides a dual incentive—providing restrictive demand management policy and simultaneously exerting a downward pressure on prices. Such policies are called incomes policies. In theory, incomes policies are different than the direct controls discussed earlier. They are not designed to work against the market; instead they are to direct the market to do what a theoretically competitive market should do. As such they are designed to work as complements to aggregate restrictive policy, not as substitutes for it.

Competitive markets theoretically force all prices down to "normal costs" reflecting the opportunity cost of the resources in their next best use. Unexpected shifts in demand can create temporary disturbances in this relationship but by encouraging entry into areas with prices higher than normal costs and encouraging exit from areas with prices lower than normal costs, competitive pressures quickly force prices to reflect normal costs.

This normal cost theory formed the basis for wage guidelines which have been the centerpiece of the incomes policies approach. Wage guidelines were first explicitly developed by Gerhard Colms in 1944, and first used explicitly in the early 1960's under President Kennedy.[12] In this normal cost approach, wages should rise in more or less direct proportion to national productivity in a non-inflationary economy. Industries with large increases in productivity should pass on their gains to the general public by lowering prices, while industries with no productivity gains should be allowed to raise prices.

The underlying theory of guidelines and guideposts is that by stating a standard of acceptable action, guidance without compulsion is provided. An early advocate of guidelines, Walter Heller (1961) wrote:[13]

> The national interest requires stability of the general level of prices. In industries where the increase in productivity is less than the national average, prices may have to increase. Hence stability of the price level requires offsetting price reductions in industries where productivity is growing more rapidly than the national average. We cannot have price level stability without reductions in many individual prices.

Although the guidelines were originally intended to serve as a guide to business and labor without direct government intervention on private markets, they actually involved significant government activity both behind the scenes and openly. The 1962 steel settlement became the first direct test of the guidelines. When the wage settlement was negotiated at 2.5 percent, guidelines appeared to be the source of the success. However, the steel industry then raised its prices by about 3.5 percent

[12] This discussion of the history of controls relies heavily on Craufurd Goodwin (1975).
[13] As cited in Goodwin (1975), page 151.

despite productivity gains, which raised a question that has plagued the guidelines: how to determine equitable guidelines for both wages and prices. Repeatedly, government's attempts to directly control private markets have broken down as either labor or business representatives have boycotted the program, charging that the guidelines have caused serious inequity. For example, in 1952, to prevent a labor boycott of the Wage Board, President Truman overuled a Wage Board decision and increased the size of the award to coal workers. The action caused the chairman and all the industry members to resign. These resignations in turn forced a freeze on all wages until the board and the controls were dissolved.

More often, however, it has been labor, not business, that has rejected the controls as inadequate. For example, the decision by four of the five Phase II of the 1971–74 controls. The statement they issued upon leaving demonstrates the potential antagonism that can develop: [14]

> Seven months of the Administraton's so-called new economic policy—included four months of Phase II controls—have demonstrated that it is nothing more than a device to make the average worker and consumer both the victim and the goat, while the banks and big business pile up increasing profits.

Whether guidelines and guideposts have provided some help in the fight against inflation is debatable. The empirical record is unclear because no "control" economy exists to provide a base comparison. By positing different scenarios of what would have happened in the absence of controls, one arrives at quite different conclusions. Thus, the empirical evidence has been interpreted in many ways. Parkin, Sumner and Jones (1972), surverying a conference on income policies, write:

> The existing evidence indicates that incomes policies have had no identifiable effect on the price equation.

George Perry (1971), however, concluded that wages rose less than expected when guidelines were in effect.

Thomas Moore (1971) probably best sums up the empirical data. He writes:

> . . . evidence on both sides can be presented. The impact of guideposts, therefore, cannot be ascertained with any certainty.

Thus, the debate on guidelines has been based upon intuition and deductive arguments. Robert Solow (1966) summed up the arguments in guideline's favor:

> Wage-price guideposts are not an ideal or complete policy for the control of inflation. They may, however, under appropriate circumstances, offer a little help at even less cost.

Milton Friedman (1966) has neatly summed up those costs with the following four points:

(1) Guideposts confuse the issue and make correct policy less likely.

(2) The compliance is uneven and consequently relative prices are distorted.

(3) They invite the use of extra-legal powers to produce compliance, thus debasing respect for the law.

(4) Compliance with voluntary controls imposes a severe conflict of responsibility on businessmen and labor leaders.

[14] Statement of the AFL–CIO Executive Council, March 22, 1972, page 2. As cited in Arnold Weber and Daniel Mitchell (1978), page 276.

Weighing the costs and benefits is difficult and is an issue where reasonable men may differ.

The Present Dilemma

The debate about the relative merits of past policies can be expanded in numerous directions, but the general conclusion remains. None of them offer a feasible solution to the present dilemma. Monetary policy used alone is politically impossible. Direct controls are the antithesis of the market, and the administrative problems of incomes policies do not recommend them. With inflation worsening the search for a better way becomes more urgent.

III. A REAL THEORY OF INFLATION

All theories of inflation must now begin with Milton Friedman's famous phrase, "Inflation is everywhere and always a monetary phenomenon." This statement and the reasoning underlying it, has rightly had a profound effect upon economists' thinking about inflation, just as Keynes', "In the long run we're all dead" altered economists' thinking about stabilization policy. Unfortunately, both are subject to misinterpretation. For example, Keynes' statement does not mean that we should forget the long run. It only means that when the problems we face threaten the foundation of society, if we wait for long run solutions, there is a serious question whether there will be any market economy left. According to this interpretation of Keynesianism, post-World War II economists should have redirected their analysis toward integrating the short run and the long run. Their failure to do so in many ways led to our present problems.[1a]

The monetary theory of inflation faces a similar problem. When first developed, it served a useful purpose, directing economic thinking away from incorrect static analyses of inflation and toward more meaningful dynamic analyses.

Monopoly Is Not a Cause of Inflation

The monetary theory of inflation provided the insight needed to dispel simple notions of cost-push theories of inflation based on industry or trade union monopoly. Such cost-push theories are inappropriate since inflation is a dynamic problem of changes in the wage and price level; monopoly can only explain high relative wages and prices. Monopolistic industries are, in economic theory, no more inflationary than perfectly competitive industries. If a monopoly has the power to raise its price, economic theory predicts that it will—thereby dissipating any unused monopoly power.[1b]

Viewing inflation as a purely monetary phenomenon successfully eliminated such errors, and thereby eliminates inflation from the realm of formal micro-economic partial equilibrium theory which concerns only relative prices, not changes in absolute price levels.

It was in barring these essential truths about inflation that the monetary theory of inflation served its useful purpose. It related inflation to a continual growth in the money supply and also shifted the focus of the analysis away from any particular relative price and toward the general price level. Thus, it approached the problem in the correct analytical framework.

[1a] For further discussion of this point see Colander, editor, forthcoming (c).

[1b] This is not to say that monopoly and market structure can not have an important effect on inflation. More recent structural theories of inflation, such as M. Piore's (1978), have developed sophisticated arguments about how monopoly may be related to inflation. The above argument refers to simple cost push theories.

Moreover, it provided a neat framework within which the inflation problem can be addressed—the quantity theory of money and the equation of exchange:

$$MV = PQ \text{ where}$$
$$Q = \text{Quantity}$$
$$P = \text{Price level}$$
$$M = \text{Money supply}$$
$$V = \text{Velocity}$$

For every real transaction, there is a mirror monetary transaction, and thus if V and Q remain roughly constant, there will be a close connection between monetary growth and inflation. This relationship between money and prices became the monetarists' first and only principle of inflation control.

Remaining Problems of Monetarism

Despite the advances made by monetarists, numerous problems remained. For example, it is generally not pointed out that in the monetary theory of inflation only one function of money—the unit of account function—is everywhere and always a monetary phenomenon. Inflation—a fall in the value of the unit of account—has nothing directly to do with either the store of value or the medium of exchange functions of money, although it indirectly affects both. If these functions were separated, inflation would not be a monetary phenomenon, yet monetarism theorizes as if it is.

A second problem concerns the definition of money: whether it should be narrowly or broadly defined. A common approach is to define money with whatever definition best fits past empirical data. This is unsatisfying for many, yet no theoretically based definition has emerged and the debate continues. The debate was fueled by recent developments; as the old definition of the money supply and the inflation rate recently began to diverge, a new definition of money was devised—M1b—which more closely relates to inflation.

All economists now accept the existence of a relationship between inflation and some credit variable; however, any specific definition of money as a predictor of future inflation or as a means of control remains a major point of contention. Critics suggest that as we attempt to control the price level by controlling M_1, individuals and firms will devise methods of escaping the control, as they learn about the nature of that control. Thus, there is a law of diminishing marginal control working that suggests that it will become more and more difficult to control the economy via the control of the money supply.

A third dispute is closely related to the second: correlation does not imply causation. Merely because money supply growth and inflation are related does not mean that the increases in the money supply cause inflation. It could just as well be that inflation causes increases in the money supply or, alternatively and more likely, that there is some rather complicated interaction of the two. The monetary correlation does not tell us whether the price level has its own internal dynamic that pushes upward, forcing the monetary authorities to increase money in order to prevent a recession, or whether the money growth causes inflation.

The Present Theoretical Dispute

It is the nature of the money-inflation interaction that is at the center of the theoretical dispute about inflation and what to do about it. In the monetarist's scenario, the direction of causation is from money to inflation and thus the solution to inflation is to stop the money supply growth.

$$\dot{M} \rightarrow \dot{P}$$

This follows from their underlying view of the economy as an approximately competitive process where supply and demand determine relative and nominal prices. In their view, these forces of demand and supply directly respond to changes in monetary variables. Although there may be certain frictions which slow the response, and random noise which hides the relationship, the general direction is clear as is the implication of what to do.

This monetarist view is both logical and compelling and those who discard it out of hand, arguing that individuals, not the market, set prices miss an important point. Even if individuals set prices, those individuals are as subject to the forces of supply and demand as the "auctioneer" in the monetarists' model who directs the movement of prices with an "invisible hand."

The argument that the monetarists' creative leap from a simple theory to a practical policy prescription is an inappropriate use of theory is similarly faulty. All good theories are simple: all real world policies are extraordinarily complex. To move from any economic theory to a policy prescription requires a creative leap of faith to make the abstract theory relevant. To object to the making of a creative leap supplemented by a shrewd intuition is wrong.[2] The arguments against the monetarist model, if there are any, must be more subtle.

The Need for an Alternative Creative Leap

The significant theoretical shortcoming of the monetarist theory is its failure to explain the mechanism through which controlling the money supply controls the price level. In the jump from the abstract model to the real world, the monetarists merely posit a connection between money and prices and hence between monetary growth and inflation. Because the abstract model has flexibility, the monetarists' leap assumes the real world to have the same flexibility.

All agree that money is part of the problem but whenever the monetary brakes are applied, they lead initially to unemployment, not to lower prices. Thus, the line of causation seems to be from money to unemployment to prices. Holding the money supply down causes unemployment which eventually is reflected in lower inflation. That "eventually" seems too long for our society to accept and thus, if monetary restraint is to become a realistic policy, those costs must be reduced.

The real theory of inflation is an attempt to provide an explanation why those costs are too high and why the monetary tools must be complemented by a policy which improves their efficiency—directly transmitting monetary control to prices rather than forcing it to work

[2] These methodological points are developed in more depth in Colander and Koford (1979).

indirectly through unemployment.[3] In the process, it will present an alternative creative leap from the one monetary theory makes in its transition from an abstract theoretical model to statements about the real economy. The basis for the alternative creative leap begins with a consideration of the nature of the competitive process.

Competition as a Dynamic Process

Economics concerns competition, and a good understanding of the competitive process is essential to an understanding of inflation.[4] In theoretical economics one quickly falls into the habit of equating competition with "perfect" competition, in which all individuals are price takers. Specifically, competition is equated with market relationships in which there are so many buyers and sellers that all act as if their individual actions could not affect the market or trading price. In fact, in formal analysis such a view defines an efficient state and provides a benchmark by which economic systems are judged. In this static view of competition, individuals do not compete with each other. They do not even consider the effect of their actions on others, but merely accept the dictates of the invisible hand of the market. Such competition is a state, not a process.

Such a view of competition is quite different than that held by most laymen and businessmen. Theirs is essentially a dynamic view of competition that takes a variety of forms—advertising campaigns, attempts to gain market share, gaining long-term goodwill. It does not operate in perfect markets and is characterized by continual uncertainty and disequilibrium rather than by the equilibrium of the static model. It is a continually unfolding dynamic process.

The business view of competition provides the basis for an alternative creative leap that underlies the real theory of inflation. This real theory is unconnected to most prevalent theories of oligopoly, monopolistic competition and imperfect competition which have lost their dynamic nature in static formalizations.

The Need To Shift to a Dynamic Framework

The only way one will understand dynamic competition is to shift completely to a dynamic framework and interpretaion. In this dynamic framework, equilibrium and the adjustment to equilibrium must be analyzed simultaneously since the adjustment process will determine the nature of the expected equilibrium. This means that the analysis of adjustments to shocks, or disequilibrium analysis, is interwoven with equilibrium analysis.

In principal all economic analysis should follow this simultaneous analysis. Neoclassical economics implicitly assumes that the two are separable and that the relvant insights can be derived from static equilibrium analysis. Thus, it misses any insights that could be gained from the adjustment analysis and the interaction of the adjustment and the static equilibrum. If the key to understanding inflation is in this interaction, neoclassical economics has merely assumed it away. How-

[3] For further discussion of the real theory of inflation, see Colander (forthcoming a).
[4] The dynamic view of competition is developed in the work of J. M. Clarke (1961), P. W. S. Andrews (1964), and I. M. Kirzner (1973).

ever, it has not done so explicitly and thus the issue has seldom been discussed.

To make a static analysis relevant to describing a dynamic process, a necesary assumption is that the dynamic adjustment forces which lead to that equilibrium do not affect the nature of that equilibrium. Specifically, in discussing a price level equilibrium, one must assume that the adjustment forces offset each other and the upward adjustment presures on prices equal the downward adjustment pressures on prices so that the actual price level equals the expected price level after a random shock to the system.

One of the biggest steps toward a dynamic understanding of inflation was made in a famous study done for the Joint Economic Committee by Charles Schultze (1959) 20 years ago. In it, he introduced the concept of demand shift inflation which suggested that the aggregate approach to inflation was incorrect. He demonstrated that an aggregate price index based on aggregate excess demand is a nonsense index. He concluded that aggregate demand inflation is meaningless without a theory of price adjustment to supplement it.

