

A black and white photograph of an American flag waving in the background. In the foreground, there is a stack of coins, with one coin lying flat on top of the stack, showing its profile.

The Supply-Side Revolution: 20 Years Later

March 2000

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Office of the Chairman, Connie Mack
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- "The best way to create new jobs is through economic growth." (Pg. 52)

Monetary Policy by Trial and Error Chapter 2

by Alan Reynolds

The U.S. suffered three increasingly painful episodes of "stagflation" in 1970, 1974-75 and 1980-82. That nasty combination of inflation and recession baffled mainstream macroeconomics. Recessions were supposed to be fixed by "stimulating demand," while inflation supposedly required the opposite remedy. Since it was obviously impossible to stimulate and dampen demand at the same time, many economists argued that we should simply tolerate the lesser evil of inflation, or adopt wage-price controls, or use higher tax rates to fight inflation and lower interest rates to fight recession.

The result of following this sort of advice from 1968 to 1980 was that inflation moved higher and higher, while recessions became longer and deeper. These were not accidents of fate, but the predictable consequence of the following misguided economic theories:

- *The fiscal theory of inflation*: Many prominent economists viewed inflation as a fiscal rather than monetary problem, or at least favored fiscal over monetary solutions (higher tax rates rather than "tight money").
- *The wage-push doctrine*: Blaming inflation on workers, wage-push theorists claimed that many years of double-digit unemployment would be required to prevent wages from pushing up prices.
- *The thermal metaphor*: The journalistic metaphor of an "overheating" economy leads people to expect rapid economic growth to be associated with higher inflation, and slow growth with low inflation, although there is no logic or evidence for that belief.
- *The Keynesian "policy mix"*: Many economists claimed the Fed could increase *real* economic growth by pushing down real interest rates, and argued that raising tax rates (and/or wage-price controls) was the best way of curbing inflation.

How Monetary Policy Works

Monetary policy is often described as a mysterious art, but the basic mechanics can be described with a little simplification. The essence of an "expansionary" monetary policy is that the Federal Reserve

("Fed") buys Treasury bills, paying for them by crediting bank reserves. With more reserves, banks make more loans (or buy bonds), and borrowers end up with more money in their checking accounts. If the Fed buys fewer T-bills, or (rarely) even sells them, it becomes more difficult to finance increased spending.

Some banks have more reserves than they need on any given day while others have less. Spare reserves are traded overnight at the "federal funds" interest rate. The Fed's Open Market Committee periodically sets this fed funds rate, which is roughly equivalent to instructing the open market desk to buy bills only if the rate drifts higher.

The "policy" aspect of Fed actions refers to targets and instruments. Most controversy has been over the targets the Fed should aim for, rather than about instruments (i.e., what the Fed should do if the targets are missed). Keynesian economists have often favored using monetary instruments (defined as lower interest rates) to boost the *real* economy and reduce unemployment. Monetarists usually advocated an "intermediary" target -- growth of the monetary base (bank reserves and currency) or of a broad measure of money (M2).

In the mid-seventies, several supply-side economists proposed a "price rule" -- what has since come to be known as inflation targets -- sometimes suggesting the use of sensitive commodity prices, the yield curve and exchange rates as early warning signals. Fed officials themselves often allude to numerous objectives, ranging from wage rates to stock prices. And central bankers everywhere have often blamed their mistakes on fiscal authorities, even when fiscal problems (such as high interest expenses for the Treasury) are the result of monetary mismanagement.

The fed funds rate is simply an instrument for hitting some target, not a goal in itself. Alternative instruments could include quantitative tools (e.g., instructing the open market desk to refrain from purchasing bills until some price index slows), or unsterilized exchange rate intervention.

A higher fed funds rate can be an indirect method of restraining the growth of liquid assets by limiting the Fed's supply of bank reserves. But high interest rates are not reliable indicators of "tight money." On the contrary, interest rates are always highest in countries with chronic high inflation (such as Turkey or Russia), and lowest in countries with low inflation (such as Japan and Switzerland).

For a couple of years after October 1979, the Fed claimed to be using M2 as the target while using the fed funds rate as the instrument. Raising the fed funds rate was supposed to slow the growth of M2. But that combination of instruments and targets was bound to fail. Since the advent of flexible interest rates on checkable money market funds and accounts, a high funds rate has almost always been associated with *rapid* growth of M2. The fed funds rate averaged 12.1% from 1979 through 1984, yet annual growth of M2 remained high, at 9.2%. The fed funds rate then dropped to 4.7% from 1992 through 1999, yet annual growth of M2 slowed to only 4.3%. What changed in the nineties is *not* that high interest rates restrained M2, but that restraining bank reserves and inflation gave us slow growth of M2 (except in 1998) and low interest rates.

Inflation can make nominal interest rates a particularly unreliable indicator of what the Fed is doing. If expected inflation rises by two percentage points while the fed funds rate is increased by only one percentage point, then the real interest rate has actually declined. When inflation is accelerating faster than interest rates, it can be profitable to use borrowed money to speculate in rapidly appreciating tangible assets, such as metals or land.

