Journal of Economic Perspectives—Volume 14, Number 3—Summer 2000—Pages 21–36

Reassessing Discretionary Fiscal Policy

John B. Taylor

In 1992, President Bush proposed legislation intended to speed up the recovery from the 1990-91 recession. Congress rejected this proposal for countercyclical fiscal policy stimulus. In early 1993 President Clinton proposed his own stimulus package, but Congress rejected this proposal too. Many reasons were given for deciding against these two discretionary fiscal policy proposals, but perhaps the most common one was the large federal budget deficit in the early 1990s. With the rapid disappearance of budget deficits in recent years, this reason to vote against a discretionary fiscal stimulus is unlikely to be mentioned in the next economic cycle. Discretionary countercyclical fiscal policy again appears to be a politically feasible option. But should America use it after so many years of disuse?

Much has happened in macroeconomics since the 1960s and 1970s when discretionary countercyclical fiscal policy was last considered a serious option in the United States. First, monetary policy-making has changed substantially. Over the last two decades, the Federal Reserve's interest rate decisions have become more explicit, more systematic, and more reactive to changes in both inflation and output. The Fed has placed a greater emphasis on keeping inflation low. The experience with this new policy has been very favorable—inflation has been low since the early 1980s and the real economy has been more stable; the 1980s and 1990s saw two lengthy expansions separated by a relatively short and mild recession. In terms of the tradeoff between output variability and inflation

■ *John B. Taylor is the Mary and Robert Raymond Professor, Stanford University, Stanford, California. His e-mail address is ⟨johnbtaylor@stanford.edu⟩.*

variability, monetary policy has helped to move the U.S. economy closer to the efficient frontier.

Second, the methods of macroeconomic policy research have changed. If one takes a careful look at research in the last 10 or 15 years, one sees that a new approach to macroeconomic policy evaluation has evolved—a "new normative macroeconomics." This research has focused on evaluating policy rules. The typical approach is to place alternative rules into macro models and simulate the models to see which policies work well. The research is normative because its purpose is to find and recommend good policies to be used in practice. Performance measures are stated in terms of the fluctuations of output and the fluctuations of inflation. The policy models usually incorporate forward-looking (rational) expectations, price and wage rigidities, and the assumption that people make purposeful decisions about prices, employment, and production. While most of the applications of this research on policy rules—whether at universities, central banks and other policy-making institutions—have been to monetary policy, there are clear implications for fiscal policy.

These changes in policy-making and policy research call for a reassessment of the role of countercyclical fiscal policy. What is the appropriate role of countercyclical fiscal policy when monetary policy is systematically and strongly reacting to the cyclical state of the economy? Does the recent research on policy rules imply that we should rely less on discretionary fiscal policy and more on the automatic stabilizers? More generally, have the arguments changed in the old debate between rules versus discretion in fiscal policy? This paper seeks to address these questions.

A Simple Framework For Analyzing Countercyclical Policy

To evaluate countercyclical policy, one has to have a model that describes how the instruments of monetary and fiscal policy affect the economy. A common approach now used for normative policy analysis is to build and estimate a dynamic stochastic model and then simulate alternative policies in that model. Examples can be found in a recent survey paper by Clarida, Gali and Gertler (1999) and in many of the monetary policy evaluation papers collected in Taylor (1999). Most models incorporate features from different schools of macroeconomic thought, including the rational expectations, new classical economics, new Keynesian macroeconomics, and real business cycle schools. What is common across these models is the policy-oriented purpose and the advanced quantitative method, which is why a term like "the new normative macroeconomics" best conveys this approach. Though the models differ in important details, there is a general framework. I try to summarize this framework in three relationships that lead to a simple graphical representation. (The

graphical representation is the same one that was proposed in Taylor [1995, 2000] and Romer [2000]).

