

CONTROLLING INFLATION

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Controlling inflation is now the preeminent goal of national economic policy. Prices have been rising at least five percent per year for the past five years and seem likely to rise by even more over the next five, unless something is done about it. At current inflation rates, the value of the dollar falls in half every nine years and falls by a factor of twenty over a forty-year working life. Inflation at this rate is not a threat to the continuing functioning of the economy, but it leaves many Americans with a profound sense of economic unease, and it has a number of unfavorable effects on the tax system and in financial markets. Almost everyone agrees on the need to bring inflation under control.

There is much less agreement about how to limit inflation. We reached current rates of prices increase in spite of the well-intentioned efforts of five Presidents and at least as many separate counter-inflationary programs. The design of any new effort against inflation ought to profit from the lessons taught by the past fifteen years. Unhappily, those lessons give no grounds for optimism about the yield from new programs. Browbeating big business and big labor, an approach launched by President Kennedy, continued by President Johnson, and apparently to be tried again by President Carter, has had no discernable effect on inflation, according to the best research on the subject. Formal, mandatory controls, as imposed by President Nixon, had no permanent effect on inflation according to that research, but controls did succeed in postponing about two percentage points of inflation from the period 1971-73 until 1974, when it hurt the most. There seems little prospect for any greater success from President Carter's proposed

hybrid program of wage-price guidelines supported by partial enforcement and partial inducement, I will argue later in this paper.

Another anti-inflationary policy now gathering momentum hopes to reduce the federal government's own contribution to high prices. Candidates for reform are agricultural price supports, import controls, the minimum wage, and regulation of transportation, and a variety of other federal activities. As desirable as these reforms are, they cannot themselves solve the problem of inflation--they have at best a one-time favorable effect on the price level, but do not then prevent the price level from rising over time. They can be no more than an adjunct to a successful counter-inflationary program.

Presidential interventions in wage and price setting have always been conducted against the persistent criticism of an influential body of economists and journalists holding that the only effective policy against inflation is to limit the growth of the money supply. The relation between money growth and inflation is so clearly apparent in the longer run as to be beyond dispute. What has prevented any recent President from embarking on a sharp deceleration of the money supply as the mainstay of a counter-inflationary program is the belief that the immediate effect of monetary deceleration is to push the economy into recession rather than to halt inflation. The evidence supports this view. If the nation opts for a quick monetary solution to inflation, it should be ready for a period of high unemployment and low growth of output.

Inflation is the result of powerful, sustained economic forces. Excessive inflation today stems from a long period of excessive monetary

growth in the late 1960s and early 1970s. All of our Presidents for the past 15 years have seen the control of inflation as a test of leadership--if only the President could convince business and labor to moderate price and wage boosts, or if only the President could invoke a sufficiently dramatic set of controls or incentives, inflationary psychology would dissipate and inflation itself would come to an end. But the evidence points in just the opposite direction. Like so many other problems, inflation responds only slightly to any feasible Presidential initiatives. Over a span of several administrations, careful control of monetary growth can cure inflation. No single President, and especially no single program launched by a President, can hope to do very much about inflation. Immediate restoration of price stability should not be a test of a President's leadership.

Experience with Wage-Price Guideposts

From 1962 to 1967, two Democratic administrations invested a good deal of effort in limiting price and wage increases through guideposts and persuasion.¹ Presidents Kennedy and Johnson and their top economic aides spent long hours in personal interventions, of which Kennedy's celebrated confrontation with the steel industry in 1962 was just one example. The theme of their persuasive efforts was the patriotic duty of organized labor and big business to limit wage and price increases in view of the national interest in controlling inflation. The idea was current then as it is now that if only people would stop and think about the national costs of their wage and price boosts, they would moderate them. And if everyone would do the same, individuals would not be made worse off by complying.

In spite of the irresistible logic of this case for inflation guideposts, the evidence suggests that the guideposts of 1962-67 had no discernable effect on wage and price inflation in that period. Careful research by Robert J. Gordon² has shown not just the absence of evidence supporting a downward effect of the guideposts on inflation, but positive evidence that their influence was minimal--no more than a tenth of a percentage point per year.

¹For a complete chronology of these efforts, see Craufurd Goodwin (ed.) Exhortation and Controls: The Search for a Wage-Price Policy, 1945-1971, Brookings Institution Studies in Wage-Price Policy, Washington, D.C. 1975.