Similarly, a lower interest rate is commonly assumed to be an "easier" policy. But deflation proves that low interest rates are a symptom of excess demand for money and therefore a relatively inadequate supply. In a deflation (such as the U.S. in the early thirties or Japan in recent years), people liquidate goods and assets at distress-sale prices in a hectic scramble for cash. Banks hoard

excess reserves out of fear of bank runs. People hoard T-bills and currency because money will buy more tomorrow than today. Nominal interest rates on the safest securities may then be near zero, but that does *not* prove that monetary policy is either "loose" or ineffective. Monetary policy can affect the economy through many channels other than interest rates, including effects on exchange rates, on the relative attractiveness of financial and tangible assets, and on nonprice credit rationing (favoring big businesses for scarce bank loans).

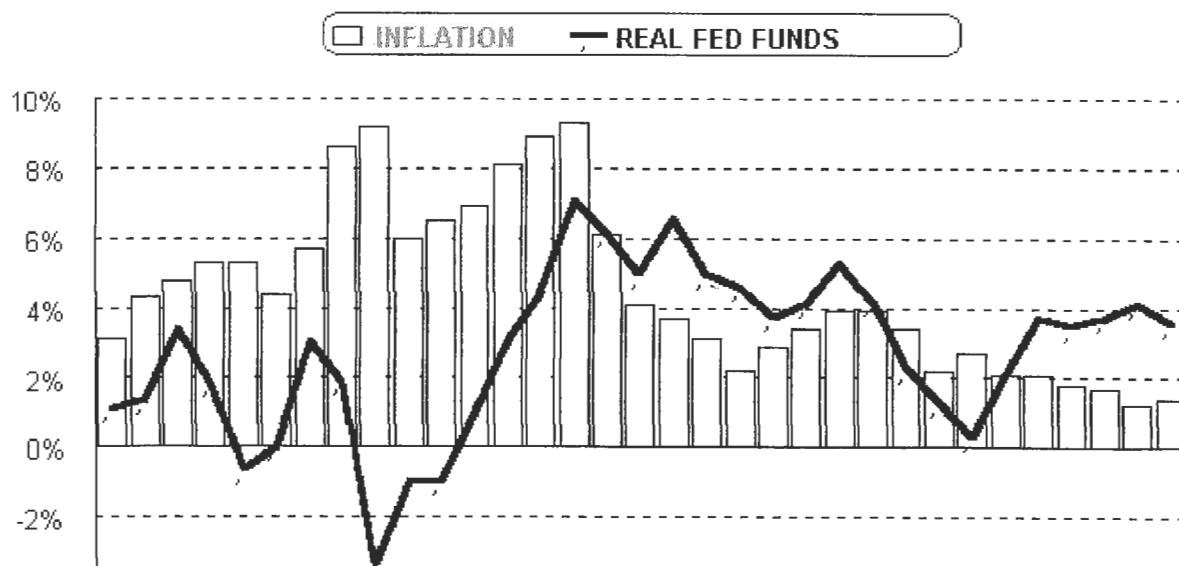
To visualize how monetary policy still matters even if interest rates are close to zero, just imagine what would happen if the Bank of Japan purchased the entire national debt and paid for it with new currency. Could anyone really argue that such a flood of liquidity would have no effect on prices? This mental experiment -- imagining converting all interest-bearing government bonds into cash -- illustrates that liquidity itself is important, not just the credit process of borrowing and lending. It also helps to illustrate why monetary policy is not at all the same as fiscal policy: Federal Reserve notes are much easier to spend than Treasury bonds.

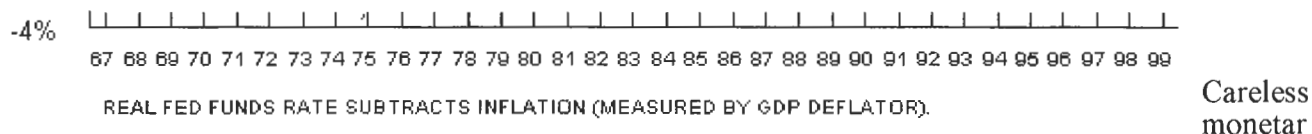
Fiscal Fixes for Monetary Problems

Some of the worst policy blunders in world history arose from attempting to apply fiscal remedies to monetary problems (such as tripling income tax rates in June 1932 to "restore confidence"). In the late sixties, creeping inflation was assumed to be caused by budget deficits -- "guns and butter." Given that diagnosis, the prescription was a 10% surtax in mid-1968, which put the top tax rate up to 77% in 1969. This tax on taxes was soon repealed as the economy slipped into recession in 1970. Yet the fiscal explanation of inflation never did match the facts, in this case or any other. Budget deficits were insignificant except in 1968, when the deficit was still no larger (2.9% of GDP) than it was as recently as 1994. The 1967 deficit was only 1.1% of GDP -- smaller than in 1962 or 1998. Inflation had been creeping up for several years before 1968, yet inflation did not exceed 4% until *after* the surtax was put into place. Consumer prices rose 1.6% in 1965, 2.9% in 1966, 3.1% in 1967, 4.2% in 1968, and 5.5% in 1969.

Figure 1

THE "REAL" FED FUNDS RATE AND INFLATION





policy fully explains the inflation of the late sixties, just as it explains every other inflation. The fed funds rate barely kept ahead of rising inflation until 1969, and the discount rate was held below 5% until April 1968. In this effort to hold interest rates down, the Fed more than doubled its portfolio of government securities, from \$26.5 billion in 1960 to \$57.7 billion in 1970. Growth of M2 averaged nearly 8% a year, financing comparable growth of "aggregate demand" or spending (nominal GDP).