> Within a stable aggregate demand, changes in composition could lead to a price rise, or a price fall depending, fortuitously, on the relative magnitude of the sectors. However, once we recognize that prices, and particularly wages, are much more rigid downward than upward, a substantial shift in the composition of demand necessarily tends to increase the price level, even if aggregate demand is stable. (Schultze, page 53.)

His analysis is, however, incomplete. He provided no underlying theory of the asymmetrical movement in wages and prices and did not take into account the possibility of ratified expectations of inflation snowballing a small asymmetry into a major inflation. But he nevertheless provided a base upon which a dynamic theory of inflation can be built.

The Concept of Equilibrium in a Dynamic Framework

In static analysis equilibrium occurs when adjustment ends. In dynamic analysis adjustment never ends, and consequently, equilibrium must take on an alternative definition. A market is in dynamic equilibrium when the upward pressures on price equal the downward pressures. This state of equalized pressure which we call a dynamic equilibrium could, when viewed from a static framework, look like a disequilibrium.

This market equilibrium is defined in terms of relative, not absolute prices. However, since in our economy relative prices are set by setting a nominal price relative to an expected price level, the transition can be made with one proviso. Dynamic equilibrium is consistent with a rising or falling price level as long as that rise or fall is expected. Thus, expectations, once built in, provide an inertia which accounts for most of the continued rise in nominal prices.

Inertial Forces of Inflation

The inertial force of expectations needs to be qualified; it is not a mechanical law stating that whatever inflation is expected will be generated in the future. Rather, it is a tendency subject to important qualifications.

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The first concerns individuals' expectations of real income. If average real income is expected to fall by 10 percent, then either the price level must be expected to rise by 10 percent or nominal incomes must be expected to fall by 10 percent. Of the two, the first is the more likely to occur. If individuals are convinced that the fall must occur and believe that their relative price is being maintained at its best level they can hope for, then the expectations of inflation will not cause prices to rise. Unfortunately, such relativities are very difficult to maintain in times of negative economic growth, and declines are likely to lead to a general belief that one's relative position is eroding.

A second qualification concerns institutional constraints which affect the timing and ability of individuals to raise wages and prices. Expectations of inflation must be matched by the ability to raise prices if they are to lead to a rise in price. Explicit and implicit contracts often are set in nominal terms for one to three years in which case a rise in the price level will not affect that nominal wage or price. However, there will be a tendency for that price to catch up when it is finally changed to make up for lost ground and to get a running start into the next contract. Since catching up is considered fair and jumping ahead is considered unfair, most wage and price increases will be described as catch up increases, and soon everyone will be catching up with no one getting ahead. Thus, expectations of future inflation will be merged with the catching up for past unfulfilled expectations.

For these reasons, while one would expect a connection between expectations and inflation, it is likely to be an extremely complicated one, and the mere elimination of expectations of inflation will not immediately end the built up expectational inflation pressures.

Theoretical Requirements of the Monetarists' Theory

Because of the interrelationship of individual relative prices and the price level, in the absence of any control of nominal income, the price level would be subject to continual dramatic shifts, depending on expectations. This does not occur because the money supply anchors nominal income by restricting the total nominal credit in the society. Thus, money supply growth is an integral part of the analysis of inflation. The question is whether it is all of the analysis as it is in the monetarists' theory. In monetarism there is no inherent dynamic to the price level—it passively responds to monetary forces. Thus any expectational inertia is quickly dissipated. Equilibrium arrives almost instanteously, as the law of supply and demand drive the markets to equilibrium.

The law of supply and demand must seem forbiddingly difficult for noneconomists. One would think that they are supported by massive calculations and theory. Actually, the law has received little attention from economists and has been accepted largely on faith or by implicit assumption. The reason is that it is essentially a dynamic law while formal economic theory is essentially static. The law is not needed for the static theory but only as the dynamic force that achieves equilibrium. Having reached equilibrium the forces of supply and demand evaporate.

The general law of supply and demand is quite simple and states that prices rise relative to expectations whenever quantity demanded

exceeds quantity supplied and fall whenever quantity supplied exceeds quantity demanded.[5]

For a static aggregate economy, this implies that unexpected inflation must be accomapnied by excess demand; otherwise prices would not rise. Thus inflation is accelerating whenever there is excess demand and decelerating whenever this is excess supply. This conception forms the basis of the natural rate hypothesis and the monetarists' prescription for inflation; remove the excess demand.[6]

In a dynamic framework, the monetarist story is incomplete. To make it complete requires an additional assumption about the forces of supply and demand. It must not only assume the direction of the supply/demand forces but must also assume that they are of equal intensity. The need for this assumption follows from Walras' law of markets and the requirement that the actual price level equal the expected in macro-equilibrium. Walras' law of markets states that excess supplies and demands sum to zero: Excess Supplies $= -$ Excess Demands. The excess supplies will place an upward pressure on the price level while the excess demand will place a downward pressure on it. Unless these upward and downward pressures offset each other, static equilibrium will not be reached. Unless it is somehow offset, the dynamic asymmetry in the upward and downward pressure will become expected and the price level explode or implode. Thus if there is a dynamic asymmetric, the normal equilibrium must offset it.

Monopolization and Dynamic Competition

As was stated before, economic theory has provided little insight into these dynamic forces.[7] It merely assumes their existence and focuses on the static analysis of equilibrium. If one begins with a dynamic framework, however, one can find that the forces are merely the dynamic counterparts to monopoly and competition. These forces might be called monopolization and dynamic competition.[8]

To help understand the operation of these dynamic forces and to differentiate them from these static counterparts, it is useful to think by analogy of a speeding train. If the observer is standing still, the train will be merely a blur; however, if one boards another train running parallell to the first, the analysis can be meaningful. Precisely the same argument holds in the economic analysis of inflation. Monopoly is a static concept. Trying to analyze the dynamic or moving process of inflation within that static framework can only leave a blur. Moving to a dynamic framework clears up the dynamic process while blurring

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[5] Specifically, the laws of supply and demand as formulated by Samuelson (1948) state that the prices will adjust to the equilibrium price at a speed relative to the size of the disequilibrium between quantity supplied and quantity demanded. In formulation these laws he implicitly assumes that upward and downward adjustment processes are identical since he treats excess supplies as negative excess demands. That is,

$$\left.\frac{\delta P}{\delta t}\right|_{s>d} = \left.\frac{\delta P}{\delta t}\right|_{d>s} = k_1$$

[6] For a discussion of the natural rate of unemployment see Milton Friedman (1968).

[7] For a discusssion of the weakness of the dynamic analysis see Kenneth Arrow (1959).

[8] Throughout this report the term monopoly is used to indicate a price or wage higher than would be charged in a competitive equilibrium. This definition of monopoly may be related to market share but need not necessarily be. Monopolization, therefore, means the attempt to increase the rent resulting fom a trade. Such activities have also been called rent seeking.

the static monopoly. What we can see are individuals' attempts to increase monopoly, and the gradual erosion of monoply through a process that can be called dynamic competition, the dynamic counterpart to static competition.

Individuals are continually attempting to receive more for the same amount of effort—to reduce uncertainty and to gain more security. In short, they are continually attempting to free themselves from competition. These attempts are defined as monopolization. Monopolization can take two forms: buyers' monopolization which is devoted to increasing consumers' or buyers' surpluses and sellers' monopolization which is devoted to increasing producers' or sellers' surpluses. If monopolization were costless, it would *lead immediately to monopoly*. But monopolization is not costless; innumerable resources are spent on the process of monopolization. Thus, monopoly will not be achieved instantaneously, nor will it necessarily lead to monopoly profits, although it may lead to greater rents for individuals who have a lower cost of monopolization than others. Instead it will be a continual process.

The Dynamic Asymmetry Hypothesis

The essence of the real theory of inflation is the postulate about the intensities of the dynamic forces of supply and demand based upon monopolization. In principle the forces of monopolization and competition can be associated with either buyers or sellers. However, in our economy there is a technological asymmetry: the number of consumer goods upon which individuals spend their money is far greater than the sources of their income. Because the costs of monopolization tend to be lumpy, individuals' optimal strategy is to concentrate their monopolization efforts in a few areas where the expected gains are highest. On average, therefore, the monopolization concentrates on sources of income rather than on uses of income. Sellers monopolization predominates making the dynamic upward push on prices greater than the downward dynamic push.

There are innumerable examples of the predominance of sellers monopolization. Individuals in their role as suppliers have grouped together in unions and firms to push for increases in their income. They have not done so in their role as consumers. Productivity increases are normally reflected initially in higher prices and wage rates, with other nominal wages and prices catching up, rather than in lower prices as economic theory would suggest should happen. Generally firms, not an auctioneer or the buyer, sets nominal prices of consumer goods. The above phenomenon have often been associated with monopoly and cost push inflation. This association is incorrect. They do not affect the final static equilibrium. However they do affect the disequilibrium adjustment process, biasing it in the sellers' favor. This bias accounts for the continual upward push on the price level that forms the basis of the real theory of inflation.

The "real theory of inflation" can be summarized as follows: there is a asymmetry in the dynamic adjustment process that places an upward pressure on the price level. Thus the economy is faced with a

dynamic constraint that prevents the attainment of a static equilibrium

The asymmetrical cost of monopolization accounts for the asymmetrical dynamic adjustment assumption of the real theory of inflation and differentiates it from the monetarists' symmetrical assumption. It is called a "real" theory of inflation because it is technologically based. "Real" contrasts with monetary or nominal. If this hypothesis is correct, the static conception of aggregate equilibrium as the satisfaction of supplier's and demander's needs is incorrect. The economy never reaches such a static equilibrium because it faces a dynamic constraint which would explode the price level if it were allowed to expand to that level.[9] Instead, monetary and credit constraints must maintain a constant market disequilibrium to offset the upward pressure. The flow of causation between money and prices is reversed:

$$\dot{M} \leftarrow \dot{P}$$

To be credible, the upward pressure of sellers' monopolization as an explanation of inflation cannot lead to continued increase in monopoly since our economy has not experienced such an increase (although it is consistent with either increases or decreases in monopoly). It must describe a continual or steady state process. Just as a runner on a treadmill runs and runs, getting nowhere, so too must this monopolization continuously occurs, but never consistently gains or loses ground.

What prevents monopolization from leading to increases in monopoly is dynamic competition, which is defined as the continual process of breaking down monopolies. Thus, if monopolization were not a continual process, dynamic competition would soon destroy any monopoly that existed. Only a continual monopolization can maintain a constant level of monopoly in an economy. Thus, within this theory, monopolization is the dynamic counterpart to dynamic competition, and the two provide the offsetting forces necessary to understand market equilibrium.

The Use of Unemployment To Fight Inflation

If there is an upward push on prices, it must be offset. In the absence of a direct downward pressure, unemployment and weak markets must fulfill this function. The real theory of inflation predicts that a consistent disequilibrium in the market must exist. To offset

[9] Rather than assuming the Samuelson specification of the laws of supply and demand, I make the following assumptions:

$$\left.\frac{\delta P}{\delta t}\right|_{d)_d} = k_1 \qquad \left.\frac{\delta P}{\delta t}\right|_{d)_s} = k_2 \quad k_2 > k_1$$

Combining this with Walras' Law implies

$$k_1 \sum_{i=1}^{m} (x_i - x_i^*) + k_2 \sum_{j=m+1}^{n} (x_i - x_i^*) \neq 0$$

where markets 1 to m are excess supply markets and markets $1+m$ to n are excess demand markets. This implies that at the equilibrium of the aggregate economy implicit in the static formulation, there will be an upward pressure on the price level. This upward pressure places the dynamic constraint on the aggregate economy.

the dynamic upward push on prices, resources utilization must be kept at a level which is consistently below full resource utilization. The natural rate of unemployment will never be achieved. Instead the employment level cannot exceed an unemployment level which is sufficient to hold down the inflation. This rate is called the nonaccelerating rate of unemployment. The employment line cannot exceed the nonaccelerating rate without generating an accelerating inflationary process. A sufficiently high nonaccelerating rate creates dynamic competition as individuals are forced to offer to undercut others' wages and firms are forced to undercut other firms' prices. This competition is based upon hardship and pain which forces individuals to undercut other's monopolization efforts. As the government lessens the pain of the weak markets and unemployment, it decreases the dynamic competition. Thus the level of unemployment needed to fight inflation will increase as government programs lessen that suffering.

The Role of Anti-Inflation Incentives in the Real Theory of Inflation

Anti-inflation incentives place a direct downward pressure on prices and allow the economy to move to the natural rate of unemployment. They tax sellers' monopolization, making the economy more efficient by directly eliminating the dynamic upward pressures and removing the dynamic supply constraint on the economy. Without their imposition, the economy must continually run at low levels of resource utilization as ours has over the past two decades.

Whereas before, one group monopolizes and another group suffers the consequences, with anti-inflation incentives the monopolizing group directly faces the consequences and must offset that monopolization. Anti-inflation incentive plans provide a direct link between aggregate monetary restraint and price level restraint, avoiding the intermediate unemployment or weak markets. The anti-inflation incentive provides the suffering, replacing the unemployment. These plans structurally change the economy, forcing it to resemble a competitive economy. It creates an economy like the one monetarists assume.

An anti-inflation incentive plan will serve as a governor on prices, equalizing the degree of monopolization in all sectors. Its institution is the equivalent of the introduction of hydraulic brakes for automobiles. If instituted it should allow a much higher average level of resource utilization and employment to be maintained.

The above argument does not imply that aggregate restraint will not be necessary. Any incentive anti-inflation plan must be coordinated with aggregate policy. However by establishing a direct link between monetary restraints and prices, incentive anti-inflation plans make monetary restrain more efficient.

Other Theories of Inflation and Anti-Incentive Plans

The real theory of inflation is a substantial departure from the monetary theory of inflation. It provides a fundamentally different picture of the inflation process and suggests that inflation will be much harder to combat. Although it naturally leads to incentive anti-inflation plans, one can reject the real theory and still support the plans.

In fact, if one holds to a monetary theory of inflation, in many ways the plans are even more appealing. This follows since the level of anti-inflation incentive needed depends upon the dynamic upward pressure. This incentive is the shadow price of inflationary pressures. If the monetarists' inflation theory is correct, there is no inherent upward push on prices and the necessary anti-inflation incentive on prices will be zero, as long as a monetary rule is followed. Without these incentive anti-inflation plans, it is unlikely that politically a sufficiently strong monetary rule could be adopted or maintained. With the plans, a stronger monetary rule will be acceptable to a broader range of the polictical spectrum. The market anti-inflation plans coordinated with monetary policy will provide the necessary guarantee that the rule will be followed and the quantity weighted price rises will just equal the quantity weighted price falls at a zero incentive when the economy is at the natural rate of unemployment, which monetarists suggest is about 6.5 percent. At an unemployment rate greater than 6.5 percent the monetarists' theory would predict a negative price or incentive to raise prices. Firms should be paying other firms for the right to lower prices. Such a belief is the test of a true monetarist.

