

Macroeconomic Policy Under Structural Change

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The U.S. economy is undergoing important structural changes. Some of these are the continuation of long-standing trends. Others started after the discontinuity in the evolution of the economy that seems to have occurred around 1973. Even others started at the end of the 1970s. No doubt other important changes will occur in the next few years whose character we can't even guess today.

Monetary and fiscal policies must be formulated with structural change in mind. Economists have been good at deriving optimal macro policies for laboratory economies with known, unchanging structures, but their advice for the U.S. economy has been deficient. To take a simple example, most economists in the 1960s subscribed to the proposition that monetary and fiscal policy should turn expansionary when the economy is noticeably below full employment. Of what value was this advice in late 1974, when unemployment jumped but inflation was still raging?

This paper starts with a catalog of structural changes that have occurred recently in the U.S. economy, with emphasis on the changes that have most complicated the task of formulating macro policy. I draw attention to the problem that in practice we cannot make a sharp distinction between cyclical and structural change. For example, the slowdown in productivity since 1973 and a number of other phenomena may have resulted in part from the slack conditions that have prevailed since then. In a sense, the entire past decade has looked like a prolonged recession.

The paper argues that macro policy ought to be conducted with highly specific, quantitative goals. Congress should set the goals, and the executive should be responsible for **carrying** out a policy to

achieve them. Structural change much complicates the choice of goals. I make the case that the goals of policy cannot be stated in terms of output, unemployment, inflation, or interest rates, because all of these are so strongly influenced by current and possible future changes.

For monetary policy, I think the policy rule whose performance would be most satisfactory in the presence of structural change is to manipulate the portfolio of the Federal Reserve as necessary to keep nominal GNP on a prescribed growth path. I join numerous other economists in making this suggestion.

For fiscal policy, I point out the vulnerability of the current tax system to changes in interest rates and the rate of inflation. The system is generally biased against capital formation, but certain types of investment — those eligible for high leveraging in tax shelters — are actually subsidized. The change toward higher interest rates over the past few years has exacerbated this problem. A complete tax reform involving the elimination of the corporate and personal income taxes and their replacement by a broad-based, low-rate consumption tax would solve the problems of anti-capital bias and sensitivity to economic change.

Throughout, I stress the implications of the growing integration of the U.S. economy with the rest of the world. A more open economy has increased the influence of monetary policy on economic activity and decreased the influence of fiscal policy. I examine the question of whether growing integration has made it desirable for the U.S. to coordinate its policies with those of its major allies. My answer is basically negative. U.S. policy has been a major destabilizing element in the world economy for the past 20 years. The biggest contribution the U.S. could make would be the adoption of stable policies, with monetary policy keeping nominal GNP on a predetermined path or keeping prices on target in the long run, and fiscal policy keeping the deficit at reasonable levels. The U.S. should encourage other nations to adopt similar policies. It is not desirable for the U.S. to alter its policy goals in response to events in the rest of the world.

Structural changes in the U.S. economy with macro consequences

Of the many changes occurring in American life, certain ones have particular importance for the conduct of macroeconomic policy. The

ones I want to discuss are:

- The declining role of the goods-producing sector.
- The rising importance of foreign trade and the increasing integration of world capital markets.
- The rising fraction of the population that is retired or disabled, and the consequent increase in the share of national income going to their support.
- The reduction in productivity growth.
- The rising fraction of national income devoted to consumption.
- The decline in federal revenue as a fraction of national income and the consequent federal deficit.
- Deregulation of the financial sector.
- Declining inflation.
- High interest rates.

Some of these are long-standing, fundamental trends in the economy — the decline in goods production, the rise in foreign trade, and the growth of the dependent population. Others are more recent developments and less well understood — declining productivity, falling saving, and high interest rates. Yet others can be traced to recent deliberate changes in national policy — declining federal revenue, financial deregulation, and declining inflation.

It will be worthwhile for the discussion of macro policy in the face of these developments to lay out some of the facts about the changes in the U.S. economy.

The declining role of the goods-producing sector

The production of goods accounts for a steadily declining fraction of U.S. economic activity. Distribution and marketing of goods and the production and delivery of services are the growing parts of the economy. Chart 1 shows the decline in the fraction of GNP originating in manufacturing, which is the major goods-producing industry.

Because goods production is more unstable than other types of activity, the trend away from goods has simplified macroeconomic policymaking. A sharp cyclical contraction in goods production, which is typical of most recessions, has a smaller total impact on the economy today than it did in past decades. In particular, goods pro-

CHART 1

The fraction of GNP originating in manufacturing has declined from about 30 percent in the early 1950s to 22 percent

Manufacturing as a percentage of GNP

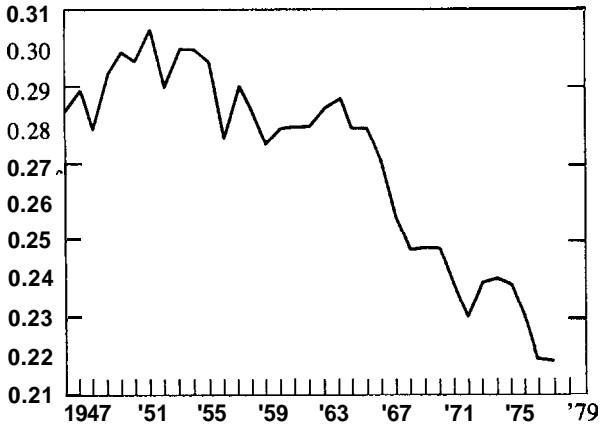


CHART 2

Exports have risen as a fraction of GNP from about 6 percent to around 12 percent