²"Inflation in Recession and Recovery," Brookings Papers on Economic Activity, 1:1971, pp. 105-158.

The guideposts of the 1960s had no legislative authority and no formal tools for enforcement. The President and the members and staff of the Council of Economic Advisers worked publicly and privately to head off some of the more conspicuous price increases in primary industries and wage increases for large unions. Cynics might argue that guideposts have a useful role in national policy. Guideposts create the impression that something is being done about inflation without causing shortages, as formal controls seem to do, and without pushing the economy into recession, as contractionary monetary policy seems to do. But it should be understood that guideposts do almost nothing to moderate inflation.

Experience with Formal Wage and Price Controls

The only experience in this country with formal mandatory wage and price controls in peacetime occurred under President Nixon from 1971 through 1974. Examination of this experience by economists has been intensive,³ with reasonable agreement on the following conclusions: Controls did slow price inflation, especially during the initial price freeze and ensuing period of strictest enforcement (Phase II). However, the burst of inflation following the demise of controls in 1974 dissipated the progress made in earlier years. According to one of the most careful studies, carried out by Robert J. Gordon, the total amount of price deceleration attributable to controls was not large, about 1.2 percent per year, or a reduction of the price level of about two percent at the time of the peak effect of the program (mid-1973). His results show that all of this gain was erased within a year after the end of controls in the spring of 1974.

On the wage side, Gordon finds little or no tendency for controls to shift the historical relation between wages and the cost of living. Controls did limit wage inflation somewhat, but accomplished this through

³ See Robert F. Lanzilotti, Mary Hamilton, and R. Blaine Roberts, Phase II in Review: The Price Commission Experience, Brookings Institution Studies in Wage-Price Policy, Washington, D.C. 1975, Arnold Weber and Daniel Mitchell, The Pay Board's Progress: Wage Controls in Phase II, Brookings Studies in Wage-Price Policy, Washington, D. C., 1978; Joel Popkin (ed.) Analysis of Inflation: 1965-1974, National Bureau of Economic Research Studies in Income and Wealth, No. 42, Cambridge, Mass. 1977; Robert J. Gordon "Can the Inflation of the 1970s be Explained?," Brookings Papers on Economic Activity 1:1977, pp. 253-277, and Alan Blinder and William Newton, "The 1971-1974 Controls Program and the Price Level: An Econometric Post-Mortem" National Bureau of Economic Research, Cambridge, Mass., Working Paper 279, September 1978.

their effect on prices. Other authors have found some direct effect, but there is substantial agreement that wage deceleration on account of wage controls was less than one percentage point.

Though President Nixon's controls achieved a modest deceleration of prices and wages, the success came at some cost. Wage and price controls were a sudden federal intrusion in decisions that previously had been in private hands except in wartime. For wage controls, the biggest threat was the possibility of a strike against the control policy. Though organized labor's support for the controls quickly evaporated, the controls were administered with enough flexibility to avoid the disaster that struck Britain in 1975, when coal miners striking against wage controls almost brought the economy to a halt. For prices, the dangers of controls are two: First, if controls bite deeply enough, they cause shortages. The desire not to create severe shortages clearly limited the aggressiveness of the Price Commission's rules on permissible price increases. There were shortages of some products for some periods under the controls--plumbing fixtures, meat, and heating oil are examples. Shortages would have been much more serious had the Price Commission tried for 2 or 3 percentage points of deceleration rather than the 1.2 points they achieved. Second, price controls have a dangerous tendency to become limits on profits instead of limits on prices. Under the Price Commission, regulations for certain firms and industries took the form of limits on the margin of revenue over costs. Such limits reduce or eliminate the firm's incentive to keep down costs. Nobody has attempted to quantify the inefficiencies that resulted from profit controls under President Nixon, but they do not

seem to have been large. The Price Commission's reluctance to push firms too hard and the brief duration of the controls kept the inefficiencies to a minimum. Rigorous, long-term controls on profits could generate cumulative inefficiencies of large magnitude, however.

Administering and complying with price controls involved substantial costs that have to be reckoned against the benefits of price deceleration. The costs of Phase II to the federal government were about \$125 million, and the costs of compliance has been estimated at \$700 million.⁴ Had the deceleration been permanent, these costs would be tiny relative to those of, say, an equivalent pure monetary contraction. Since the benefits of a postponement of inflation are smaller, if they are benefits at all, pure administrative and compliance costs are an important argument against the use of controls.

