

Mayer, Thomas

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WHY WAS THE FED SO INFLATIONARY IN THE 1960s AND 1970s?

Thomas Mayer

IN DB

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**Department of Economics
University of California
Davis, California 95616-8578**

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Thomas Mayer*

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ABSTRACT

Why was the Fed so inflationary in 1965-79? No single explanation suffices. Forecast errors and poor operating procedures played at most a minor role. Unwillingness to accept greater interest-rate variation and cognitive errors played a greater role. Political pressures also played a role, but, given its desired policy the Fed was not greatly constrained by them. Wage and price controls played an uncertain role. The most important factor was the prevailing intellectual atmosphere with its de-emphasis on the costs of inflation, its faith in the viability of an inflation/unemployment trade-off and concern with cost-push elements.

WHY WAS THE FED SO INFLATIONARY IN THE 1960s AND 1970s?

Thomas Mayer

The inflation starting around 1965 was the greatest failure of American macroeconomic policy in the postwar period. As Figure 1 shows, the United States had experienced substantial inflations before, but all of them had been connected with a major war. Up until 1965 one could reasonably have argued that the United States was immune to serious peace-time inflation.

In the 1970s the price level rose more than in any other decade in the 19th and 20th centuries. The years of the Great Inflation, as this inflation is often called, also differed sharply from the immediately preceding years. From 1952 to 1964 the CPI rose at an average rate of 1.3 percent; in only two of these thirteen years did the inflation rate exceed 2 percent. By contrast, in the nine years, 1973-1981 the inflation rate averaged 9.2 percent, with a peak of 13.3 percent in 1979. Moreover, as Figure 2 shows, until the early 1980s the inflation rate accelerated; in each peak of the inflation cycle it was higher than the preceding peak, and in each trough it was higher than the previous trough. It is therefore not surprising that in 1979 there was a flight from the dollar, not only into foreign currencies but also into gold, silver and even diamonds.

The two oil shocks obviously played a major role. But as Figure 2 illustrates something more was involved because the inflation rate had already started to rise substantially prior to the first oil shock. That cannot be explained as an unsurprising result of the Vietnam War. As Figure 3 demonstrates defense expenditures as a percent of GDP were higher in the early 1950s than in the mid-1960s, and were on a downward course from the late 1960s until the 1980s. The Vietnam War may bear *some* indirect responsibility for the Great Inflation, but one cannot tell a story in which large military expenditures caused the inflation through the usual channels stressed by macroeconomics. Nor does the piling of Great Society programs on top of war expenditures provide a straightforward explanation. The deficits were much larger in the 1980s when the inflation rate fell.

Since it is clear that the inflation could not have become anywhere near as virulent as did

had the monetary growth rate been much lower, and since a high monetary growth rate is a necessary condition for a major inflation, it is useful to treat the Fed's policy as the "cause" of the inflation. That does not necessarily imply that it was the "fundamental cause", or that there were no other causes.

I start my analysis with 1965. The terminal date has ragged edges. Since the focus is on the Fed's policy and not on the inflation rate, I terminate most of the discussion in March 1976, after which I no longer have the FOMC's *Minutes* available. Some part of the discussing that does not require the *Minutes* I carry forward to October 1979.

I. AVAILABLE ANALYTIC FRAMEWORKS

Two theoretical frameworks are often used to explain inflations, time-inconsistency theory and public choice theory. I have used neither. The time-inconsistency theory of monetary policy consists of a set of models that generate different predictions depending upon the specific, and essentially arbitrary assumptions made.¹

Public choice theory fails to explain what central bankers gain from inflation. On the most obvious level they lose since their salaries are likely to lag behind inflation. And although by adopting expansionary policies they avoid - in the short run - blame for rising interest rates and for high unemployment, in the longer run they are likely to be blamed for the resulting inflation and the high nominal interest rates. A possible response is that central bankers are not the ones who *really* make monetary policy, that the thrust of monetary policy is determined by their political masters. But it is far from obvious that politicians benefit all that much from inflation. Besides, if the political process drives the Fed to be so inflationary, why did that manifest itself only from 1965 to 1979?

I have also not used of Fed reaction function. As John Wood (1967) has shown, the regression coefficients of such a reaction function should not be interpreted as indicators of the relative importance that the Fed attributes to various goals.² Second, as Salva Khoury (1986, 1990) has shown, Fed reaction functions are highly fragile.

For these reasons I worked on a much lower level of, abstraction by reading through the FOMC *Minutes* and by interviewing eleven former FOMC officials and two former CEA

chairmen. In setting out the results I start by seeing whether the inflationary policy might have been due to forecast errors. I then look at the Fed's operating procedures, as well as the certain cognitive errors that the Fed made. After that I consider political pressures and the effect of wage - price controls before turning to what I think is the most important cause, the prevailing intellectual atmosphere.

II. THE FOMC'S FORECASTS

Table 1 shows the forecast errors for four variables, the GNP deflator, real GNP, the unemployment rate, and nominal defense expenditures. The reason for including defense expenditures is that the Johnson administration systematically understated future defense expenditures, and that might have caused the staff's GNP and inflation forecasts to be downward biased. Since the major supply shocks may be responsible for forecast errors Table 1 shows the errors (except for defense expenditures) both including and excluding the 1973.1-74.3 period.

As Table 1 shows except for the current quarter, most of which was over by the time the FOMC meeting, the staff underestimated the GNP deflator. To put this underestimate into a meaningful context one can compare it to the 121 percent rise in the GDP deflator between 1965 and 1979. Here are the figures for all the quarters:

Quarters ahead	Forecast error as percent of total inflation, 1965-79
1	
2	18
3	19
4	20

Suppose the FOMC had not underestimated the inflation rate, how much less would the GDP deflator have risen? One extreme assumption is that the FOMC had a rigid inflation target and hence would have responded to a higher estimate of inflation by adopting sufficiently restrictive policies to bring the inflation rate down to this target. In this case the inflation rate would have been 16 to 20 percent lower. The alternative extreme assumption is that even if the FOMC had estimated the inflation rate correctly it would have pursued the policy it actually did. Obviously, the truth lies in-between, but there is no way of determining exactly where.