Figure 1 compares the "real" fed funds rate (after subtracting inflation) with a broad measure of inflation. Before 1981, real interest rates were erratic but usually low. The Fed let real rates rise briefly in 1969 and 1973, but then pushed real rates below zero during the ensuing recessions. The counter-cyclical easing was soon followed by another bout of inflation. In short, the Fed routinely pushed too hard on the monetary accelerator, but periodically stomped on the brakes for a few months. The Fed also pushed real rates down in 1992-93, after the brief 1990-91 slump, possibly contributing (along with increased tax rates) to the falling dollar and rising bond yields in 1994. With that exception, however, real rates have been comparable to real GDP growth rates since 1983.

The notion that selling Treasury bonds (a budget deficit) would have the same impact on inflation as printing money (a Fed open market purchase) never made much sense. If it were true, then governments could safely cover any borrowing requirements by simply printing currency rather than peddling IOUs.

If the government borrows from Peter to pay Paul, consumers as a group will *not* have "more money in their pockets." If the government runs a surplus, using excess taxes from Paul to buy back some bonds owned by Peter, then Paul will have less cash and Peter will have that much more. Deficits do not create money and surpluses do not destroy money. Only the Fed can do that.

Today, when even the slightest reduction of tax rates or revenues is said to threaten inflation, the old fiscal theory of inflation hangs on only as a mindless impulse. It does not survive as a matter of logic or evidence. Except in extreme crises, when governments lose the capacity to borrow, inflation is entirely monetary, not fiscal.

The Wage-Push Doctrine

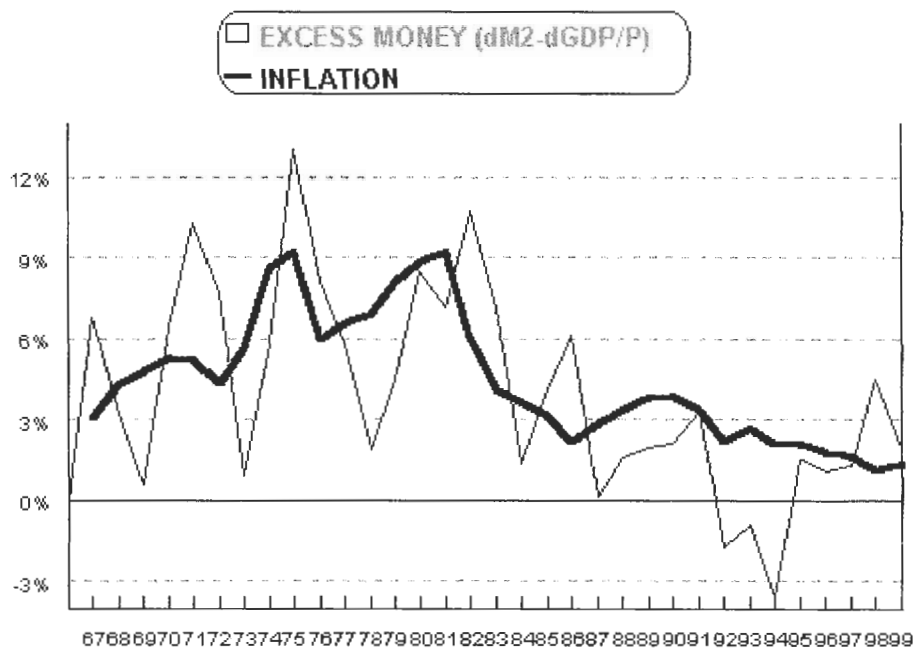
After the conspicuous failure of the surtax to reduce inflation, fiscal theorists decided that their theory was still right but reality had gone wrong. The urgent need for new scapegoats and excuses led to a new theory, the "wage-price spiral." The value of money still had nothing to do with monetary policy, but now it had nothing to do with fiscal policy either. Inflation was now said to be entirely a matter of private greed. Workers demanded big pay increases, so employers just passed their higher wage costs along in higher prices. Faced with these rising prices, workers "demanded" even bigger raises. The whole idea that prices and wages are set in such an arbitrary fashion contradicts basic price theory, but "microeconomics" was out of fashion.

Wage-push theorists saw only two ways to unwind the wage-price spiral, and judged one of them unacceptably painful. The feared pain arose from the nefarious "Phillips Curve," which claimed we could always trade a little more inflation for a lower unemployment rate, and vice-versa. Faced with high inflation, Phillips Curve theorists claimed it would require years of very high unemployment to discourage stubborn workers from asking for the raises that supposedly caused inflation.

The only painless solution, according to the wage-push theory, was for a government agency to dictate to people what their labor and products were worth. On August 15, 1971, the Nixon Administration froze wages and prices, and subsequently went through four agonizing phases of

heavy-handed controls. The controls naturally focused on items heavily weighted in the price indexes, which seemed to hold measured inflation down for a while. But it was quite impossible to control prices of imports, new products (nothing to compare them with), used cars, land, and much more. Any money saved on prices of controlled items became excess demand for uncontrolled items. Where they were effective, controls boosted demand and discouraged supply, creating infamous "shortages" that made inflation even worse (a 12.3% CPI by the end of 1974). Wage-price "guidelines" were nevertheless revived by the Carter Administration, and so was double-digit inflation (13.3% by the end of 1979). Like the 1968-69 surtax, regulation of wages and prices was an inherently futile effort to solve monetary problems by nonmonetary means.