⁴Lanzilotti et al., Phase II in Review, pp. 190-192.

President Carter's Program

The wage-price standards announced by the President are an attempt to find a middle ground between the purely voluntary guideposts of the Kennedy-Johnson years and the strict mandatory controls of the Nixon years. The President and his advisers apparently respect the general professional judgement of economists about those two experiences: Guideposts are economically innocuous but do little to alleviate inflation; controls can limit inflation but do so at the cost of shortages, inequities, and distortions that eventually become intolerable. Probably one of the main fears of the Administration is that mandatory controls will eventually collapse in an inflationary explosion as in the spring of 1974. Still, the new program has the potential for close resemblance to President Nixon's controls. Though the decision has not yet been made, nor is its legal basis completely unambiguous, the program as announced raises the possibility that the federal government will stop dealing with businesses who fail to comply with the standards. As a practical matter, in some sectors of the economy that is as potent as an enforcement tool as anything wielded by the Price Commission or Pay Board in the early 1970s.

The Wage Standard

The program asks that the average wage paid by a firm, including the value of fringes, not increase by more than seven percent per year. If it achieves this goal, a considerable deceleration of wage inflation will have to occur. Wages have been rising at 8 or 9 percent per year for the past few years, and the likely prospect for 1979, in the absence of the new program, was a 9 percent increase over 1978. In order to achieve the desired reduction to 7 percent, however, the program need not limit every firm to the standard. In some parts of the economy, wages will rise by less than 7 percent next year even without the limitation of the program. This should be true almost throughout the government, especially state and local governments, and in the private education sector. As a general matter, wages are rising most rapidly among blue-collar workers and least rapidly among white-collar workers, although, of course, there are important exceptions like the health industry.

In this respect, the Administration's apparent determination to take an exceptionally hard line in union negotiations may be misplaced. In today's economy, where the demand for workers with the kinds of skills held by union members is exceptionally strong compared to the demand for, say, college graduates, an overall goal of 7 percent wage inflation could tolerate 8 or 9 percent union wage settlements.

Any program for moderating wage inflation faces a significant problem of measuring wage changes for enforcement purposes. Apparently the Administration has decided to determine compliance for a firm by dividing the total wage bill by the number of workers, and then comparing

this ratio to the same ratio in the previous year. In other words, compensation per worker should not rise by more than seven percent per year. By some method, not yet worked out, firms would not be judged out of compliance if compensation per worker rose because hours of work per worker rose. Many practical difficulties inhibit accurate computations of this kind. Changes in the composition of the labor force of a firm can bring about spurious changes in average compensation--for example, a firm could deliberately shift toward lower-wage workers to limit the increase in its average compensation, while at the same time it was raising the wages of each worker by more than the wage standard. Perhaps even more troublesome is the treatment of the many workers who are paid by piecework rates, by commission, or who receive productivity or profit-sharing bonuses. Plainly it is undesirable to limit wage increases that correspond to harder or more efficient work by employees, and in fact the President specifically has stated that such increases are outside the standard. The problem is to translate this intention into manageable procedures for monitoring wage increases.

The administrative obstacles to a successful program for limiting wage increases are not insuperable, but they have not so far been taken very seriously. The program threatens to become a repetition of the experience under the Pay Board in the early 1970s. The only meaningful attempt to control wages was an examination of union wage settlements. The Pay Board did not have the data or the staff to verify that compensation actually obeyed the controls, either in unionized or non-unionized firms. The President's proposal to add a hundred people to the staff

of the Council on Wage and Price Stability is ludicrous in the light of the administrative load involved in monitoring compensation per hour in even the few hundred largest firms. The process will quickly bog down in thousands of requests for variances from the rules for computing compensation made necessary by special circumstances in individual firms, or for that matter, just in answering requests for clarification of the rules. Again, the process is likely to amount to simply passing judgment on union wage settlements at the time they are negotiated. If so, the program of wage standards is directed solely at the wages of the minority of no more than one-quarter of American workers who are paid under collective bargaining agreements.

