

Lecture Notes: Chapter 13: Stabilization Policy

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Economic Policy Institutions

Monetary policy in the United States is made by the Federal Reserve, which is our central bank. In other countries the central bank bears a different name. The most common is the name of its country: the central bank of country X is probably named "The Bank of X."

The principal policy-making body of the Federal Reserve system is its *Federal Open Market Committee* [FOMC]. It is the FOMC that lowers and raises interest rates, and that increases and decreases the money supply. The Federal Reserve's *Board of Governors* can alter bank regulations, and can and raise or lower the interest rate at which the Federal Reserve itself lends to banks and businesses. But most of the time it is the FOMC that plays the leading role within the Federal Reserve.

Today the Federal Reserve is the most important organization making macroeconomic policy. Because *monetary policy* is the most powerful tool for stabilizing the economy, the Federal Reserve plays the leading role in stabilization policy. Fiscal policy plays second fiddle. This institutional division of labor is probably the correct one. Over the past 50 years in the United States monetary policy *has* proven itself to be more powerful, faster-acting, and more reliable than fiscal policy.

The Federal Reserve

The Federal Reserve has a central office and twelve regional offices. Its central office is the Board of Governors, comprised of a Chair, a Vice Chair, and five Governors, all of them nominated by the President and confirmed by the Senate. The Board of Governors' offices are in Washington D.C.

The Federal Reserve's twelve regional offices are the twelve Federal Reserve Banks. They are scattered around the country. There are Federal Reserve Banks in San Francisco, Minneapolis, Dallas, Kansas City, St. Louis, Chicago, Cleveland, Atlanta, Richmond, Philadelphia, New York, and Boston.

The members of the Board of Governors and the Presidents of the twelve regional Federal Reserve Banks meeting together make up the Federal Open Market Committee [FOMC], which is the principal policy-making body. The Chair, the Vice Chair, the other five Governors, and the President of the Federal Reserve Bank of New York are always voting members of the FOMC. The eleven Presidents of the other Federal Reserve Banks alternate. At any moment four of them are voting members and seven of them are non-voting members of the FOMC.

The Federal Reserve was created just before World War I. Its Congressional architects feared that a unitary central bank based in Manhattan would pay too much attention to the interests of bankers and financiers and not enough attention to the interests of merchants and producers. A near-century of experience, however, suggests that they were wrong: bankers in St. Louis think like bankers in New York.

The Federal Reserve failed to handle its first great crisis, the Great Depression that started in 1929. Depending on who you believe, the Federal Reserve either did nothing to help cure the Great Depression, or it made things much worse and played a major role in causing the Great Depression. Since World War II, however, the Federal Reserve has done a much better job: there has been no repeat of the Great Depression.

The Federal Reserve's performance in the 1970s is generally regarded as inadequate. The 1970s were a decade of rising inflation and relatively high unemployment. Today, after two straight decades in the 1980s and 1990s of very successful monetary stabilization policy, the prestige of the Federal Reserve is high. It has almost unlimited freedom to conduct monetary policy as it wishes. Few outside the organization wish to challenge its judgments or decisions.

The FOMC tries to reach its decisions by consensus. If a consensus cannot be achieved, the members of the FOMC are more likely to postpone the issue than to make a decision that some substantial minority of its members oppose. However, once the FOMC decides on a change in policy that change is implemented *immediately*. It takes only minutes for

interest rates to shift in response to FOMC decisions. Indeed, often interest rates will change in advance of the actual FOMC meeting as speculators attempt to make money by betting on what they believe the Federal Reserve will do.

The Chair of the Federal Reserve Board is the Chair of the FOMC: [Alan Greenspan was confirmed to another four-year term as Chair of the Federal Reserve Board in the summer of 2000](#). The President of the Federal Reserve Bank of New York is the Vice Chair of the FOMC: [William McDonough has been President of the Federal Reserve Bank of New York since 1993](#).

The FOMC changes interest rates by carrying out open-market operations. In an expansionary open-market operation, the Federal Reserve buys government bonds. Such a transaction reduces the amount of interest-bearing government bonds available for investors to hold. This reduction in supply raises the price of short-term government bonds--and an increase in the price of a bond is a decline in its interest rate. When the Federal Reserve buys government bonds it pays for them by crediting the purchasers with deposits at the regional Federal Reserve banks. Commercial banks use these deposits to satisfy the reserve requirements imposed on them by bank regulators. The more reserves a bank has, the more deposits it can accept and the more loans it can make. With more banks trying to make more loans, the interest rates that banks charge on loans drop. Thus purchases of government bonds by the Federal Reserve are expansionary open-market operations, and lower interest rates. Contractionary open-market operations work in reverse, and raise interest rates.

Open market operations are not the only policy tools the Federal Reserve has. The Board of Governors can alter legally-required bank reserves. The Board of Governors can lend money directly to financial institutions. But these are used very rarely. Almost always the FOMC can use open-market operations to set interest rates at whatever it wants them to be.

Note the “almost always.” There is only one important restriction on the Federal Reserve's power to set interest rates. the Federal Reserve cannot reduce the nominal interest rate on any Treasury securities below zero. If a Treasury bill carried an interest rate less than zero, then no one would want to buy it: it would be more profitable to simply hold cash instead.