Exports as a percentage of GNP

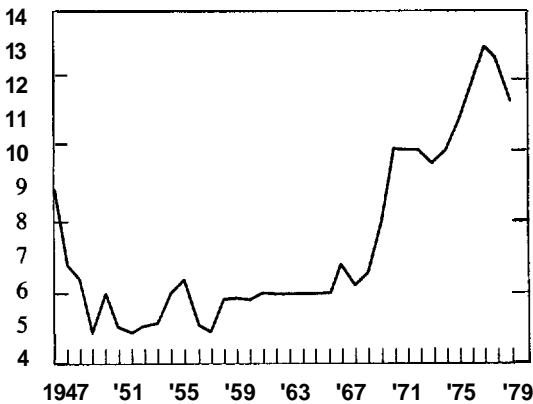
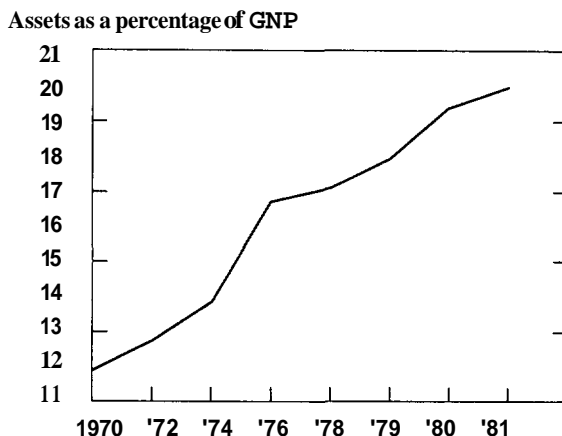


CHART 3
U.S. ownership of foreign assets rose relative to GNP from 12 percent of GNP in 1970 to 20 percent in 1981



duction is more sensitive to interest rates than are other components of total output. Today's economy can tolerate financial gyrations more calmly than before.

Rising trade and integration of world capital markets

Another important long-standing trend is toward greater participation in the world economy. First, trade in goods and services is growing relative to GNP. Chart 2 shows exports as a fraction of GNP.

U.S. investors are also more deeply involved in the economy of the rest of the world. U.S. ownership of claims on foreign businesses and governments have risen dramatically relative to GNP. Chart 3 shows foreign assets held by Americans as a fraction of U.S. GNP.

Increasing openness of the U.S. economy has a number of important implications for macro policy. For monetary policy, it enhances the effects of policy changes on real activity and the price level. When monetary contraction raises U.S. interest rates, the dollar appreciates in order to limit the flow of foreign funds into the U.S. credit market. A higher value of the dollar means a lower dollar price of imports. The U.S. price level responds quickly to monetary policy through this channel, whereas the response of domestic prices to

monetary contraction is sluggish. Further, a lower price of imports diverts demand from U.S.-produced goods to foreign goods, in both U.S. and overseas markets. Aggregate demand falls when the dollar appreciates. The influence of monetary policy on aggregate economic activity is strengthened as a result. The effects through the international value of the dollar augment the direct effects through interest rates on investment and consumer durable spending.

On the other hand, fiscal policy becomes less potent as an economy becomes more open. An expansionary policy of deficit spending contributes to aggregate demand in other countries and correspondingly less to U.S. aggregate demand. Further, deficits raise U.S. interest rates, causing dollar appreciation and contraction in economic activity. Policies of deficit spending are still expansionary in an open economy, but less so than in a closed economy.

Increasing openness has altered macro policymaking in another important way. Whatever steps the U.S. takes to control its economy have important repercussions everywhere else in the world. When the U.S. raises its interest rates to try to control inflation, interest rates are pushed upward everywhere else as well, and economic activity is altered. The U.S. has become keenly aware of its role as the interest-rate setter for the entire world. Political pressure from its major allies produces a distinct limitation on its choice of macro policy.

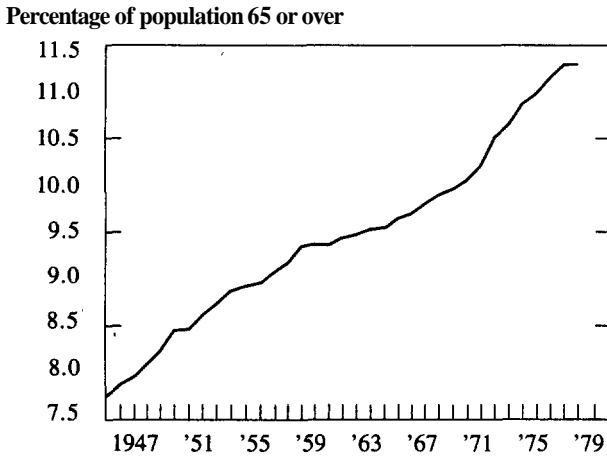
The rising dependent population

A third major trend in the U.S. economy is the growing fraction of the adult population dependent on support from outside the immediate family. As medical advances have dramatically reduced mortality from heart disease and cancer, many more people are surviving for many years without being able to support themselves through work. Diabetes, arthritis, and other disabling conditions are replacing the fatal diseases of the past as the major medical problem of the U.S. population. By some estimates, the number of disabled individuals below retirement age has tripled in the past two decades. Chart 4 shows one simple indicator of the growth of the dependent population, the fraction of the population aged 65 or over.

The U.S. public has shown overwhelming support for a government rather than a family solution to the problem of supporting a much larger non-working adult population. Most of the steady upward trend in the government's share of national income comes

CHART 4

The fraction of the population aged 65 or over has risen from below 8 percent to over 11 percent in the postwar period. It is projected to continue rising



from the Social Security programs that support the disabled and retired. **Because** the trend toward a larger dependent population will continue in the coming decades, macro policy must be combined with a long-term solution to the problem of providing the revenue to pay for Social Security. Each year, tax increases will be required to keep up with the growth of dependency; in years of recession, the need for long-run tax increases will have to be balanced against need for the stimulus from tax cuts.