IV. FROM THEORY TO PRACTICE: A CONSIDERATION OF DESIGN CHARACTERISTICS

The previous chapter argued that incentive anti-inflation plans are the theoretically correct policies to solve inflation.

When people decide what wage or price to charge they do not take into account the affect of that decision on inflation. This means that the private costs of their decisions do not reflect the social costs. Because of this difference between social and private costs, attempts to slow inflation by decreasing money supply growth are inefficient. They lead primarily to decreased production and unemployment, not to decreased inflation.

Incentive anti-inflation plans equate the social and private costs of individual's pricing decisions. They provide incentives for firms to hold prices down and in doing so channel decreased money supply growth into lower inflation and not into recession. They are a necessary tool to make monetary policy efficient.

Even if one accepts that they will theoretically succeed in stopping inflation, there is still another, more difficult question: Can they be practically implemented? If the answer is no, then the theoretical beauty of the proposals is irrelevant.

There is no simple answer to the question of implementation. Much depends upon the ingenuity and perseverance of the designers and administrators. The introduction of an effective incentive anti-inflation plan is a major change in economic policy, equivalent in sigficance to the creation of the Federal Reserve System or the adoption of Keynesian demand management policies. Such major steps must be taken cautiously. Any new program will entail innumerable difficulties, some of which will be expected, and others which will not. There are difficult questions of definition, of coverage, of enforcement, of political acceptability, of equity, of administration, of novelty. . . . These potential problems cannot be underestimated.

Precisely how important these practical administrative problems are depends on the level of the anti-inflation incentive needed to stop inflation. They will only be significant if the necessary anti-inflation incentive is high because of a continual upward pressure on prices. Without an incentive based incomes policy, these pressures would continually increase the rate of inflation or would require the maintenance of a continualy high rate of unemployment with concomitent lost production. Economists who do not believe in any systematic asymmetry or upward pressure on the price level must also believe that the on-going anti-inflation incentive necessary to stop inflation is extremely low. In this case there is no administrative problem, and the difficult questions become easy since the selection of alternative definitions or rules have little effect. However, if one accepts the real theory

of inflation presented in the preceding chapter, or some similar theory, then there will be an underlying upward pressure on prices, requiring a continualy positive anti-inflation incentive to offset it. In this case, the administrative problems may be significant.

The relevant questions concern alternatives: what happens if we do not meet these administrative challenges? What happens if we do not find a method of integrating the market with controls on seller's monopolization? Even advocates agree that incentive based anti-inflation programs are not ideal; they will involve significant administrative difficulties. If there were realistic alternatives, no one would choose such programs. But unfortunately there are no realistic alternatives; if these policies are not implemented, or some other market solution found, the political process will give up on the market system—the political process wants answers, not theories. It will not allow inflation to reach a sustained 15 percent, nor will it let unemployment reach a sustained 10 percent without taking some action. If economics does not have the answer, the political process will turn to other policies such as long term comprehensive wage and price controls. Compared to this alternative the administrative problems posed by an incentive based incomes policy are minor.

From Theory to Practice

Previous chapters have discussed anti-inflation incentive plans in a general manner. Some market incentive was to be placed on some abstract concept of price. This abstract generality was useful in maintaining the discussion at the broadest level, separating theoretical from practical considerations and avoiding analytic errors.

Many previous discussions of the proposal have combined the two, leading to objections to the entire concept on the basis of a single design characteristic which was not central to the proposal. Specifically, the TIP proposals have been called anti-labor because the Wallich-Weintraub TIP proposal directed the incentives at the wage rate. Nothing in the TIP concept requires singling out wage income, as is evidenced by other TIP proposals designed around prices or value added rates (combinations of wage rates and profit rates).

Any actual proposal must make the transition from the abstract to the practical by making numerous interdependent design characteristic decisions. Although the various design characteristics are interdependent, expositional considerations require their independent consideration.

Two central design characteristics stand out:

(1) Whether to use a tax or a market incentive?

(2) What "price" to direct the incentive at?

Innumerable lesser issues such as how inclusive the plan should be; how to treat certain benefits and how quickly to adjust the guidelines must also be considered. Many of these issues have been discussed in technical reports and a thorough consideration of the technical issues will not be replicated in this report.[1] The report will, however, provide

[1] These include an unpublished study done by this author for the General Accounting Office and an unpublished paper done for the Federal Reserve Board by Richard Sitor.

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an overview of the major issues and some of the minor ones. First, the two central issues are addressed, and then brief discussions of some of the others are provided.

A Market or a Tax Incentive?

Chapter I provided a general comparison of market and tax incentives; this section applies that discussion to anti-inflation incentives.

Market anti-inflation plans (MIP's) and tax anti-inflation plans (TIP's) correspond to market control of the price level and tax control of the price levels. Both provide economic incentives against seller's monopolization, while at the same time leaving the individual decisionmaker free to make his own choice. Specifically, a MIP is any anti-inflation incentive plan which requires individuals raising their prices above the guidelines to buy the right from someone else who lowers their price below the guideline by an offsetting amount; in essence the MIP proposals create property rights in prices and allow trading in these rights. They work as a type of hydraulic system which equalizes inflationary pressure in all sectors of the economy and establishes an offsetting anti-inflation incentive.

Any market result can be achieved by a corresponding set of taxes and subsidies. TIP is the tax analog to MIP. A TIP that perfectly corresponded to the MIP would have the following characteristics:

It would include both a subsidy and a tax, so that the program is self-financing.

It would be implemented as a separate excise tax on above guideline "price" increases and not as part of a corporate income tax or payroll tax.

It would be a permanent, not a temporary, program.

It would provide an equal incentive for all price changes.

It would be accompanied by a decrease in nominal aggregate spending, so that there was no excess demand.

The tax rate would not be set, but would vary as the need required.

The sole difference between such a TIP and its MIP analog would be that the government and not the market forces would determine the price of raising or lowering price. Most TIP proposals, however, do not perfectly resemble their market equivalent and therefore work only as partial analogs.

The key difference between the TIP proposals and MIP proopsals concerns the flexibility of the anti-inflation incentive. MIPs set the inflation rate and allow the incentive to vary in order to equate supply and demand of raising price. TIPs set the incentive and allow the inflation to vary. Because of the slowness of political responses, it is likely that the anti-inflation incentive will adjust slowly under a TIP, while they will adjust much more rapidly under MIPs.

In theory, the more flexible anti-inflation incentive is preferrable since the primary working of the incentive is through expectations. Because MIPs set the general price level by law and then allow the market to determine the price of raising price, the MIP guideline will be far more meaningful than the TIP guideline. Other than for slippage, the productivity adjusted MIP guideline will be the inflation rate. Consequently MIPs have a significant advantage in that they

provide the dramatic step necessary to break the expectational spiral. Second, they remove more decisions from the political arena, allowing the market and not the political process to determine the level of the incentive. This is a significant advantage, for if the incentive is set too low, and is expected to rise, it can create an expectational dynamic disequilibrium where the anti-inflation incentive causes individuals to raise their prices in order to avoid the later higher tax. With market anti-inflation policies, such expectational problems are impossible since everyone's desire to raise price will immediately force up the incentive.

On the other hand, market based incomes policies are far more significant institutional changes and will consequently be far more difficult to impose. Their institution requires a major commitment by the government to a powerful anti-inflation program.

At What Price Should the Incentive Be Directed?

The cornerstone of all anti-inflation incentive plans is the incentive against raising prices. Thus, the precise definition of price is fundamental to all proposals, as is an understanding of the relation of price to income.

Income is the product of price and quantity. Thus a price is the per unit amount of money one receives from supplying a certain quantity. The quantity can either be a product, such as the price of a television, or it can be a factor such as the price of labor (wage), land (rent), or money (interest and dividends). Since all products are made from factors, if the factor prices are controlled, the product prices will also be controlled. The reverse is also true. The identity is expressed in national income accounting identities: [2]

Nominal Income Identity: $P_{\text{Input}} \times Q_{\text{Input}} = P_{\text{Output}} \cdot Q_{\text{Output}}$

Real Income Identity: $Q_{\text{Inputs}} = Q_{\text{Outputs}}$

(composite Output/Input Identity)

Composite Price Identity: $P_{\text{Inputs}} = P_{\text{Outputs}}$

These identities mean that to control inflation only one—the composite input price or the composite output price—must be controlled. Most economists favor directing the incentive at a composite input index.[3] In essence, this input price index is an income rate—the amount earned per unit input supplied.

The reasons for the superiority of the input price index are twofold. First, output prices are administratively too cumbersome to acceptably measure; new products are continuously developing and old products changing. This change makes the required continuity in the indicies difficult to achieve.

Second, indices with the least internal relative change are desirable, A well functioning society requires greater variation in output prices than in input prices; thus the composite input is preferrable. An example of the problem is an industry with large exogenous changes in productivity. Economic theory requires output prices in such industries to fall significantly, while input prices only temporarily rise until equilibrium is arrived at.

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[2] For simplicity, this formulation assumes no exogenous change in factor productvity.

[3] See, for instance, Larry Dildine and Emil Sunley (1978).

The above arguments have generally been used in favor of separate wage, dividend, interest, profit, and rent control within wage control generally being singled out for most stringent control since wages are over 70 percent of factor income. However there have been recent suggestions broadening the scope of input price control by designing a composite input price index.[4] This would leave market forces to determine the relative prices of land, labor and capital while still controlling the aggregate.

An Incentive on Whom?

In principle the incentive could be directed at an individual's income rate or input price, but measurement problems on the individual level would be severe as income changes resulting from increased inputs would need to be separated from income changes resulting from higher income rates.

Averaging eliminates many of these problems and thus there is a strong administrative reason for directing the incentive at a group of individuals rather than each specific individual. The most logical group is the firm and thus, most likely, the incentive will be directed at a composite average of input prices at the firm level.

The firm is preferable, because it is the most organized and most of the necessary information for calculating the inflationary measures already exists. Moreover much of that information is currently subject to auditing for payroll and income tax purposes. Thus, the enforcement mechanisms also exist. For these reasons almost all the proposals' guidelines have been on the average income rate paid by the firm.

The success of firm based incentives depends upon the firm's ability to translate the incentive to the individual factors. For a significant fraction of total income, this transmission should not be difficult. 70 percent of the labor force is non-unionized, the capital market is relatively competitive, and profits are directly affected by the incentive. In these sectors, the transmission should be smooth. Even in the unionized sector, firms have significant power in collective bargaining. However, if the transmission of the incentive to the union sector proves difficult, certain structural reforms may be necessary.[5]

The Value Added and the Wage Bill Guidelines

Of the variety of "inflationary measures" two seem most likely candidates:

The value added rate—the composite price of all the firm's inputs.

The wage rate—the composite price of all the firm's labor input.

These will be instituted by assigning guidelines to firms for their noninflationary value added or wage bill and allowing adjustments in those guidelines for changes in inputs.

These adjustments could be made in a variety of ways. For adjustments in labor inputs, the firm's guideline could be adjusted by:

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[4] See Colander (1979a, 1979b).
[5] See the discussion, Chapter VI, page 61.

(1) The worker's last wage (x) change in hours worked,
(2) The wage rate of a "comparable" job (x) change in hours worked, and
(3) The average wage in the economy (x) change in hours worked.

Each of these will have slightly different distributional and allocational affects with the theoretically preferably also being the more administratively complicated.

For the value added rate, additional adjustments are made for new investment. This could either be done by calculating the flow values of the financial investment or disinvestment, (the investment multiplied by the risk adjusted prime rate) or by using a physical depreciation measure. Alternatively, the guideline could be increased by the full amount of the investment only in the year that the investment is made, giving a strong pro-investment bias to the program.

The guideline adjustment provides some insight into the way in which incentive anti-inflation plans will operate to slow inflation. Under the plans, firms, faced with strong demand, will have a greater incentive to expand output to meet that demand rather than to raise prices. By channeling high demand into increased production, not increased prices, they avoid inflation while also reducing unemployment. The specific way in which the adjustments are structured determines the relative input mix which will accompany that expansion.

Productivity Adjustment of the Guidelines

The causes of productivity increases are not well understood.[6] Since the appropriate productivity adjustment depends upon its cause, no simple theoretical answer exists to what is the appropriate productivity adjustment. Much productivity improvement depends on general market conditions and capacity utilization and is exogeneous to individual firms. Anti-inflation incentive plans, by allowing the economy to operate at a high level of capacity should greatly increase this exogeneous productivity. Such free productivity is a bonus of the plans and can be allocated in any manner. A likely candidate is an equal proportional increase in all firm's guidelines. Productivity advances resulting from increased investment must return the gain to the investor to serve as an incentive.

Allowing for Increased Entrepreneurial Effort in the Guidelines

Probably the most difficult inputs to allow for are effort and entrepreneurial skill. Two workers can be doing the identical job while exerting tremendously different amounts of effort. Similarly, two individuals can face the same problem; one can be totally puzzled by it, while the other might solve it in ten minutes. To the degree that the guidelines do not fully account for such efforts, total entrepreneurial effort will be discouraged. Productive effort may not, however, be discouraged. This follows because there are two types of entrepreneurial effort: one devises methods to earn a large amount on each unit sold; the other devises methods to increase production, while making a small amount in each unit sold.

[6] Edward Dennison (1978) in a recent book analyzing the productivity slowdown concludes: "What happened is, to be Blunt, is a Mystery."

Competition channels entrepreneurial efforts into the second type, and thus stimulates productivity growth. Competition's failure has caused the recent slowdown and has encouraged the first type of entrepreneurial effort. The anti-inflation incentive will aid competition and channel relatively more entrepreneurial effort into increasing output. This may more than offset the declining total effort.

Moreover, it is even unclear how much total entrepreneurial effort will be affected. Much entrepreneurial creativity is based upon a commitment to quality workmanship and to meeting a challenge. Financial reward is often secondary. Large firms already standardize creative effort into research and development divisions which they view as investment in future productivity changes.

Since firms will receive adjustments in their guidelines for research and development inputs, it would be inappropriate for them to also receive a further adjustment. For small firms, entrepreneurial inputs are more difficult to measure. It may therefore be necessary to make special small firm allowances for productivity improvements.