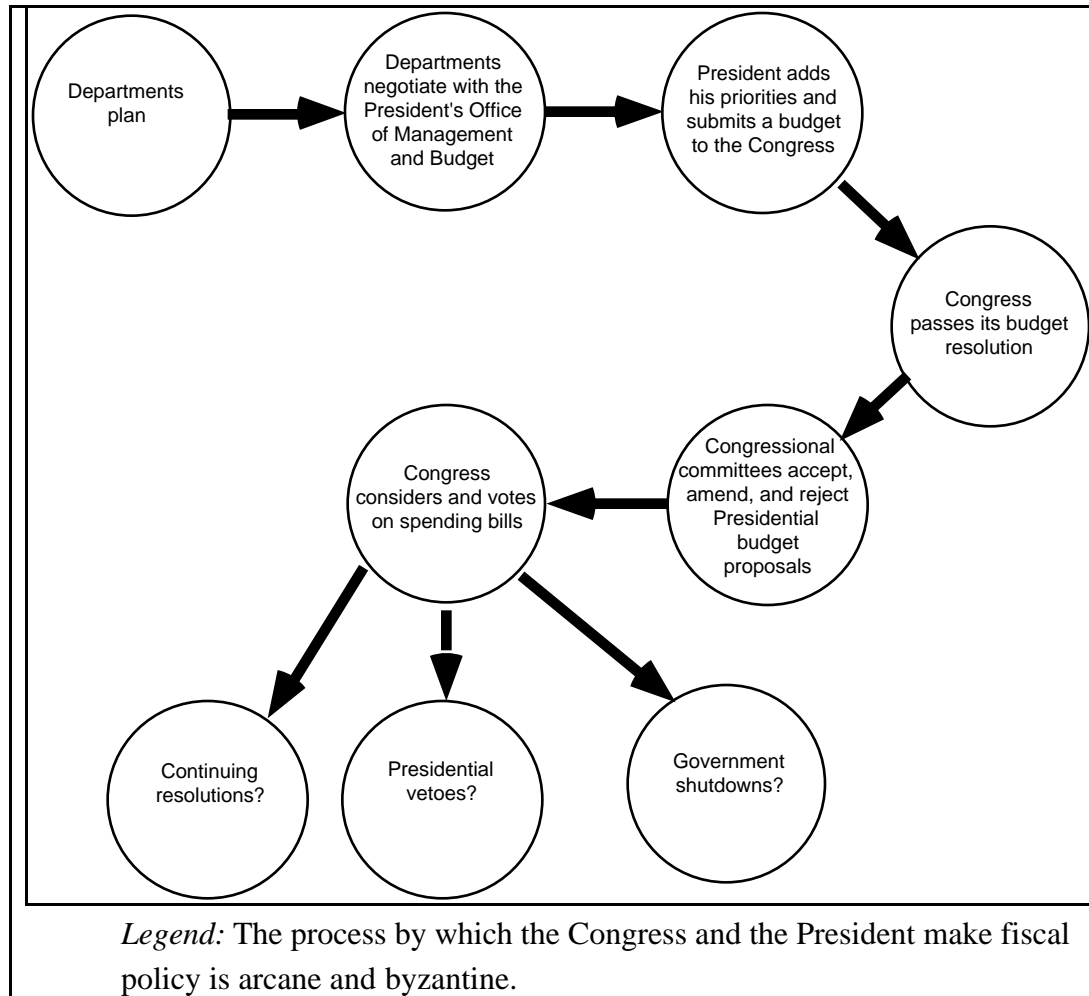
It is possible to envision situations in which this inability of the Federal Reserve to push nominal interest rates below zero has destructive consequences. If prices are expected to fall--if it is a time of anticipated deflation, so that the expected inflation rate is negative--a nominal interest rate that is close to but not less than zero may still be a relatively high *real* interest rate, because the real interest rate r is the difference between the nominal interest rate i and the expected inflation rate π^e .

$$r = i - \pi^e$$

If the expected inflation rate is sufficiently far below zero, the real interest rate will be high, and investment low, no matter what the FOMC does.

Fiscal policy in the United States today is managed by the Congress (subject to the veto of the President). The Congress passes laws which the President then signs (or vetoes--and the Congress then overrides or fails to override the vetoes). The Congress's tax laws determine the taxes imposed by the Federal Government. The Congress's spending bills determine the level of government purchases. Together these taxes and government purchases make up the government's fiscal policy.

The Budget Process



Some broad classes of expenditure, called "mandatory," are the result of open-ended long-term government commitments, and continue whether or not Congress explicitly appropriates money for them in the current year. Social Security, Medicare, Medicaid, unemployment insurance, food stamps, and so forth fall into this category of so-called "mandatory" spending. Other broad classes of expenditure, called "discretionary," must be explicitly appropriated by Congress in each fiscal year. Defense spending, the National Park Service, NASA, the National Institutes of Health, highway spending, education spending, and so forth fall into this category of so-called "discretionary" spending.

Early in one fiscal year the Executive Branch departments and agencies that administer federal programs begin planning for the next. Throughout the fall they negotiate with the President's Executive Office--the Office of Management and Budget. The end of these negotiations, modified by the President's own priorities, becomes the President's budget submission to the Congress in January.

The Congress considers the President's budget request, conducts its own internal debates, and by the end of April is supposed to have passed a *budget resolution* giving spending targets for broad classes of expenditure. Using the budget resolution as a guide, the Congress alters and amends the laws that control mandatory spending, alters and amends and tax code, and passes the appropriations bills necessary for discretionary spending. By the end of September all of the appropriations bills are supposed to have been passed, so that the new fiscal year can begin with the pieces of the government knowing what and how much should be spent over the next twelve months.

More often than not, however, Congress fails to pass or the President vetoes one or more appropriations bills. In that case the government continues more-or-less on autopilot if the Congress passes and the President signs a *continuing resolution* until the appropriations bill is passed. If they don't, the government "shuts down." Discretionary spending is cut back to the bone. Non-essential employees are sent home. The Washington Monument and other major tourist attractions are closed. Government office buildings are inhabited by only a skeleton crew of key functionaries and unpaid interns until the Congress and the President reach agreement, and pass and sign the appropriations bills necessary for the government's discretionary spending programs to go forward.

However, even during a government "shut down," most of what the government does continues. Mandatory spending does not have to be explicitly appropriated every year, and continues even if there is total gridlock in Washington.

The lesson to draw from this overview is that making fiscal policy in the United States is complicated, baroque, and time-consuming. The inside lag--the time between when a policy proposal is made and when it becomes effective--for fiscal policy is measured in years. By contrast, the "inside lag" associated with FOMC-decided changes in monetary policy is measured in days, weeks, or at most two months. The FOMC can turn on a dime. The Congress and the President cannot. This is a key advantage that makes the

Federal Reserve more effective at undertaking stabilization policy to manage aggregate demand.