Tax Incentives for Compliance with the Wage Standard

Henry Wallich, Arthur Okun, and a number of other economists have been pushing the idea of inducing compliance with a wage deceleration plan through tax incentives in place of strict controls. Economists have offered similar advice about a wide range of regulatory activities of the federal government--financial incentives are generally more flexible and efficient than outright coercion, it is argued.⁵ Wage inflation can be brought under control, according to this logic, by rewarding those employers and workers who adhere to wage limits or by penalizing those who exceed the limits, or both. The corporate income tax could be modified to include a surtax on wage payments in excess of the limit, or the personal income tax for workers could incorporate a similar penalty. Tax credits under either tax could reward wage rates below the limit.

It turns out that plans of this kind face almost overwhelming administrative and political obstacles. The prospects for Congressional enactment of a tax incentive system for controlling wage inflation in the near future are virtually nil. For one thing, tax officials and tax lawyers are dead set against any involvement of the tax-collection apparatus in measuring and taxing wage changes.⁶ Firms are not currently

⁵This is the theme of Charles Schultze's The Public Use of Private Interest, the Brookings Institution, Washington, D.C., 1977.

⁶For a careful review of the obstacles by Treasury officials who avoid making their own recommendations, see Larry Dildine and Emil Sunley, "Administrative Problems of Tax-Based Incomes Policies," in Arthur Okun and George Perry (eds.), Curing Chronic Inflation, Brookings Institution, Washington, D.C. 1978.

required to maintain the kinds of records the IRS would need to measure wage rates--total wage payments are recorded accurately, but the corresponding number of hours of work are not. A whole new system of accounting for hours would be needed. A leading expert in the economics of taxation who is also sympathetic to federal intervention in the wage-setting process, Joseph Pechman, agrees with tax officials that proposed tax incentive programs for moderating wage increases are impractical. It seems likely that the critics will quickly prevail if Congress begins hearings on the actual details of an incentive plan.

President Carter has proposed a variant of the tax incentive idea, real wage insurance. Workers in groups that collectively receive no more than the wage standard would be given an insurance policy by the federal government against excessive price increases. The value of the policy constitutes the incentive to join the plan and accept lower wage increases. Under the system proposed earlier by Wallich, Okun, and others, the incentives would be sure things, while under the President's plan, the incentive is random. The proposed insurance policy pays one percent of extra wages, after tax, for each percent increase in prices above 7 percent, up to some dollar limit. In evaluating the insurance policy, workers will be guessing about the prospects for inflation, and those who are most pessimistic will value the insurance most highly. The proposal has an odd feature as a result--if everyone were convinced of the success of the program in holding inflation under 7 percent, they would regard the insurance as worthless and there would be no financial incentive for compliance.

Another feature of real wage insurance has attracted more criticism: If new inflationary shocks hit the economy while the insurance is in effect, the payment of benefits from the insurance will itself add to the inflation. The benefits amount to a tax cut of up to \$12 billion for each percentage point of inflation in excess of seven percent. It is not clear that automatic tax cuts of this magnitude are a desirable response to inflationary surprises. However, there is no strong economic case that tax cuts are substantially inflationary as long as they are not financed by monetary expansion. The fear of excessive inflationary feedback from real wage insurance is probably overstated, provided monetary policy is conducted sensibly.

The real objection to tax incentives, whether of the kind proposed by President Carter or simpler alternatives, is the impossibility of executing them fairly and efficiently. There is nothing wrong with the principle of using tax incentives to achieve national goals, and probably little to fear from the linkage of taxes to the rate of inflation, but, nonetheless, they are a bad idea.

The Price Standard

Though the stated goal of the President's program is to limit price increases in 1979 to 6 or 6.5 percent over 1978, the price standard does not simply limit individual price increases to a given percent. Rather, price increases in 1979 are to be at least one-half a percentage point below the increases in 1976-77. Obviously, the designers of the program are aware that some prices need to rise faster than others, and this formulation tries to provide that flexibility. Again, as in the case of the wage standard, there is enough dispersion in the pattern of price inflation across industries and firms so that many will meet the standard with no effort at all--especially in cases where prices happened to rise a great deal in 1976-77. On the other hand, in some industries, variation in demand and other determinants of prices will be such that prices would rise substantially more in 1979 than they did in 1977. These industries will have a great deal of difficulty in meeting the standard. In some cases, prices fell relative to their usual relations to cost in 1977, and there is some prospect of restoration of the normal level in 1979 by price increases well above 7 or 8 percent. The paper industry is a good example of such a situation. The President is simply misguided in stating that "This is a standard for everyone to follow. Everyone." The interests of the economy in providing incentives for producing adequate levels of output and adding to productive capacity require that prices rise by more than the standard in some cases. On the other hand, in some sectors, prices ought to rise by considerably less than the standard. Every experience with price controls has taught us that many special cases have to be considered

in order to get the economy to function at all well under a program for limiting price increases.