Three Relationships and Graph

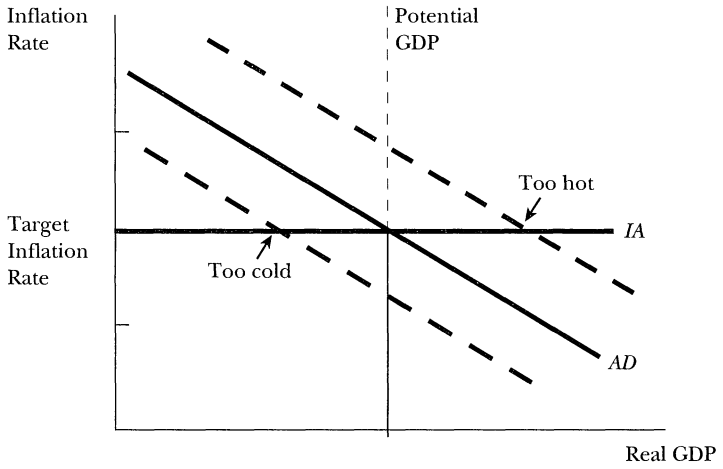
The first relationship is a monetary policy rule describing how the Fed changes the interest rate in response to inflation. According to this policy rule, when the inflation rate rises, the Fed raises the federal funds interest rate by enough that the real interest rate rises. In developing this framework, I first assume that inflation is the only variable in the monetary policy rule, though in reality, as shown below, real output appears too. The second relationship is between real GDP and the real interest rate—analogous to an IS curve—showing how a higher real interest rate depresses the demand for goods and services. The third relationship is an expectations-augmented Phillips curve relationship between inflation and real GDP in which inflation increases, with a lag, when real GDP is above potential GDP. The second and third relationships summarize individual decisions and are derived from intertemporal utility and profit maximization assumptions.

Combining the first two relationships—that is, higher inflation leads the Fed to raise interest rates, which in turn reduces output—results in the negatively sloped aggregate demand (AD) relationship between inflation and real GDP shown in Figure 1. Movements along the AD relationship occur when inflation changes and the central bank changes the interest rate, causing real GDP to change. Because the AD relationship incorporates the interest rate rule for monetary policy, when one uses this framework for evaluating countercyclical fiscal policy one automatically builds in a monetary policy reaction to inflation. Shifts of the AD curve occur when the monetary policy rule changes; for example, when the Fed raises or lowers interest rates for reasons other than a change in inflation. Cutting the interest rate by more than stated in the policy rule—which could occur to offset the impact of a sharp fall in stock prices as in 1987—would cause the AD curve to shift to the right. Shifts in the AD curve are also caused by any other change that affects aggregate demand at a given level of inflation, including a change in export demand from abroad or a change in consumer confidence at home.

The third relationship can also be represented in Figure 1. It is a flat "inflation adjustment" line, labeled IA. The IA line shifts up over time (with a lag) when real GDP is above potential GDP and shifts down over time (again with a lag) when real GDP is below potential GDP. Real output and inflation are determined at the intersection of the AD and IA curves in Figure 1.

Policy evaluation with macro models of the type represented in Figure 1 usually proceeds by changing the policy rule in the model and observing what happens to the fluctuations in real output and inflation when the model is subject to shocks. Figure 1 is helpful for illustrating some of the basic ideas underlying such

Figure 1
Keeping Aggregate Demand in Line with Potential GDP



a formal policy evaluation exercise. I first look at countercyclical monetary policy actions.

Countercyclical Monetary Policy

The dashed lines in Figure 1 show two different shifts of the AD curve: one shift to the right and one to the left. These shifts can be used to illustrate countercyclical monetary policy. The task of countercyclical monetary policy may be described as trying to keep real GDP near potential GDP, when inflation is on target. In Figure 1, the current inflation rate (given by the position of the IA line) is assumed to equal the Fed's target inflation rate. The solid aggregate demand curve intersects the inflation adjustment line at a point where real GDP equals potential GDP and the inflation rate equals the Fed's target inflation rate. Because real GDP is equal to potential GDP, there is no tendency for inflation to rise or to fall. Thus, this intersection represents an ideal point: the inflation rate is equal to the target inflation rate and real GDP is equal to potential GDP. This represents a Goldilocks economy: not too hot, not too cold, just right.

The other two positions of aggregate demand, the dashed lines in Figure 1, represent a misalignment of real GDP and potential GDP. In the right-hand AD position, aggregate demand has increased too much—perhaps due to an expansionary shift in consumption, investment, or net exports. At this position, there are inflationary forces in place that will soon cause the inflation adjustment line to rise. If inflation did rise, then the economy would move back along the AD curve toward potential, though these dynamics are not shown in Figure 1. As inflation actually

rose, the Fed would have to raise interest rates (as called for in the policy rule) to bring the inflation rate back down.