The staff also overestimated the growth rate of real GNP, as well as the unemployment rate. That the FOMC expected real GNP to grow faster than it did may have generated a bias towards a restrictive policy. But that it expected unemployment to be higher than it was should have induced a bias towards an expansionary policy. The latter bias may well have outweighed the former, because at least those FOMC members who were not professional economists are likely to have had a more definite opinion about the acceptable level of unemployment than about the acceptable rate of real GNP growth.

All in all, most of the Fed's highly inflationary policy cannot be attributed errors in forecasting real GDP, the inflation rate, unemployment or defense expenditures.

III. OPERATING PROCEDURES

Monetarists as well as others have rightly criticized the Fed's operating procedures of the 1960s and 1970s. But these money-market-condition (MMC) procedures should not be blamed for much of the inflationary trend. One reason is that while MMC targets generate instability, they imparted an inflationary bias to Fed policy only to the extent either that the Fed is more reluctant to reverse a too expansionary policy than a too restrictive policy, or that prices react more strongly to excess demand than to deficient demand. While both conditions probably existed to some extent, the net effect of MMC targets on the inflationary trend is likely to have been small. Moreover, current operating procedures are not all that different from those of the 1970s, and yet the Fed has succeeded in controlling inflation. Similarly, the Bank of Japan has used such operating procedures successfully (See Cargill and Hutchison, 1990).

Table 2 shows the regressions of the M-1 and M-2 growth rates on the FOMC's intentions as measured by Boschen and Mills' (1995) policy index which is based on their reading of the Minutes. This Table should be treated with some caution because monthly growth rates of money are measured with large errors, and because the policy index is not cointegrated with the growth rate of M-1 and perhaps not with the growth rate of M-2.

With these qualifications Table 2 shows that in the first period the sum of the coefficients for both M-1 and M-2 is large enough to suggest that the Fed's operating procedures did allow the Fed to exert a strong enough impact on the growth rate of money. But for M-1 the low R^2

shows that its control over that impact was very loose. For M-2 R^2 is much higher, but the sum of the coefficients is, if anything, less than for M-1. However, experiments with different lags show that the relative size of the sum of coefficients is very sensitive to the (essentially arbitrary) number of lags included.

In the second period the growth rate of M-1 is unrelated to the policy index. By contrast, the growth rate of M-2 is related to the policy index, but with a smaller coefficient and a lower R^2 than in the first period. It may seem surprising at first that the FOMC's control over the monetary growth rate appears to be less in the second period when the FOMC claimed to be paying more attention to it than it before. But that may be merely the result of OLS bias. If the FOMC saw the monetary growth rate rising and expected the rise to continue, it might respond by adopting a restrictive policy, thus generating a negative correlation between the policy index and the monetary growth rate. The Fed was more likely to act this way in the second period than in the first period. The probable existence of reverse causation also suggests that for both periods Table 2 underestimates the effects of policy actions on the monetary growth rate.

Starting in October 1972 the Blue Books contain additional evidence against the hypothesis that poor operating techniques were a major factor in the Great Inflation. They give the FOMC's target ranges for M-1 and M-2, along with its current estimate of the actual growth rates of M-1 and M-2, so that one can calculate the FOMC's misses of its monetary targets. Negative errors largely offset positive errors, so that the net error for M-1 is only 0.3 percent (with a standard deviation of 3.1 percent). and for M-2 it is 0.5 percent (with a standard deviation of 2.1 percent).

A more likely reason for the high inflation than the MMC targeting procedure is the FOMC's reluctance to let interest rates rise as the IS curve shifted outward. Even if the FOMC had kept the M-1 and M-2 growth rates exactly on its target its policy would still have been inflationary if it had set these targets too high because it did not want the funds rate to rise sharply.

It may seem bizarre that the FOMC would give short-run stabilization of the

federal funds rate priority over controlling the monetary growth rate, but it becomes less bizarre when considered in the context of the thinking at the time, with its insufficient emphasis on the role of money in inflation, and concern about measurement errors in money growth. In any case, there are a number of passages in the *Minutes*, as well as in the reports of an important FOMC committee, the Committee on the Directive, that show that the FOMC was willing to sacrifice control of money growth in order to stabilize the funds rate.

V. COGNITIVE ERRORS

We generally assume that agents operate rationally. While this is a useful assumption for many purposes it is less helpful when considering the behavior of an organization insulated from market pressures. Several cognitive errors characterized Fed thinking in the 1960s and 1970s. One was vagueness, that is the absence of a thought-through view of how monetary policy operates. William McChesney Martin, who was chairman from April 1951 to January 1970 distrusted economic analysis. Robert Hetzel (1995, p. 2) states that he "valued individuals who could offer anecdotal information about economic activity more highly than economists." Sherman Maisel (1973, p. 170) reports that Martin distrusted quantification. His successor, Arthur Burns, was certainly not opposed to quantification, but he was "always suspicious of all embracing economic theories (Wells, 1994, p. 24), stressed the uniqueness of each particular situation, and considered econometric models to be "bankrupt" (cited in Hargrove and Morley, 1984, p. 121).

Whether the econometrics and economic theory available at the time deserved more credence than the FOMC gave it is not a settled issue. But the vagueness of the FOMC's analysis might be part of the explanation of the inflation. Reliance on intuition suffers from the problem that intuition might be influenced by wishes to an even greater extent than is economic analysis. Permitting interest rates to rise sharply and generating a recession is a painful decision, and if one does not use a formal model it is easier to convince oneself that one does not need to do so.

Another relevant cognitive problem is procrastination. The conditions under which the FOMC operates invite procrastination. Like other organizations it is subject to a natural

tendency to put off painful decisions whose need cannot be unequivocally established. As Janis and Mann (1977, p. 207) have pointed out, when an organization is aware of the losses its decisions will cause, and has no hope of finding a good solution - which was certainly the situation of the FOMC on many occasions - it tends to procrastinate. In addition, the FOMC is confronted with an immense amount of information, and that, too, might lead to procrastination (Vertzberger, 1990, p. 86). Moreover, the high degree of uncertainty under which it operates provides a rationale for postponing decisions until the next meeting when additional data will be available. And, of course, the same is then true again at that meeting. It is therefore not surprising that the *Minutes* contain several complaints about procrastination.³

Procrastination may have played some role in the inflation. To a large extent the effects of procrastination on the inflation rate tend to cancel since it means that both periods of tightness, as well as periods of ease start too late and end too late. But since tightening monetary policy is a more painful decision than is easing policy, procrastination probably biased policy in an inflationary direction. Moreover, if excessive delay in abandoning a restrictive policy generated a recession, or made an ongoing recession more severe, then the Fed is more likely to have been pressed more strongly to change this policy than is true in the opposite case.