As a practical matter, the application of the price standard will not be very different from the price controls administered by the Price Commission in the early 1970s, though, of course, the new program does not give the standard the force of law. Large sectors of the economy will simply be ignored, because they contain too many independent business units. Efforts will be concentrated on a few hundred large corporations. The persuasive power to limit price increases for this group is substantial, since most of them do some business with the government. The Council on Wage and Price Stability will quickly discover, as did the Price Commission, that average prices across the many products sold by a typical firm are almost impossible to compute. Here are some examples of problems encountered by the Price Commission that will immediately recur in the new program:

- services that are normally provided free in connection with a sale can be curtailed, so as to bring about an effective increase in prices that escapes detection. In the steel industry, companies stopped carrying large inventories for the convenience of their customers. Customers for steel "off the shelf" had to deal with middlemen who charged higher prices.
- cheaper products are no longer offered. In the paper industry, customers were required to buy higher grades of paper at higher prices. Average increases in product prices satisfied the controls, but the effective price of paper rose by much more than the controls permitted.

-- not every product is sold on the simple basis of a certain price for a certain quantity. In the television industry, the prices charged for commercials are made contingent on the number of people viewing the commercials. Prices will rise if the audience rises. The COWPS will have to grant an exception to the television networks from whatever rules for computing average prices are formulated for other industries, just as the Price Commission did under controls.

Under the Price Commission, price controls were quickly turned into controls on margins of revenue over cost, that is, controls on profits. The same thing will happen under the new program--in fact, the Administration has already announced that limits on margins will be used as an alternative to the basic price standard if costs have risen dramatically.

Roughly speaking, then, price controls amount to profit controls, and a price standard will become a profit standard. Nobody wants profit controls, certainly not this Administration, but the practical obstacles to measuring prices will force them into trying to limit profits. The pursuit of high profits is the primary motivation for efficiency in a free economy. The new program will try to make it unpatriotic to earn high profits, and may penalize profitable firms by preventing them from doing business with the government as well. This cannot improve the incentives for efficiency and innovation that are important for the long-run prospects of the American economy.

Reducing the Federal Contribution to High Prices

Deep government involvement in the American economy keeps some prices and wages above their free-market levels. Concern about inflation has prompted an increased flow of suggestions for limiting the role of government in the name of controlling inflation. Some of the most conspicuous candidates for control are agricultural price supports and acreage set-asides, import controls for food, clothing, and steel, the minimum wage, and regulation of railroads and trucking. Proponents of this approach are enthused by their recent impressive victory in eliminating government regulation of fares and routes in the airline industry.

The quantitative prospects for reducing prices by limiting the federal role in the economy have been studied by Robert Crandall.⁷ He estimates, first, that replacement of price supports and acreage set-asides by direct payments to farmers would reduce the overall US price level by about 0.5 percent. Further deregulation of transportation could yield 0.3 to 0.6 percent. Substitution of direct subsidies in place of restrictions on imports of meat, steel, and sugar could reduce the price level by 0.1 to 0.2 percent. Restoration of the minimum wage to its 1977 level would be worth another 0.2 percent. In all, these steps could lower the price level by about 1.4 percent. In any one year, this would be a substantial contribution to controlling inflation. But the benefits are available only once. Bringing down high prices is not the same as keeping prices from rising over the future. This kind of policy can have only a transitory role in limiting inflation, though the role may still be important.

⁷"Federal Government Initiatives to Reduce the Price Level" in Arthur Okun and George Perry(eds.) Curing Chronic Inflation, Brookings Institution, Washington, D.C. 1978, pp. 165-204.