This rightward position of the AD curve was, for example, the situation in early 2000, when the Fed reported that "aggregate demand may well continue to outpace gains in potential output over the near term, an imbalance that contains the seeds of rising inflationary and financial pressures that could undermine the expansion. . . . [T]he level of interest rates needed to align demand with potential supply may have increased substantially" (Monetary Policy Report, 2000).

The task of monetary policy is to try to prevent such misalignments and to correct such misalignments once they occur. In this case, the Fed would raise interest rates to bring aggregate demand back down so that real GDP is equal to potential GDP. Of course, with the impacts of a change in monetary policy occurring with long and variable lags, the Fed might not be able to get aggregate demand back to potential GDP fast enough to prevent the incipient inflation from becoming an actuality.

The left-hand position of aggregate demand in Figure 1 is the case where aggregate demand has fallen below potential GDP—perhaps due to a downward shift in consumption or net exports. With real GDP less than potential GDP, the inflation adjustment line will soon fall below the target inflation rate. As in the case where real GDP is above potential GDP, the task of monetary policy is to prevent or correct such misalignments. In this case, the Fed would lower the federal funds rate to bring aggregate demand up to potential.

There is some controversy about whether central bankers should be trying to adjust interest rates to move aggregate demand around in the way described here. However, keeping the growth of aggregate demand in line with the growth of potential supply is a key element of many different approaches to monetary policy. For example, in the case of a constant growth rate rule for the money supply, the numerical value of the growth rate of money should take account of the growth rate of potential GDP as well as the growth rate of velocity. Morever, whatever the academic merit of arguments that the Fed should not focus on aggregate demand, the reality is that even when the Fed or other central banks focus heavily on controlling inflation, they still consider adjustments in the interest rate in response to developments in the real economy.

The Role of Discretionary Fiscal Policy

Given this description of monetary policy, now consider the role for fiscal policy. In Figure 1, a change in fiscal policy can shift the AD curve. A fiscal stimulus—for example, an increase in government purchases or a cut in taxes—causes a shift to the right, and a fiscal contraction causes a shift to the left. In the model, the effect of even a permanent increase in government spending on the

deviation of real GDP from potential GDP is temporary, however, because the shift in the AD curve would bring about changes in inflation—with the IA line rising—until real GDP returned to potential GDP.

At this point it is important to distinguish between discretionary changes in taxes and spending—for example, the legislative and executive actions proposed by Presidents Bush and Clinton in the early 1990s—and changes in taxes and spending due to the automatic stabilizers, like the increase in spending on such programs as unemployment compensation and the decrease in tax revenue as employment and income falls in a recession. The overall size of the actual changes in taxes and spending due to the automatic stabilizers are frequently much larger than even the proposed discretionary changes. Both types of changes in taxes and spending impact aggregate demand, but the automatic ones are more predictable and work more quickly than the discretionary ones. Here I focus on the discretionary fiscal policy actions, taking as given the workings of the automatic stabilizers. The magnitude of the automatic stabilizers is not chosen with cyclical considerations in mind, but rather depends on noncyclical factors such the progressivity of the tax and transfer system. The size of the automatic stabilizers does change over time (see the paper by Alan Auerbach and Daniel Feenberg in this symposium), but countercyclical stabilization is at best a minor consideration when changing the tax law. Hence, it is a realistic assumption to take the automatic stabilizers as given and focus on discretionary fiscal policy.

Recent evidence that changes in the instruments of fiscal policy shift aggregate demand in this way is found both in structural econometric models (Taylor, 1993) and in structural vector autoregressions (Blanchard and Perotti, 1999). There is much evidence that the effects on real GDP are temporary, but as discussed below, there is a great deal of uncertainty about the exact size and timing of these impacts. Moreover, the size depends greatly on the assumptions made about monetary policy. There are, of course, long-run effects of fiscal policy on potential GDP due to changes in marginal tax rates or changes in the composition of spending, but here I focus on the short-run impacts—deviations of real GDP from potential GDP—that are relevant for countercyclical fiscal policy.

Assuming that fiscal policy has this power to shift aggregate demand and change real GDP in the short run, how should the power be used? From a normative perspective, a reasonable countercyclical goal of fiscal policy would be the same as that of monetary policy described above: Keep real GDP close to potential GDP when inflation is on target. Pushing real GDP beyond potential GDP through fiscal stimulus would cause inflation to rise and would clearly thwart the inflation-targeting goal of monetary policy; most likely such action would bring about an offsetting action by the Fed. Similarly, letting real GDP drop below potential GDP as in a recession would be undesirable.