Slippage

A variety of political, technical and administrative considerations will underlie the specific treatment of, and adjustments for, inputs. These adjustments will likely err on the generous side. Such errors will cause slippage between the guideline controlled and the actual price level. A slight upward movement of the price level will result as firms adjust their inputs to take advantage of generous (overly broad) definitions.

For example, if expenditures on recreational facilities are not counted as part of the wage bill, there will be an incentive to increase the relative amount spent on recreational facilities. The result will be the appearance of a decline in productivity and a relative worsening of workers' position, since their wage rates have not increased, while prices have.

This is only appearance, and not reality. The workers' jobs will have been made easier, or more pleasant by the recreational facilities, and their real wage should be adjusted upward accordingly. The true loss will be small, resulting from the excess burden imposed by different forms the income takes. If productivity figures and wage figures were adjusted to reflect real effort and intensity of inputs, most of the slippage would prove illusory. Actually making such adjustments is probably administratively impossible, but the statistical bias should be kept in mind when interpreting the effects of any policy.

The Superiority of the Value Added Guideline

The wage rate guideline considers only labor income while the value added rate guideline considers all income—wages, profits and rent—generated by the firm. The equity of the value added guideline highly recommends it. Many of the well-known proposals, such as the Wallich-Weintraub TIP, have applied only to wage income. This has provoked serious questions about their equity. The following quote from a recent Committee hearing exemplifies the problems:[7]

[7] Quoted for *Review of the Economy, October, 1978*, Joint Economic Committee (1978). page 183.

Many members of the Committee are opposed—on philosophical and equity grounds—to the institution of TIP proposals that call for penalties and incentives on wages without corresponding incentives and sanctions for prices and profits.

The equity problems of the wage guidelines can be seen in the following example. Say a firm gives a 5 percent wage rate increase, but its profits rise by 200 percent, causing the value added rate to increase by 7 percent. Under a wage guideline, if the guideline is 5 percent, the firm would not be subject to an anti-inflation incentive. Competitive pressures would be relied upon to hold prices and profits down. Under a value-added guideline, high profits would be treated precisely as high wages are treated, and the firm would be subject to the anti-inflation incentive.

The firm level profit/wage fight is extremely important to the inflationary process, with high profits leading to high wage demands. Other sectors then "catch up" in wages and profits to maintain market relativities. The value added guideline directly affects this inflationary process whereas the wage guidelines do not.

A second advantage to the value added guideline is administrative. By sidestepping the issue of the relative wage/profit division and leaving it to the market, the government can avoid instituting numerous additional programs which would be necessary to monitor profit margins and maintain a semblance of fairness to labor. Any such program would be administratively complicated; if it can be avoided, it should be.

The Value Added Guideline Is Not Pro-Labor

If the value-added guideline is to be equitable, it must be made clear that it is not pro-labor. Even though the value-added applies equally to all income, the firm is responsible for the incentive and could face inequities if wages rise unduly. Wages can not, on average, increase significantly more than the underlying rate of productivity growth. Moreover, it must also be made clear that the slippage in measured rates discussed above will, most likely, look as if wages are increasing at less than the inflation rate. If the labor markets are not sufficiently competitive for the firm to transmit the incentive through to labor, then additional structural changes in the labor market will be required.

Is Profit Income Different Than Wage Income?

The argument against the value added guideline is based on a belief that profit income is somehow theoretically different than wage income. The argument takes two forms:

(1) Using value added guidelines make the plan equivalent to a tax on total productivity. It provides a direct incentive for lowering productivity.

(2) High profits are needed to stimulate investment whereas high wages are not.

In their simple form, both arguments are incorrect:

(1) Using the value added rate guideline is no more a tax on total productivity than using the wage rate guideline is a tax on labor productivity. Both encourage the substitution of inputs for which adjustments in the guideline are made for inputs for which they are not. Thus, they are subject to "slippage" in the measured productivity

rate. This slippage should not be confused with changes in productivity. Since the value added guideline allows adjustments for additional investment, productivity improvements that result from such investment are not discouraged.

The only truth to the argument is the following: The value-added anti-inflation incentive plans make the economy more competitive. A competitive economy taxes productivity by quickly eliminating any monopolistic gains by individuals or firms—forcing their wages or profits down to the competitive level. To the degree that such competition is a tax on productivity, the value added anti-inflation incentive plans also are.

(2) The second argument—that the value added guideline limits investment in growing firms—is incorrect for two reasons.

First, such an argument assumes that investment must come from profits and not from capital markets. There is no necessary reason for this. If an investment opportunity is a good investment, the firms should be able to acquire the necessary funds from capital markets. The fact that capital market funds have a higher cost to firms than retained earnings also has an overall positive effect. More reliance on outside financing would equalize the cost of funds among all types of investment and would consequently decrease the comparative advantage existing firms have. Both these effects would promote economic efficiency by promoting competition and entry by new firms into markets. It is, however, possible that in the short run, a temporary disruption in the normal flow of capital funds could occur. In this case, a supplemental program of encouraging investment may be needed.

Second, the argument does not consider the incentive effects on firms to expand. Firms that are making high short run profits have little incentive to expand their production, unless they are threatened by the potential entry of competition. Including profits in the measure of inflation reduces the incentive that a firm has to expand slowly so as to maintain its short run monopoly position for a longer time.

How Inclusive Should the Plans Be?

Theoretically, the anti-inflation plan should apply to all sectors, although competive sectors such as agriculture need not be included. Administratively, however, there is a strong case for eliminating the smallest firms for whom the administrative burden will be largest. The preferable approach is to establish a minimum size by a weighted average of assets, employees, and net sales or wages. Doing so may cause certain "hurdle" problems, where firms organize in a manner to avoid the program, but the avoidance of the administrative problems for the smaller firms outweighs these problems. Even though smaller firms are not covered, if a larger firm in their industry is covered, the smaller firms will be forced to maintain competitive prices in order to stay in business and thus will be subject to an indirect incentive.

Determining the Initial Base

Propably the largest roadblock to the introduction of the plans is the difficulty in determining the initial starting point or base for individual firms. If a positive incentive is expected, all firms and

workers will have an incentive to claim a higher wage rate or value added rate than they had—basing that claim on last year being unusually poor or merely on general fairness.

There is no easy answer to this problem; it can only be met by compromise and political bargaining. Most likely, some inflation adjusted averaging of past years will form the best starting point.

Phasing in the Plans

Another introductory problem is how fast to phase in the non-inflationary guidelines. Firms and individuals have contracts which extend into the future, and are based on expectations of future inflation. Stopping inflation too qiuckly could make fulfillment of these contracts impossible.

To meet this problem, the guidelines should be designed to slow inflation as quickly as possible in a manner consistent with the legitimate expectations of inflation. Initially allowing the guidelines to increase by the core inflation rate and then decreasing them by roughly 2 percent per year until a zero-inflation guideline is achieved might be a reasonable approach, although the annual decrease could be as low as 1 percent and as high as 3 percent. If partial compensation is given for existing contracts, the inflation rate guideline could be reduced even faster. If the core inflation rate is 10 percent, using the 2 percent reduction guidelines approach would mean that it would take 5 years to stop inflation totally.

Incorporating the Incentive Into the Determination of Wages and Prices

Since the incentive is not meant to be a penalty or a reward, it is important that some means of incorporating the incentive into the wage and price setting policies of firms be included in the TIP or MIP program. For wages, this does not present a serious problem since wage rates are a direct decision variable for the firm. However, value added is not a direct decision variable and therefore the incentive tax or subsidy will operate partially as an ex-post tax or subsidy on unexpected variations in profits. Under a market plan or a neutral tax plan, this will not present a general bias; it will only reduce the variance of profits and not the average level of profit. Even this affect can be reduced by calculating the value added rate or the wage rate as a cumulative average of a multi-year period, with the moving average determining the guideline. Thus a firm whose value added rate rose by 20 percent, −5 percent, 10 percent, 20 percent, and −10 percent over a 5-year period would have a cumulative value added rate increase of 8.5 percent, 10.2 percent and 7 percent in the last 3 years, rather than the fluctuating values.

Enforcement, Auditing and Administration

The anti-inflation incentive program will be susceptable to fraud, cheating, and mistakes in calculation. Thus it will require auditing and enforcing. The easiest method of integrating these programs with the present institutional structure is to make the tax or subsidy payable or the market accountability simultaneously with the personal and cor-

porate income tax. Since the plans will involve additional compliance costs, the government might offset those costs via a payment of some percentage of the value added or wage bill of the firm that approximates the marginal compliance costs. Since much of the information is already collected by firms, this compliance cost should not be great.

The Internal Revenue Service would be assigned the responsibility for auditing. Enforcement would most likely be carried out by the tax courts with criminal fraud cases referred to the Justice Department.

The total administrative and compliance costs depend on the degree of complexity of the program. Sidney Weintraub has estimated that his proposal would only involve twenty to thirty additional employees and would cost, at most, one to two million dollars. More complicated and stronger proposals would likely be much more expensive. A wild estimate of $100 million additional annual administrative costs does not seem unreasonable. The higher expenditures will probably be necessary because the plans' success depends on their equitable enforcement. Skimping on administrative expenses and risking failure of the program seems an unwise investment.

Design Characteristics Specific to Tax Incentive Plans

If the program is instituted as a tax subsidy, a number of decisions specific to TIP must be made including decisions concerning the type of tax with which it should be incorporated, how much tax flexibility will be allowed, and what accompanying macroeffects should be built into the system. Each of these will be considered in this section.

The Superiority of an Excise Tax

The corporate income surcharge tax used by Wallich-Weintraub faces numerous problems as a wage based proposal and would be totally unsuitable for a value added based proposal. The alternative of instituting the proposal as a special excise tax and subsidy seems preferable for the following reasons:

(1) The implicit base for the incentive under the corporate income tax is not the wage rate increase, but is a subset of those wage rate increases which affect firms that also have high profits. Corporations with low profits are not subject to the anti-inflation incentive, regardless of what wage increase they give. Since roughly 40 percent of all corporations have no reported profits for any one year, a large proportion of firms will be excluded from the plan. Moreover, since profits vary from one year to the next, this differential incentive presents arbitrariness in application which could have serious inter-firm effects.

(2) Since corporate profits in total are generally small relative to the wage base, such a proposal will give firms a strong incentive to structure their profit income to minimize their incentive tax. Because profits are relatively easily manipulated among years, the corporate income tax approach will give firms with high wage rate increases in any one year strong incentives to understate profits for that year; firms with low wage rate increases will have an incentive to overstate their profits. These two effects will not only lower the effectiveness of TIP, but they will also cause equity

problems as workers who received low wages will see that their firms have made high profits.

(3) Even if profits can not be manipulated among years, these profits are subject to the vagaries of the definition of the corporate income tax. Including the incentive with the corporate income tax will reflect those vagaries and will reduce the uniformity of the incentive.

(4) Tying the tax to the corporte income tax rate discriminates against capital intensive firms and gives all firms an incentive to reduce their capital. To see the problem, compare two firms with equal outputs, one with a capital-labor ratio of one and the other with a capital-labor ratio of one-tenth. The first will have significantly higher profits on average merely to pay the owners of the capital. If both firms gave an equal wage increase, the capital intensive firm would be subject to a tax of about ten times the magnitude of the other firm. To avoid these taxes, firms are likely to shift to debt-financing, increasing their debt-equity ratios, and to labor-intensive production methods, inducing efficiency loses.

Rather than adjusting the corporate income tax rate, the TIP incentive could be included by disallowing deductions for wage increases over a guideline figure. This could be done either as a scaled down disallowance or as a straight 100 percent disallowance. This disallowance approach is preferable to the rate adjustment approach because it would not uniformly favor businesses with relatively low taxable income bases. However, it still limits the applicability of the incentive to corporations with positive profits.

An alternative approach which avoids the above problem is to institute the TIP incentive as a separate excise tax which, although it might be payable with the corporate tax, would be calculated independently. Its base would be either increases in the value-added rate or wage rate of all included activities, including businesses and governments not subject to the income tax and also corporations with zero profits. This approach would be more easily integrated with the value-added rate TIP which reduces the base on firms which experience below normal profit rates. Under the value-added approach, firms with a high wage rate increase but a profit rate decrease will pay a lower incentive than a firm with the same wage increase but a profit rate increase.

Establishing Flexibility in the Tax Incentive

No one knows what level incentive will be needed. One of the major advantages of the market anti-inflation incentive plan is that it sets the guideline and allows the incentive to vary to whatever level is necessary to encourage firms to alter their pricing practices to meet that guideline. Tax incentive plans do not allow such incentive flexibility, presenting a major problem.

To partially meet the problem, the incentive could be made progressive with the degree of progression determined by the percentage that the actual value added or wage bill exceeds the guideline. Thus, a firm that exceeds the guideline by 1 percent could face a 10 percent tax incentive while a firm that exceeded the guideline by 2 percent

could face a 40 percent tax. Although such a progression places a bias against large relative price adjustments, it allows the necessary flexibility in the tax incentive.

What Macroeconomic Effect Should Accompany TIP?

The anti-inflation incentive plan can be designed with a net positive, a net negative, or a neutral macro-economic impact. The net positive effect has been called a reward plan; the net negative effect has been called a tax plan; and a neutral effect has been called a neutral plan.

Considering only the direct incentive, the reward plan seems superior. Its immediate impact will be to lower prices. This effect is, however, procured only at a government revenue cost which must be made up in reduced spending or in higher taxes. When these consequences are also considered, any advantage for the total package disappears. If the costs of the reward plan are not offset by higher taxes elsewhere, then it must be financed by government bonds or an increase in the money supply. Unless expansionary government budgetary policy is otherwise called for, the reward plans could make the necessary coordination of the plan with aggregate policy more difficult.

A second disadvantage of the reward plan is that for political reasons, it must be extended to all firms, including the smallest, if it is extended to any. This would significantly increase the administrative complexities of the program.

The arguments in favor of, and against, a tax-only plan are the opposite for those of the reward plan. Sectors included are likely to feel discriminated against, and thus the imposition of the plan will be more difficult. Similarly, if a restrictive budget is not called for on other grounds, a tax-only plan could have a depressing effect on the economy.

The problems inherent in the tax-only plan and the reward-only plan can be avoided by adopting the neutral plan. A neutral plan would include both a tax and a subsidy element. These tax and subsidy rates would be set so that the expected net revenues received by the government would be zero.

If tax rates, subsidy rates and the guidelines were all pre-set, the plan could be made only roughly neutral in any one year. To make it completely neutral, the excess or shortfall of revenues in any one year would need to be assigned to a special fund. In the next year, the tax and subsidy rates, as well as the guidelines would be varied to offset the carryover. One advantage of the carryover is that it would be counter-cyclical. If inflation were less than expected, the revenue would be negative, and would have an expansionary effect on the economy. If inflation were greater than expected, the revenue would be positive and have a net contractionary effect on the economy.