The best arguments for limiting government intervention in the economy have nothing to do with inflation. De-regulation of transportation, restoration of free trade, elimination of preferential treatment of farmers, and replacement of the minimum wage by a comprehensive plan for income supplements, all would be urgent priorities even in an economy free of inflation. Further, some forms of government intervention keep prices down, not up, so their elimination would cause inflation to worsen briefly. A good example is the energy sector--further progress in deregulating oil and natural gas prices may be thwarted by excessive attention to the inflationary consequences. Contributions to inflation should not be the major economic criterion for judging federal policies.

Proponents of federal initiatives to lower the price level have another range of proposals whose merits are more controversial. They would like to switch from taxes that affect prices--payroll, excise, and sales taxes--to those that have no direct effect on prices, mainly income taxes. The prospective effects of switching from one form of tax to another are substantial. Crandall estimates that replacement of the existing payroll taxes for disability and health insurance under social security by increases in income taxes would reduce the general price level by 0.7 percent. Abolition of federal excise taxes with corresponding hikes in the income tax would yield a price reduction of 1.0 percent. Further, an extension of federal revenue sharing financed by income taxes to replace some state and local sales taxes could be worth a 1.6 percent reduction in prices. Taken together, the tax-switching policies would yield an important reduction in the overall price level of 3.3 percent.

The problem with all this is that the benefits of tax-switching are illusory. The average US citizen is no better off paying more income tax and less payroll, excise, and sales tax, even though the price level is lower after the switch. It just happens that official price indexes are defined to include some taxes and exclude others. A government that claims to have done something about inflation by switching taxes is just playing games with its citizens. The games may have some important side effects. Many collective bargaining agreements are linked to the Consumer Price Index through cost of living escalators. Tax switching could limit wage increases by reducing the wage increases paid under these escalators. Then the impact of the policy is to lower the effective real incomes of workers covered by contracts--escalators deprive them of the benefits of the price reduction, but they are required to pay the income tax increases. There is a very serious question whether the government ought to proceed in this way. Certainly one episode of manipulation of the cost of living index through tax switching would destroy its value as an escalator in future contracts for many years to come.

Some of the proposed steps for reducing the federal government's contribution to high prices make good economic sense on their own and would have the incidental advantage of helping lower inflation in the year the steps are taken. Others, like the proposal for switching to direct taxation, have little or no intrinsic merit and amount to no more than tricks played with official statistics on the cost of living. As a general matter, price-reducing measures have relatively little potential for contributing to

stabilization of prices in the longer run. They cannot be the mainstay of a comprehensive program for the control of inflation.

Controlling Inflation by Limiting Monetary Growth

Many critics of the President's program believe it overlooks the principal cause of inflation--excessive creation of money--and that the only successful anti-inflationary policy is an immediate and sustained deceleration of the money stock. Anything else is a harmful intervention in the working of free markets and cannot get at the underlying cause of inflation, they claim.

No knowledgeable observer of the American economy can deny the relation between money growth and inflation in the long run. The persistent rise in inflation starting in the late 1960s was accompanied by a parallel rise in growth of the money supply. Further, monetary discipline could have prevented the worsening of inflation--it is inconceivable that the price level could have doubled over the period if the money stock had been held to moderate growth. But it is a long way from this observation to acceptance of the proposition that a sudden deceleration of the money supply is a desirable move at this time. The President's advisers are hardly unaware of the relation between money and prices. They would argue that monetary deceleration triggers a serious recession unless it is somehow made feasible by an accompanying policy to limit the momentum of inflation. Otherwise, inflation will continue almost unabated through the period of monetary contraction, and the nation will repeat the unhappy experience of 1974 and 1975. In other words, the issue is not intervention in wage and price setting versus monetary deceleration; it is deceleration by itself versus deceleration made feasible by intervention, in the Administration's view.

The evidence on this point is not very favorable to the proponents of simple deceleration of the money supply. Virtually every study of the inflationary process has concluded that inflation accumulates a great deal of momentum that cannot be offset in the short run by contractionary policies of any kind, including monetary deceleration. This insensitivity of prices to monetary and other determinants of demand is the backbone of Keynesian economics, so it is no surprise that modern Keynesians, including President Carter's advisers, accept the hypothesis of the momentum of current inflation. What is more significant, though, is the support for the hypothesis that emerges from the research of distinctly non-Keynesian economists. In particular, results obtained recently by a leader of that group, Robert Barro, suggest little immediate effect of changes in monetary growth on the rate of inflation.⁵ According to his estimates, once inflation becomes established, it tends to continue even well after the monetary authorities try to counteract it. The implications of the relationship between money and inflation are shown in the following projections for the US economy with and without monetary deceleration:

⁵"Unanticipated Money, Output, and the Price Level in the United States," Journal of Political Economy, vol. 86, pp. 549-580, August 1978.