Figure 2
GROWTH OF M2 MINUS REAL GDP ("EXCESS MONEY")
HAS BEEN ASSOCIATED WITH INFLATION



For those who prefer

Changes in M2 are December to December.

to measure monetary policy by quantities of cash rather than interest rates, **Figure 2** compares inflation with a rough measure of "excess" money -- the growth of M2 minus the growth of *real* GDP. The underlying concept is that more money is needed to finance more transactions (at stable prices) when the real economy is growing rapidly, but that rapid money growth during a recession could only be financing higher prices.

The link between excess money and inflation is imprecise in any single year, but the apparent monetary excesses of 1967-68, 1971-72, 1975-77 and 1980-83 were certainly followed by high inflation. No comparable episodes of excess monetary expansion have been sustained since then, and inflation has been moderate. Whether measured by the real fed funds rate in **Figure 1**, or by the relative growth of M2 and real GDP in **Figure 2**, the monetary origins of instability in the seventies should be apparent to anyone not totally blinded by archaic fiscal or wage-push theories.

An important lesson from **Figure 2** is that for any given growth of money (or of nominal GDP), faster *real* growth implies *slower* rather than faster inflation. This contradicts the illusion that

inflation is a byproduct of "overheated" economic growth. Higher tax rates in 1968-69, 1990 and 1993 were indeed accompanied by slower *real* growth. But slower real growth must push inflation higher unless -- as happened in each of those cases -- the Fed responds with higher real interest rates.

Muddled Metaphors

Financial journalists have long found it irresistibly tempting to compare the economy to a pot on the stove. Inflation thus becomes a simple matter of "overheating" and the Fed's job is to "cool off" excessive economic growth. Popular as it is, this thermal metaphor accurately describes the exact opposite of U.S. experience.

Figure 3 compares real growth with inflation. If inflation were due to rapid real growth, then we ought to see inflation and real growth moving up and down together. In fact, they invariably move in opposite directions. Since at least 1968-71, when the dollar was unhinged from gold, inflation has *always* accelerated during economic slumps, *never* when the economy was growing rapidly. And inflation has *always* slowed when the real economy was booming, never during recessions.

A spurt of inflation might conceivably appear to boost measured real GDP for a short while, due to speculating on inventories or real estate in the hope of reselling at a higher price. Even if that happened, it would still be backwards to say that real growth caused inflation. Similarly, recessions may lead to temporary cyclical discounts in the cost of industrial and building materials. But even that ephemeral improvement depends in part on whether or not the recession is global (depressing *world* demand for raw materials) and on what happens to the dollar (a falling dollar can raise commodity prices in dollars even if those prices have fallen in terms of, say, Japanese yen).

Cyclical caveats aside, **Figure 3** shows that no *sustained* period of low inflation has been associated with slow economic growth, and no sustained period of slow economic growth has been associated with low inflation. *Inflation is bad for real economic growth, and strong growth of production and productivity is good for price stability.* The paradoxical idea that an economy can somehow be in danger of growing faster than its "potential" to grow is an illogical myth. We can have high inflation or high real growth, but not both.

Keynesian v. Mundellian Policy Mixes

The failure of the 1968-70 surtax helped discredit the odd notion that tax penalties on marginal productive activity could somehow substitute for prudent monetary policy. But it took two more episodes of stagflation to undermine a closely related "policy mix" theme -- namely, *the idea that budget deficits and easy money have equivalent effects on the growth of nominal GDP.* Those who argued for using an expert mix of fiscal and monetary devices always claimed (and still do) that a reduction of budget deficits could allow the Fed to push *real* interest rates lower without fear of inflation. Proponents of this Keynesian policy mix argued that budget surpluses would risk recession unless offset by a Fed willing to reduce real rates. As shown by **Figure 1** above, however, the *real* funds rate hovered near 4% in 1995-99, regardless of the surplus.

Much of the controversy about what came to be known as supply-side economics in 1976 actually started in 1971 as a debate about this Keynesian policy mix. The supply side of the debate involved the neglected macroeconomic impact of microeconomic policies (such as marginal tax rates, tariffs and regulations) in causing distortions and disincentives that impede personal effort, investment and entrepreneurship. The demand side of the debate involved Keynesian habits of first regarding inflation as a desirable way to reduce unemployment (the Phillips Curve), and later being willing to experiment with absolutely *any* scheme *except* monetary policy (notably surtaxes and wage-price controls) as a means of dealing with inflation.

In 1971-75, "stagflation" became nearly as troublesome for economic theorists as it was for ordinary citizens. Macroeconomists had been engrossed in a turf war about the best way to manage demand -- whether by manipulating the supply of government debt (budget deficits and surpluses) or the supply of cash (the money supply). **Figure 2** suggested that monetarists won this argument, as far as it goes. But the debate was all about "stabilization," not expansion. Both fiscalist and monetarist varieties of demand management held that governments could and should stabilize overall spending (aggregate demand) in the economy. Whether by fiscal or monetary means, the universally accepted goal of "macroeconomics" was to *stimulate* demand in recessions and *retard* demand in inflations. Even today, when the Fed has new plans to announce that the balance of risk leans more toward inflation *or* recession, the implication is that inflation and recession are polar opposites, not twins.