Apart from procrastination the FOMC also tended to over-emphasize short run considerations, something that is hardly unique to the Fed. As Vertzberger (1990, p. 211) explains:

Organizations deal with ambiguity by avoiding it. Consequently information dealing with general or long-term developments receives little attention compared to information dealing with the specific and current. Information about long-term developments that does not suggest clear, immediate deadlines is easier to ignore or postpone dealing with.

Thus, as late as 1972 the FOMC's targets for the monetary aggregates were for relatively short periods ahead, one and two quarters, though by 1973 it may have thought of its long-run aggregates targets as applying to twelve months - the evidence on this is conflicting. Only in April 1975, when a congressional resolution (C.R. 133) required it to do so, did it formally set its long-run targets for a year. The FOMC's short-run focus drew much criticism, not only from academic economists, but also from FOMC members themselves. The former FOMC

officials I interviewed split on the question whether procrastination and a short-run focus created serious problems.

Another problem was that if the lag in the effect of monetary policy shown by our econometric models is correct, then in the 1960s and 1970s the FOMC substantially underestimated the length of the lag. Many FOMC members estimated the lag at only 6 to 9 months. (Such a lag is more or less in line with academic estimates made in the 1950s and 1960s, though much shorter than the lag that modern econometric models show.) However, it seems that Chairman Martin thought that the lag was much shorter. The interviews suggest that the FOMC as a whole underestimated the lag, and was reluctant to accept the evidence for long lags shown by the Fed's own econometric model, in which for a long time the FOMC showed little trust.

Like procrastination, underestimation of the lag should primarily generate instability rather than inflation. But, as discussed above, due to asymmetries increased instability is likely to raise the inflation rate.

Another potential cognitive problem is a failure to distinguish between nominal and real interest rates. There are statements in the *Minutes* that do draw this distinction, but it is far from clear whether the FOMC paid enough attention to this. Failure to distinguish, consistently in practice, between nominal and real rates, and hence to forget about the Fisher effect, could partly explain why the FOMC usually stayed with its funds rate target even if it meant letting the growth rate of money exceed its target.

A further error was that the FOMC did not appreciate enough how its willingness to let money grow at too high a rate was generating inflation. In part, this reflected the mainstream view of the economics profession at the time, and should therefore not be considered a "cognitive error", as I am using the term here. But it was also due to the specific way in which the FOMC looked at the monetary growth rate. Although FOMC members would have agreed that in the long run the growth rate of money was determined by the growth rate of reserves, on a day-to-day basis they considered it to be determined by the demand for bank credit and money, and thought of themselves as merely supplying the reserves that the banks

need.

In part, that was due the FOMC's short- run focus. If the demand for loans and money increases then banks usually have enough excess reserves to raise the growth rate of money substantially for a week or a month at what, when expressed in annualized terms corresponds to a substantial rate. And with its focus on the short run, what the FOMC saw front and center was banks needing additional reserves to meet their immediate obligations. And in the short run it makes sense to supply these reserves to avoid a financial stringency.

In part, the belief that money demand determines the rate of monetary growth was also due to the Fed's control procedure. It tried to control the money stock from the demand side by setting the funds rate at a level that will induce the public to demand the quantity of money that the Fed wants to have outstanding, and to provide banks with the reserves they need to support that level of deposits. Given such a policy it is natural to view changes in the money stock as due to changes in the demand for money, and to look for idiosyncratic factors, such a bunching of tax payments, to explain changes in the money supply. In much of the Fed's thinking the money supply was (and presumably still is) referred to as though it were something determined by the private sector, and not by the Fed itself. Such a framework does not foster a realization of the importance of controlling the growth rate of money if one wants to control inflation.

This list of cognitive problems does not include something that many economists might expect to find on such a list, insufficient attention to expectations. That was not a problem. The FOMC paid a great deal of attention to expectations, though, of course it did not talk about rational expectations. .

V. POLITICAL PRESSURES

The Fed's freedom to determine monetary policy is limited by pressures from both the Administration and Congress. The extent of presidential influence on monetary policy is a subtle issue on which there is considerable disagreement. At one extreme is Robert Weintraub's (1978, p. 350) statement that: "in each administration monetary policy fitted

harmoniously with the President's economic and financial objectives and plans." (However, in the year following the publication of his paper this rule was broken.) William Greider (1987, p. 184), too, argues that the President has great power over the Fed.

But a leading authority on the Fed., John Woolley, (1984, p. 111), takes a more moderate position, writing: "Rather than conclude that presidents generally get the monetary policy they want, it would be more accurate to say that only infrequently, are presidents extremely unhappy with the monetary policy they get." Two former Fed insiders also stress White House influence. Maisel (1973, pp. 24, 147) describes Fed independence as "both ill-defined and circumscribed. ... In time any president can make certain that his views will prevail. ... [I]t is clear that no body... can continue to function well under an all-out attack by the Administration." Andrew Brimmer (1995, p. 7) writes: "The record shows that (with only a few exceptions) presidents or their aids - from President Wilson through President Bush - have tried to capture or greatly influence monetary policy."

Others have attributes more power and autonomy to the Fed, since it has striven in various ways to develop strong political support in the financial industry, and to foster its image as the guardian of sound money. (See Pierce, 1990.) At a time when it is perceived as fighting inflation, while the President is seen as weak on inflation, it has a strong constituency to back it. According to Schultze:

whenever the President has a strong anti-inflationary policy of his own ... he can argue publicly with the Fed. He could go on television and say that these willful men are destroying us. He would win. But if the Fed has the only anti-inflationary game in town the President can't do anything about it. (cited in Hargrove and Morley, 1984, p. 499)

Comments by two of the people I interviewed, Lyle Gramley and Eliot Swan, also indicate that the Fed is able to resist presidential pressure for expansionary policies. All in all, well informed observers differ substantially in their judgments about the President's power over monetary policy

If presidents have such power one way they might use it is to generate political business cycles. But political-business-cycle theory can explain why inflation was so much greater in the 1965-79 period only if there were some evidence that political business cycles were then

unusually frequent or strong. And, indeed, there is much more persuasive evidence for a political business cycle in the 1972 election than in other elections (see Woolley, 1995), though a number of people I interviewed denied that Burns' policy in 1971 and 1972 was politically motivated. In any case, at least the direct effect of a higher monetary growth rate before the election cannot account for much of the sharp rise in the price level between 1965 and 1979 because it lasted only a short time..