Year	Money Growth	Without deceleration		Money Growth	With deceleration	
		Real GNP Growth	Infla- tion		Real GNP Growth	Infla- tion
1979	7.5	2.5	7.5	6.5	1.5	7.3
80	7.0	4.0	7.5	6.0	3.2	7.6
81	7.0	3.5	7.5	6.0	3.2	7.2
82	6.5	3.5	7.0	5.5	3.3	6.2
83	6.5	3.5	7.0	5.5	3.3	5.9

On the left is shown a representative forecast at the time of this writing on the assumption that monetary policy will be conducted as in the past, with no attempt to push money growth below the trend of inflation. On the right is shown the impact on the economy, according to Barro's equations, of a monetary growth rate that is one percentage point less each year than on the left. This modest deceleration of money should reduce inflation by about one percentage point per year after a transition period, but note how long that period is. In the first two years, monetary deceleration has a large adverse effect on the growth of output, and disappointingly little effect on inflation. The difference between the 2.5 percent real growth in 1979 on the left and 1.5 percent on the right amounts to a mild recession. What would otherwise be reasonably vigorous growth in 1980--4.0 percent increase in real GNP--becomes a substandard 3.2 percent. By 1981, real growth is almost back to its path in the absence of deceleration. The benefits of lower inflation do not become readily apparent until 1982 and 1983.

Barro's evidence would not make any politician very enthusiastic about the monetary approach to controlling inflation.

Inflation and the Value of the Dollar in World Markets

Americans have learned a good deal in the past decade about the interaction of domestic and world prices. When the value of the dollar declines relative to the mark and the yen, imports from Germany and Japan immediately become more expensive. Price increases are not just limited to imports themselves, but spread to domestic goods that compete with imports. For example, recent steep increases in the prices of smaller US cars are clearly related to increases in the prices of Japanese cars brought about by the depreciation of the dollar.

Dollar depreciation is not just a sudden outside shock on the US economy like the oil price increase in 1973-74. Though some of the gyrations of the dollar defy economic explanation, by and large they reflect expectations about the future performance of the US economy relative to the other major economies. One of the reasons for the declining value of the dollar in the past year is the much more favorable growth of real output and decline in unemployment achieved here compared to any other major country. Brisk growth carries with it expectations of future inflation, and these expectations are registered instantly on international currency markets.

The international value of the dollar responds favorably to any news that lowers expectations about future US inflation, even if the lowering of inflation will not occur for several years. Further, the dollar appreciates when US interest rates rise. Stricter monetary policy has both effects--it lowers inflation, though not for several years, and it immediately raises interest rates. Announcement of a policy of monetary deceleration

should have an instantly favorable effect on the value of the dollar. The upshot is a channel for a speedy effect of monetary policy on US inflation. The pessimistic conclusions about monetary control of inflation that emerge from Robert Barro's research may be altered a little in a favorable way by this mechanism: Barro measures the average relation between monetary expansion and inflation over the entire postwar period. During most of that period, the value of the dollar was fixed by international agreement. Since 1973, the dollar's value has been set in an open market, and probably the influence of money on prices through the international value of the dollar has strengthened as a result. Even so, monetary deceleration takes a long time to bring down inflation.

Could the value of the dollar be raised without the severe short-run effects of monetary deceleration? If it could, inflation could be depressed at little cost. There is a time-honored technique that is supposed to have this effect, but its efficacy is being questioned more and more by economists: The US can borrow in foreign currencies from other countries or from the International Monetary Fund and use the proceeds to retire US debt that is payable in dollars. Equivalently, the US Treasury can issue debt that is payable in other currencies directly instead of in dollars. Under President Carter's November 1 plan for saving the dollar, both policies will be pursued. But there is no good evidence that decreasing the amount of dollar debt in the world increases the value of the dollar. In fact, since private firms both in the US and in other countries are perfectly free to issue their own debt payable in dollars, and do so in large volumes, it is not even clear that this kind of policy has any effect on the composition

of world debt. There is nothing really wrong with a policy of exchanging dollar for foreign debt, but it does not help the value of the dollar or the US inflation rate.