Unfortunately, the actual problems of 1970, 1974-75 and 1979-82 did not offer us a choice of fighting either inflation or recession. We had plenty of both -- "stagflation." The logic of demand-side economics implied that we had to choose which problem to fix. Even as recently as the early 1980s, it remained surprisingly respectable to argue that the wisest choice was to tolerate endless inflation rather than risk even a brief recession. A *New York Times* editorial on February 11, 1980 proudly announced that, "We have done our part over the months to curb the panic about inflation, to show that most Americans were better off with the disease than with the false remedy of recession."

As early as 1971, Robert Mundell, the recipient of the 1999 Nobel prize in economics, had explained that there was never any serious possibility of choosing inflation over recession. That false dichotomy was entirely theoretical, not real -- the result of trying to hit two targets (supply and demand) with one instrument (demand management).

On February 12, 1971, Mundell attended a U.S. Treasury Consultants meeting, and urged that the correct policy mix to combat stagflation was to use monetary policy alone to slow the inflation, combined with a cut in tax rates to spur recovery from recession. This advice, published as "The Dollar and the Policy Mix" in a Princeton Essay in International Finance, fell on deaf ears. President Nixon's advisors ended up combining easy money with draconian wage-price controls.

In 1999, the Nobel committee finally applauded Mundell's views about "how each of the two instruments, monetary and fiscal policy, should be directed toward either of the two objectives." Mundell described this as an "assignment problem." *If we are trying to fix two problems at the same time -- boost supply and restrain demand -- then we have to assign the best tool to each task.* Mundell has observed that "monetary policy has a comparative advantage over fiscal policy in attacking inflation and preserving exchange rate stability, and fiscal policy has a comparative advantage in increasing employment and stimulating growth."

Macroeconomics was, by definition, artificially separated from such "microeconomic" details as tax reform and deregulation. As a result, macroeconomists have always had trouble understanding Mundell's "policy mix." They imagined that Mundell was simply advising a "loose" fiscal policy (big budget deficit) and a "tight" monetary policy (high real interest rates). Yet Mundell's concept of "fiscal policy" always emphasized the microeconomic, structural details of taxation -- *incentives* -- not merely the amount of government borrowing. And Mundell actually favors *good* money, not tight money -- money that holds its value over decades and across national boundaries.

Mundell's 1971 policy advice finally began to be adopted in 1981-86, as the U.S., U.K. and many

other nations assigned the task of maintaining price stability to monetary authorities, while enacting deep cuts in marginal tax rates to enhance productive incentives.

Economists of the Keynesian persuasion have long been vehemently opposed to the idea of using monetary policy to even "fight" inflation much less end it. In an interview with *Newsweek*, September 8, 1980, Paul Samuelson said "monetary policies must bring down real rates of interest to clear the market for investments." Samuelson favored "austere taxing policies" as an alternative to monetary restraint. Writing in the *Washington Post* on January 10, 1982, Robert Solow and James Tobin proclaimed that "it would be healthy to achieve whatever deflationary pressure is desirable with a mix of easier monetary policy and tighter fiscal policy."

Orthodox economists, left and right, vehemently denied that Mundell's policy mix would work. They first claimed that temporary budget deficits resulting from the military build-up must be inherently inflationary regardless of monetary policy. Some described supply-siders as "inflationists," simply because we advocated explicit price targets for the Fed and denied *fiscal* explanations of inflation. Yet fiscal explanations of inflation should have lost credibility as soon as consumer price inflation dropped from 13.5% in 1980 to 3.2% in 1983, while the deficit more than doubled (to 6% of GDP).

Fiscalists eventually stopped arguing that budget deficits were inflationary, and switched to arguing that they instead cause "unsustainable" trade deficits. That trendy "twin deficits" fable soon proved unsustainable. The U.S. current account deficit grew huge in the late 1990s as the budget moved into surplus, while Japan's trade surplus grew larger as its budget deficit exploded. The ever-flexible fiscalists then did a complete flip-flop and argued that budget surpluses are *stimulative*. By early 2000, Treasury Secretary Summers was arguing that if the Treasury had run larger budget deficits in recent years, then businesses would have bought more Treasury bills instead of computers.

Although fiscal solutions to inflation always failed, and monetary solutions always worked, the old Keynesian policy mix nevertheless became the principal rationale for increasing marginal tax rates on pensioners and relatively productive two-earner couples in 1993. Although higher tax rates were clearly harmful to *real* growth (productivity growth slowed to only 0.8% a year in 1993-95), the seductive promise of 1993-94 was that higher tax rates would let the Fed lower real interest rates.

Real Rates Reflect Real Returns

Real GDP grew by 3.6% a year from 1983 to 1999 -- a full percentage point higher than the 1970-82 average. Tax policy is still much better than it was in the seventies, but monetary policy has also greatly improved. Fed officials have sometimes *said* the wrong things, fretting about real growth or stock prices, but they have come close to *doing* the right thing.