Presidential pressure is not confined to election years. President Johnson had a strong ideological commitment to low interest rates, and Herbert Stein notes that even President Nixon was "always wary of the Federal Reserve and .. the bankers." (Cited in Hargrove and Morley, 1984, p. 366) To what extent such pressures influenced the FOMC is hard to say. Unsurprisingly the Minutes, at least for the 1965.01 - 1976.03 period, contain few indications of such presidential influence.⁴ Perhaps this is an issue discussed more over lunch than at official meetings. Or perhaps the President's influence operates without being discussed.

One can make a case that, quite apart from a possible political business cycle in the 1972 election, the Fed was more constrained in curbing inflation by White House pressures in the 1965-1979 period than at other times since the restoration of its autonomy in early 1953. Hetzel (1995 p. 5) argues that in the 1950s the high inflation rate during the Korean War subsequently made control of inflation the macroeconomic focus of the political system. Hargrove and Morley (1984, p. 26), too, argue that the first priority of the Eisenhower administration was to hold down inflation and protect the dollar. Moreover, as Havrilesky (1993, pp. 53-55) points out, the Eisenhower administration was disinclined to put pressure on the Fed. In 1960 and 1961 the Kennedy administration did press the Fed to ease policy for a time, but ceased to do so in 1962 when it became more concerned about the balance of payments deficit. (Havrilesky, 1993, pp. 56-57)

By contrast, in the 1965-79 period there were more instances of White House pressure for ease. From 1964 until early 1967 the Johnson administration urged the Fed to be more expansionary. Then from early 1969 until 1970 the Nixon Administration wanted the Fed to be more restrictive, but after that it argued for ease. In 1974 there were again some months of

presidential pressure to tighten. After that, the Ford administration left the Fed more or less alone. The Carter Administration then urged the Fed to towards ease.

After the Volcker revolution the Reagan Administration initially pressured the Fed to be more restrictive. Subsequently, under the influence of supply siders it favored ease, as was also true of the Bush Administration (Havrilesky, 1993, pp. 62-69). My general impression is that the Clinton Administration has not pressured the Fed much.

All in all, this record strongly suggests that the White House pressed the Fed much less towards expansion before 1965 than in the 1965-79 period. Whether such pressure was also less after 1979 is not as clear, but that seems highly likely. In any case, since nominal interest rates were higher in the post-1979 period the fact that the Fed was then not under much greater pressure to ease shows that the White House was much more willing to tolerate what many perceived as a highly restrictive policies after 1979 than it had been previously.

There is considerable disagreement about the extent to which the Fed responds to pressure from Congress. That pressure, too, may have been greater in the early part of the 1965-79 period, because of the strong easy-money stance of Representative Patman, a Texas populist who was then chairman of the main House Committee overseeing the Fed.⁵

It is therefore correct to say that the Fed had less leeway to follow a restrictive policy in the 1965-79 period than in the immediately prior or subsequent periods. But all of these pressures were subsidiary and not the dominant cause of the inflationary policies. The *Minutes* do not show the FOMC straining at the leash, eager to adopt more restrictive policies than were politically feasible. Although the type of statements that such a situation would elicit do appear *occasionally* in the *Minutes*, they do not characterize them. Similarly, the picture that emerges from interviews with CEA chairmen (Hargrove and Morley, 1984) is not one of the Fed continually testing the political constraints in its efforts to control inflation. One might say that the FOMC was nudged in the direction of inflation, but a nudge is not a shove.

All the same, while it would therefore be wrong to depict the FOMC as the helpless victim of political pressures, had the FOMC adopted a *much* more restrictive policy than it actually did, it could well have run into insuperable political obstacles. So we have here a

problem of what might be called "layered causes". One can call political pressures the major "back-stop" cause of the inflation - that is a potential cause that did not come into operation, but would have been determinative if other causes not done the job first - as well **as** one of several contributory causes in the more usual sense of the term.

VI. Wage and Price Controls

The wage and price controls that were introduced in August 1971 and completely eliminated only in April 1974, affected monetary policy in several ways. On the one hand, they lowered price expectations of households, though not those of economists (Gramlich, 1983), and thus reduced the inflation rate. On the other hand, wage-price controls made it more difficult for the Fed to follow a sufficiently restrictive policy because. their existence reduces the perceived need for a restrictive monetary policy. A major purpose of the controls - and a reason why Burns had advocated them - was to take some of the pressure off the Fed. If the Fed tightens monetary policy until the marginal benefit from reducing inflation is equal to the marginal cost of tightening, any reduction in inflation brought about by controls should induce the Fed to become less restrictive. Moreover, beyond such rational considerations, the existence of controls may well have induced an unjustified mood of relaxation at the Fed.

Stein (1995, p. 67), who was then chairman of the CEA, reports that the seeming initial success of controls did "seduce us into excessively expansionary fiscal and monetary policy." Similarly, the St. Louis Federal Reserve Bank **Review** describes the December 1971 and January 1972 Directives as indicating that: "with the existence of a price-wage control program, the Committee gave greater weight to providing the growth of money and credit which they viewed as essential to real economic recovery." Similarly, William Poole (1975, p. 102), who was on the Board staff at the time, cites faith in wage and price controls **as** a factor that prevented a more restrictive policy between mid-1971 and mid-1973. The interviews support such a conclusion. Thus Pierce observes that: "policymakers got very fooled by wage and price controls, ... they thought ... that wage and price controls took care of the inflation problem." Gramley and Maisel also said that the existence of wage-price controls affected Fed policy.

A second way in which wage and price controls could have inhibited a restrictive monetary policy is that to avoid the impression of unfairness, control over wages had to be accompanied by efforts to prevent substantial increases in interest rates and dividends. There was therefore the danger that if the Fed raised interest rates substantially, price controls would be extended to interest rates.

A third way was Burn's appointment to the chairmanship of the Committee on Interest and Dividends, the agency charged with constraining interest rates and dividends. This helped Burns to protect the Fed from attempts to impose controls on interest rates. But it also imposed an at least potential constraint on the Burn's freedom to raise interest rates.