Intervention in currency markets often takes the form of a combination of monetary deceleration and debt exchange. Then it can be explained as borrowing abroad to decrease the number of dollars outstanding and so to increase their value. This explanation is perfectly correct, but it should be understood that the effective part of it is the monetary contraction, not the debt exchange. There is no painless way to push the dollar up in world markets without paying the cost of temporary reductions in real growth associated with monetary deceleration.

Conclusions about Counter-Inflationary Policies

The sharpest conclusion emerging from this review of evidence from past experience is the undesirability of price and wage controls. Controls are costly to administer, create shortages, distort long-run incentives for efficiency, and have only a small, temporary effect on inflation in any case. Further, the same conclusion follows for controls that are enforced by tax incentives through federal purchases. Purely voluntary wage-price guideposts seem to be almost completely ineffective. Their merit is in creating the impression of government action without having any adverse effect on the economy. Use of voluntary guideposts at this point in the upward swing of inflation and downward swing in public faith in the government seems quite inappropriate.

Another innocuous but ineffective measure is the exchange of US debt for foreign debt in an attempt to bolster the international value of the dollar. Again, moves of this kind are not intrinsically harmful, but it is dangerous for the government to promise that they will help limit inflation.

The only policy that survives this review as one capable of limiting inflation in the long run is monetary deceleration. A policy of slower money growth has a favorable impact on the US price level as soon as the rest of the world becomes convinced that the policy will stick in the long run and the international value of the dollar rises accordingly. After about two years, monetary deceleration would begin to limit wage inflation as well. But the cost of any monetary deceleration is retarded growth in real output and increased unemployment. Sufficiently strong deceleration

will plunge the economy into recession. Vigorous monetary contraction invites the repetition of the stop-go policies of the past ten years. After a monetary contraction causes or contributes to a recession, pressure mounts for monetary acceleration to bring the economy out of the recession. After each experience, the level of both inflation and money growth reaches a new high.

A better way to achieve lower inflation in the long run is the stabilization of money growth at a level that involves only a modest deceleration at first. For example, the following pattern of future monetary growth would eventually restore more tolerable inflation rates (again, Robert Barro's equations are used to project the effects on prices and output):

<u>Year</u>	<u>Money Growth</u>	<u>Infla- tion</u>	<u>Real GNP Growth</u>
1979	7.0	7.4	2.0
80	6.5	7.6	3.6
81	6.0	7.3	3.1
82	5.5	6.7	3.2
83	5.0	6.2	3.2
84	4.5	5.5	3.4
85	4.0	5.2	2.8
86	4.0	4.9	3.4
87	4.0	4.3	3.8
88	4.0	3.9	3.7

At first, continuing high inflation is tolerated under this plan. Not until 1982 is the first real progress visible, and inflation remains above 5 percent until 1986, the year after President Carter will leave office if he is re-elected in 1980. Progress then becomes more rapid. Further, by the mid-1980s, the inhibiting effect of the policy on real output growth is replaced by a stimulative effect, as the economy moves toward its full-employment growth path. The policy implies a lengthy period of mild economic slack from 1979 through 1985. It is up to the nation to decide if this cost is worth the eventual victory over inflation that the policy will bring. Note that President Carter is asked to preside over the period of weakest growth and least progress against inflation under this program. Nothing in it will help him be re-elected in 1980 or to go down in history as the victor over inflation in his second term.

This analysis may be excessively pessimistic in one important way. It assumes that the US public and the world economy interpret the initial phases of the deceleration as just another brief pause in the general upward trend of monetary growth. They do not revise their expectations of future monetary growth until a number of years of limited growth pass by. If, on the other hand, the formulation of monetary policy in the US could be reformed in a way that convinced the public and the world of a fundamental move toward deceleration, progress would be more rapid. At this stage, there seems little prospect that any simple announcement of reform could affect expectations very much. The Federal Reserve has successfully evaded recent Congressional attempts to impose limits on monetary growth, and the public will expect them to be equally successful in the

future. But the actuality of two or three years of monetary deceleration might begin to convince the public of its likely continuation. Then the impact on inflation would be stronger and faster, and the inhibition of real growth correspondingly smaller. Still, control of inflation will be a long and expensive process.