The History of Economic Policy

The government did not always see itself as being responsible for stabilizing the economy and taming the business cycle. It accepted this responsibility in the Employment Act of 1946, which:

- established Congress's Joint Economic Committee.
- established the President's Council of Economic Advisers.
- called on the President to estimate and forecast the current and future level of economic activity in the U.S.
- announced that it was the "continuing policy and responsibility" of the federal government to "coordinate and utilize all its plans, functions, and resources... to foster and promote free competitive enterprise and the general welfare; conditions under which there will be afforded useful employment for those able, willing, and seeking to work; and to promote maximum employment, production, and purchasing power."

Passage of the Employment Act marked the rout of the belief that the government could not stabilize the economy and should not try to do so. In this view, monetary and fiscal policies to fight recessions would keep workers and firms producing in unsustainable lines of business and levels of capital intensity, and would make the depression less deep only at the price of making it longer.

This doctrine that in the long run even deep recessions like the Great Depression would turn out to have been "good medicine" for the economy drew anguished cries of dissent even before World War II. John Maynard Keynes tried to ridicule this "crime and punishment" view of business cycles, concluding that he did not see how "universal bankruptcy could do us any good or bring us any nearer to prosperity..." Indeed, it was largely due to Keynes's writings, especially his *General Theory of Employment, Interest and Money*, that economists and politicians became convinced that the government could halt depressions and smooth out the business cycle. But Keynes was not alone. For example, Ralph Hawtrey, an advisor to the British Treasury and the Bank of England, called it the equivalent of "crying, 'Fire! Fire!' in Noah's flood." But you still can see traces of this view in economics in places (like the real business cycle theories discussed at the end of chapter 7).

The high water mark of confidence that the government could and would manage to use its macroeconomic policy tools to stabilize the economy came in the 1960s. In that decade President Johnson's chief economic advisor, Walter Heller, wrote of the *New Dimensions of Political Economy* that had been opened by the Keynesian Revolution. The Department of Congress changed the title of its *Business Cycle Digest* to the *Business Conditions Digest*--because, after all, the business cycle was dead.

The 1970s, however, erased that confidence. Economists Milton Friedman and Edward Phelps had warned that attempts to keep the economy at the upper left corner of the Phillips curve would inevitably cause an upward shift in inflation expectations--that even if expectations had truly been static during the 1950s and early 1960s, they would become adaptive if unemployment were pushed too low for too long. Friedman and Phelps were correct: the 1970s saw a sharp upward shift in the Phillips curve as people lost confidence in the commitment of the Federal Reserve to keep inflation low, and raised their expectations of inflation. The result was *stagflation*: a combination of relatively high unemployment and relatively high inflation. The lesson learned was that attempts to keep unemployment low and the level of output stable were counterproductive if they eroded public confidence in the central bank's commitment to keep inflation low and prices stable.

The 1970s ended with many economists convinced that "activist" monetary policy did more harm than good, and that the United States might be better off with an "automatic" monetary policy that fixed some control variable like the money stock to a stable long-run growth path. But the sharp instability of monetary velocity since the start of the 1980s has greatly reduced the number of advocates of such an "automatic" central bank, that lets the money stock grow by a fixed proportional amount in every year.

The Power and Limits of Stabilization Policy

Because economic policy works with long and variable lags, stabilization policy requires that we first know where the economy is and where it is going. If future conditions cannot be predicted, policies initiated today are as likely to have destructive as constructive effects when they affect the economy eighteen months or two years from now.

There are in general two approaches that economists take in trying to forecast the near-term future of the economy. The first approach is to use large-scale macroeconomic models--more complicated versions of the models of this book. The second approach is to search for *leading indicators*: one or a few economic variables not necessarily noted in this book that experience tells us are strongly correlated with future movements in real GDP or inflation. The U.S. government used to, and a private economics research group called the Conference Board now, publishes a monthly index of leading economic indicators--eleven factors averaged together that many economists believe provide a good guide to economic activity nine or so months in the future.

Of the components that go into the index of leading indicators, perhaps the most broadly-watched is the stock market. The level of the stock market is a good indicator of the future of investment spending because the same factors that make corporate investment committees likely to approve investment projects--optimism about future profits, cheap sources of financing, willingness to accept risks--make investors eager to buy stocks and to buy stocks at higher prices. We can read likely future decisions of corporate investment committees off of the current value of the stock market. But the stock market is far from perfect as a leading indicator: as economist Paul Samuelson likes to say, the stock market has "predicted" nine of the past five recessions.

Details: The Structure of the Economy and the Lucas Critique

Economist Robert Lucas argued that most of what economists thought they knew about the structure of the economy was false. Expectations of the future have major effects on decision-making in the present: workers' nominal wage demands, managers' investment decisions, households' consumption decisions, and practically every other economic decision hinge, in one way or another, on what is expected to happen in the future. And expectations depend on many things--including the policies followed by the government. Change the policies followed by the government, and you change the structure of the economy as well.

Thus, Lucas argued, the use of economic models to forecast how the economy would respond to changes in government policy was an incoherent and mistaken exercise. Changes in policy would induce changes in the structure of the economy and its patterns of behavior that would invalidate the forecasting exercise.