The drop in productivity growth

The 1950s and '60s saw steady improvement in output per worker in the U.S. economy. Since the early 1970s, productivity growth has proceeded more slowly. Chart 5 shows the slowdown since-1955. The reasons for the decline in productivity growth have so far escaped good economic explanation, so there is no widespread agreement on policies for restoring higher growth. Fluctuations in productivity growth from one decade to the next have been common in U.S. history. Macro policy needs to be formulated so as to deal with uncertainty in future productivity growth. It would be a mistake, for example, to set a goal for growth in real output. Even if we can specify rea-

CHART 5

Productivity growth measured at annual rates over 5-year periods has declined from rates around 3 percent before 1970 to rates of 1-2 percent since 1970

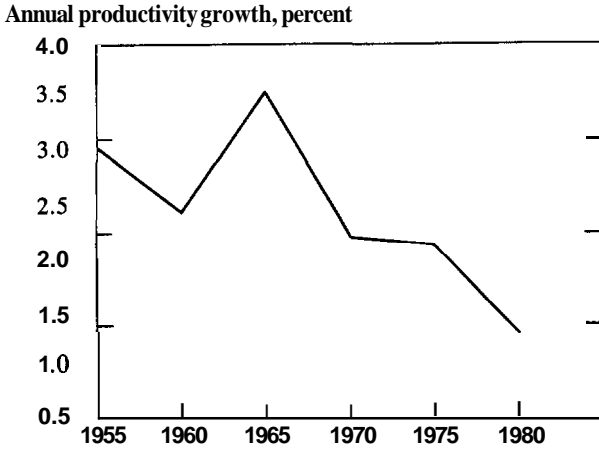
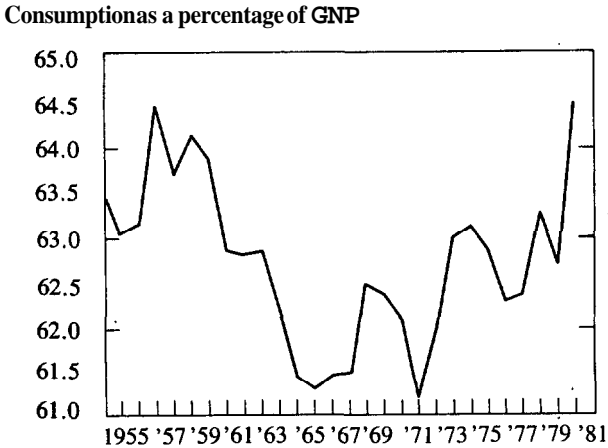


CHART 6

As a fraction of GNP, consumption has risen from its low of just over 61 percent in 1972 to a high of over 64 percent



sonable targets for growth in labor and capital inputs, we cannot predict how much output will or should be produced from the inputs.

Rising consumption relative to GNP

Over the past ten years, the U.S. economy has devoted an increasing share of its output to consumption. Figure 6 shows consumption as a fraction of GNP.

The proportion of GNP going to government purchases of goods and services (not counting income transfers) and to net exports has been almost exactly constant over the same period. All of the increase in consumption has come from declining capital formation.

The tilt toward consumption and against saving has been the subject of a good deal of attention. Many economists and policymakers have called for corrective policy in the form of a forthright consumption tax or added investment and savings incentives that would make the income tax more like a consumption tax. The tax legislation of 1981 added a number of incentives for capital formation and saving.

The recent decline in federal revenue

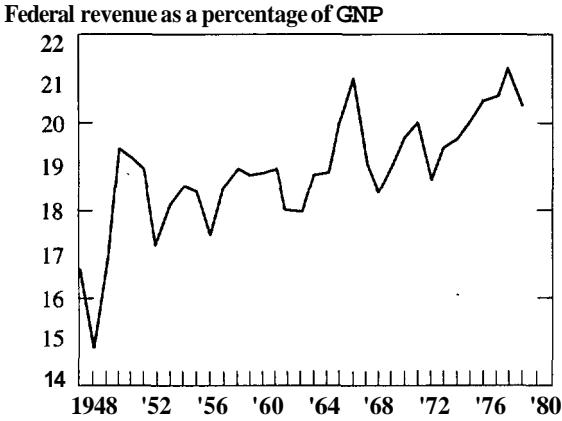
As Chart 7 shows, federal revenue generally grew as a fraction of GNP during the postwar period. The growth in requirements for federal income support programs more than exhausted the growth in revenue over the period. As mentioned above, the government's own use of resources in the form of purchases of goods and services did not grow at all relative to GNP.

Chart 7 shows that federal revenue declined in 1982 relative to GNP, a direct result of the tax cuts enacted in 1981. The tax cut came at a time of rapid increases in total government spending, for income support and other purposes. Even though the tax cut was modest by historical standards, it produced a substantial federal deficit. No more than half the deficit can be attributed to the recession of 1982—the rest is permanent in the sense that federal revenues would not pay for total federal spending even at full employment.

The struggle to eliminate the permanent part of the deficit will dominate fiscal policy in the coming years. Two intellectual forces favor policies of low taxes: concern about the restrictive effect of higher taxes on aggregate demand, which will continue for several years, until the economy reaches full employment, and concern about the adverse incentive effects of higher tax rates. On the other hand, there is almost complete agreement that, sooner or later, the

CHART 7

In relation to **GNP**, federal revenue has grown from about 18 percent to about 20 percent since the 1950s



government must start paying its bills in full. Deficits at current levels cannot be sustained forever.

Financial deregulation

Major legislation enacted in 1980 has brought profound change to U.S. financial institutions. The changes have been most important for narrow concepts of the money stock. Longstanding prohibitions against paying interest on checking accounts have been almost completely eliminated. The sharp distinction between money and other forms for holding wealth has virtually disappeared. Though these changes are desirable from the point of view of economic efficiency, they have created confusion about the conduct of monetary policy. The doctrine that the money stock should be kept on a smooth growth path, which has some appeal in an economy with an unchanging financial structure, has proven unworkable during the period of deregulation.