DESIGN CHARACTERISTICS SPECIFIC TO MARKET INCENTIVE PLANS

The market plans avoid many of the problems inherent in the tax plans. They are less complicated in that they do not complicate further an already complicated tax code, and do not require integration into a tax system. Moreover, market plans' flexible incentives adjust

automatically to whatever incentive level is necessary to offset the inflation. Thus, there are strong arguments in their favor.

To operate effectively, market plans require the development of a specific market within which trading would take place. This market could be developed by the Federal Reserve System, a government agency, or by a private organization such as a stock exchange. As with all markets, institutional rules would need be designed such as: who would be allowed to trade for credits? What are the trading limits? What are the price fluctuation limits? Should a stabilization fund be established?

Initially trading could be limited specifically to firms within the program with limits on general trading. An initial trading price could be established with a maximum daily fluctuation in price stated. After traders and authorities have a feel for the market, the restrictions can be removed. Many of the specific issues parallel those of an options market whose market structure the anti-inflation incentive market would resemble.

Conclusion

The above discussion provides some insights into the administrative problems. They are not minor, but they can be resolved, if not perfectively, at least acceptably. Thus, the conclusion is that an incentive anti-inflation plan is feasible.

V. A VARIETY OF PROPOSALS

The preceding presentation was general and necessarily left a certain ambiguity about the administrative workings of the proposal. This chapter attempts to remedy that ambiguity by presenting summaries and discussions of specific proposals.

There have been numerous proposals along the general lines of incentive anti-inflation plans. Following the discussions made in Chapter IV, these can be classified under two broad headings: taxes based anti-inflation policies (TIP's) and market based anti-inflation policies (MIP's).

Under the TIP heading, there are proposals by Scott (1961), Wallich and Weintraub (1971), Colander (1979), Okun (1978), Seidman (1978), Streble (1978), the French government (1978), and the U.S. government (1979). Under the MIP heading there are proposals by Lerner (1978), Von Weitzacker (1976), Colander (1976), Lerner and Colander (1979), and Howard (1976).

Below in Tables I and II these proposals are summarized according to the general design characteristics discussed above. These tables are simplifications requiring the separation of interdependent issues and the categorical interpretation of vague proposals. They, nonetheless, provide a useful overview and comparision of the proposals.

Five of the proposals were designed specifically for implementation in the U.S. economy and the diversity in the proposals can be captured by consideration of three of these:

(1) Real wage insurance.
(2) The Wallich-Weintraub TIP.
(3) The Lerner-Colander MAP.

The remainder of this chapter provides summaries and discussions of these proposals while the appendix provides a brief description of others.

Real Wage Insurance

Michael Blumenthau, when he was Secretary of the Treasury, briefly summarized the real wage insurance (RWI) proposal as follows:[1]

> Real wage insurance (RWI) is an innovative anti-inflation initiative which President Carter has proposed for enactment by the Congress.
>
> RWI would strike directly at the wage-price spiral by encouraging widespread observance of the voluntary 7 percent pay standard announced by the President in October, 1978.
>
> RWI would work like this: If you belong to an employee group that has an average pay increase of 7 percent or less, you would qualify for a tax credit equal to your 1979 employment earning times the amount by which the 1979 inflation rate exceeds 7 percent. For instance: Assume that you belong to a complying group, that your 1979 earnings are $15,000, and that the 1979 inflation rate is 8 percent. You would receive a RWI tax credit of $150—$15,000 times 1 percent (i.e., 8 percent minus 7 percent). This credit would be shown on your Form W–2 and would serve either to reduce your tax payment or to increase your tax refund. The credit (like wages themselves) would be subject to income tax.
>
> The proposal would cover inflation up to 10 percent, with the rate measured from October–November 1978 to October–November 1979, and would apply to the first $20,000 of your pay from an employer.

[1] Quoted from hearings on Real Wage Insurance before the Committee on Ways and Means, January 1979, page 20.

TABLE I.—SOME ALTERNATIVE TIP PROPOSALS

	"Price" controlled	Acc. macro affect	Incorporated tax	Enforcement mechanism	Inclusiveness	Statutory resp.	Structure of incentive	Guideline	Determination of initial base
Colander	Value added per unit input.	Neutral	Value added tax or separate excise tax.	IRS tax courts	Firms > $500,000 net sales.	Firms	Proportional or progressive.	Decreased over 5-year period to 2–3 percent.	Weighted average of past 3 yrs.
French Government	do	Positive with payback.	Value added tax	Tax authorities	Firms > $6,000,000	do	Proportional		Initial year's value added rate.
Scott	Output price	Positive	Separate excise tax.	Inland revenue	do	do	do	Zero inflation	Last year price.
Seidman	Wage rate	Negative	Social security tax	IRS tax courts	All	Workers	Proportional	Decreased over 5-yr period to 2–3 percent.	Last year wage rate.
Streeble	Value added per unit output.	Positive	Corporate income tax.	do	do	Firms	do	do	
U.S. Government (real wage insurance).	Wage rate	Negative	Personal income tax.	do	All	Firms and workers	Hurdle	7 percent	Last year wage rate.
Wallich-Weintraub	do	Positive or neutral	Corporate income tax.	do	Large corporations.	Firms	Hurdle proportional.		Do.

TABLE II.—SOME ALTERNATIVE MIP PROPOSALS

	Market operation	Price controlled	Inclusiveness	Guideline	Statutory resp.
Lerner	Unspecified	Wage rate	All firms	Immediate reduction to 2–3 percent	Firms.
Lerner and Colander	Run by Federal Reserve System	Value added rate	Firms over $500,000 in net sales	Gradual reduction	Do.
von Weitsacher	Unspecified	Output price	All firms	Immediate reduction to 0 percent	Do.

Why Real Wage Insurance Is Not a True Incentive Anti-Inflation Plan

Although RWI follows the general line of reasoning of an anti-inflation incentive program, it is presented more as an example of what can go wrong with a proposal when compromised by political realities than as an example of the type program advocated in this report.

A primary problem with RWI was that it was designed to play a *supplementary* role to the voluntary guidelines that formed the heart of the President's program. There is a key distinction between tax and subsidy incentives and direct regulation enforced by tax penalties or encouraged by subsidies.

The first is an attempt to work with the market, strengthening its positive incentives and weakening its negative incentives, while the second is an attempt to replace the market with regulatory control. When tax incentives are used as penalties, the action of raising wages and prices becomes viewed as wrong or unsocial when in fact there is nothing wrong with raising price if market conditions warrant. Relative price changes are a necessary part of a non-inflationary economy. It only becomes a problem when all or most individuals raise their price; then relative prices are not changing and we merely have inflation.

Incorporating RWI with the guidelines blurred this distinction between a tax incentive plan and a regulatory plan. Many interpreted RWI as merely another means of securing enforcement of the guidelines.

The tendency to view RWI as merely an enforcement mechanism of the guidelines was strengthened by the use of a hurdle approach rather than a continuous incentive approach. Under RWI only a member of a group with a wage increase under 7 percent would be eligible for RWI; 7 percent becomes the focal point of an inflationary or noninflationary wage increase. In fact depending on market conditions a 12 percent wage increase might be noninflationary and a 4 percent wage increase might be inflationary. Focusing the incentive on the guideline figure of 7 percent changes the nature of the program. A true anti-inflation incentive plan would ideally provide an equal incentive to all individuals. Hurdles, or noncontinuous incentives of any kind, are only useful as administrative expedients.

Incentive and Income Effects

Partially because of the hurdle approach and partially because of the low level of the incentive, much of the discussion of RWI's effectiveness centered around the income effect rather than the incentive effect. The following argument was advanced: Since RWI, would provide a subsidy to individuals who held their pay down, it would be in their interest to do so. With a large enough subsidy, the government could buy out all the inflation and the effect of the program would depend on the size of the subsidy. This argument, however, does not rely upon the incentive effect, merely on the income effect of the subsidy and to be complete must consider how that subsidy will be financed. Any subsidy plan will face a problem of potential budget exposure and to create a sufficiently strong incentive while still limiting

budget exposure, any realistic proposal must include both subsidy and tax elements. In this case, there will be no income effect.

The anti-inflation plans advocated in this report do not work through income effects; they work through incentive and expectational feedback effects. The incentive effect works by making the act of raising wage rates or value added rates more costly and lowering them less clostly. It affects only the relative costs of raising nominal wages.

This direct incentive effect will be slight and has nothing to do with the income effect. However, if it is a general incentive, it will be magnified throughout the economy by an expectational feedback mechanism. As other individuals slow their wage and price increase, the pressure on any one individual to raise his price is decreased which in turn decreases pressure on others. As all slow their wage increases simultaneously, inflation is stopped, and all maintain their relative positions. The anti-inflation incentive only removes monopolization's cutting edge. That removed, the expectational element of inflation deflates itself.

The hurdle RWI incentive was expected to affect only 21 million workers or 24 percent of the work force, an amount that was insufficient to generate the necessary expectational feedback. This significantly reduced the proposal's effectiveness as a anti-inflation incentive plan. For the above reasons, RWI does not qualify as a true anti-inflation incentive plan. The fact that it was selected as the administration's proposal demonstrates how difficult the political decision to adopt a true anti-inflation incentive program will be. Of the effective alternatives that stop inflation by facing the real issues, anti-inflation incentive programs are the easiest way, but they are only easy because the others are so difficult.

The Wallich-Weintraub Proposal

The essence of the initial Wallich-Weintraub (W–W) proposal is the following:[2]

> In simplest terms, it is proposed to levy a surcharge on the corporate profits tax for firms granting wage increases in excess of some guidepost figure. If the wage guidepost were 5.5 percent, and a wage increase of 7 percent were granted, the corporate profits tax for the firm would rise above the present 48 percent by some multiple of the 1.5 excess. If the guidepost were 3.5 percent, the excess would be 3.5 percent and the multiple would be applied to that figure.

Sidney Weintraub further developed his version of the proposal in later writings. He sums up his modified proposal in the following manner:[3]

> All business firms employing 500 or more employees or having an annual wage and salary bill of five million or more, are subject to the following tax provisos:
>
> (*a*) For average employee wages that increase by not less than 3 percent nor more than 5 percent per annum, the firm's tax rate will be lowered by (at least) 2 percent below the standard corporate tax rate.
>
> (*b*) If the average annual pay increase exceeds 5 percent, the firm will be subject to progressive penalty tax rates.
>
> Essentially, (*b*) is the original Wallich-Weintraub TIP. Proviso (*a*) is inserted (from Dr. Seidman) with the 3 percent floor intended to preclude greater rewards to firms that beat down pay levels; it dispels any possible allegation that TIP is a plan to "create slave labor." It should also encourage pay moderation

[2] Quoted from Henry Wallich and Sidney Weintraub (1971), pages 2 and 3.
[3] Quoted from Sidney Weintraub (1979), pages 53 and 54.

to foster price stability. Restriction to large firms should render the proposal administratively feasible. Others may prefer to include only firms that are even larger in size.

TIP-CAP: A productivity bonus. Firms reporting average value-added per employee surpassing the economywide 2–3 percent trend of the past might be granted a pay prerogative above the 5 percent norm. Calculations would have to be made for average product corrected for price level inflation. (CAP, or Corrected Average Product). This would be a bit more complicated than TIP calculations, but would involve only simple substractions (of cost of materials from sales receipts) and applying standard price level indexes as a deflator.

This would be a productivity bonus. Perhaps one-third of the superior productivity increase above 6 percent might be added to the 5 percent standard increase. Not all of the productivity gain should be commanded by employees, however, for the firms should be motivated to reduce prices.

TIP supplements. Various supplements can be attached to TIP-CAP to assure compliance. For example, certain firms might be in cash-flow financial straits if their 5 percent settlement offer were rejected by labor, resulting in a strike. Such firms might be cleared for a government-guaranteed loan to meet fixed charges. Clearly, loan availability would have to be monitored to prevent collusion.

Labor, in rejecting a settlement at 5 percent (or a trifle more) might be subject to penalties ranging from mild to stringent, depending on strike duration and the (vague) national interest. Labor specialists should promote this discussion.

Government employees. Average pay increases for federal employees would be limited to 5 percent per annum, with corrections every 2 or 3 years if the private sector trend exceeds this norm. State and local employees would be brought under the same 5 percent tent through the leverage of federal grants or other federal aid programs.

Discussion

The key features of the plan are its use of the wage rate as the proxy for inflation and its incorporation of the incentive into the corporation income tax. Its concentration on wage income leaves it vulnerable to significant attacks as being anti-labor and Wallich and Weintraub go to great lengths to argue that it is not. The addition of a base floor on wage decreases to dispel possible allegation that TIP is a plan to create slave labor reflects their concern.

Their justification of the wage base is that the aggregate wage/profit share has remained relatively constant over the past 50 years. They argue: If wages increase, prices will also since most firms use standard cost plus pricing. Thus they rely on the competitive nature of the product market to hold prices down. This argument was unconvincing to many; labor in specific rejects it. While a fall in wages will ultimately lead to a fall in prices, the short run effect will likely be a rise in profit rates. This is especially true on an individual firm level. For example, if wages were held down to 5 percent, the firm would not be subject to any anti-inflation incentive, even if its profits increased 500 percent. Moreover, because the W-W proposal ties the progressive incentive to the corporate income tax. firms with the largest profits will have the strongest incentive to hold down wages. This will likely cause additional labor strife. Weintraub recognizes these potential problems and suggests that the FTC report quarterly trends in profit margins. Where there is evidence of increases, he would empower the FTC to report and seek remedial power.

This modification will significantly involve the government in the determination of relative prices and still will be unlikely to meet labor's claim of inequity since it only promises the ability to resort to remedial power.

A certain fiexibility in guidelines would be created by Weintraub's CAP modification. Such a modification is likely to be politically attractive, but it presents a number of theoretical and practical problems. Theoretically individual wage rates should not rise in relation to individual productivity. Only the average of wages should rise with productivity. The only change in relative wages that should occur from a change in productivity is where that productivity change reflects a change in the relative intensity of effort of that group of workers relative to other groups. Practically it will be nearly impossible to differentiate theoretically allowable productivity changes from non-allowable changes. If all productivity changes are allowed, certain relative pay anomalies will be created. Industries such as micro-processing which have been experiencing large productivity gains will have guidelines much higher than other industries. Thus, under Weintraub's plan, an industry where productivity increases by 50 percent would have a 21 percent guideline rather than a 6 percent, even though market forces may not have required any relative wage change.