The net effect of wage-price controls on the growth rate of money is uncertain. But that does not necessarily mean that it was trivial.

VII. Economists' Thinking and the FOMC

At one time the Fed was heavily influenced by the ideas and attitudes of bankers. But in the 1960s and 1970s the influence of economists grew as more and more economists were appointed to the Board and to the presidencies of the Federal Reserve Banks, and as the quality of the Fed's research staff improved greatly. It is therefore possible that a major reason for the high inflation was an attitude among economists that discouraged the pursuit of a sufficiently restrictive monetary policy.

I will therefore look at the opinions of academic economists on the following issues: the existence of an exploitable trade-off between inflation and unemployment, the optimal trade-off ratio (if there is a sustainable trade-off), cost-push inflation and the NAIRU. Since only one opinion survey of economists is available for the 1965-79 period I will rely largely on the opinions expressed in textbooks. Textbook authors have an obligation to present the professional consensus rather than just their own idiosyncratic opinions. Moreover presenting the consensus rather than stressing idiosyncratic views is a way to enhance sales.

Until the work of Friedman (1968) and Phelps (1967) standard macroeconomic models implied a long-run unemployment-inflation trade-off (Lucas, 1996, p. 671). It might seem that almost immediately after the publication of these two papers economists would have rejected

the hypothesis of an exploitable trade-off. But that was not so. During the 1970s the proposition that the long-run Phillips Curve is vertical, though appealing on theoretical grounds, had not yet been empirically confirmed. Many Phillips-curve regressions were run on the assumption of extrapolative expectations. Frequently in these regressions the sum of the coefficients on past inflation rates was significantly below unity, though the later studies did tend to have coefficients with sums not *significantly* below unity.

Hence it is not surprising that the feasibility of an unemployment-inflation trade-off was taken seriously. Even five years after the publication of Friedman's presidential address Samuelson (1973, p. 835), in the leading Principles book at the time, told students that, although some people think that the choice is only between having more unemployment now or in the future:

No statistical evidence establishing so definite a view has yet been forthcoming. And even if this pessimistic view were to have an element of truth, no doubt many would argue that, in an uncertain world it is better to grasp the lower unemployment that can be had at hand than to wait for the lower unemployment that, so to speak, can be found only in some future bush.

In a footnote, after stating the argument of those who believe that the long-run Phillips Curve is vertical, Samuelson dismissed this possibility as follows: "Critics of these writers say that by the time their proposed equilibrium is reached the system may well have been torn apart by voter revolt, urban riots... [Moreover, the data from experience] do not yet allow us to judge whether the Phillips curve is vertical." (Samuelson, 1973, p. 835n). Lipsey and Steiner (1975, p. 831) and McConnell (1969) took a similar position. Alchian and Allen (1972) did not mention a trade-off, while Bach (1974) was equivocal about its existence.

I know of no survey of economists' opinions during the 1965-1979 period on the trade-off ratio of unemployment against inflation that the central bank should use. But an earlier survey published in 1958 asked economists the maximum level of unemployment they were prepared to accept to obtain "a high degree of price stability." Excluding the nonresponse category, 20 percent were not willing to accept more than 4 percent unemployment, 40 percent were not willing to accept more than 5 percent and only 27 percent were willing to accept 6 percent

unemployment. Asked what to do if price stability and low unemployment are not "fully compatible", three quarters of the respondents opted for achieving the unemployment goal. (U.S. Congr., 1958, pp. 3-4)

Samuelson (1973, p. 272) pointed out that: "In mild inflation the wheels of industry are initially well lubricated, and output is near capacity. Private investment is brisk, jobs are plentiful" and workers are better off. Although he warned that creeping inflation may accelerate into a canter or gallop, he also warned that using monetary and fiscal policy to fight cost-push inflation "will only result in unemployment and stagnation." (Samuelson 1973, p. 837, emphasis added). He cited "some economists" as saying that we should learn to live with creeping inflation, and that "undoubtedly such a solution is better than a masochistic throttling down of the economy that puts the burden of fighting inflation on the marginal workers who can least afford to bear that burden." (Samuelson, 1973, pp. 834-35)

Lipsey and Steiner (1975, pp. 815-16) explained that although unanticipated inflation redistributes income arbitrarily, and under fixed exchange rates creates balance-of-payments problems, there is no evidence that inflation reduces real income. Three other textbooks I looked at, Alchian and Allen (1972), Bach (1974) and McConnell (1969), do not take an unequivocal position on the appropriate trade-off ratio.

One consideration that made many economist reluctant to advocate restrictive policy was a fairly widespread belief that inflation was largely a cost-push phenomenon. In an opinion survey that asked economists whether they agreed with the statement that: "The 'Corporate State' as depicted by Galbraith [in a book that de-emphasizes the role of atomistic competition inn the American economy] accurately describes the context and structure of the U.S. economy", 18 percent of the respondents generally agreed, while another 34 percent agreed with reservations. (Kearl et al, 1979).

In principle, if inflation is due to cost-push, that does not prevent the central banks from aiming at price stability with cost-push price increases in some industries being offset by falling prices in other industries. But economists who think that cost-push is the major cause of inflation generally argue that it would take unacceptable unemployment to reduce the inflation

rate significantly. Moreover, countering cost-push inflation by lowering aggregate demand offends one's sense of justice. Why should unorganized workers and workers in competitive industries lose their jobs just because unionized workers raise their wages or oligopolistic industries raise their prices? Furthermore, they might argue, cost-push inflation is not the Fed's responsibility; its job is only to ensure that aggregate demand is neither excessive or deficient. Cost-push inflation should be combatted not by monetary policy, but by incomes policy. Thus Samuelson (1973, pp. 837) wrote that "to cope with cost-push inflation some new kind of 'incomes policy' is now seen to be needed," and referred to economists who rejected income policy as "a minority."

The five textbooks tell us nothing about the magnitude of the NAIRU. But in 1968 Franco Modigliani (U.S. Congr. 1968, p. 58) summarized the presumably then prevailing estimates of the NAIRU as follows: "Just what it is we do not know precisely. We know that it is less than five [percent], probably less than four; and are pretty sure that at the present time it is no less than three." In 1972 two leading forecasters, Otto Eckstein and Roger Brinner (1972, p. 1) put the NAIRU into the 4 to 4 1/2 percent range. Seven years later 1979 Michael Wachter (U.S. Congr. 1979, p. 124) provided two annual series of the NAIRU. One set it at 4.65 percent in 1965 and at 5.55 percent in 1978; the other set it at 5.73 percent in 1965 and 6.40 percent in 1978. Henry Aaron (1978, pp. 117-18) reports that around 1969 most economists believed that a 4 percent unemployment rate would generate an excessive and perhaps accelerating inflation rate, and that many economists doubted that even 5 percent unemployment was an achievable goal.