There are, of course, important noncyclical, or structural, effects of fiscal policy that have no counterpart in monetary policy. Reducing marginal tax rates and enlarg-

ing the tax base reduces deadweight loss and creates greater efficiency. Running a budget surplus to keep real interest rates down provides for more private investment and higher economic growth. Unemployment compensation, payroll tax policy, and other laws affecting the labor market can change the natural rate of unemployment.

To be sure, from a "positive economic theory" perspective, there may be other goals of countercyclical fiscal policy, too. Some of these may be political, including the simple political need to be seen to do something, anything, in a recession. Also, like monetary policy, fiscal policy may be subject to "political business cycle" pressures to increase spending or to cut taxes to stimulate the economy in the short run, even though such stimulus would be inflationary in the long run. Time-inconsistency, in which there is a temptation to announce one policy now and follow another one later, is a problem for fiscal policy as well as for monetary policy. However, I focus on normative countercyclical policy considerations in this paper, in which case the assumption that the goals of monetary and fiscal policy are the same seems reasonable.

Let the Fed Do the Job?

If the countercyclical goals of fiscal and monetary policy are the same, then why not simply let monetary policy do the job? If the Fed has the power to move the aggregate demand curve, and uses this power wisely to try to keep real GDP in line with potential GDP, then countercylical fiscal policy is not needed. In recent years the Fed appears to be making the needed adjustments more successfully then ever before, so the role for fiscal policy seems to have diminished.

Monetary policy has a comparative advantage over fiscal policy in achieving countercyclical goals. Experience has shown that the implementation lags are much shorter for monetary policy than for fiscal policy, which puts fiscal policy at a disadvantage as a countercyclical tool. The Fed can and does make adjustments in interest rates relatively quickly—all the Fed Open Market Committee needs to do is have a conference call, vote, and transmit its decision to the New York trading desk where the short-term interest rate is changed. In contrast, changing government purchases or tax rates by the amount needed to bring about a similar shift in demand requires a substantial period of time even after the need is recognized. The president and the cabinet need to decide exactly what program or tax will be changed; proposed legislation must be submitted in Congress, which in turn will debate and then either pass, modify, or reject the proposal. The time span is quarters, or even years, rather than days. It is true that adjustments in withholding rates and accelerations of authorized spending can be done with presidential executive orders rather than legislation, but in a world of forward-looking economic agents, such temporary measures are unlikely to have much effect on aggregate demand.

Another advantage of monetary policy is that, if it is necessary to reverse policy action in a few months, the Fed can do this much more easily than the president and the Congress can propose and pass legislation to undo their previous actions.

In the 1980s and 1990s, the Fed has shown much more flexibility in changing its instruments than discretionary fiscal policy could ever show.

It is also likely that the use of discretionary fiscal policy could make the Fed's job more difficult. The Fed staff would have to spend time forecasting the size of the fiscal proposals. Political analysis would be required to estimate the chances that proposals would pass. Forecasting the changes in revenues and spending due to the automatic stabilizers is easier, because it does not require political forecasting. Because the effect of the automatic stabilizers is more predictable, they create an element of certainty in fiscal policy similar to that achieved by a monetary policy rule.

In fact, there has been little or no discussion about using discretionary fiscal policy to bring aggregate demand back into line with potential GDP in recent years. In early 2000, neither the president nor the Congress proposed to help the Fed in its quest to "align demand with potential supply" by advocating spending cuts or tax increases. Of course, it is the reverse situation—a recession where aggregate demand crosses the inflation adjustment line at less than potential GDP—where countercyclical fiscal policy would be more likely to be considered.