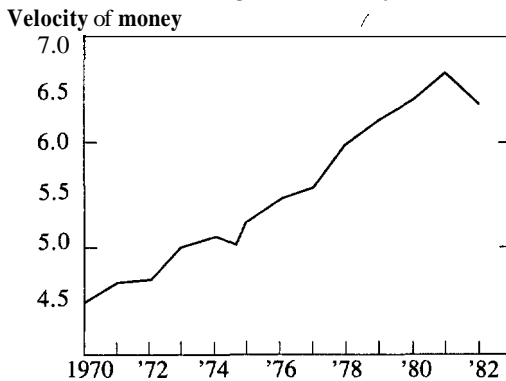
Chart 8 shows the velocity of the narrow monetary aggregate, M1 comprising currency and checking accounts. Until 1982, velocity grew along a reasonably predictable path — each year, a somewhat larger volume of transactions was mediated by each dollar. In 1982, the situation changed abruptly. The public suddenly held more cash per dollar of income than in 1981, a reversal of the earlier trend. A massive switch into interest-bearing checking accounts was part of the change. Another part, less predictable under the circumstances,

was an increase in the public's holdings of currency.

The process of adjustment to deregulation is far from complete. We can expect further shifts in monetary aggregates, and not just in the narrow money stock. Banks have recently acquired the right to offer federally guaranteed savings accounts paying market rates. These accounts are exempt from reserve requirements. Potentially they could draw funds from many other types of investments into banks. If so, the broader aggregates that include savings accounts will shift upward relative to GNP.

CHART 8

Velocity grew smoothly from a level of about \$4.50 of GNP per dollar of money in 1970 to over \$6.50 in 1981, before falling dramatically in 1982



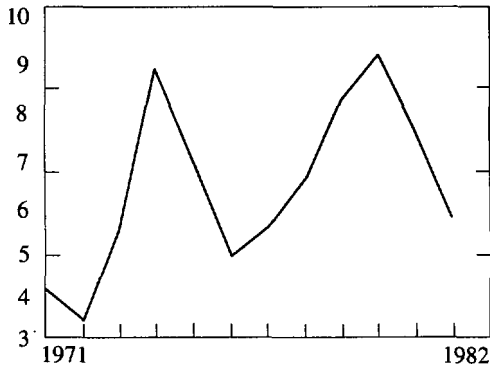
Declining inflation

Inflation reached its recent peak in 1980 and has declined substantially since then. Chart 9 gives the data for the most reliable single measure of inflation, the implicit deflator for consumption. As the graph makes clear, inflation in the past decade was closely related to the two jumps in world oil prices in 1973-74 and 1979-80. Though the aggressive anti-inflation policy of the past two years has made an important contribution to declining inflation, stabilization of oil prices has probably been even more important. It is safe to predict that inflation will continue to fluctuate in response to outside forces; it is far from being directly controlled by monetary policy. The design of macro policy should keep in mind the likelihood of favorable and unfavorable developments in world commodity markets.

CHART 9

The rate of inflation, as measured by the annual change in the deflator for consumption, peaked at close to 10 percent in 1980 and fell to 6 percent in 1982; a further decline in inflation is likely in 1983 and later years

Rate of inflation, percent per year



High interest rates

High interest rates have been one of the most conspicuous features of the U.S. economy in the past few years. Interest rates remained unusually high throughout the period of slack of the recessions of 1980 and 1981-82. The anomaly is particularly evident if interest rates are corrected for inflation. The real interest rate, measured as the nominal rate on commercial paper less the rate of increase in the consumption deflator, is shown in Chart 10.

The interaction of structural and cyclical change

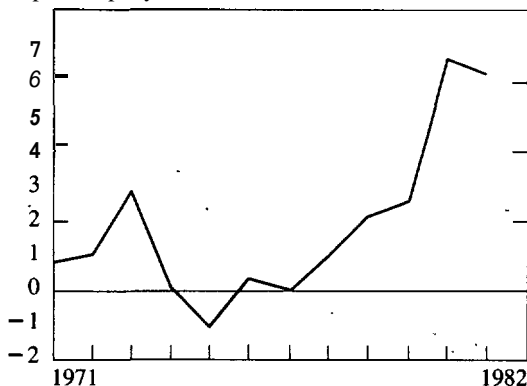
Many discussions of macroeconomic policy make a clean separation between cyclical phenomena and structural change. The most extreme manifestation of this view appears in econometric models of the U.S. economy. In those models, structural change is portrayed as time trends in many equations and, occasionally, as time trends in coefficients. The model expresses certainty about the current structure of the economy and about its future structure.

Within an econometric model, we can be quite specific in defining the state of full employment. Departures from full employment represent the operation of the business cycle. Designing an optimal macro policy in this setup is straightforward once we have agreed on the weights to be assigned to the objectives of full employment and

CHART 10

The real interest rate averaged around one percent per year in the 1970s, and in 1981 and 1982 it rose to above 6 percent

Real interest rate, percent per year



Note: The real rate is computed as the nominal rate on prime commercial paper less the rate of increase of the consumption deflator.

price stability. Given the weights and the model, the computer can grind out the optimal settings of the instruments of monetary and fiscal policy.

Exercises of this kind are still carried out by the proprietors of econometric models, but the events of the past decade have made clear the extreme limitations of the approach. The plain truth is that we don't know the current structure of the economy, and we know even less about the changes in the structure of the economy.

The issue of separating cyclical and structural change is important because there is an influential body of opinion holding that much of what appears to be structural change over the past decade is really just a prolonged cyclical slump. Going with this diagnosis is a policy recommendation: What the **U.S.** economy needs for rejuvenation is no more than a good strong dose of stimulus.

A number of the items in my list of apparent structural changes may fit into this view. Productivity growth has always tended to be weak during slumps. **Consumption** has tended to be high and saving low during slumps. And, of course, the high unemployment of the past decade fits in well with this view.

The targets of monetary and fiscal policy

Macroeconomic policy in a democracy requires the clear statement

of targets. Under the U.S. Constitution, Congress establishes the goals of policy and the executive branch carries out the steps necessary to achieve the goals. But structural change in the economy requires great care in choosing the goals. Under the right choice, Congress can hold the executive branch strictly accountable for macro policy. When the economy is off target, the executive is plainly at fault.