The loan supplements Wallich suggests are interesting and may prove useful. The special penalties for labor and the direct controls for government employees, however, are essentially direct controls and are likely to upset the balance which underlies the collective bargaining process. There is, in principle, no reason why government wage rates should not also be subject to the same TIP incentive as private firms. This could be accomplished by combining the incentive with a separate excise tax rather than with the corporate income tax.

The Lerner-Colander Market Anti-Inflation Plan

The most fully developed market plan has been put forward by Abba Lerner and myself and is called MAP. One version of the plan is the following:[4]

(1) The Federal Reserve is currently responsible for maintaining a sound money supply, which means a money supply compatible with price stability and with economic prosperity. To achieve this, price stability and prosperity must be made compatible with each other. The Federal Reserve's responsibility is therefore extended by Congress to include responsibility for the maintenance of price stability through MAP.

In an expectational inflation, a "sound money policy" is impossible because prosperity can be maintained only by permitting the money supply and the total spending in the economy to "ratify" the expected rising prices—the "price instability." Only when price stability is being maintained by some other means can a sound monetary policy be carried out.

(2) A Federal Reserve MAP Credit Office credits each firm, at no cost to the firm, with a basic MAP Credit equal to its dollar Net Sales in the previous year.

A firm is any employer subject to income tax. Net Sales is gross sales, including "internal sales" (inventory increases at cost), minus purchases from other firms (which are counted in the sales of the other firms). Each firm's Net Sales is therefore equal to its profits plus its wages. Net Sales includes interest payments, rents, fees, and other payments that constitute income to individuals. as well as wages, salaries, and the cost of all fringe benefits. National total Net Sales is the same as total spending on final goods, since somebody must be buying what is being sold. National total Net Sales consists of the total profits and the total wage bill, in the wide senses of these terms. It is the same as total income, which an incomes policy, to prevent inflation, must keep growing parallel to the increase in total output.

[4] Quoted from Abba Lerner and David Colander (1980), pages 40 and 41.

(3) Hiring a new employee (including all the employees of a new firm) entitles the firm to additional free MAP Credit from the MAP Credit Office. This Credit is equal to the employee's Wage (including fringe benefits) in his or her previous job. Conversely, the separation of an employee from a firm reduces the Credit of the firm by the amount of that employee's Wage. The free Credit must be equal to the previous Wage to prevent firms from firing and rehiring employees at higher salaries to obtain additional free Credit for the difference.

(4) New capital investment (whether financed by stocks, bonds, or reinvested declared profits, including all the capital investments of a new firm) entitles the firm to additional free Credit equal to interest on the new investment at the interest rate. This represents the payment (Wage) for the services of the new capital. Conversely, the retirement of invested capital correspondingly reduces a firm's MAP Credit.

If a firm buys another firm, there is no net investment in the economy. Additional MAP Credit is granted only on the value of increases in capital invested and not on increases in the value of capital already invested. The buying firm acquires the other firm's stock of MAP Credit, together with its other assets.

(5) The MAP Credit Office grants each firm a further increase in free Credit, equal to 2 percent per annum of its total Credit, to allow for the estimated national average growth of net output per unit of input. The purpose of the 2 percent annual increase in each firm's free Credit is only to keep the national average increase in Net Sales per unit of input at just 2 percent.

(6) All firms are required to keep their Net Sales and their MAP Credit equal to each other by buying or selling Credit or by increasing or decreasing their Net Sales. The latter must be achieved by increasing or decreasing their prices, *not* by changing their inputs.

To facilitate this, the MAP Credit Office maintains a market in MAP Credit, buying or selling this Credit freely to all comers and adjusting the price to keep supply and demand equal. The demand for Credit comes from "deficit" firms who are short of Credit (their Net Sales exceeds their Credit). The supply of MAP Credit comes from "surplus" firms (their Credit exceeds their Net Sales.) No MAP Credit is created or destroyed in this trade, so that the total amount of MAP Credit in the economy remains unchanged.

Increases or decreases in a firm's Net Sales due only to changes in its scale of operation will be accompanied by proportional changes in the inputs that provide a proportional change in the firm's free Credit. Net Sales and the firm's total Credit will therefore increase or decrease together, and the firm will not need to buy or sell MAP Credit.

As a result of all these provisions, the total national volume of Credit will increase in proportion to the total national increase in productive resources *plus* the (estimated) national increase in net output per unit of productive resources. This means that total Net Sales (kept equal to total Credit) will grow at the same rate as total net output. Thus, the average price—the price level—will not change.

Since MAP Credit is freely tradable, it can also be acquired for a temporary period to match a temporary increase in the firms' Net Sales by buying MAP Credit to sell later. Conversely, MAP Credit can be sold to match a temporary reduction in Net Sales. The same effects might be achieved more conveniently by *renting* some MAP Credit for the period. But to simplify the exposition, we will speak only of buying and selling MAP Credit, even though the sole operative requirement is that the firm *be in possession* of an amount of MAP Credit equal to its Net Sales over the period (the year) during which Net Sales occur.

(7) The MAP Credit Office keeps a record of each firm's Credit as it is adjusted for hirings and separations of employees, changes in capital investments, and purchases and sales of Credit, to check whether the Credit in the firm's possession matches its Net Sales. Such records are required by the Internal Revenue Service or by the Social Security Administration with which the MAP Credit Office would cooperate. The maintenance of these records is no more "mind boggling" than the task currently being handled by Master Charge computers.

(8) Government agencies and private nonprofit corporations are also subject to MAP regulations. In these cases, "Net Sales" is replaced by "Net Personal Income Generated" (the nonprofit part of Net Sales). Thus, business and government are both treated the same way.

Discussion

Of the three plans presented, the Lerner-Colander MAP plan is the strongest and most consistent with the theoretical underpinnings of incentive anti-inflation plans. As such, it is also the most politically difficult to implement.

Its key features are its use of a market in which MAP credits are traded and the value-added, or net sales, base that those credits will have. These general concepts seem sound although much additional detailed work remains to be done before they will be operational. As that work is done it is likely that significant modifications and clarifications will be forthcoming.

One problem of the proposal is the allocation of the initial credits according to the previous years' sales; this would most likely create numerous complaints. Basing the allocation on an adjusted average of three or more previous years would seem preferable. Another modification which might be considered is the use of a private organization, rather than the Federal Reserve, to operate the market. Whoever runs it, the detailed workings of the market must be specified in much greater detail. Extending the accounting period to a 5-year period will greatly enhance political and administrative feasibility. Thus a firm, rather than being given a one year guideline will be given a discounted five year guideline. Although trading in MAP credit will be allowed, no actual MAP credit adjustments will be required until the end of that 5-year period. Before that time firms might be required to maintain a MAP credit accounting position which must be entered on their balance sheet. Additionally, a staggered accounting period could be used to maintain the continuity and depth of the MAP credit market. In every month one-twelfth of the firms would need to settle their accounts.

The broad definition of firm in the MAP plan will likely create numerous administrative problems; a size exemption seems preferrable. Additional considerations must be given to the treatment of financial corporations and banks for whom interest income constitutes a large percentage of their receipts. Similarly, the treatment of implicit rents, capital gains and international corporations will need careful consideration, as will the allowable adjustments for changes in inputs will need to be specified in more detail.

The immediate reduction of the guideline will likely cause significant problems for firms with existing long run contracts. Either the guideline will need to be decreased more slowly, or procedures will have to be developed to adjust contracts in light of the drastically changed expectations.

Numerous other clarifications and potential modifications remain. Firms' and individuals' ingenuity in circumventing the intent of a law is virtually unlimited. Careful consideration of design characteristics at an early stage can avoid innumerable later problems. This is especially true with such a major institutional change as the MAP proposal.

Conclusion

The preceding proposals provide some insight into the administrative problems and their potential resolution. Although they provide a range within which an anti-inflation program may be designed, they

are still shells, allowing major modifications to acommodate political considerations. Any actual proposal will necessarily reflect administrative, political and economic considerations. Thus, these proposals should be used as benchmarks to begin the difficult task and not as set proposals.

To move toward an actual proposal a three part program should be followed:

Additional theoretical and empirical research into the proposal should be undertaken, specifically considering how high the anti-inflation incentive must be and how best to integrate the plans with monetary policy.

A task force of business, tax, security and options market, legal and accounting experts should be established to work out an options paper, detailing the administrative implementation of the plan.

A business, labor, and government task force should be established to work on the general political issues surrounding the plans' introduction.

Appendix. Other Proposals

A variety of proposals have been suggested besides the ones discussed above. The following are brief descriptions of some of them.

Heilde Behrand—Exemption Proposal (1973)

Wage increases following the guidelines should be exempt from income tax.

Lord Wilfred Brown—Industry Specific TIP (1972)

Government establishes industry specific guidelines, and taxes above guideline wage increases.

Colander Value Added TIP (1979)

Similar to the Wallich Weintraub TIP, except that it uses a value added rather than a wage guideline and is instituted on government and private firms through a separate excise tax, rather than through the corporate income tax.

French Government—Lévé Conjectural (1979)

Firms with value added rates above guidelines are required to deposit a portion of that with the tax authorities if the inflation is high. When the inflation subsides, they are paid back the money.

Scott Tax on Price Increases (1961)

A general tax on price increases. Few practical details are included.

Seidman's Payroll Tax Credit (1976)

A proposal to subsidize individuals with below guideline wage increases. Primarily designed as a supplement to the Wallich Weintraub proposal. Weintraub's later revision partially incorporates it.

M. D. Stueurer's Escrow Proposal (1962)

Wage settlements in excess of guidelines be placed in escrow.

Streble's Value Added Policy (1978)

A general proposal to tax increases in a firm's value added output price. Few administrative details are considered.

Lerner's Wage Increase Permit Plan (1978)

A proposal similar to MAP, except that the incentive is on the wage rate rather than the value added rate.

von Weitzacker's Market Plan (1976)

A proposal that uses the market to force prices to change immediately with changes in the money supply. Its mechanism is somewhat similar to MAP except that the incentive is directed at output prices. Few administrative issues are addressed.

VI. SUPPLEMENTAL PRO-COMPETITIVE REFORMS

The institution of an incentive anti-inflation policy will not lead to a problem free world. If the real theory of inflation is correct, the necessary anti-inflation incentive will be positive, and possibly high, if a full employment policy is maintained. Such a high anti-inflation incentive will cause problems with administering the program and induce efficiency losses in the economy.

To reduce these side effects, any incentive anti-inflation plan can be supplemented with a variety of anti-monopolization or pro-competitive policies whose primary goal is to reduce the anti-inflation incentive necessary to maintain a high employment policy. These complementary policies can take many forms. Most have been proposed before; none are costless, and those that make the most sense from an economic viewpoint are generally the ones that are politically most difficult to implement.

The goal of these policies is quite simple: To place a downward pressure on prices and make it more difficult for nominal wage rates, dividend rates, interest rates and, therefore, prices to rise. Such a goal can be accomplished by direct or indirect attacks on sellers' monopolization, making the economy more closely resemble the competitive ideal.

Anti-Monopolization, Not Anti-Monopoly

It should be emphasized from the begining that the goal is an anti-monopolization program, not an anti-monopoly, or anti-big business program. This must be emphasized because monopoly has often been associated with size of the firm relative to the market or with high concentration ratios in an industry. Thus, its dynamic counterpart would be associated with increasing the size of the firm relative to the market. This association is unfortunate because generally there is only a loose association, if any, between this definition of monopoly and what is economically bad about monopoly. In fact, often there is a negative relationship—the largest firms have monopolized the least. Rather than gaining market share, a monopolizing firm or group will often be losing market share while a non-monopolizing firm will be gaining.

By condemning bigness per se, U.S. anti-trust policies have, in essence, been following the paradoxical progam of encouraging vigorous competition but then penalizing success. Such policies actually discourage expansion of output and encourage firms to set high prices relative to costs. Thus, these policies encourage the very result that the policies were supposed to avoid—monopoly. This follows because, when correctly defined, evidence of monopoly is a difference between the price charged and the competitive normal costs. A firm

that cannot charge a price higher than the competitive normal cost because of competitive pressures should not be called a monopoly, even if it has 100 percent of the market.

What creates monopolies are barriers to entry [1] *Where there are no barriers to entry there can be no monopoly.* The association of monopoly with single firms in an industry developed from a theoretically static conception of the world—precisely the same conception that led to the misunderstanding of the nature of inflation and of how it must be fought. The sole relationship between the market share of a firm and monopoly is an indirect one which operates through barriers to entry.

Since entry is never instantaneous, all firms have some monopoly power and also are competitive since they face entry and potential competition. Some of the barriers to entry will be the result of past investment and others will be technologically or governmentally determined. The analysis of dynamic competition concerns the building up and breaking down of these entry conditions. Over a sufficiently long time period, all industries are competitive; over a sufficiently short time period all firms are monopolies. The relevant question in dynamic competition is the length and nature of that interim period. Thus it is fundamentally disequilibrium or adjustment analysis.

The barriers to entry view of monopoly provides a quite different view of the causes of monopoly and the programs that must be followed to offset it. Government, rather than being the defender of competition can be a channel through which pressure groups attain restrictive barriers to entry. Licensing, trade restrictions, and assistance programs become the barriers, freeing groups from the competitive pressures. Similarly professional associations designed to promote the general welfare become groups designed to promote their members' welfare.

All this is not to argue that the above programs and groups serve no useful purpose. Public as well as private monopolization serves legitimate ends. The problem is one of balance between these legitimate ends and anti-competitive ends. Our current inflation dilema suggests that competition has not fared well.

The Short Run and the Long Run

A probable cause of competition's demise is the timing of the effects; the anti-competitive effects are often long term while the socially beneficial effects are more immediate. Calls for government action are therefore guided by the immediate effects while the long-range effects are attributed to general forces. The problem has been compounded by a change in the political climate. Over the last 50 years there has been a movement toward a more activist government. Although the role of government has changed, the guiding principle of "do no direct harm" has not. This guiding principle focuses almost entirely on short benefits. Charles Schultze (1977), illustrating the process, writes: [2]

In the long run, however, prices are a potent instrument. Given time, the economic system follows with incredible efficiency the price signals that society

[1] For a discussion of the importance of barriers to entry, see Joseph Bain (1956).
[2] Quoted from Charles Schultze (1977), page 79.

sends out. It is sometimes easier to demonstrate this from cases in which the price signals are wrong than from those in which they are right. In the naturally arid Imperial Valley, for example, water was brought in at great expense by irrigation works. But since the water is heavily subsidized and priced at absurdly low levels, one of the favorite crops in this land of scarce water is watermelons! By setting low prices on the possession of empty railroad boxcars is unimportant, that boxcars are virtually a free resource. And behold! the average U.S. boxcar travels loaded only 7 percent of the time and covers the grand total of 50 miles a day. We develop a medical insurance system that, for various reasons, underwrites the cost of hospital stays (that is, puts a zero price on such stays for the indivduals patient) but does not do so for preventive medicine and physician office visits; and the entire structure of medical care gradually shifts toward hospital inpatient care. I have already noted that labor, always priced as a scare resource, is steadily conserved in the production process, while environmental quality, in which we put no price, has always been wasted.