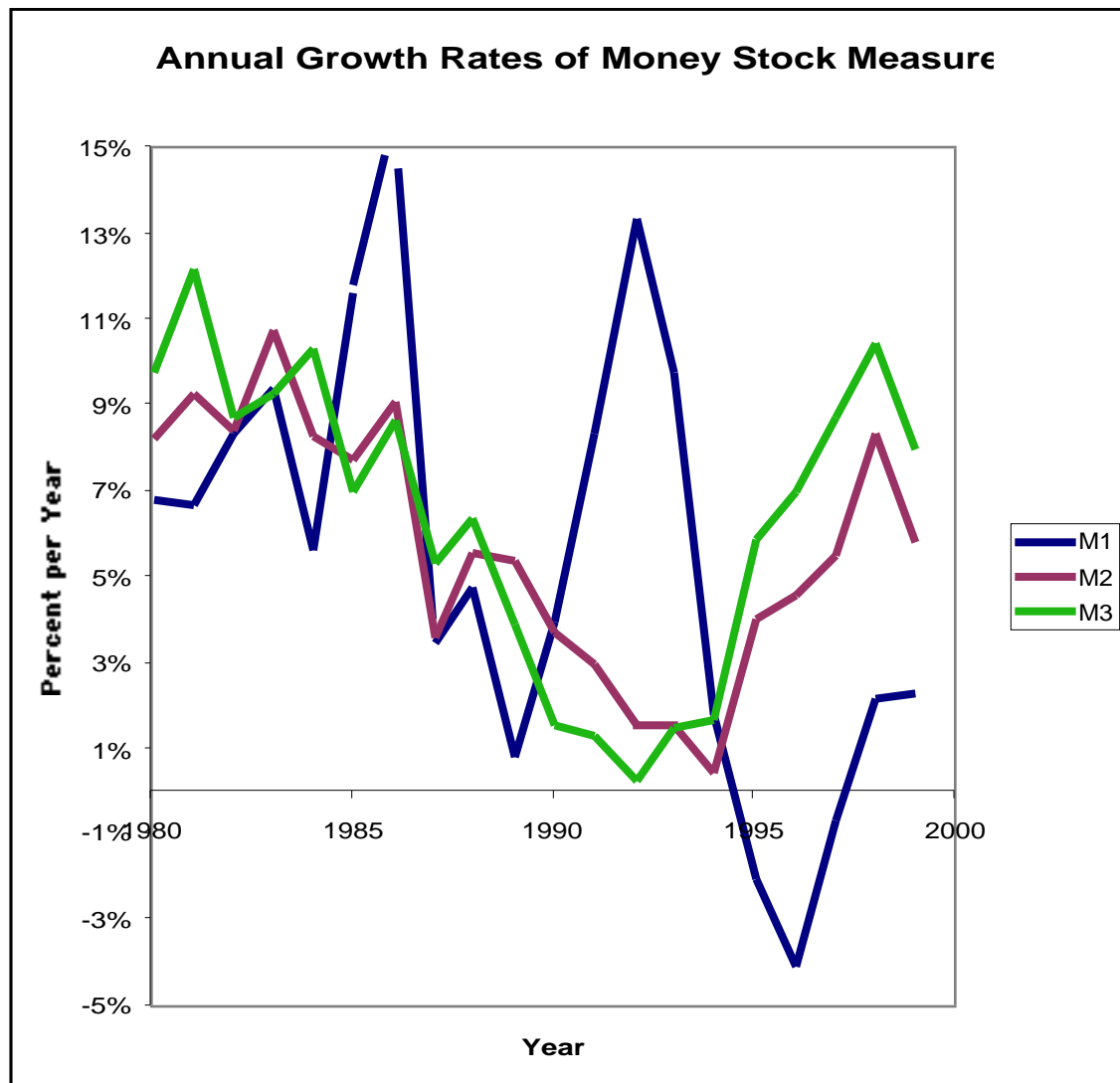
Economic forecasts based on a period in which inflation expectations were *adaptive* would turn out to be grossly in error if applied to a period in which inflation expectations were *rational*. Forecasts of consumption spending based on estimates of the marginal propensity to consume from a period in which changes in national income were permanent would lead policy makers astray if applied to forecast the effects of policies that caused transitory changes in national income.

This *Lucas Critique* was an important enough insight that for it Robert Lucas was awarded the Nobel Prize.

The leading indicator that has been most closely watched is the *money supply*. Before the instability of the 1980s *monetarists* used to claim that the appropriate measure of the money stock is the only leading indicator worth watching. If the central bank could guide the money stock to the appropriate level through open market operations, then success at managing the economy will immediately and automatically follow.

Different measures of the money stock say different things about monetary policy. Republican Party critics of Alan Greenspan continue to blame his tight money policies for George H.W. Bush's defeat in the presidential election of 1992: during that year M3 grew by less than one percent. Supporters of Greenspan's point to the extraordinarily-rapid growth of M1 (and short-term real interest rates of less than zero) as evidence of extraordinarily stimulative recession-fighting monetary policy. To say that the money stock is the single most important leading indicator is unhelpful if different measures of "the" money stock say different things.

Different Measures of the Money Stock Behave Differently



Legend: Since 1980 the different measures of the money stock have ceased to move

together. A year (like 1996) in which M1 falls can also see M3 grow, with a difference between the two of more than ten percentage points per year.

Source: Economic Report of the President,

It is much harder to be a monetary economist than it used to be.

Even if economists have good reliable forecasts, changes in macroeconomic policy affect the economy with long lags and have variable effects. Estimates of the slope of the IS

curve are imprecise: this isn't rocket science, after all. Economists are estimating the reactions of human beings to changes in the incentives to undertake different courses of action. They are not calculating the motions of particles that obey invariant and precisely-known physical laws.

Moreover, changes in interest rates take *time* to affect the level of aggregate demand and real GDP. It takes time for corporate investment committees to meet and evaluate how changes in interest rates change the investment projects they wish to undertake. It takes time for changes in the decisions of corporate investment committees to affect the amount of work being done in building up the country's capital stock. It takes time for the changes in employment and income generated by changes in investment to feed through the multiplier process, and have their full effect on equilibrium aggregate demand. Thus the level of total product now is determined not by what long-term real risky interest rates are now, but by what long-term real risky interest rates were more than a year and a half ago.

As more than one member of the FOMC has said, making monetary policy is like driving a car that has had its windshield painted black. You guess which way you want to go by looking in the rear-view mirror at the landscape behind.

The fact that the Federal Reserve's decision and action cycle is shorter than that of the President and Congress means that the Federal Reserve can if it wishes neutralize the effects of any change in fiscal policy on aggregate demand. As a rule, today's Federal Reserve does routinely neutralize the effects of changes in fiscal policy. Swings in the budget deficit produced by changes in tax laws and spending appropriations have little impact on real GDP unless the Federal Reserve wishes them to.

Fiscal Policy: Automatic Stabilizers

There is, however, one kind of fiscal policy that does work rapidly enough to be important. The so-called "fiscal automatic stabilizers" swing into action within three months to moderate business cycle-driven swings in disposable income and so moderate the business cycle.

Whenever the economy enters a recession or a boom, the government's budget surplus or deficit begins to swing in the opposite direction. As the economy enters a boom, tax

collections and withholdings automatically rise because incomes rise. Spending on social welfare programs like food stamps falls because higher employment and higher wages mean that fewer people are poor. Thus the government budget moves toward surplus, without Congress passing or the President signing a single bill. And if the economy enters a recession, tax collections fall, social welfare spending rises, and the government's budget swings into deficit.