So far, Congress has failed to set the right kind of goal for macro policy. A number of laws stating broad goals are on the books, including most recently the Humphrey-Hawkins Act, but their goals are wishful thinking. Low unemployment rates and low rates of inflation are simultaneously invoked. The president escapes accountability because everyone recognizes that the **goals** are unrealistic.

Making the goals specific and attainable is not enough, however. Congress has considered legislation on several occasions to require a strict money growth rule. But events of the past two years have shown that such legislation would never stick. When an inappropriate policy rule like fixed money growth gets into trouble, as it did in 1982, the rule will be broken. Fixed money growth is not tenable under conditions of rapid structural change.

I want to stress the importance of continuing to seek a good policy rule in spite of the bad examples of Humphrey-Hawkins and fixed money growth. The U.S. economy operated without any consistent macro policy rule over the past two decades, and the result was completely unacceptable — far too much expansionary policy early in the period and a decade of contraction and recession afterwards to try to get back on track. The economy today resembles the economy of the early 1960s in combining low inflation with excess slack. At all costs, we must avoid repeating the excess expansion and long contraction that followed the early 1960s. Establishing a reasonable policy rule to which the executive can be held strictly accountable year by year seems the best hope for continuing stability.

Structural change in the U.S. economy precludes stating the goals of macro policy in terms of many of the measures of economic performance that suggest themselves. It is worthwhile going over the list and spelling out the reasons why output, unemployment, inflation, and interest rates are ruled out as ways to express the goals of macro policy. Many past and current discussions of the conduct of macro policy have advocated goals based on these variables without coming to grips with the problem of structural change. Goals that have to be

revised every year or two because the economy has changed will not function as goals at all.

Output goals. Congress could require that output grow 3 percent per year. If output growth fell short of or exceeded the goal, the president and the chairman of the Fed would be required to take immediate remedial action. But we cannot know in advance that the economy is capable of growing 3 percent year after year. If productivity grows only 1 percent per year, and the labor force grows 1 percent, it is asking the impossible for output to grow 3 percent. Macro policy might be able to attain the extra growth by superheating the economy for a few years, but ultimately the attempt would collapse in an inflationary explosion. This argument against a real as against nominal target for macro policy was made effectively by **Milton Friedman** in 1967 and has held up well ever since.

A more subtle output target would call for output to grow at its potential rate. The president and the chairman of the Fed would figure out how much productivity and the labor force were going to grow and then adjust policy so as to achieve that rate of output growth. In practice, this would amount to no policy at all. The executive would announce productivity and output projections at the level needed to validate whatever policy they wanted.

Unemployment. It is commonplace to state the goal of macro policy as full employment. In terms of statistical measures of economic performance, this inevitably becomes a quantitative target for the unemployment rate. Targets of 3, 5, or even 7 percent have been proposed. Compared to an output target, an unemployment target does have the advantage of eliminating guessing about productivity and labor force growth. With an unemployment target, unexpectedly low productivity growth or low labor force growth will automatically bring lower output growth without any modification in the unemployment target. But unemployment is subject to structural change itself. A recent paper by James **Medoff** has documented an important upward shift in unemployment relative to all other indicators of conditions in the labor market. Such a shift absolutely requires an increase in the unemployment target, else the same type of inflationary explosion could occur as in the case of an over-ambitious output goal. Or, on the other side, a decision to try to hold the unemployment rate at too high a level could bring accelerating deflation in the longer run. A fixed goal for the unemployment rate is simply untenable. Modifications in the goal are necessary as new information

becomes available, but once modifications are permitted, the goal becomes meaningless.

Inflation. A rate of inflation of no more than a few percent per year is the second major goal of macro policy as conventionally expressed. A number of economists have proposed elevating the inflation goal to a precise standard to **which** the executive should be held strictly accountable. There is a good deal of agreement about the desirability of price stability in the longer run. The public would be in a far better position to make lifetime **financial plans** if the purchasing power of the dollar were reasonably certain over the next 30 or 40 years. The most severe distortion from inflation comes from the confusion it creates for financial planning. When inflationary expectations are high, for example, the apparent return from bonds, annuities, and other assets whose returns are fixed over time at the same dollar level is overstated. Chronic inflation severely inhibits the stock market as an allocator of credit, as a result.

Setting a strict goal of zero inflation each year is not the way to achieve long-run price stability, however. As we learned in the **1970s**, a burst of inflation can hit the U.S. economy from world commodity **markets**. Because wages in the U.S. are not very flexible from one year to the next, the overall price level jumps upward when the price of an important raw material jumps. When macro policy reacts only cautiously, as in **1974 and 1979**, inflation can be severe. Moreover, real activity declines as the price level rises. At its most basic level, the reason for the decline in output and employment is the following. Macro policy controls nominal GNP. If policy is held constant and an outside event raises the U.S. price level, U.S. output must fall in proportion to the increase in prices in order to hold nominal GNP constant.

If macro policy were guided by the principle of year-by-year price stability, it would have to turn sharply contractionary in the face of an increase in world raw materials **prices**. **Policy** would be exacerbating the contractionary effects of the price increases themselves. The recessions set off by the two oil price shocks of the 1970s would have been far deeper under a policy of zero inflation each year.

A "price rule" would have an adverse effect in the happy event of a decline in raw materials prices as well. As the U.S. price level fell, policy would be required to be expansionary to try to keep inflation up to the target rate of zero. A situation of over-full employment could result.

Achieving the important goal of price stability from one decade to the next requires a more subtle statement to policy makers than simply to do what is required to keep the price level constant each year. I will return to this topic in the next section.

Interest rates. Friedman's case against policy rules based on interest rates looks far stronger today than it did in 1967. We are not capable of specifying a target for either nominal or real interest rates. If we pick a target that is too low, and try to keep rates at that level through monetary expansion, we risk an inflationary explosion. As with other ill-chosen policies, we will probably abandon the policy before it brings catastrophe. Still, given the strong interest of **politicians today** in imposing an interest-rate rule on the Fed, economists should be vocal in pointing out the consequences of such a rule.