The problem is not that economic outcomes fail to respond to price signals. Over time they do, and with almost frightening efficiency. But in that short run, most market prices themselves change little, and only after substantial strains have built up. In turn, the behavior of business firms, workers, and consumers only gradually adjusts to new price patterns. As a consequence, observing the day-to-day behavior of private markets may provide a misleading and far reassuring picture of the social efficacy of the pricing system.

The simple truth is that the competitive process is neither pretty nor painless. It requires irritation to stimulate individuals to resolve difficult problems. Much as irritation in an oyster creates a pearl, the pain of competition leads to a problem's resolution.

Competition's success requires that individuals and firms be responsible for the consequences of their actions. This includes potential ruin, bankruptcy, and suffering. Without the fear of such consequences the competitive process is biased, and thereby destroyed.

This is not an argument, as some people have said, that the government should never intervene; it is only an argument that such potential long run effects as can be foretold should be considered. Attacking short run problems removes the stimulus those problems would have instilled toward a private resolution of the problem.

The Key to a Successful Program

The key to a successful anti-monopolization program is to make sellers' monopolization less desirable and more expensive—to make the economy more competitive. Competition lessens the need for an anti-inflation incentive. A successful program will encourage productivity and productive effort while discouraging the creation of monopoly.

Establishing the program will not be politically easy since it will go against the political grain. It will be a broad based diverse, rather than a narrowly focused, program, and will, if properly designed, step on everyone's toes—while pressing harder on the bigger toes. However, there are potentially large benefits and even partial success can contribute to the anti-inflation program.

Obviously one chapter in one report can not do justice to the complicated issues raised. Many are controversial either in theory or in application and have been discussed more fully elsewhere. They are raised here primarily to provide a starting point for further discussion of the type policies that might be adopted to complement the anti-inflation incentives. They fall into three general categories:

(1) Pro-competitive structural reforms of markets.
(2) Pro-competitive government reform.
(3) General structural reforms to make monopolization more difficult.

Pro-Competitive Structural Reforms of Markets

In economists' models, markets work wonderfully—costlessly coordinating individuals decisions. The economy differs substantially from the model but can be made to better reflect the competitive pressures through a series of general reforms. Below, a variey of programs are sketched that should lead to more competitve market structures.

Which markets should be concentrated on depends on the design characteristics of the anti-inflation plan. If the incentive is directed at wage rates— product market reforms will take precedent; if directed at value added rates—labor market reforms will take precedent.

Improving Competition Through Better Information

Competition depends upon knowledge of alternatives. An underlying cause of the inflation problem is the differential search for alternatives by individuals as consumers and as producers. Better information of product comparability, both in price and quality, can improve the competitive nature of the economy. Unfortunately, a free-rider problem exists with information. Consumers rely upon other consumers to provide the search and information that makes competition work. Price is used as a signal of value. But if everyone relies upon everyone else, no one actually provides the information, and the pricing system no longer works efficiently.

Advertising supplies some of the needed information, but is naturally biased in favor of the seller and does not concentrate on informational content. If a practical program to increase the informational content of advertising could be designed, it could be beneficial.

To accomplish this, advertising would need to be divided into two types: informative and persuasive. An example of the first type might be an advertisement of a comparison study done by an independent testing agency; an example of the second might be a famous star endorsing a product. The goal of a pro-competitive program would be to increase the informational content.

Requiring all advertising to include an independent assessment of its major products in its advertisement is one method to achieve this end. For example, an advertisement of a cereal by a famous personality would be followed by independent presentation of merits of that cereal compared to others certified by an independent consumer testing group. While this particular policy may not be cost effective, numerous other such policies are possible and the Federal Trade Commission could concentrate more on its efforts toward developing such pro-competitive advertising programs.

Government Regulation

The government provides probably the largest single source of barriers to entry and thus is the largest cause of monopoly. Some government-created monopolies are merely the necessary side effects of

otherwise beneficial programs; others have little redeeming social value and are merely an expression of power politics. Much excellent research has been done on the problems and posibilities of reform, and this short discussion can only touch the surface of these.

There are two types of regulatory reform that can help in the fight against inflation:

(1) Modification of direct industry regulation.

(2) Modification of general regulations—such as OSHA and EPA regulations.

The second category of regulatory reform is often advocated as a *primary* anti-inflation tool. The argument goes: cut government regulation and you will cut costs which will cut inflation. This argument is wrong for two reasons. First, inflation is a continuing process; a one-time cost reduction will not stop the process. Second, most of the cost-cutting would be too small compared to the total to significantly affect the general price level. This is not to argue that regulatory reform should not be undertaken. If a regulation is inefficient or cost ineffective, it is so independently of inflation and should be removed.

There is one way in which these regulations can contribute to the inflationary process, however. By impeding new entry into industries, they add an additional barrier to entry which can slow competition and increase monopolization.

Pro-competitive regulatory reform encourages entry. Advantageous trade-offs might be possible in lessening the regulatory burden on new firms, either by partially subsidizing the costs of regulation or by making regulations less stringent in the first few years of operation. Possibilities for reform should be explored and coordinated by the President's Council on Wage and Price Stability.

The first type of regulation directly affects the competitive process through its effect on dynamic competition and monopolization. By limiting entry and making new entry more difficult, regulation of an industry limits competition and encourages monopolization. A significant group of critics representing a wide range of political views of regulation has developed, as have proposals for reducing regulation.[3] Numerous proposals have been put forward, such as the Ash Council Report and proposals by Task Forces on Inflation under Presidents Johnson and Nixon.[4] Unfortunately, other than the encouraging results in the airline industry, little gain has been made. This does not mean that future progress will not be made; it merely emphasizes the difficulty and the long run nature of the process.

Competition in the Labor Market

Using a value-added anti-inflation plan, combined with supplemental regulatory reforms, the product markets should be workably competitive and, if they are not, the value added anti-inflation incentive will have a direct impact on them, forcing them to better reflect the competitive ideal. The value-added anti-inflation incentive does not, however, directly affect the labor market, and the relative competitiveness of this market will need to be carefully watched under a value-

[3] See, for instance, George Stigler (1971), Richard Posner (1973), or Mark Green (ed.) (1973).

[4] For a discussion of these proposals see Almarin Phillips (1975).

added incentive plan, just as the relative competitiveness of the product market will need to be carefully watched under a wage incentive plan.

The argument that unions cause inflation is well known, as are the arguments concerning its validity.[5] Where product markets do not display sufficient competition, unions are a necessary counterveiling power to protect workers relative to business. However, if the product market is competitive, the counterveiling power is not needed and union pressure can lead to serious problems.

Directing the anti-inflation incentive at firms does not directly affect labor's incentives to push for higher wages. It relies on the corporation's ability to transmit that incentive into wages through the collective bargaining process. Since much of the U.S. economy is non-unionized, this is a reasonable assumption. Moreover, in the past labor has initially cooperated with the wage guidelines and consequently there is hope that this will not be a serious problem.[6] If, once the program is instituted, unions push for impossible *real* wage demands, their casual role in the inflationary process will be demonstrated and the appropriate reforms can be made.

Any actual reform will be the result of significant compromise by both business and unions; only a positive approach by both sides will allow progress. Just as the anti-inflation incentive must be applied fairly, so too must pro-competitive reforms.

Minimum Wage Laws

Not all monopolistic interference with competitive markets is bad. Some serve legitimate purposes. Advocates of minimum wage laws suggest that minimum wage laws are such policies, guaranteeing that workers receive a decent wage for a job. Even advocates recognize, however, that a high wage and no job serves almost no purpose, and that minimum wage laws can both reduce employment and raise wage rates.

The relative effect of the minimum wage laws is an open empirical question and the programs potential effectiveness must be judged upon that empirical evidence and upon the feasibility of developing an effective guaranteed jobs program at an acceptable cost.

Changing Work Rules To Improve Productivity

One of the problems with any guideline is that changes in existing work rules to improve productivity are discouraged because the change is not reflected in the guideline. To meet this problem a separate program could be set up where a government-organized productivity board can contract with individual firms and unions to remove such rules. The potential gain in productivity for removing the work restriction rule would be estimated, and the firm's guideline adjusted accordingly. A review board would then certify that the change was made. The estimating and administrative problems of such a program are significant and while, in principle it is possible, in practice the program remains highly tentative.

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[5] See, for instance, Dudley Jackson, H. A. Turner, and Frank Williamson (1972).
[6] For a discussion of labor's role see Craufurd Goodwin (1975).

Reform of Unemployment Insurance

Unemployment insurance serves many useful functions—providing stabilization for the economy and humanitarian support for the unemployed. It is a fixture of the society and must be maintained in some form. However, the particular form it currently takes has numerous long-run side effects: increasing the unemployment rate, decreasing wage flexibility and reducing the competitive pressures in the labor market.

Probably more than any other program affecting inflation, unemployment insurance is in need of major modification. Reforms have to be developed for unemployment insurance that would offset these negative side effects and a major policy thrust toward implementing those reforms should accompany the anti-inflation incentive program.[7] Essentially, the modifiactions should reduce the relative subsidy for remaining unemployed as compared to lowering ones wage rate offer, increasing the downward pressure on wages associated with any specific amount of unemployment.

The Problem of Private Savings and Investment

Savings and investment are fundamentally important to society, and individual decisions to save or invest must be coordinated to guarantee full employment and continued prosperity. The relevant question is who is to enjoy the fruits of that investment?

There is no inherent reason why investment funds should be generated only from profits. A number of proposals exist such as Kelso plans which, if developed, could generate significant investment from wage income. Modifications of such plans would induce workers to take part of their wages in the form of stocks and bonds, thereby increasing total investment.

In principle such a plan could generate any amount of investment funds, even after adjustment for displacement of other forms of saving. A major policy thrust in this direction therefore seems warrented.

The above list is neither intensively nor extensively exhaustive; it, nevertheless, should stimulate thinking and further research into the feasibility of a variety of novel programs designed to increase market competition.

Structural Reforms in Government: There Is No Free Lunch

Besides the above structural market reforms, there are a variety of governmental reforms that could indirectly increase competitive pressures in markets or reduce pressures on the Federal Reserve System to increase the money supply. These proposals might be summarized as the "no free lunch" proposals. They are designed to force government to make the difficult choices on costs and benefits. They involve either reforms such as a balanced budget plan which make it impossible for the government to avoid the no free lunch proposition, or structural reforms of Congressional decisionmaking that reduce the pressures on government to provide free lunches.

[7] For a discussion of some proposals see Martin Feldstein (1972).

Controls on Government Spending

The role of monetary policy is closely tied to fiscal policy because the federal debt must be financed. The Federal Reserve has a responsibility to maintain a stable market for government securities. Significant new governmental bond offerings presents it with conflicting duties: on the one hand to maintain a constant price level while on the other to maintain a stable market for government securities.

As was emphasized above, if an incentive based incomes policy is to be effective, it must be coordinated with aggregate policy; consequently, prospects of success can be greatly enhanced by responsible fiscal policy. Precisely what reasonable fiscal policy is, is unfortunately difficult to say. It depends on estimates of future tax revenues and business conditions. Thus there is a likelihood of significant debate on any specific definition of responsible.

Despite the ambiguity of what is responsible, certain types of fiscal policy can be classified as irresponsible. On the one hand, running a deficit when there are shortages of goods and factors, is irresponsible, unless there is a national emergency that can be met in no other way. On the other hand, when there is an expectational crisis which leaves plants and workers unemployed, then not to run a deficit is irresponsible. Any responsible fiscal policy would include both contingencies.

Unfortunately, the required flexible budget policy is not easily achieved. A democratic government's ability to maintain a responsible budgetary policy faced with temptation to spend more than they take in seems rather limited. To effectively control government spending in a democratic society requires a socially or constitutionally imposed budget constraint. Government must be made to take into account the fact that there is no such thing as a free lunch.

In the absence of an anti-inflation incentive plan, fiscal responsibility leads to a high level of unemployment which creates an almost irresistable pressure towards irresponsibility. The problem is that the people who bear the biggest burden of the fiscal responsibility are not necessarily the ones who should bear the burden. The resulting conflict between equity and responsibility makes it seem as if all policies are irresponsible.

With the introduction of an anti-inflation incentive plan, fiscal responsibility once again becomes possible. Thus, its introduction should be accompanied by a plan to guarantee that a responsible fiscal policy is maintained.

A Responsible Fiscal Policy

In economics, individuals and government should be continually planning for the future. Their decisions should reflect that planning, and the discounted value of future expected expenditures should equal the discounted value of future expected receipts, plus or minus a growth adjustment. For the government, receipts can include seignorage—the net income for the government's money monopoly, and can also include maintenance of an optimal debt, since the society is an ongoing process. (When the economy is growing, seignorage and debt will likely be positive; when it is declining, they will most likely be negative.) A fiscal policy that balances expected future expenditures and expected future receipts is a responsible policy. This means

that a deficit or a surplus can be run in any one year, but except for the growth adjustment, a continual deficit is fiscally irresponsible.

Because the constraint is an average constraint over extended periods, and not a constraint in any one period, fiscal responsibility does not require a balanced current budget. Such a budget could be highly irresponsible, either because it does not allow for the expansionary affect of a deficit, or because it does not take into account future liabilities which can cause serious future problems. A responsible fiscal policy focuses, not upon the current budget, but rather upon the expectational budget which requires discounted expected future revenues to equal discounted expected future expenditures.

The expectational budget allows for deficits to be maintained provided that the deficit will be offset with a surplus in the future. If the deficit expands the economy sufficiently, then the future tax rate will not need be raised to create the surplus; if it does not, then future taxes must be raised. Creating a full expectational budget and requiring it to be balanced is administratively impossible. However, the budgetary process can be made considerably more forward looking and long term spending constraints could be developed. For example, a requirement that all current deficits and programs be financed—either by an increase in the future tax rate or by growth in real output—will achieve the necessary responsibility while allowing the flexibility necessary for stabilization policy. Any expected growth dividend would be stated in the original bill and if it becomes apparent to a fair observer that these expectations are not being met, future tax rates would need to be raised. The role of a fair observer would be played by an outside financial review board consisting of actuaries, economists, and budgetary specialists whose function it would be to make these fair assessments about future expected growth, tax rates, and optimal levels of debt.