As unemployment rises and national income falls, taxes fall by about 30 cents for every dollar fall in national product. Spending rises by about 7 cents for every dollar fall in national product. A \$1 fall in national product produces only a fall of 70 cents in consumers' disposable income. Thus automatic stabilizers provide more than one dollar's worth of a boost to aggregate demand for every three dollar fall in production.

Such fiscal automatic stabilizers would be large enough to reduce the marginal propensity to spend from about 0.6 to about 0.4. This would imply a reduction in the size of the multiplier from about 2.5 to about 1.67. Business cycles could be considerably larger if these automatic stabilizers did not exist, if the Federal Reserve found itself unable to compensate for their disappearance, and if their disappearance did not lead to counteracting changes in the marginal propensity to spend.

Rules vs. Authorities

In the late 1940s Chicago School economist Henry Simons set the terms for a debate over macroeconomic policy that continues to this day. He asked if macroeconomic policy be conducted "automatically," according to rules that would be followed no matter what? Or should macroeconomic policy be left to authorities--bodies of appointed officials--provided with wide discretion over how to use their power and given general guidance as to what goals to pursue?

Competence and Objectives

The first reason for automatic rules is that we fear that the people appointed to authorities will be incompetent. If people are appointed because of friendships from the past, or because of their ability to rally campaign contributions for a particular cause, there is

little reason to think that they will be skilled judges of the situation or insightful analysts. Better then to constrain them by automatic rules. Even if those appointed to authorities are well-intentioned, they may well fail to find good solutions to macroeconomic problems. The stream of public discourse about macroeconomics is polluted by a large quantity of misinformation.

A second reason for fixed rules is that authorities might not have the right objectives. To institute a good rule it is only necessary for the political process to make the right decision once--at the moment the rule is settled. But an authority making decisions every day may be more likely to start pursuing objectives that conflict with the long-run public interest. The state of the economy at the moment of the election is a powerful influence on citizens' votes. Thus politicians in office have a personal power incentive to pursue policies that will sacrifice the health of the economy in the future in order to obtain good reported economic numbers during the election year.

The substitution of technocratic authorities--like the Federal Reserve--in the place of Presidents, Prime Ministers, and Finance Ministers provides some insulation. It is this fear that politicians will have objectives different from the long-run public interest that has led many to advocate that monetary policy be made by *independent* central banks. If stabilization policy is to be made by authorities, it should be made by authorities placed at least one remove from partisan politics.

Economic Policy: The Political Business Cycle and Richard Nixon

The most famous example of the political business cycle at work comes from American politician Richard Nixon's episodic autobiography, *Six Crises*, that he published in 1962. Looking back on his defeat in the 1960 Presidential election by John F. Kennedy, Nixon wrote that:

"Two other developments [that] occurred before the [Republican Party C]onvention... [had] far more effect on the election outcome...

"Early in March [1960], Dr. Arthur Burns... called on me.... [He] expressed great concern about the way the economy was then acting.... Burns' conclusion was that unless some decisive government action were taken, and taken soon, we were heading for another economic dip which would hit its low point in October, just

before the elections. He urged strongly that everything possible be done to avert this development... by loosening up on credit and... increasing spending for national security. The next time I saw the President, I discussed Burns' proposals with him, and he in turn put the subject on the agenda for the next cabinet meeting.

"The matter was thoroughly discussed by the Cabinet...[S]everal of the Administration's economic experts who attended the meeting did not share [Burns's] bearish prognosis....[T]here was strong sentiment against using the spending and credit powers of the Federal Government to affect the economy, unless and until conditions clearly indicated a major recession in prospect.

"In supporting Burns' point of view, I must admit that I was more sensitive politically than some of the others around the cabinet table. I knew from bitter experience how, in both 1954 and 1958, slumps which hit bottom early in October contributed to substantial Republican losses in the House and Senate....

"Unfortunately, Arthur Burns turned out to be a good prophet. The bottom of the 1960 dip did come in October.... In October... the jobless roles increased by 452,000. All the speeches, television broadcasts, and precinct work in the world could not counteract that one hard fact."

By 1972 Richard Nixon was President, and he had appointed Arthur Burns to be Chair of the Federal Reserve. The year 1972 saw very good economic statistics-- at the price of a sharp acceleration of inflation in subsequent years. Given the smoking gun provided by Nixon in *Six Crises*, many have diligently searched for evidence that the Federal Reserve made economic policy in 1971 and 1972 not in the public interest but to enhance the private political interest of Richard Nixon.

However, things are more complicated. Economist Herbert Stein pointed out that Nixon administration economic policy was in fact less expansionary than many Democratic politicians and economic advisors wished: the claim that Burns was leaning to the expansionary side of the center of gravity of opinion is simply not correct. And once Arthur Burns had become Chair of the Federal Reserve, Nixon administration officials found him to be truly and annoyingly independent.

The verdict is that Richard Nixon dearly wished for the Federal Reserve to tune economic policies in a way that would enhance his reelection chances, but that the institutional independence of the Federal Reserve worked. White House political pressure in 1971-1972 led to little if any change in Federal Reserve policy.

Details: Is There in Fact a Political Business Cycle?

Few would dispute that politicians seek to tune the macroeconomy to their political advantage. The Bush administration tried to persuade Federal Reserve Chair Alan Greenspan to pursue a more expansionary monetary policy in 1991 to produce better economic numbers for the George Bush reelection campaign in 1992, going as far as threatening not to nominate Greenspan for a second term as Federal Reserve Chair. But it was unsuccessful. Richard Nixon certainly believed when he appointed Arthur Burns to be Fed Chair that Burns would still be the loyal partisan supporter he had been in 1960--contemplating this appointment Nixon referred to the "myth of the autonomous Fed" and laughed.

But how successful are governments at manipulating the political business cycle? It is not clear. It is true that in the United States since 1948 the fourth year of a President's term--the Presidential election year--has seen annual real GDP growth average 0.6% more than the average of non-Presidential election years. But there is a fifteen percent probability that at least that large a difference would emerge from random chance and sampling variation alone. Faster growth in Presidential election years is suggestive, but not conclusive.