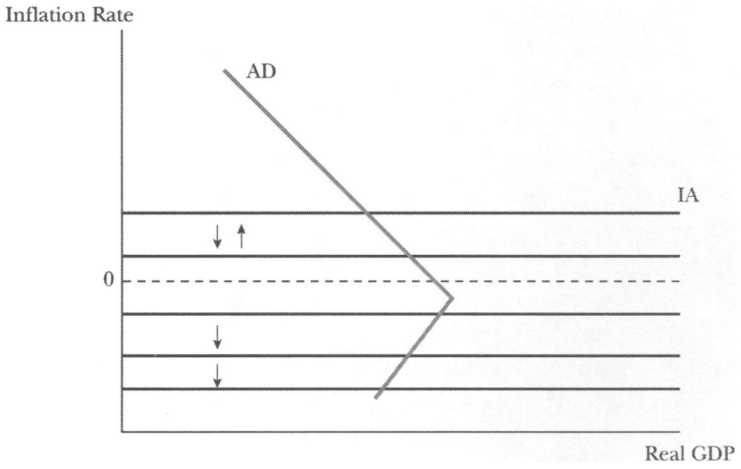
These types of arguments against discretionary fiscal policy, involving implementation lags, irreversibility, and political constraints, have been discussed in the past, but I believe that they are reinforced by the explicit and frequently preemptive way that monetary policy has been working in recent years. Another difference with past arguments is that there is much less confidence about the impact of discretionary fiscal policy changes in recent years. Recent studies of changes in government spending and taxes have revealed *impact* lags (measured from the time that the action is taken) that seem as long and as uncertain as for monetary policy. Empirical work with U.S. data by Blanchard and Perotti (1999) finds that the impact of a change in fiscal policy on real GDP reaches a peak several quarters after the actual change and lasts for several years. There is disagreement among researchers about the size of the increase, the timing, and the economic mechanism through which a fiscal stimulus or contraction occurs (Ramey and Shapiro, 1998; Burnside, Eichenbaum and Fisher, 2000). Blanchard and Perotti (1999) also find that the impacts of changes in taxes on the components of spending are hard to reconcile with most macro models.

Fiscal consolidation in chronic deficit countries in Europe even seems to have the wrong sign, with the impact of "contractionary" fiscal policies being positive on real GDP in some cases (Giavazzi, Japelli and Pagano, 1999). One example is Ireland, where it may be that the positive effects of lower interest rates overwhelmed the negative effect of a decline in government spending. In Japan, several bouts of fiscal policy stimulus in the 1990s had little effect on the overall economy.

The Zero Bound on Interest Rates

Not all recent developments suggest a smaller role for discretionary fiscal policy, however. With the current interest rate approach to targeting inflation at a rate near zero, there is a risk that the federal funds rate would approach its lower

Figure 2
The Kinked Aggregate Demand Curve



bound of zero in a recession. This could reduce the power of monetary policy to stimulate demand further. Japan in the 1990s has been experiencing a situation where interest rates have already been pushed to zero, and so the power of additional monetary policy steps has been questioned.

The problem is that a monetary policy oriented toward interest rates runs the risk of a downward spiral in the economy as the nominal interest rate approaches zero. This is illustrated in Figure 2, which has the same axes as Figure 1, but in this case the aggregate demand (AD) curve has a different shape and several inflation adjustment (IA) lines are shown. When the nominal interest rate hits zero, any further declines in the inflation rate cause the real interest rate to rise, further reducing demand and putting even more downward pressure on inflation. The switch from falling real interest rates as inflation falls (for a positive nominal interest rate) to rising real interest rates when inflation falls (for a zero nominal interest rate) causes a kinked aggregate demand curve. Above the kink, the aggregate demand curve is negatively sloped and the model is stable; below the kink, the aggregate demand curve is positively sloped and the model is unstable. For example, when the AD curve has a positive slope, the inflation adjustment line just keeps shifting down, causing higher and higher real interest rates and even more deflationary pressure.

The kinked aggregate demand curve creates a role for fiscal policy as a fail-safe device, in case aggregate demand falls so much that the Fed's interest rate hits a lower bound and the Fed's policy is incapable of reviving aggregate demand.

The problem of the lower bound on nominal interest rates has received much scrutiny in recent years. Research by Fuhrer and Madigan (1997), Orphanides and Weiland (1999), and Reifschneider and Williams (2000) shows that there is a small risk that such a bound could be reached when inflation is

targeted at 2 percent, but the likelihood rises as the inflation target gets lower. The Reifschneider and Williams study, which simulates policy rules in a rational expectations model, relies on fiscal policy to prevent downward spirals in the economy in the simulations.

Meltzer (1999) has challenged the argument that there is a monetary policy problem when the nominal interest rate hits a lower bound by stressing the money stock and noninterest rate channels of monetary policy. He provides evidence to show that increases in the money supply could be quite stimulative even when the short-term nominal interest rate is zero, because other asset prices—including exchange rates—would change. In addition, one must recognize that fiscal policy has not exactly solved the problem of the zero interest rate bound in Japan, shedding some doubt on this fail-safe role of fiscal policy.