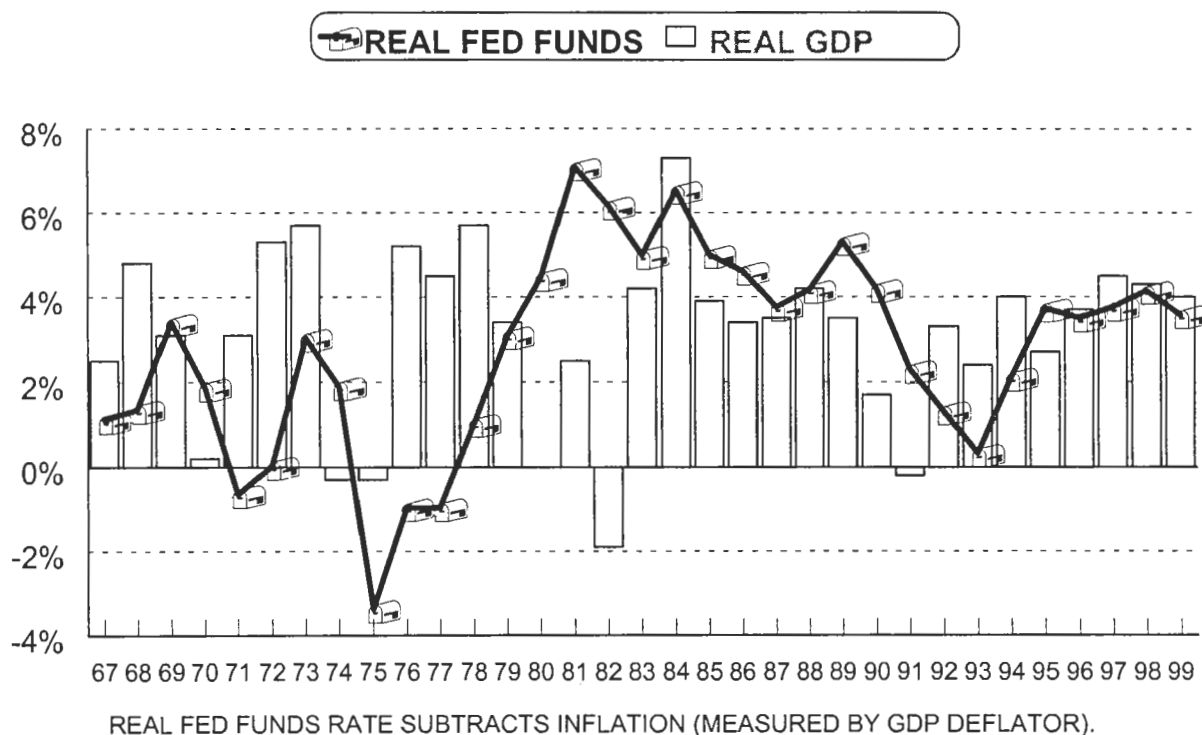
As **Figure 4** shows, the fed funds rate has generally remained comfortably above the inflation rate since 1984, except in 1993, and movements in the real funds rate have been *relatively* restrained. By contrast, the Fed was *hyper-reactive* in the past -- pushing the real funds rate way down in 1971 as a belated response to recession in 1970, then repeating an extreme version of the same mistake in 1975. Swinging from one extreme to the other, the Volcker Fed pushed the funds rate more than six percentage points above the inflation rate in 1982 and 1984, which fostered liquidation of raw materials and foreign assets, pushing the dollar up and dollar commodity prices down.

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Figure 4 reveals another huge factual inconvenience for the Keynesian policy mix. The whole point of trading higher tax rates for easy money was that lowering the *real* funds rate was supposed to be very

Figure 4

THE "REAL" FED FUNDS RATE AND REAL GDP GROWTH



beneficial for investment and real GDP. Yet **Figure 4** shows that *the real funds rate has been relatively high while the economy was growing most vigorously, and very low (or negative) when the economy was in or near recession.*

When real rates were kept quite high from 1983 to 1989, this was widely blamed on the alleged supply-side mix of "tight" money and budget deficits (actually the rise and subsequent fall of deficits had to do with defense policy, not with economic policy advice). Keynesians repeatedly promised that smaller deficits would allow the Fed to push *real* rates much lower, presumably pushing real growth even higher than the awesome 4.3% average of 1983-89.

⁹ Alan Reynolds, "The Fed Flirts With Deflation," *The Wall Street Journal*, July 12, 1984.

In February 1994, *The Economic Report of the President* claimed that, “With credible deficit reduction, the Federal Reserve will be able to achieve a given level of nominal demand with a less restrictive monetary policy. This shift in the policy mix should reduce future real short-term interest rates.”

Evidently, the 1994 Clinton Administration did not yet regard “credible deficit reduction” as a stimulus to technological investment, but rather as an alternative to monetary restraint. In reality, the funds rate was doubled in little more than a year — rising from 3% in January 1994 to 6% by March 1995 — making a mockery of the government’s “policy mix” forecast. In 1996-99, when the economy resumed growing at decent pace, the *real* fed funds rate was back up to about 4%. But the higher real rates of 1996-99 could no longer be blamed on some unproven theoretical link between budget deficits and interest rates. In short, *the central promise of the Keynesian policy mix — lower real interest rates from the Fed — proved to be a fraud, and would have been inflationary had it been attempted.* The budget, whether in deficit or surplus, never had anything to do with how high or low the Fed sets the funds rate in relation to inflation and/or real growth.

The central promise of the policy mix fable in the 1994 *Economic Report of the President* — “to reduce future real short-term interest rates” — was not just a bad forecast but also an irresponsible objective. The message of **Figure 4** is that short-term interest rates *cannot* remain low in real terms unless real economic growth is feeble. If the Fed tried to push real rates down through aggressive monetization of debt, regardless whether the budget was in deficit or surplus, that could be accomplished only by pushing inflation up and real GDP down (i.e., by stagflation).