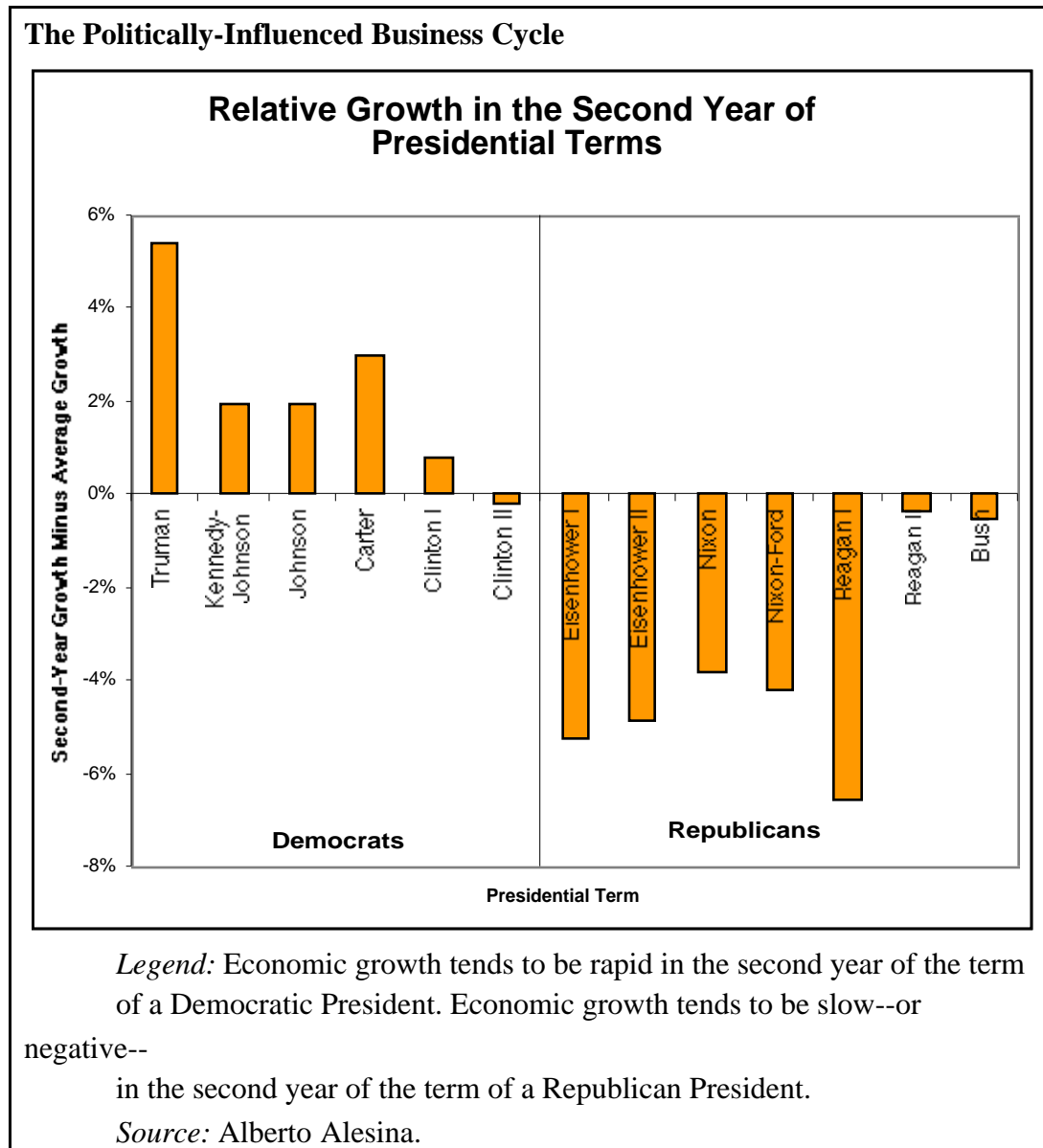
Moreover, other ways of looking at the data deliver even less evidence. Out of twelve post-1948 Presidential terms, fully six--Johnson, Nixon-Ford, Carter, Reagan II, Bush, and Clinton I--saw slower economic growth in the politically-relevant second half of the term than in the first half of the term. This alternative way of looking at the data provides not even a suggestion of evidence one way or another. And it is important when analyzing any situation not to choose to look only at the data in the way that makes one's preferred conclusion appear the strongest.

There is, however, stronger evidence not of a politically-motivated component to the business cycle but of a politics-influenced component to the business cycle. In

all seven post-WWII Presidential terms in which Republicans have occupied the White House, growth in the second year of a Presidential term has been lower than average real GDP growth over that term. By contrast, in only one of the six terms in which Democrats have occupied the White House has second-year growth been lower than average.

The odds against this pattern happening are astronomical: there is less than one chance in a thousand that it could be the result of random sampling variation.

Economist Alberto Alesina interprets this pattern as showing that the political parties have--or had, for Clinton is the Democratic President for whom the pattern of growth fits the Republican model--different views of the relative costs of unemployment and inflation. Republicans have more tolerance for unemployment and less tolerance for inflation than Democrats do. Hence when Republicans come into office the Federal Reserve feels more free to try to push inflation down to a lower level. Because a considerable portion of inflation expectations relevant for the second year of a Presidential term were formed back before the result of the election is known, actual inflation in the second year of a term is less than expected inflation and so economic growth is relatively low.