Credibility, the Assignment Problem, and Fixed Exchange Rates

Another reason that countercyclical fiscal policy might be appropriate is if monetary policy is constrained not to react to the gap between real GDP and potential GDP. Modern "political macroeconomics" suggests that such a situation might arise if credibility problems were caused by monetary policy reacting to the cycle, or if such a reaction would cause confusion about the inflationary goals of monetary policy. For example, reacting to the state of the real economy might suggest that monetary policy is trying to exploit the long-run Phillips curve; this would reduce credibility of the monetary authority. Thus, with monetary policy unable to respond, fiscal policy might have to take up the slack.

An extreme version of this policy assignment would be for monetary policy to focus entirely and publicly on reacting to inflation, so that the central bank can create a fireproof reputation as inflation fighters, while fiscal policy focuses on the countercyclical job of keeping real GDP close to potential GDP. This is reminiscent of the fiscal-monetary policy assignment suggested by Robert Mundell, though it is motivated by credibility rather than by the relative effectiveness of fiscal versus monetary policy. Taylor (2000) discusses this alternative interpretation of the assignment problem.

Another case, though not relevant to the Fed at this time, where monetary policy is constrained not to react cyclically is the classic case of a fixed exchange rate with capital mobility. In this case, monetary policy is constrained by world interest rates and cannot be changed independently of events abroad. In this case fiscal policy would have a cyclical role because monetary policy could not be used.

A Formal Rules Approach to Countercyclical Policy

Thus far I have not treated the reaction of monetary policy to the cycle as part of the central bank's monetary policy rule. The above graphical framework only treats the response of monetary policy to inflation as part of the policy rule. While it is easier to discuss the systematic reaction of policy to one variable than to two,

especially in a diagram, in most analyses of monetary policy rules researchers consider the reactions of monetary policy to real output as well as to inflation. In this section I take this more formal approach to examine the implications for fiscal policy of a monetary policy that responds systematically to real output. Allowing policy to react systematically to real GDP also allows me to distinguish more explicitly between discretionary fiscal policy and the automatic stabilizers, and to examine empirically how cyclical responses of policy have changed over time.

Monetary and Fiscal Policy Rules with a Response to Real GDP

Observe that to bring real GDP into alignment with potential GDP in Figure 1, the Fed reacts to the gap, or the difference, between real GDP and potential GDP. That is, it raises the interest rate when real GDP rises above potential GDP and lowers the interest rate when real GDP falls below potential GDP. This type of interest rate reaction to the gap between real GDP and potential GDP is typical of the Fed and many other central banks and is incorporated in most monetary policy rules in most new normative macroeconomic research. Responding to real output in this way tends to bring real GDP back into equality with potential GDP.

This interest rate reaction is similar in form to the reaction of the Fed to the inflation rate. Combining both reactions—the reaction to the inflation rate (already considered) and the reaction to the gap—into one monetary policy rule, results in the following monetary policy rule:

$$\text{real short term interest rate} = h(\text{inflation rate}) + g(\text{output gap}),$$

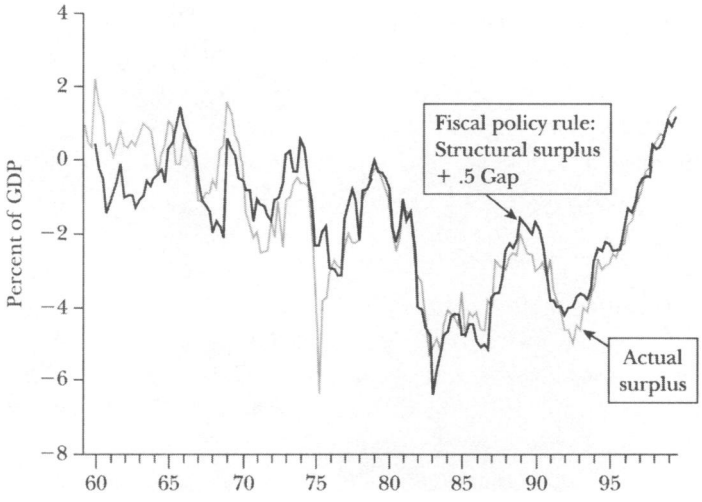
where h and g are positive response coefficients multiplying inflation and the output gap. The output gap is the percentage deviation of real GDP from potential GDP. (I am ignoring the constant term in the equation). The graphical case above had $g = 0$; that is, the Fed reacted only to inflation, not the output gap. This formulation simply incorporates the output gap into the policy rule.