As it turned out, short-term interest rates were relatively *high* in real terms from 1996 to 1999, similar to what they had been from 1986 to 1989. The shift from budget deficits to surpluses in recent years did *not* prevent real rates from being high whenever real GDP growth is high. In both 1983-89 and 1996-99, *real interest rates were high because investment opportunities were attractive and the real return on invested capital was high.* Attractive investment opportunities (not “twin deficits”) also explain why foreign capital flowed *into* the U.S., financing a current account deficit and strong business investment in both periods.

The Fed can push the real interest rate *on cash* very low (as in 1975) or very high (as in 1982). But the Fed cannot push too far in either direction without creating a situation that will soon compel a reversal of policy. Pushing real rates too low in relation to real growth is inflationary, and pushing real rates too high is deflationary.

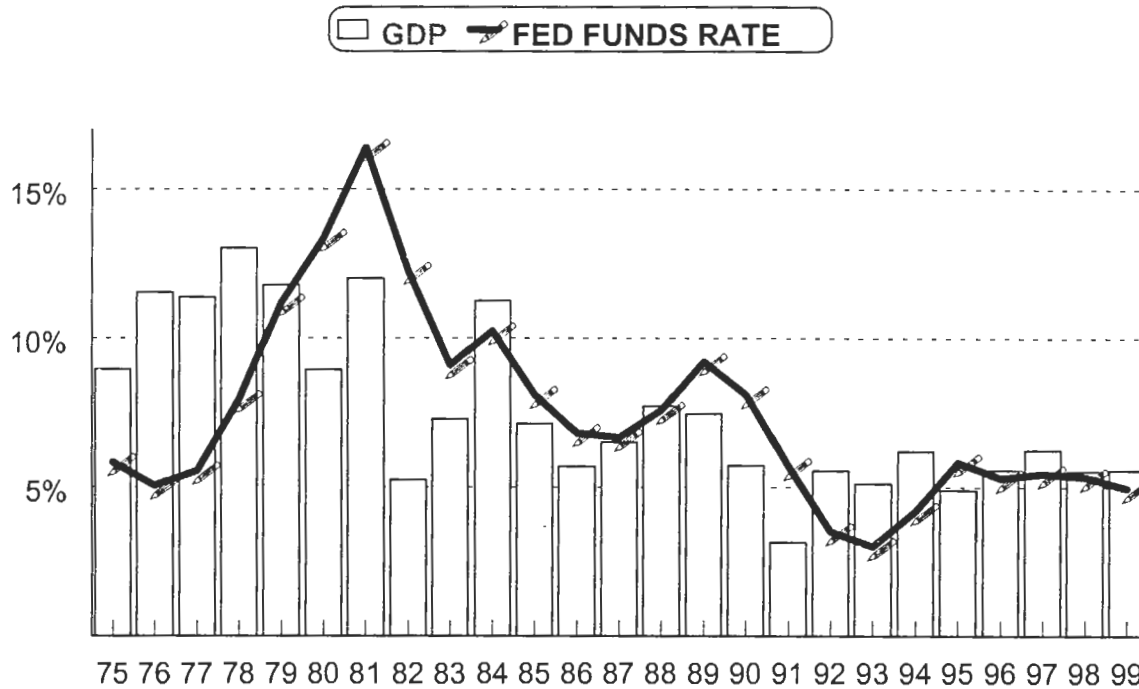
Real growth depends on the quantity and quality of labor and capital, not on the volume of Treasury bills purchased by the Fed. The Fed can only print money. The Fed cannot print machinery, buildings or jobs. The Fed’s job is to avoid gyrations in the value of money. Monetary instability may discourage long-term business investment, but inflationary “ease” cannot improve long-term growth. The only government policies that affect long-term growth are those that reduce tax and regulatory impediments to productive effort, investment and entrepreneurship.

Forecasting the Fed

Figure 4 shows that the “real” funds rate has been fairly closely matched to the real GDP growth rate ever since 1984. The growth of *nominal* GDP adds inflation to real GDP growth. And the nominal (actual) fed funds rate likewise adds inflation to the real funds rate. So it follows as a matter of arithmetic that the federal funds rate has been remarkably similar to the rate of growth of *nominal* GDP since 1984. This close relationship is shown in **Figure 5**.

Figure 5

CHANGE IN NOMINAL GDP AND THE LEVEL OF FED FUNDS RATE



It is unlikely that the FOMC has been consciously linking the funds rate to nominal GDP. What they have probably been doing is watching a variety of statistics that relate to *both* inflation and real growth, and eventually reacting to what appear to be trends over a year or so. It takes some time to distinguish temporary changes from trends (called “recognition lag”), and more time to develop a consensus that action is needed. As a result, it is a commonly acknowledged fact that the Fed is always *reacting to the past*. Anyone who watches the growth of nominal GDP over the past four quarters can come very close to predicting what the Fed will do to the fed funds rate. This is not a criticism. It is better to react slowly to a past that we know than to attempt “preemptive” strikes on the basis of notoriously inaccurate forecasts.