Both Arthur Okun and Herbert Stein have argued that economists, or at least those in government, tended to underestimate the NAIRU (cited in Hargrove and Morley, 1984, pp. 308, 406). Alan Greenspan pointed out that as late as January 1977 the official estimate of the NAIRU was 4 percent, but that "very few economists were willing to buy that." (cited in Hargrove and Morley, 1984, p. 452). Estimating the NAIRU at 4 percent may have been realistic at one time, but such estimates became and less realistic.

Let us now look at the FOMC's opinions. While the FOMC accepted the existence of a

NAIRU, and hence a limit to the drive for low unemployment, it seems that many FOMC member thought that one had to worry about inflation only when unemployment is low. But if the Fed is willing to adopt restrictive policies only when unemployment is low enough to raise the inflation rate, then the inflation rate will have a tendency to rise secularly. Burns, however realized that the price level rises not only at full employment, and he exercised great power over the FOMC during his chairmanship, February 1970-March 1978. Hence, the reluctance to move against inflation when unemployment is high may have created a problem only during part of the 1965-79 period. The FOMC's estimate of the NAIRU was probably higher than that of many academic economists, but if the recent estimate of Staiger, Stock and Watson (1996) is correct, it was still too low.

The FOMC, on the whole, did not seem to have believed in a vertical Phillips curve. It therefore had to decide the relative importance it placed on low inflation and balance of payments equilibrium on the one hand, and low unemployment on the other. The *Minutes* contain many strong statements about the dangers of inflation.⁶ The FOMC also did not ignore the balance of payments problem, but on the whole, it did not give it a central role.

Although unemployment was not mentioned as often as inflation, an incident occurred in June 1973 that illustrates how concern about unemployment acted a serious constraint on policy options. Although staff economist Partee described the prevailing inflation as "nearly runaway", when his staff looked for different policy options, they ran their model with the constraint that the unemployment rate would not be allowed to exceed 5 percent by the end of 1974. Although Burns responded that it would not be: "totally unrealistic to aim at significantly lower or higher unemployment rates for short periods of time" (*Minutes*, June, 1973, p. 610), this does suggest that the Fed took unemployment rate seriously. And in December 1974 when the unemployment rate rose sharply (to 6.6 percent in November) the FOMC did shift to a much easier policy, though fear of a financial crisis may have played a larger role than unemployment in this decision.

All in all, although in some years the FOMC showed concern about the high rates of unemployment, it expressed even more concern about inflation. That might seem to suggest

that it had a stronger preference for low inflation than for low unemployment. But that must be interpreted in its historical context. The FOMC was so concerned about high inflation because the inflation rate was so extraordinarily high. Hence this concern was consistent with a willingness to live with a much higher inflation rate than would usually have been tolerated previously.

It is not surprising that as the inflation rate accelerated the Fed's tolerance for inflation increased. What was considered acceptable in, say 1976 would have been considered totally unacceptable in 1965. To a substantial extent that was rational since expectations had changed, and expected inflation is much less damaging than unexpected inflation. Another factor that explains the FOMC's greater tolerance of inflation after 1973, and was surely a major part of the explanation after that date, is, of course, the occurrence of major supply shocks in 1973-74. Trying to bring the 12.2 percent inflation rate of 1974 down to, say 4 percent within a year would have required a rise in unemployment unacceptable not only to the FOMC but also to the political authorities and to the public.

VIII. Conclusion

Thus, several factors appear responsible for the high inflation, quite apart from the supply shocks. One potential factor, forecast errors, can be ruled out as a major cause; that played only a minor role. Inefficient operating procedures, too, had only a small effect. What was more important was the FOMC's great reluctance to change sufficiently the setting of its interest rate target. Cognitive errors, such as vague thinking, a tendency to procrastinate, insufficient appreciation of both the lag in monetary policy and of the importance of the monetary growth rate, and inadequate attention to the distinction between nominal and real interest rates also played a part.

Political pressures played *some* role. But their role was limited by the fact that for its own reasons the FOMC usually wanted to stop well short of the bounds these limits set. Had the FOMC tried to follow a much more resolute anti-inflation policy, then political pressures might well have emerged as the main "cause", other than supply shocks. The imposition of wage and price control probably had *some* effect, but it is not certain in which

direction.

Finally, there was the intellectual atmosphere, or more specifically the received doctrine of macroeconomics. By and large, economists did not consider inflation a disaster and were more concerned about unemployment. Belief in the prevalence of cost-push inflation and the near impotence of monetary policy in that situation, while not the dominant view, were an influential view. Moreover, only slowly did the absence of a long-run inflation/unemployment trade off become widely accepted, at least as far as one can judge from textbooks. Furthermore, if the FOMC did underestimate the NAIRU in the later part of the period it was in good company.

In such a situation it would have been difficult for the FOMC to have pursued a policy that was *much* more restrictive than the policy it did pursue. The temptation to listen to the experts, both on its staff and in academia must have been strong. Moreover, it would have meant adopting a policy contrary to what many FOMC members had been taught as students (and some had themselves taught prior to their appointment to the Fed). In addition, economists would have lambasted the Fed at congressional Hearings and in the media, thus helping to mobilize political pressure against it.

Such a listing of various factors that caused the Fed to pursue a highly inflationary policy does not exhaust what can be said about the reasons for this policy. It is useful to step back and look at the Fed's decision in a broader framework. In doing so one must preserve the distinction between what we know today, and what the Fed could reasonably be expected to have known at the time.