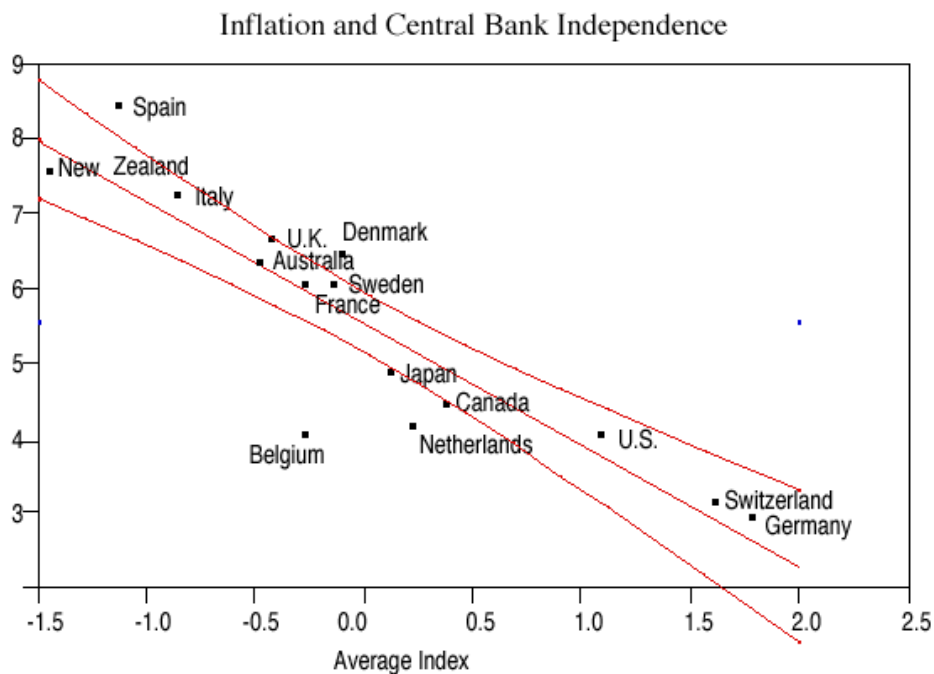
Economic Policy: Central Bank Independence

A number of economists have investigated the relationship between the degree to which central banks are insulated from partisan politics and macroeconomic performance. They have examined the legal and institutional framework within which central banks in different countries operate, and constructed indexes of the extent to which their central banks are "independent."

Alberto Alesina and Lawrence Summers concluded that the more independent a central bank, the better its inflation performance. More independent central banks presided over lower average inflation and less variable inflation. Moreover, countries with independent central banks did not pay any penalty. Countries with independent central banks did not have higher unemployment, lower real GDP growth, or larger business cycles.

Interpreting this correlation is not straightforward. Perhaps the factors that lead countries to have independent central banks lead them to have low inflation. Perhaps independent central banks do reduce economic growth, but only countries likely to have high economic growth for other reasons are likely to have independent central banks. Nevertheless, at least the post-1950 experience of the industrialized countries strongly suggests that central bank insulation from partisan politics delivers low inflation without any visible macroeconomic cost.

Central Bank Insulation from Politics and Inflation



Legend: Countries whose central banks are more independent have lower average inflation rates.

Source: Alberto Alesina and Lawrence Summers (1993), "Central Bank

Independence and Macroeconomic Performance", *Journal of Money,
Credit
and Banking.*

Credibility and Commitment

There is always a temptation for the central bank to pursue a more expansionary monetary policy: More expansionary policy raises national product and reduces the unemployment rate. Moreover, it has little impact on inflation in the short run in which expectations of inflation are more-or-less fixed. In the short run, expansionary monetary policy does always seem to be a central bank's best option. Suppose firms and unions agree on large nominal wage and price increases. Then in the short-run it is best for the central bank to accommodate inflation and expand the money supply. To fight inflation by raising interest rates would generate a recession, and inflation would continue anyway. Suppose instead that firms and unions decide on wage and price restraint. Expansionary monetary policy is still better--inflation will be low, and the economy will boom.

In either case, pursuing a more expansionary monetary policy produces a better short-run outcome. Moreover, announcing that monetary policy will be more restrictive produces a better short-run outcome as well, for by announcing that fighting inflation is job one the central bank may influence the expectations of workers, managers, investors, and households.

So why--given the obvious short-run benefits of a more expansionary monetary policy--should anyone ever believe that a central bank will aim for low inflation?

Yet in the long run, it is surely the case that a central bank is wiser to keep low inflation as its top priority. Central banks benefit if workers, firms, and investors all believe that future inflation will be low. A central bank that succumbs to the temptation to make inflation higher than expected loses its credibility. All will soon recognize that the central bank's talk is cheap, and that it has a strong incentive once expectations relevant to a period of time are formed to make inflation and money growth higher than expected. So the central bank will find that its words about future policy are ignored in the process of setting expectations. And expectations of inflation will be sky-high.

Economists give this conflict the awkward name of "dynamic inconsistency": what it is good to have workers, managers, investors, and employers believe that you will do in the future is not what seems best to do when the future becomes the present. Many economists have argued that this dynamic inconsistency problem is a strong point on the side of rules rather than authorities: you don't have to worry about a rule breaking its word. Others have pointed out that central banks that are concerned with their long-term reputation and credibility appear to have little problem resisting the temptation to make inflation and money growth higher than the firms and workers in the economy had expected. And they have little problem acquiring credibility, which they do in many ways including:

:

- complaining that inflation may be rising.
- refusing to admit even the possibility that monetary expansion might reduce unemployment.
- repeatedly declaring that price stability is the primary objective.

The most important way to acquire credibility is to possess a history of past successful control of inflation.

Modern Monetary Policy

Whether monetary policy is guided by strict and rigid rules, or made by authorities using their discretion to come up with the best policy for the particular--unique--situation, one question remains: what sort of rule should be adopted, or how should the authority behave? What sort of *guidelines* for monetary policy should those who set the rules or those who staff the authorities follow?

Economists believe that one set of rules to avoid are those that command the central bank to attain values for real economic variables, like the rate of growth of real GDP or the level of the unemployment rate. The rate of growth of real GDP is limited in the long run by the rate of growth of potential output. The level of the unemployment rate is in the long run controlled by the natural rate of unemployment. A central bank target of too high a rate of real GDP growth, or too low a level of the unemployment rate, is likely to end in upward spiraling inflation. A policy that targets *nominal* variables--like the nominal money stock, or nominal GDP, or the inflation rate--is robust, in the sense that it

does not run the risk of leading to disaster if our assessment of the macroeconomic structure of the economy turns out to be wrong.

Extreme Situations: Financial Crises

Open market operations are not the only tool by which the government affects the economy. Because the long-term interest rate is an average of expected future short-term interest rates, expectations of future Federal Reserve policy--closely tied to central-bank credibility--are also important influences on aggregate demand today. Even more important, however, are the existence of *deposit insurance* to insulate bank depositors from the effects of *financial crises*, and the expectation that should a financial crisis become deep enough the Federal Reserve will act as a *lender of last resort*. In extreme situations such alternative policy levers become important tools to try to stem depressions.