Now one can analogously define a fiscal policy rule as

$$\text{actual budget surplus} = f(\text{output gap}) + \text{structural budget surplus},$$

where f is a constant and both the actual budget surplus and the structural budget surplus are measured as a share of GDP. The difference between the actual budget surplus on the left-hand side of the equation and the structural surplus on the right-hand side is the cyclical surplus, which is assumed to equal the first term on the right-hand side—f(the output gap)—in this framework. Thus, the above equation can be viewed as a standard decomposition of the budget surplus into a cyclical part and a structural part. It also is a way to distinguish between automatic stabilizers and discretionary policy. If the changes in the structural surplus are dominated by discretionary actions—countercyclical and otherwise—as seems

Figure 3
The Actual Surplus and a Fiscal Policy Rule



reasonable, then the term f(the output gap) would represent the full effect of the automatic stabilizers on the surplus.

Empirical Evidence on the Monetary Policy Rule

The first equation, the monetary policy rule, has been investigated by many researchers (for example, Taylor, 1999). Such an equation gives a close approximation of actual changes in the federal funds rate in the United States in the 1980s and 1990s. I have suggested coefficients of h and g equal to .5; that is, a 1 percentage point increase in inflation should lead to an increase in real short-term interest rates of .5 percentage points, and a shortfall of, say, 1 percent below potential GDP leads to a reduction of real short-term interest rates of .5 percentage point. Values near this suggestion are commonly found in empirical work in the United States in the 1980s and 1990s. (If the nominal interest rate were on the left hand side of the equation, then h should be greater than one; say, 1.5.) Values of h and g near these magnitudes result in good performance in model simulations (Taylor, 1999).

Empirical estimates of the coefficient g on the output gap have increased from the 1960s and 1970s to the 1980s and 1990s, representing a more responsive interest rate policy aimed in part at keeping real output stable. Estimates of the coefficient h have increased as well, with a breakpoint somewhere in the early 1980s.

Empirical Estimates of a Fiscal Policy Rule

The fiscal policy rule has received much less scrutiny than the monetary policy rule, yet it describes the behavior of the federal budget surplus quite accurately. Figure 3 shows how such a fiscal policy rule compares to actual movements in the

Table 1
Estimated Response of the Surplus and Its Components to the Output Gap

Sample period	*structural*	*cyclical (f)*	*total*
1960:1–1999:3	.01	.43	.45
	(.040)	(.028)	(.048)
1960:1–1982:4	−.13	.45	.32
	(.029)	(.040)	(.048)
1983:1–1999:3	.31	.37	.68
	(.070)	(.036)	(.070)

Note: Standard errors in parentheses.

surplus during the past 40 years. The fiscal policy rule shows what would have happened if the cyclical surplus (the actual surplus less the structural surplus) responded to the output gap with a coefficient f equal to .5. For example, with this coefficient, a 2 percentage point decrease in the output gap, as in a recession, would result in a decrease in the cyclical surplus (or increase in the cyclical deficit) of 1 percent of GDP. For the chart in Figure 3, I use the national income and product account definition of the federal budget surplus and CBO's measure of the structural surplus (called the standardized budget surplus) and of potential GDP when computing the output gap. (CBO measures the structural surplus by disaggregating taxes and government spending into several different components and then taking out the cyclical response of each item.) During this period, the structural surplus has changed gradually over time, declining from the 1960s to the 1980s and then reversing direction in the late 1980s and into the 1990s.

The very close connection between the budget surplus and the cycle illustrated in Figure 3 suggests that the automatic stabilizers have played an important role in moving the budget surplus over the cycle. This close connection can be demonstrated more formally with regression analysis, which also shows that discretionary fiscal policy has had little relation to the cycle.

Table 1 shows the estimates from bivariate regressions using the output gap as the independent variable and the structural, the cyclical, and the total surplus, one at a time, as the dependent variables. Over the last four decades, the impact of the output gap on discretionary fiscal policy as measured by the structural surplus was very small. Indeed, there is no room for the response of discretionary policy to decline without becoming perversely negative; it is already about as low as you can go at .01!