One can then tell the following story: The low inflation rate in the early years of the long expansion that started in February 1961 lulled the Fed into complacency, so that when the inflation rate did rise it was slow to recognize the problem. When it finally did step sharply on the brake the resulting 1969-70 recession came close to setting off a financial crisis, which may have made the Fed reluctant later on to become sharply restrictive. Then came the unprecedented supply shocks of 1972-74, for which neither experience nor the macroeconomic literature provided adequate guidance. The Fed's first response to the 1972-74 supply shocks

was therefore not coherent. When a sharply restrictive policy produced much pain it was replaced by an expansionary policy before it could succeed in preventing the sharp price increases of 1972-74 from being incorporated to a substantial extent into inflationary expectations, and hence into base-line inflation. As a result, the inflation rate for 1976-79 was both high and accelerating, until it was broken with much pain by the Volcker disinflation.

One might go further and argue that with the U.S. never having experienced a substantial inflation other than in association with a major war, one could hardly expect the Fed to be vigilantly on guard against such a contingency. Instead, the formative economic experience of most, or perhaps all of those who made policy or advised on policy had been the Great Depression. A "never-again" attitude towards that event could readily have generated a too dismissive attitude towards what was thought of as the opposite danger, inflation. With people learning primarily from their own experience, rather than from "theory" and might-have-beens, perhaps, sooner or later, a major inflation was inevitable.

ENDNOTES

1. Moreover, the assumption made by the older version of this theory, that the central bank tries to offset the reduction in the supply of effort that taxes and various safety-net programs cause, does not sound plausible to anyone to who has spent much time reading the *Minutes* of the FOMC. The other variant, that central banks generate inflation to reduce unemployment in the short run is observationally equivalent on most tests to the hypothesis that the central bank underestimates the NAIRU.
2. Suppose, for example, that a reaction function tells us that, *ceteris paribus*, the Fed raises the funds rate by more in response to a one percent rise in the CPI than it does in response to a \$50 billion rise in the balance of payments deficit. That does not tell us that it considers such a rise in the CPI to be worse than the rise in the deficit. Instead, it may raise the funds rate more because it thinks that it takes a bigger increase in the funds rate to reverse a one percent rise in the CPI than to reverse a \$10 billion increase in the deficit. In other words, the coefficients of a Fed reaction function measures a combination of the Fed's utility function and its production function. Hence, while a Fed reaction function might explain why the Fed raised the funds rate at a particular time, it does not allow us to infer the Fed's preferences, and hence explain its tolerance for inflation.
3. See *Minutes*, 1965, pp. 1112, 1270-71, 1972, 807. 4. For exceptions see *Minutes*, 1965, pp. 1112-13, 1272-73, 1975, pp. 518, 5260.
5. Finally, there was also an indirect source of political influence FOMC members argued that if the Fed adopted a too restrictive policy Congress would respond to the ensuing recession by adopting too expansionary fiscal policies.
6. See *Minutes* 1965, p. 1112; 1968, pp. 460-61; 1971, p. 553; 1973, pp. 403 and 506; 1974, pp. 214, 367, 390, 393, 742, 1024, 1036, 1048, 1123.)

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Table 1

Forecast Errors of FOMC Staff

	Current quarter ^a	Quarters ahead:			
		1	2	3	4
Actual minus Predicted					
GNP Deflator					
Percent					
Whole period ^b					
Mean error	.10	.32	.74	1.15	1.63
Mean absolute error	.27	.52	.96	1.40	1.87
Excluding 1973.1 - 1974.3 ^c					
Mean error	.05	.16	.39	.58	.91
Mean absolute error	.25	.40	.67	.89	1.22
Real GNP					
Percent					
Whole period ^b					
Mean error	.01	-.14	-.54	-1.03	-1.47
Mean absolute error	.36	.73	1.07	1.46	1.88
Excluding 1973.1 - 1974.3 ^c					
Mean Error	.06	.02	-.10	-.22	-.47
Mean absolute error	3 6	.67	.75	.77	1.01
Unemployment Rate					
Percent					
Whole period ^b					
Mean error	-.04	-.08	-.11	-.04	-.03
Mean absolute error	-.08	.26	.42	.53	.66
Excluding 1973.1 - 1974.3 ^c					
Mean Error	-.04	-.07	-.14	-.14	-.16
Mean absolute error	.08	.25	.36	.45	.56
Defense Expenditures					
Billions of Dollars					
Whole period ^b					
Mean error	-.05	-.20	-.40	-.54	-.77
Mean absolute error	.93	1.51	1.91	1.94	2.44

a. Forecasts were made late in this quarter, except in one case in which they were made early in the next quarter.

b. The earliest quarter forecast for the GNP deflator is 1967.1, for real GNP it is 1966.4, for the unemployment rate and defense expenditures it is 1966.3. The last quarter forecast used for the "current quarter" is 1979.2. As the forecast horizon is lengthened by a quarter, a quarter at the end of the period is lost. For the deflator and for real GNP some quarters had to be omitted due to a major GNP revision creating a problem in deriving the

deflator from the Green Book data. The number of available forecasts decreases as the length of the forecast increases. Data for 5 quarter forecasts are based on relatively small samples.

c. Quarters denote those in which the forecast was made, not those to which the forecast applies.

Table 2
Regression of Annualized Monetary Growth Rates on Policy Index

	Coefficient/t value						Sum	R ² /D-W
Lag (months)	1	2	3	4	5	6		
A. 1965.01-1972.12								
M-1	-.76 -.7	2.53 1.6	-.39 -.2	-.96 -.6	2.96 1.9	-1.56 -1.4	1.82	.16 1.9
M-2	.96 1.6	.65 .8	-.20 -.2	-.43 -.5	.51 .6	.01 .0	1.50	.71 2.1
B. 1973.01 - 1979.09								
M-1	-.32 -.2	-.17 -.1	1.56 .8	-1.26 -.6	-.74 -.4	.91 .6	-.02	.00 2.0
M-2	.78 .9	.20 .2	.32 .3	-.35 -.3	-.45 -.4	.64 .7	1.14	.44 1.9

NOTES: All regressions include constant and first order lagged dependent variable. R² is adjusted for degrees of freedom.

Source: Based on data obtained from Federal Reserve Bank of St Louis bulletin board.