Even using these *annual* figures, it is easy to see that *movements in the funds rate (in 1987, 1989, 1993, and 1995) follow changes in the previous year's GDP*. Such delayed reactions have become so obvious that economists have taken to *using the economy to forecast the Fed*, rather than the other way around. John Taylor of Stanford does this using inflation and the deviation of real GDP from trend (i.e., the real rate is highest when growth is strong and lowest in recession). Robert Barro uses inflation plus job growth. Bennet McCallum advises the Fed to target nominal GDP (inflation plus real growth), which is similar in practice to the Taylor and Barro models for predicting what the Fed actually does. More complicated models may not do a better job than nominal GDP alone. In December 1999, Barro's model “suggests lower rates ahead,” but faster growth of nominal GDP suggested higher rates (which is what happened).¹⁰ The Taylor rule attracted considerable media attention in the fall of 1995, because, as Taylor then put it, “the weakening economy and

¹⁰ Robert J. Barro, “How to Build Your Own Fed Crystal Ball,” *Business Week*, December 6, 1999.

the relatively good news on inflation suggests somewhat more ease is coming.”¹¹ Since the Fed reacts to stale news, the funds rate did dip briefly in early 1996. Yet Taylor’s implied fine-tuning of the real economy was a poor rationale. The “weakening economy” of October 1995 suddenly expanded quite vigorously in the first half of 1996, thanks to commercialization of the Internet and a related investment boom in information technology.

Conclusion

A predictable Fed is surely preferable to a totally *unpredictable* Fed. What **Figures 4 and 5** suggest, however, is that the Fed is partly reacting to old news about where the *real* economy has been in the past, rather than to recent or leading indicators of where *inflation* may be headed in the future.

The Fed’s apparent focus on *nominal* GDP growth, whether explicit or not, contains a residual fascination with limiting *real* GDP growth as well as inflation. This obsession with managing the real economy is evident in the Congressional testimony of Fed officials, which repeatedly express anxiety about the pace of *real* economic activity. Yet as saw in **Figure 3** above, real GDP growth is *inversely* related to inflation. That means *successful* Fed efforts to slow or stop the growth of the real economy must be *inflationary*. And that, in turn, is why nominal GDP is far from an ideal target.

If the Fed attempted to maintain, say, a 5% growth rate for nominal GDP under any and all circumstances, that would require that inflation rise in recessions and fall in booms. If real growth was zero and nominal GDP rose by 5%, then inflation must be 5%. If real growth was 7% (as in 1984) and nominal GDP were still limited to 5%, then prices would have to *fall* by 2%. As a matter of recent history, inflation *has* been highest in recessions, including recessions thought to have been engineered by the Fed. Yet it would be peculiar to *institutionalize* inflation during recessions as a matter of deliberate policy. If consumers and companies came to expect the Fed to inflate whenever *real* GDP slowed (in order to hit a nominal GDP target), they would acquire a perverse incentive to time most purchases during periods of strong economic growth, when prices were stable.

There is no question that monetary policy has been enormously improved since 1983-84. The Fed has become far less erratic and capricious than it was in 1969-82, far more gradualist and cautious. Keeping inflation down over the long haul has had a much higher priority than it did in the past, when the Fed invariably “eased” dramatically after making only minor cyclical inroads into inflation. There is much greater understanding today, at least among younger economists, that monetary stability is a task that can *only* be accomplished by monetary policy, and that too many Fed goals (for real growth, wages or stock prices) are a dangerous distraction at best.

In practice, the Fed appears to have been acting as if it were targeting previous growth of *nominal* GDP — that is, the growth of *real* GDP plus inflation. Even this is an improvement, since Keynesian advice to the Fed had once been to focus *entirely* on real GDP, treating inflation as an unavoidable byproduct of rapid growth. The seventies showed what happened when we try using the Fed to fine-tune *real* growth, assigning inflation to such destructive gimmicks as surtaxes and price controls. Today, the Fed has it at least half right, because inflation can be the most variable component of nominal GDP.

¹¹ “The Taylor Rule for Predicting the Fed,” *International Economy*, September/October 1995. Also, “How Low Should Rates Be?” *Business Week*, October 9, 1995.

The Federal Reserve has never had a remotely clear mandate about what it is expected to accomplish, and therefore never been accountable for failure. Lacking any guidance from the public and its elected representatives, the Fed has sometimes paid excessive attention to irrelevant indicators (stock prices and unemployment) and used a potentially misleading instrument (the fed funds rate) to aim at inappropriate targets (last year's growth of *real* GDP). What the Fed needs is fewer and simpler targets. The pace of real GDP, in particular, is best left to the private sector, responding to incentives that are distorted as little as possible by taxes and regulation. The Fed's only legitimate task is to protect the value of its own product, Federal Reserve notes.

Several other countries have enacted explicit inflation targets (usually at 2% or less) for which their central banks are held accountable. Such inflation targets began in New Zealand in 1989, followed by Canada in 1991, Britain in 1992, Sweden and Finland in 1993, and later by other countries such as Israel, Spain, Australia.¹² The once-heretical "price rule" advocated by a handful of supply-side economists has now been put into practice for quite a while, with an impressive track record so far. The Fed ought to welcome such a Congressional mandate to stabilize the purchasing power of the dollar.¹³ Such a mandate could insulate the central bank from future political pressure to "reflate" too aggressively (as in 1971 and 1975) at the first sign of economic trouble, whether real or imagined.

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¹² Ben S. Bernanke, Frederic S. Mishkin, *et. al.*, *Inflation Targeting: Lessons from the Intl Experience*, Princeton University Press, 1999.

¹³ Editor's Note: Senator Connie Mack introduced legislation (S. 1492) in 1999 to require the Board of Governors of the Federal Reserve System, when establishing monetary policy, to focus on price stability.