For nearly four hundred years market economies have undergone financial crises--episodes when the prices of stocks or of other assets crash, everyone tries to move their wealth into safer forms at once, and the consequent panic among investors can lead to a prolonged and serious depression. Managing such financial crises has been one of the responsibilities of monetary policy makers for more than a century and a half.

A financial crisis--like the financial panics in East Asia in 1998--sees investors as a group suddenly (and often not very rationally) become convinced that their investments have become overly risky. As a result, they try to exchange their investments for high-quality bonds and cash. But as everyone tries to do this at once, they create the risk that they hoped to avoid: stock and real estate prices crash, and interest rates spike upward as everyone tries to increase their holdings of relatively safe, liquid assets.

The sharp rise in real interest rates that occurs in a financial crisis can severely reduce investment, and send the economy into a deep depression. Moreover, once the crisis gathers force the ability of monetary policy tools to boost investment may well be limited. Financial crises are accompanied by steep rises in risk premiums. They are often accompanied by sharp rises in term premiums as well, as investors decide that they want to hold their wealth in as liquid a form as possible. And financial crises frequently generate deflation as well.

All of these drive a large wedge between the short-term nominal safe interest rates that the central bank controls and the long-term real interest rate relevant for the determination of investment and aggregate demand. The central bank may have done all that it can do to reduce interest rates, and it may not be enough: real interest rates may remain high.

Lenders of Last Resort

In such a situation a central bank can do a lot of good very easily by rapidly expanding the money supply, so that the increase in the demand for liquid assets to hold doesn't lead to a spike in interest rates and a crash in other asset prices. It can also do a lot of good by lending directly to institutions that are fundamentally *solvent*--that will, if the crisis is stemmed and resolved rapidly, be able to function profitably--but that are temporarily *illiquid* in the sense that no one is willing to lend to them because no one is confident that the crisis will be resolved. Such a *lender of last resort* can rapidly reduce risk and term premiums as it reduces safe short-term nominal interest rates, and end the financial crisis.

The problem is that a central bank can also do a lot of harm if it bails out those institutions that have gone bankrupt, and thus encourages others in the future to take excessive risks hoping that the central bank will in its turn bail out them in the future.

Thus the central bank has to (a) expand the money supply and lend freely to institutions that are merely illiquid--that is, caught short of cash but fundamentally sound--while (b) forcibly liquidating institutions that are insolvent, those that could never repay what they owe even if the panic were stemmed immediately. This is a neat trick--to do one without doing the other.

There are institutional steps that a central bank can take in advance to reduce the chance that the economy will suffer a financial crisis, and reduce the damage that a financial panic will do. The first and most obvious is to do a good job as a supervising regulator over the banking system. Depositors will panic and pull their money out of a bank when they fear that it is bankrupt--that it no longer has enough capital, and that the capital plus the value of the loans that it has made are together lower than the value of the money it owes back to its depositors. If banks are kept well-capitalized, and if banks that fail to

meet standards for capital adequacy are rapidly taken over and closed down, then the risk of a full-fledged financial panic is small.

The potential problem with this strategy of supervision and surveillance is that it may be politically difficult to carry out. Bankers are, after all, often wealthy and influential people with substantial political connections. Bank regulators are mid-level civil servants, subject to pressure and influence from the high politicians.

Deposit Insurance and Moral Hazard

The most recent major financial crisis in the United States, the Great Depression, was also the most destructive. Banks closed; at the beginning of 1933, more than one in three of the banks that had existed in 1929 had closed its doors. When banks failed, people who had their money in them were out of luck; years might pass before any portion of their deposits would be returned. Hence fear of bank failure leads to an immediate increase in households' and businesses' holdings of currency relative to deposits. In the Great Depression this flight from banks reduced the money supply.

With 6,000 banks failing in the first three years of the Depression, more and more people felt that putting their money in a bank was not much better than throwing it away. Since a rise in the currency-to-deposits ratio carries with it a fall in the money multiplier, fear of bank failures shrunk the money stock. That only deepened the Depression. Something had to be done to prop up depositors' confidence.

One of the reforms of President Franklin D. Roosevelt's New Deal program in the 1930s was the institution of deposit insurance provided by the Federal Deposit Insurance Corporation—the FDIC. If your bank failed, the government would make sure your deposits did not disappear. The aim was to diminish monetary instability by eliminating bank failure-driven swings in the money supply and interest rates.

Since the 1930s, federal deposit insurance has acted as a *monetary automatic stabilizer*. A financial panic gathers force when investors conclude that they need to pull their money out of banks and mutual funds because such investments are too risky. Deposit insurance eliminates the risk of keeping your money in a bank—even if the bank goes belly-up, your deposit is still secure. Thus there is no reason to seek to move your money

to any safer place. Deposit insurance has broken one of the important links in the chain of transmission that used to make financial panics so severe.

The availability of deposit insurance and the potential existence of a lender of last resort do not come for free. These institutions create potential problems of their own--problems that economists discuss under the heading of *moral hazard*. If depositors know that the Federal Deposit Insurance Corporation has guaranteed their deposits, they will not inquire into the kinds of loans that their bank is making. Bank owners and managers may decide to make deliberately risky high-interest loans. If the economy booms and the loans are repaid, then they make a fortune. If the economy goes into recession and the risky firms to which they have loaned go bankrupt, they declare bankruptcy too and leave the FDIC to deal with the depositors. It becomes a classic game of heads-I-win-tails-you-lose.

The principal way to guard against moral hazard is to make certain that decision makers have substantial amounts of their own money at risk. Making risky loans using government-guaranteed deposits as your source of funding is a lot less attractive if your personal wealth is the first thing that is taken to pay off depositors if the loans go bad. Hence deposit insurance and lenders of last resort function best only if there is adequate supervision and surveillance: only if the central bank and the other bank regulatory authorities are keeping close watch on banks, and making sure that every bank has adequate capital--so that it is the shareholders' and the managers' funds, rather than those of the FDIC, that are at risk if the loans made go bad.