Fig.1 Inflation Rate (CPI) 1800 - 1990

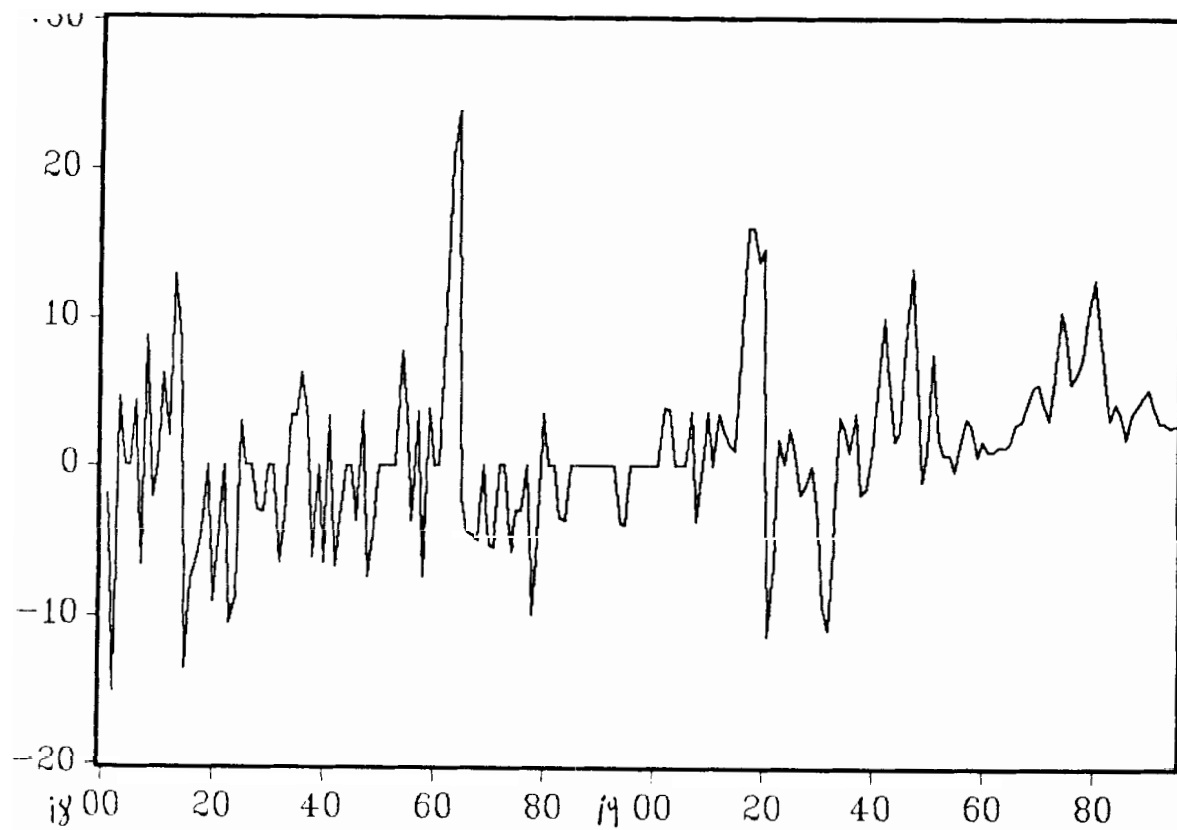


Fig.2 Inflation Rate (CPI) 1'950-1995

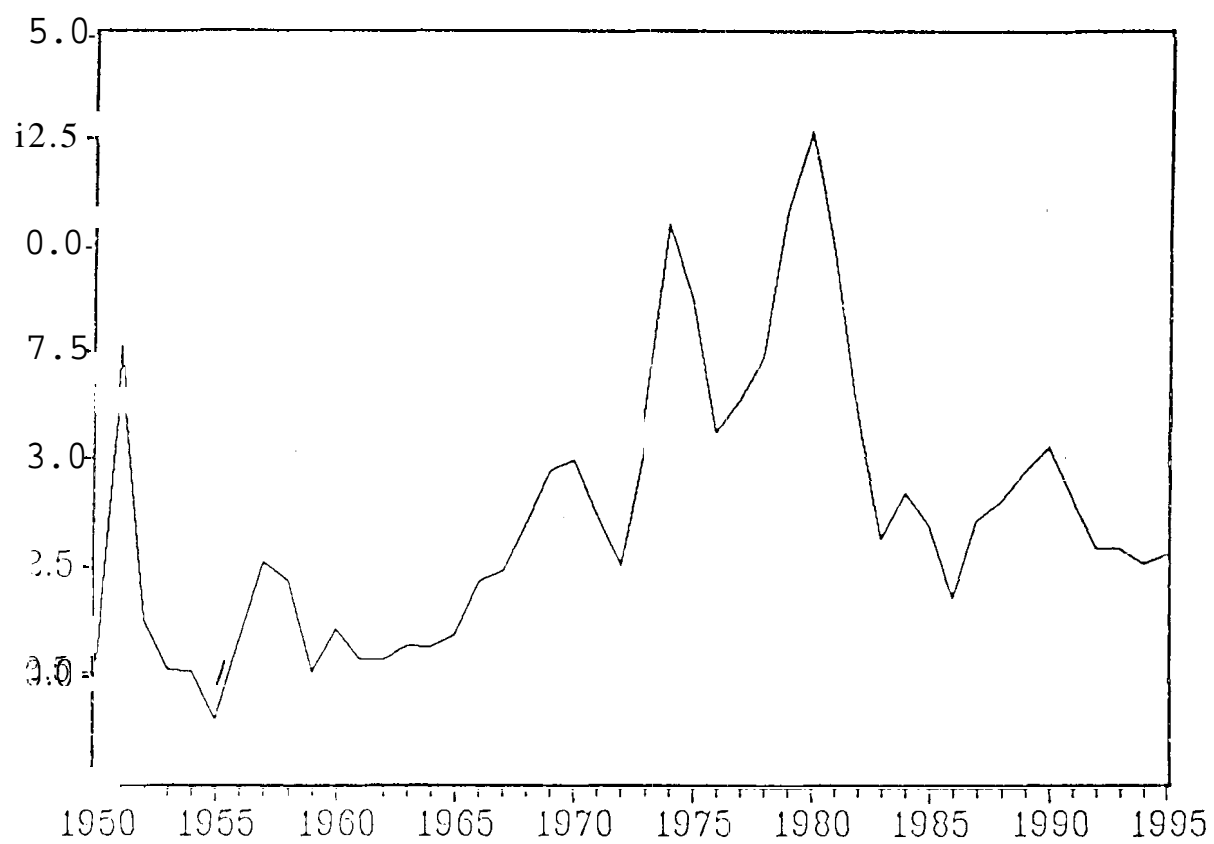


Fig. 3 Defense Expenditures