The spectacular rise in nominal and real interest rates since the late 1970s has escaped an explanation that is widely accepted among economists. Some would attribute high interest rates primarily to contractionary monetary policy. As a matter of macroeconomic theory, this opinion is on firm ground in that the standard IS-LM model does predict that a leftward shift of the LM curve raises interest rates and lowers real activity, and these are two major changes that have occurred over the period.

Many economists, **especially** those most widely quoted in the financial press, have stressed the role of fiscal policy in bringing high interest rates. Huge federal deficits have coincided with high interest rates. But macro theory implies that when the government adds to aggregate demand by spending in excess of revenue, it *stimulates* real activity at the same time that it raises interest rates. The deficit theory of high interest rates needs to come up with some explanation for the low levels of real activity of the period of high interest rates.

It remains entirely possible that high interest rates reflect a deeper structural change in the U.S. or the world economy and are not just the outcome of changes in monetary and fiscal policy. Some of the other important changes noted at the beginning of the paper, especially the decline in saving, may be related.

Because we are still in the dark about the causes of high interest rates in recent years (or, for that matter, low interest rates in earlier years), we are not in a position to state a policy goal in terms of interest rates. I do not mean to say that interest rates can never have a role in good macro policy making, but rather that the final goal of policy cannot be a particular level of interest rates.

Prescriptions for monetary policy

There is reasonable agreement that the task of monetary policy is to look after the purchasing power of the dollar in the longer run and not interfere excessively with real activity in the shorter run. Today, the Fed is operating with instructions no more precise than these. Its quantitative targets are self-imposed, and the public is fully aware that they will be discarded whenever the Fed decides they are unsuitable.

I find the case compelling for a strict, quantitative policy rule for the Fed. We need a simple criterion for deciding if monetary policy is too contractionary or too expansionary. The criterion needs to be formulated carefully to take account of everything we know about likely structural changes in the economy. It should be simple. It should be related in an obvious way to the goal of long-run price stability. It should make monetary policy roll with the punch in the short run, so that monetary contraction does not amplify other contractionary or expansionary influences on the economy.

I will give an example of a monetary policy rule with good properties. I am not sure it is the best rule, but it would make sense as a permanent statement about the conduct of monetary policy. Under the rule, Congress would always know at a glance where the economy stood relative to the criterion set forth in the rule.

The nominal GNP rule. An idea pushed by a number of economists, recently endorsed, in the Economic Report of the President, states the goals of monetary policy in terms of nominal GNP — the dollar value of U.S. output and the dollar value of total U.S. income. Once and for all, Congress would adopt a target path for nominal GNP. In the future, if nominal GNP were above the path, monetary policy would be judged excessively expansionary and would be required to contract as necessary to bring nominal GNP back to the path. If the economy slipped below the path, monetary expansion would be called for.

Why is it desirable to keep nominal GNP on a prescribed path when it would not be desirable to keep either the price level or real output on a predetermined track? The answer is that targeting nominal GNP is the best compromise between price targeting and real targeting. Price targeting gives a guarantee against inflation, but can bring severe fluctuations in real activity and unemployment. Real targeting can bring unlimited inflation. Nobody has yet come up with a monetary policy that guarantees perfect price stability and a full-

employment economy, especially in the face of important structural change. The best we have available is a "fail-soft" policy — that is, one that guarantees that the situation won't be too bad no matter what happens.

Nominal GNP targeting is a fail-soft policy. With respect to inflation, it does not promise perfectly stable prices, but it does guarantee that we cannot enter a serious inflationary spiral. The inflation of the 1970s and early 1980s could not have occurred under nominal GNP targeting. If a little inflation got started, nominal GNP would exceed its target. The Fed would immediately begin to lean against the inflation. If inflation persisted, contractionary policy would strengthen. Within a year or two, inflation would respond to monetary contraction, just as it responded from 1981 to 1983. Persistent inflation would be impossible. In fact, the policy promises something even better than the absence of inflation in the longer run. If some force perturbs the price level upward, eventually prices will come back down to their original level. A period of inflation will be followed by a period of deflation as necessary to keep the price level approximately stable.

On the real side, nominal GNP targeting is also fail-soft. Again, the policy does not promise that we will never have another recession. It does say that monetary policy will act to offset recessions and prevent them from becoming deep. In a recession, when output falls, nominal GNP falls by at least as much. The value of output falls because output falls, and may fall some more if prices fall as well. Expansionary policy is set in motion automatically during a recession if a nominal GNP target is in effect.

Prescriptions for fiscal policy

In discussing fiscal policy, I will assume that a monetary policy of the type just discussed is in place — the Fed is looking after the price level in the long run in a way that is not disruptive to real activity in the short run. Fiscal policy has three tasks in such an economy:

- Raising the revenue necessary to pay for government programs.
- Influencing the mix of output between investment and consumption.
- Possibly offsetting fluctuations in employment and output.

Raising revenue

It is absolutely essential that the government be on a long-run path

where revenue is close enough to spending that the accumulation of debt is proceeding no more rapidly than is the growth of the economy. If the public and the world perceive that chronic deficits are above that level, market valuation of the government's debt will decline. Moreover, the market value of the dollar will decline as well or, to put it the other way around, inflation will become severe. History has recorded the collapse of a number of weak governments under conditions of excess deficits.

Though the growth of the U.S. government debt has exceeded the growth of the economy in recent years, the world has not shown any signs of lack of confidence in its soundness. U.S. debt sells at record premiums over other types of debt, and the dollar is exceptionally strong abroad and losing value at home at a far slower rate than in earlier years. The people who count are showing no signs of panic over the U.S. government deficit.

Still, in due time it is important that the deficit be reduced somewhat. Government debt is about a trillion dollars currently. Nominal GNP should be growing at about 7 percent per year in the steady state at current rates of inflation. Thus a "structural deficit" of 7 percent of a trillion, or \$70 billion per year, is consistent with keeping the growth of the debt at the same rate as the growth of nominal GNP. Current estimates of the structural deficit are about \$100 billion, so revenue increases or spending cuts of about \$30 billion are needed to bring the deficit down to an acceptable level for the longer run. Moreover, large increases in spending for retirement, disability, and medical benefits are projected over the coming decades for the reasons mentioned in the first section of this paper. Continuing increases in revenue will be necessary to keep the deficit under control.