Structural Reforms in the Government Decisionmaking Process

Besides balancing the budget, certain structural reforms are also possible, reducing the pressures on the government to spend. One such structural change might be a tax on lobbying expenses (or, alternatively, making lobbying expenses non-deductible), making it more expensive for groups to lobby for their individual benefits. Thus, it would be more difficult, for example, for unions and firms to achieve import restrictions which significantly reduce domestic competitive pressures. Consideration of such a tax must, however, take into account the fact that lobbying also serves useful purposes, such as preventing other lobbies from establishing barriers to entry into markets. The ability to separate "bad" lobbying from "good" lobbying will likely leave this proposal a purely theoretical one, demonstrating both what structural reforms could accomplish and why it will be so difficult to make progress in accomplishing them.

General Structural Reforms To Make Monopolization More Difficult

Many of the institutions we have developed are premised upon the assumption that the economy is relatively inflation-free. The advent of inflation has reduced these institutions' effectiveness, thereby benefitting some groups and hurting others. The benefitting groups have

accepted the result while the others, rather than working for the elimination of the benefits, have worked for their own offsetting programs and benefits. Paradoxically, an important one of these institutions is the measurement and adjustment for inflation with the Consumer Price Index and indexation.

It was emphasized above that inflation is a continual rise in the general price level. This definition is not quite correct; the correct definition is that inflation is a continual rise in the general price level that does not reflect increasing scarcity or a negative growth rate. Where there is increasing scarcity, the output price level must rise relative to individuals' incomes in order for that scarcity to be met by the market. Such a price rise is not true inflation but is a market change serving a useful function. Without that price rise, some other means of reducing individuals' incomes must be designed. For example, the recent sudden rise in the price of oil and fall in the value of the dollar required a fall in the real standard of living in the United States. A rise in the output price level with the input price level—wages, interest and profits—remaining constant would accomplish such a fall and serves a useful function.

The Problem of Incorrect Indexation

Indexation of input prices to the consumer price index prevents such a relative rise in output prices. Thus, if all incomes had been indexed to the consumer price index, real income would not be allowed to decrease in the face of an exogenous price shock. Some other method of reducing individuals real income must be found. If only some incomes are indexed relativities will be affected, creating additional pressures for monopolization.

The CPI has numerous other problems as a base index and theoretically, if a perfect index were used, such problems could be avoided. Unfortunately the perfect index is administratively impossible to calculate. Thus a flexible index is necessary and the monetary unit of account fulfills this function. Anti-inflation incentive programs use that monetary unit of account and indirectly index the price level to that unit of account. When fully implemented, they eliminate the need for indexation by maintaining a roughly constant price level.

In the interim, however, a number of revisions in the present indexing procedures are possible which would better reflect true inflation and would exclude necessary intertemporal price adjustments. These include revising the treatment of housing expenses in the CPI and eliminating import price changes from it. With these modifications indexation can serve a useful purpose; without them, it will only hurt the inflation fight.

Foreign Competition: Free Trade and Fair Trade

One of the most important sources of competition comes from abroad. Foreign competition limits domestic monopolization while the erection of trade barriers decreases competitive pressures and makes further monopolization possible. For this reason, economists have generally supported free trade and continued vigilence against trade barriers will remain an important complement to any anti-in-

flation program. Ideally, other countries will treat United States companies similarly, so that foreign firms do not have an unfair competitive edge.

Conclusion

The above discussions are merely suggestive. This study is concerned with anti-inflation incentive plans, not with supplemental proposals. However the variety of supplemental proposals should be kept in mind when developing an acceptable political package that includes an anti-inflation incentive plan. A groups' concessions on design characteristics can be compensated for by offsetting concessions in supplemental proposals by another group.

VII. CONCLUSION

The government should do few things, but those that it does it should do well. One of its primary responsibilities is to maintain a stable price level, a goal inherent in the government's role as a regulator of the money supply and necessary to preserve society's fabric. Although it currently has the responsibility for stabilizing the price level, it does not have the power. Private individuals, not the government, determine prices and have the power to raise prices independently of the government's actions. Faced with rising prices, the government can restrict the money supply, thereby limiting total nominal income, but it cannot directly stop prices from rising. By limiting total nominal income, the government makes price rises more costly to society, but not necessarily more costly to the specific individuals who raise their prices. Unless monetary policy can be channelled into lower prices, restrictive monetary policy will only lead to a recession, unemployment and underutilized resources. This separation of power and responsibility provides the inflation/unemployment dilemma presently facing the United States.

The Monetarists' Dream

In the monetarists' theory of inflation, little, if any, unemployment is necessary to provide the anti-inflation incentives needed to transmit restrictive monetary policy to prices. In fact, in their theoretical model the transmission is instantaneous, and decreased money supply growth is directly channelled into decreased inflation:

The Monetarists' Dream

$$\dot{M} \rightarrow \dot{P}$$

No unemployment is needed. All that is needed is the fear of unemployment. Once individuals are convinced of the government's resolve in limiting the money supply growth to 2–3 percent per year, all will recognize that such a money supply growth can only lead to full employment if the price level remains constant. This recognition and their collective desire for full employment embodied in the assumption of perfect competition will cause them to reduce their price increases. Although monetarists admit to certain frictions and expectational elements in the translation of this theory into practice, this underlying conception of perfect competition guides their policy prescriptions.

The Shattered Monetarists' Dream

The lack of a transmission mechanism of the incentive from monetary restriction to inflation shatters the monetarist's dream. Although it is in society's interest for all individuals to respond to restrictive monetary policy with lower prices, it is not in any individual's private interest. Everyone waits for the others to respond. An analogy to taxes can be made. It is in society's interest that all individuals pay taxes, yet it is not in any one individual's interest to do so. To meet this problem, paying taxes must be made mandatory; a voluntary tax system would soon destroy the country. In this same way relying on voluntary reductions in prices merely leads to everyone depending on others to lower their price. This reliance channels the restrictive demand into unemployment rather than into lower prices. In economists' terminology, inflation is an externality.

The Theoretical Problem With Monetarism

Monetarism's static view of competition underlies its policy prescription and accounts for its failure to provide an effective understanding of the inflationary process. Competition is a dynamic process with individuals constantly striving to increase their income in the face of shocks and uncertainties. In a static world, the monetarists would be right; in a dynamic world they are wrong. This dynamic competitive process is characterized by the juxtaposed forces of monopolization and dynamic competition. Sellers' monopolization places an upward pressure on the price level and dynamic competition places a downward pressure. Inflation represents a failure of dynamic competition to offset sellers' monopolization. If we are to stop inflation, competition must be given a helping hand.

The Cause of Competition's Demise

If society were willing to accept whatever level of unemployment and under-utilized resources were required, inflation could be controlled by restrictive monetary policy and credit controls. However, monopolization tends to be unevenly spread throughout the economy; some individuals, firms, and industries are substantially protected from the threat of recession which means that the unprotected must bear a larger share of the burden. An equally shared 10 percent reduction in hours worked might be tolerable; 10 percent unemployment with 90 percent unaffected is not.

This unequal sharing of the anti-inflation burden places tremendous pressures upon the political process to step in and mitigate that burden. It led to a variety of governmental programs such as unemployment insurance, guaranteed loans, and adjustment assistance, which reduced the pain of the recession but, in doing so, reduced the dynamic competition in the economy. Controlling the money supply did not stop inflation; the suffering, associated with the unemployment and weak markets that it caused, did. As political programs stepped in to reduce that suffering the cork on the inflation bottle was removed. This has led many to the myopic claim that the inflation was caused by these governmental programs. But, these programs

were, themselves, caused by the uneven monopolization which violated society's precept of equal sharing of the burden. Given that monopolization, a democratic government's intervention was inevitable. Thus. it is more appropriate to say that unequal monopolization, not the government programs, caused the inflation.

Given our social institutions no individual is going to brave the scorn of other workers and undercut their pay unless he is in dire straights. Similarly, firms will limit their price competition, unless they are on the verge of bankruptcy. Monetary policy does not stop inflation; hunger and suffering does, and when the government limited the use of hunger as a weapon against inflation, it limited monetary policy's effect on inflation. The actual transmission mechanism of monetary policy is the following:

$$M \rightarrow U \rightarrow Suffering \rightarrow \dot{P}$$

Restrictive monetary policy causes unemployment which causes suffering and hardships which, when sufficiently harsh, forces individuals to sell cheaper which lowers prices.

The Contradiction in Government Policy

Currently, it is stated government policy that unemployment will not be used as a weapon against inflation. If the government followed its policy of not using the unemployment weapon, monetary policy used alone which works through unemployment would be ruled out. However, it is not true. We are presently using unemployment and monetary policy as our primary weapons against inflation while simultaneously preventing it from having its desired effect. Thus, the government policy is actually one of refusing to allow significant increases in unemployment to be used in the fight against inflation while allowing moderate unemployment to be used.

Making the Monetarists' Dream Come True

Incentive based incomes policy reinstate the monetarists' hoped-for transmission mechanism by by-passing unemployment and translating the incentive directly onto prices. They assist competition by directly taxing sellers' monopolization.

$$M \rightarrow U \rightarrow Suffering \rightarrow \dot{P}$$

Under monetary policy the monopolizing groups were not *directly* subject to the restrictive monetary policy. Some groups could monopolize and others would suffer the consequences. This inequity led to government intervention. Incentive based incomes policies remove the inequality by placing a direct restraint on monopolization, thereby giving competition the assistance it needs to equalize the upward and downward pressures on prices and stop inflation.

Saving the Market System

These anti-inflation incentive plans do not substitute government decisionmaking for the market; instead they use market incentives against inflation and do it in a way that has minimal interference with

the relative price setting function of the economy. They make the economy behave like a competitive economy. If, as monetarists claim, the economy is already competitive, then the required level for the anti-inflation incentive will be extremely low or zero and the programs will have minimal side effect.

The Paradox of the Fight Against Inflation

Nobody should want to implement an anti-inflation incentive plan.—If they did, they either underestimate the problems that will be associated with its introduction or are sadistic. Similarly, every governmental unit that has a role to play in the proposals should be uncomfortable about accepting that role. If they were not, they would not be the proper ones for carrying out that role.

Anti-inflation incentive plans are in no one individual's or group's interest.—They are, however, in the best interest of society. It is precisely this quality that makes their introduction a government responsibility and not a private individual responsibility.

Establishing an anti-inflation incentive plan will not be easy. There will be difficult decisions on the precise design characteristics of the plan. Administrative feasibility must be integrated with theoretical considerations. This report provided some initial analysis of those design characteristics but much work remains before an effective plan can be arrived at. Incentive anti-inflation plans represent a major institutional change in the economy and care must be taken to focus on the long range, not short range, effects. Their appropriate institution will strain the political system.

The Government's Role in Society

A well functioning democratic government is designed to establish the ground rules—the rules of conduct—under which maximum individual freedom and liberty are maintained, while simultaneously insuring that those individuals' freedoms do not act to the detriment of the society as a whole. It is a difficult role, one which has not been especially well played by government in recent years. In fact it has often seemed that government's role is to provide an additional means through which individuals and groups can attain their individual goals, rather than guarding against such actions. Perhaps it can be no other way. The integration of democracy and freedom depends upon offsetting pressure groups. The normal, ideal, state of a democratic government is one of somehow muddling its way through. Were it any more efficient, democracy itself would be threatened.

There is much debate today about the government's role in society. In defending positions pro and con, arguments are often advanced which appeal to economic theory; in particular, economic theory had often been associated with a laissez faire attitude. Economic theory, it is argued, predicts that the market will solve our problems—that there is a natural economic order and governmental intervention will only complicate and add more problems. The rational expectations theory is the latest expression of this argument. In this view the cause of our present problems is the government's intervention in the economy dating back to Keynesian macroeconomics. According to the rational ex-

pectationalists, economic theory tells us that the government cannot stabilize the economy because individuals are already stabilizing it. Government intervention only causes problems.

This view and the whole line of reasoning that accompanies it is wrong. Economic theory gives no direction concerning government action. When used correctly, it merely directs policy makers toward the implications that some policies have. Nonetheless, it does provide insights that recommend some policies over others. One of those insights concerns the fragile nature of a solution to a problem based upon all individuals' good will. It recognizes that in a large society, at least one or two individuals will attempt to take advantage of any situation; this in turn will force other more socially minded, individuals to do the same. The result will be the failure of any plan built upon an idealized conception of cooperative man. Instead, a stable society depends upon making individuals' self interest and the social interest coincide. Market incentives accomplish this end. This is not to say that voluntary cooperation is not a worthy goal to work for, nor that we as a society would not be better off if individuals were selfless. Opinions differ on this matter. It merely states that such voluntary cooperation, unless buttressed by some type of enforcement mechanism will not succeed. A second of the economists' insights is that political decisions are extremely difficult and costly to make. When one considers how difficult it is for a group to decide what movie to see, the need for a society not to be faced with millions of group decisions is clear. If a free society is to function, it must rely on an automatic pilot for most decisions. Again, the market serves this function relatively well. But the market only functions within a legal and social framework in which individuals' legitimate contracts can be expected to be fulfilled. This requires a set of relatively well defined rules, a commitment to those rules by private individuals, and a commitment to enforce those rules by the government.

A Time To Act

The government's role as enforcer of those rules requires a generally passive role, slowing the spontaneity of the system down, much as a referee of a fight maintains the flow and fairness of the fight. It cannot continually change the rules—to do so negates the very essence of the rules and destroys their value. However, as the natural evolution of the system itself diminishes the rules' effectiveness by changing the nature of the system, this evolution makes the rules no longer serve their intended purpose. Faced with this evolution, the government cannot stand idly by.

Thus periodically government's role must change from passive to active as it modifies the existing rules to respond to the evolving system. This need for explicit rules and the need for periodically changing the rules creates a tension among reasonable individuals about government's role; individuals will likely differ on the timing and need for changes. Deciding when a change is necessary is an art, and choosing the correct timing is what separates statesmen from politicians.

The question we must now ask is whether the time has come to make those major changes. If one believes that the time has come, then the

question remains whether the economic and political system is equal to the task. The institution of structural changes will be marked by tremendous pressures from various groups to turn the program into a program to benefit them; the effectiveness of the program will ultimately depend on the ability of politicians to weigh these competing demands while simultaneously assuming the role of statesmen.

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