However, the near-zero coefficient over the full sample is an average of a negative coefficient and a positive coefficient in two subsamples. Consider, for example, a sample breakpoint of 1982. This break point was about the same time as the change in the monetary policy rule noted above. In Table 1 the coefficient on the structural deficit has switched from a perverse procyclical negative coefficient—that is, larger structural deficits seemed to accompany booms rather than

slumps—to a rather sizeable countercyclical coefficient. Does this indicate that countercyclical discretionary fiscal policy has suddenly become more effective?

The positive and significant regression coefficient seems to be due to two main events. The first was the Reagan tax cut that was passed in 1981, and phased in during 1982 and 1983. This tax cut was proposed in September 1980 during the presidential election campaign and after the 1980 recession (which had its trough in July 1980). It was certainly not proposed as a demand stimulus. However, by the time the tax cut took effect, the economy had entered a follow-up recession, which had its trough in November 1982. So even though President Reagan's tax cuts were proposed well in advance, they were perfectly timed for the follow-up recession. The second main event is that tax revenues increased in late 1990s as the income of high-income people with high tax rates rose rapidly. This gave the appearance of countercyclical policy; that is, strong economic growth being accompanied by higher taxes. But the change in the income distribution was obviously not an intentional move by Congress to move to a less stimulative fiscal policy in the late 1990s. (The shift in the income distribution, given a certain growth rate of GDP, is conceptually different from the automatic stabilizer effect, which involves a change in the growth rate of GDP, with the distribution of income given.) In short, the seemingly well-timed countercyclical fiscal movements of the structural surplus during the 1980s and 1990s is best interpreted as a coincidence.

Over the last four decades, the role of automatic stabilizers has been much larger than the role of discretionary fiscal policy; the coefficient of a regression of the cyclical budget deficit on the output gap over the period from 1960 to 1999 is .43. Over the whole sample period, all of the systematic movements in the surplus have been due to the automatic stabilizers, as discussed above in the context of Figure 3, and as seen in the difference between the coefficients of .43 and .01 over the entire sample period. However, when the sample is divided into an earlier and later time period, observe that the coefficient f which reflects the automatic response of the budget to the output gap has fallen from .45 to .36 over this period.

To test whether this change was significant, I added to the full sample regression a variable that equals the output gap after 1982:4 and zero before. I also allowed for a second-order autoregressive error in the equation to get consistent estimates of the standard errors. The coefficient on this dummy variable was –.2 with a standard error of .07, indicating a large and statistically significant decline in the size of the automatic stabilizers. This could reflect the flatter income tax system introduced in the 1980s.

Conclusion

In the current context of the U.S. economy, it seems best to let fiscal policy have its main countercyclical impact through the automatic stabilizers. U.S. monetary policy has been doing a good job in recent decades at keeping aggregate

demand close to potential GDP, partly because this is consistent with the Fed's inflation objectives and partly because it is viewed as good policy in its own light. It seems hard to improve on this performance with a more active discretionary fiscal policy, and an activist discretionary fiscal policy might even make the job of monetary authorities more difficult. Empirical evidence suggests that monetary policy has become more responsive to the real economy, suggesting that fiscal policy could afford to become less responsive. Empirical results reported here indicate that the automatic stabilizers have in fact become less responsive and the discretionary actions have shown little consistent response over time.

Given the more transparent and systematic approach to monetary policy that has been followed in recent years, it is more important than ever for fiscal policy to be clearly stated and systematic. The automatic stabilizers represent such a predictable and systematic response, setting out rule-like mechanisms for changes in taxes and spending. It would be appropriate in the present American context for discretionary fiscal policy to be saved explicitly for longer-term issues, requiring less frequent changes. Examples of such a longer-term focus include fiscal policy proposals to balance the non-Social Security budget over the next ten years, to reduce marginal tax rates for long-run economic efficiency, or even to reform the tax system and Social Security. Other examples might include stating explicitly how fiscal policy would be used in unusual situations, such as when nominal interest rates hit a lower bound of zero. Such rules for fiscal policy are more difficult to specify and enforce in practice than parallel rules for monetary policy. However, dividing the labor of fiscal and monetary policy in this way would be a useful step forward.

■ *I am grateful to John Cogan, J. Bradford De Long, Alan Krueger, Milton Friedman, and Timothy Taylor for helpful comments and discussions, and to the Hoover Institution and the Stanford Institute for Economic Policy Research for research support.*

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