Consumption versus investment

The tax system influences the allocation of output between investment and saving. The response of U.S. savers to incentives is a matter of controversy among economists. Certainly the high real interest rates of the past few years have not depressed consumption as they would have if saving were highly sensitive to incentives and nothing else had changed in the economy. But in an open economy, investment is not determined by domestic saving alone. Capital flows freely between the U.S. and the rest of the world. If the U.S. taxes the earnings of capital heavily, investment will decline as investors seek better after-tax returns in other countries. At a minimum, fiscal pol-

icy controls the allocation of investment among nations.

Taxation of capital in the U.S. has received much attention in the past few years and important changes in capital taxes were made in **1981**. But capital is still taxed in a remarkably helter-skelter fashion. Some investments are taxed heavily while others are **subsidized** just as heavily. Grossly unequal taxation remains true even though the revenue from the corporate income tax has fallen from **2.7** percent of GNP in **1979** to an estimated **1.1** percent in **1983**. The corporate tax is quickly becoming an economic monster that taxes some activities in order to subsidize others, with little net yield in revenue.

The investments most heavily subsidized by the tax system are those where businesses take full advantage of the deduction for interest permitted under the tax law. An investment **financed largely** with borrowed money, with the investment tax credit and accelerated depreciation, earns its owners a return several times greater than its before-tax earnings. The rest of the after-tax earnings **are tax** benefits. As inflation recedes, the problem of tax subsidies to certain types of investment will worsen, because inflation will no longer diminish the real value of depreciation deductions.

The tax system puts heavy taxes on the earnings of other types of investments. If a corporation makes an investment **financed entirely** from retained earnings, takes the investment credit and accelerated depreciation, and pays out the earnings of the investment as dividends to shareholders who are taxed at the 50 percent personal rate, the effective tax rate from the corporate and personal taxes can be as high as 60 percent.

The existing tax system is sensitive **to** some of the types of structural change listed in the first section of the paper. Rising interest rates have made the system **even more vulnerable** to abuses based on the interest deduction. Falling inflation has helped reduce excessive tax rates in some cases, by boosting the value of depreciation deductions, but simultaneously worsened the subsidies **paid to highly leveraged** shelters. **Increasing** openness of the economy has increased the sensitivity of U.S. investment to U.S. tax laws.

Because leveraged investment is only a small part of total investment, the principal distortion of the tax system has **been** to depress investment below its efficient level. A subsidiary effect has been to divert investment into the areas where high leveraging is feasible. Tax shelters have boomed while total investment has weakened.

Stabilization

The use of fiscal policy for stabilization has been the centerpiece of U.S. macro policy since the Depression. Every recession has seen spending increases to stimulate activity, and since the early 1960s, tax cuts have been an important stabilization tool as well. There remains a question, however, whether fiscal stabilization policy is really a good idea.

In particular, were the U.S. to adopt a stable, sensible rule for monetary policy, so that swings in monetary policy were no longer a source of instability, there would be a strong argument against the use of taxes and spending for stabilization.

There are four elements to the argument against explicit countercyclical fiscal policy:

- Spending is automatically linked to the state of the economy already through unemployment insurance and other programs where payments rise when the economy softens.
- Changes in purchases of goods and services — direct government employment and public works programs — take too long to put into effect.
- Changes in taxation and spending have little influence on total economic activity in an open economy.
- Consumption is not very responsive to temporary changes in taxes.

The automatic stabilizers

The American public is reasonably well insulated against recessions thanks to the many income support programs whose payments rise automatically when the need for them rises: On the average over the postwar period, changes in the real disposable income of the public have been only about half as large as the changes in the real income of the economy. The federal government has absorbed the difference.

Lags in spending programs

In spite of numerous emergency job and public works programs, the postwar history of U.S. government spending reveals no general pattern of increased real purchases of goods and services during recessions. Studies of specific countercyclical job programs have

confirmed the government's inability to crank up programs quickly enough to contribute to aggregate demand before the recovery is well underway. The record is fairly convincing that countercyclical fiscal policy should not include programs of government employment or purchases.

Fiscal policy in an open economy

The more open an economy, the weaker is the relation between domestic aggregate demand and domestic employment and output. The pronounced movement toward greater integration with the rest of the world has diminished the influence of fiscal policy on economic activity in the **U.S.** When the government contributes to aggregate demand by raising its own purchases, or by adding to the incomes of consumers, the extra resources tend to be drawn in from other economies instead of coming from added production in the **U.S.** The exchange rate has an important role in the process. Fiscal stimulus raises **U.S.** interest rates. As a result, the dollar appreciates, imports become cheaper to Americans, and **U.S.** goods become more expensive to the rest of the world.

The ineffectiveness of temporary tax cuts

The administrative difficulties of cranking up countercyclical spending programs have led fiscal stabilization policy to put most of its emphasis on tax cuts to provide stimulus during recessions. The most aggressive tax cut occurred in early **1975**; its net effect was to depress federal revenue by more than a full percentage point of GNP (see Chart 7). The government also attempted to cool off the economy in **1968** with a temporary income tax surcharge amounting to about 2 percent of GNP.

Economists have criticized temporary tax measures on the grounds that consumers are aware that their incomes have changed only temporarily. They adjust their consumption only a fraction of the amount they would if the same income change were known to be permanent. This criticism is well grounded in the theory of consumer behavior. A study of the influence of temporary tax changes by Alan Blinder reached the conclusion that consumers were less responsive to temporary taxes than to permanent changes in income, but still responded reasonably vigorously. A reasonable summary of all the evidence on this point is that there is large uncertainty about the magnitude of the response of consumption to temporary taxes.

Recommendations for fiscal policy under structural change

It seems to me that we should put in place a simple, clean tax system that generates the level of revenue required by federal spending commitments and is robust under structural change. In particular, it should totally eliminate the pattern of excess taxation of some activities and subsidies of others. Further, it should have a uniform pro-investment influence on every consumption-investment choice.

There is widespread agreement that a broad-based consumption tax with low marginal rates would satisfy all of these requirements. In my work with Alvin Rabushka, I have developed a plan for a consumption tax which solves many of the transition problems and overcomes some of the political obstacles to a consumption tax. Our plan involves a flat rate of 19 percent on all consumption, but the flatness of the rate is not essential to the plan. Rather, it is a progressive tax at low rates on all consumption.

The best way to think about the Hall-Rabushka plan is the following: Consider a national sales tax at a uniform rate on all consumption goods. This is a broad-based consumption tax, but it is not progressive. To make it progressive, we first change the administration of the tax from a sales tax to a value-added tax with a deduction for investment. Instead of paying the tax only for their sales to final consumers, businesses pay the tax on all sales. But purchasers of goods for resale get a tax deduction for their purchases, as do purchasers of investment goods. Then we break up the value-added tax into two parts. Businesses pay the tax on the part of value added that is not contributed by their workers — in other words, they receive a tax deduction for wages as well as purchased goods and investment. The workers themselves pay the value added tax on their own earnings. However, to make the system progressive, workers receive a rebate for the taxes they pay on their consumption, up to about \$8,000 in consumption for a family of four. This rebate is subtracted from the payment they make for the value added tax on their own earnings.

Though this system is a thorough-going consumption tax with no compromises, it looks very much like the current tax system with some desirable reforms. Businesses pay a tax that looks like the corporate income tax. There is no deduction for interest payments, but investment receives first-year writeoff. Individuals pay a tax that looks like the personal income tax. There are no deductions for interest or other items except the standard deduction, but there is no tax on interest or dividends. Both tax forms are immensely simpler than

their existing counterparts.

Hall-Rabushka has been severely criticized as inadequately progressive. It is true that switching to a 19 percent rate is on net a good deal for the wealthy, though it will raise taxes for many who are using shelters aggressively today. But a modification of our proposal offers the best hope for a true consumption tax. To make the tax more progressive, the business rate could be raised to, say, 27 percent. Then the wage tax could have two brackets, with marginal rates of 14 and 27 percent. The net effect is to tax consumption at a uniform rate of 27 percent, with a rebate whose magnitude is related to wage earnings. No other consumption tax proposal has gone as far in solving the administrative and political problems as this one.

Because the Social Security system is already a large part of the federal fiscal system, and will become even a larger part in the coming decades, no fiscal reform is complete without inclusion of Social Security financing. I favor the proposal made by Martin Feldstein, Laurence Kotlikoff, and others to split Social Security into two components. One is an **actuarially** fair disability and retirement system, financed by mandatory contributions. These contributions would not be labeled as taxes and would not have the economic distortions of taxes — a dollar of contributions would buy benefits with a present discounted value of a dollar. The redistributive part of Social Security would be financed by the comprehensive federal consumption tax. I see no case for any major reductions in Social Security benefits — the public has made it unambiguously **clear** that it wants benefits at their current level and is willing to pay for those benefits.

Policy coordination with other countries

My discussion has repeatedly emphasized the integration of the U.S. economy with the rest of the world, but it has treated U.S. policy as completely unilateral. U.S. macro policy influences other economies, and their policies influence us. Aren't there advantages **to be** gained from coordinating policies, at least among the big three of the OECD, Germany, Japan, and the U.S.?

If U.S. macro policy continues to be conducted by granting the executive branch wide discretion and relying on their judgements to make good decisions in the light of current circumstances, then policy coordination is a necessity. It would be naive for the U.S. to embark on a policy, for example, whose effect was to raise U.S. interest rates without recognizing that other countries will feel

obliged to copy our policies.

The general approach to macro policy advocated here has quite a different flavor, however. For monetary policy, the top priority is to eliminate swings in **U.S.** policy as a disruptive influence in the world economy, which is clearly what it has been since the 1960s. In its place, we should install a stable policy precommitted to a path for nominal GNP or a long-run target level for **U.S.** prices. Such a policy should not **try** to react to events in the world economy any more than it should react to events in the **U.S.** economy. The type of policy coordination that fits in with this kind of monetary policy is to convince other nations to adopt similar policies of precommitment to a nominal GNP path or price level. Or, especially for smaller countries, a policy of manipulating the monetary instruments as necessary to maintain a fixed exchange rate with the dollar would be a sensible counterpart to the proposed type of policy in the **U.S.**

For fiscal policy, one of the most telling arguments against unilateral **U.S.** action to offset the business cycle is that the openness of the economy vitiates the action. This argument does not apply to concerted action by all the major economies; the world economy is closed. However, it is hard enough to get the **U.S.** political system to act quickly enough to time the stimulus correctly. I see little prospect that a coordinated fiscal program could be launched in the major economies of the world in time to push even in the right direction, much less at the right moment.

Concluding remarks

U.S. monetary and fiscal policy should be precommitted to simple, feasible, quantitative goals. Continuing important structural changes in the economy make it essential to choose the goals carefully. For monetary policy, a goal of keeping nominal GNP on a prescribed growth track or of keeping the price level at a target level in the long run, according to a specific short-run strategy, emerge as good choices. Goals for monetary policy based on concepts of the money stock have been rendered useless by major changes in the financial structure of the **U.S.**

For fiscal policy, we need to eliminate the bias of the system against capital formation and remove provisions which make effective tax rates sensitive to inflation and interest rates. A broad-based consumption tax with low marginal rates would achieve these goals. The level of tax rates should be set in such a way that the growth of the

national debt does not exceed the growth of the economy as a whole except in times of recession.

These reforms in the conduct of macro policy would provide a stable background for private economic activity in the U.S. and the world economies. They would not eliminate recessions and brief episodes of inflation, but they would prevent extended episodes of bad macroeconomic performance.