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### Fiscal Policy and Inflation

Betty C. Daniel

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The recent passage of a tax cut package in the U.S. raises an interesting and important question for monetary policy: Will the tax cuts create inflation that the Fed cannot contain? According to conventional wisdom, the answer is “no.” So long as a central bank is independent and well run, it can control inflation, irrespective of the stance of fiscal policy. “Independent” means that the central bank cannot be forced into inflationary finance of fiscal deficits; and “well run” has come to mean that the central bank targets inflation and does not try to keep output artificially high. The Federal Reserve seems to fit both parts of that description fairly well. Its independence is well established. And though the Fed has not formally adopted inflation-targeting, some studies (for example, Clarida, et al. 2000) show that its conduct of policy was consistent with a version of inflation-targeting called the Taylor Principle during the 1980s and 1990s, a period when inflation in the U.S. was reduced substantially and subsequently maintained at a low, stable level.

Some economists have challenged conventional wisdom, however, in their work on the “fiscal theory of the price level” (Sims 1994; Woodford 2000). They claim that inflation is the joint product of both monetary and fiscal policy. Specifically, they claim that some fiscal policy changes create inflation that an independent monetary authority is powerless to avoid. While controversial, this theory is garnering more attention.

This *Economic Letter* explores this issue by reviewing the Taylor Principle and its implementation, as well as the conditions under which the “fiscal theory of the price level” holds.

#### How does inflation targeting work?

According to the Taylor Principle (Taylor 1993), a central bank should focus on hitting a chosen target for

the inflation rate, so long as output is not too far from the level consistent with the natural rate of unemployment—that is, the rate that would be observed once short-term cyclical factors played themselves out. To do this, the central bank first chooses a target for the long-run nominal interest rate based on its inflation target. Then, when the expected rate of inflation rises above that target, the central bank should act aggressively by increasing the nominal interest rate above its long-run target level by more than the increase in expected inflation. The increase in the nominal rate also increases the real interest rate—that is, the nominal rate minus the expected inflation rate—which is the rate that ultimately influences demand. With a higher real interest rate, forward-looking consumers understand that there is a reward to postponing consumption. If they cut back on some consumption today, and save their money at a higher interest rate instead, they can consume more tomorrow. So, by raising the nominal interest rate in this way, the central bank reduces demand and contains inflation.

The beauty of using the Taylor Principle to guide monetary policy is that the central bank does not need to understand whether the higher expected rate of inflation is due to a transitory demand shock, a transitory supply shock, or a shock to the financial markets.

For example, suppose there is a transitory increase in demand that lasts for only one period. The resulting excess demand creates higher expected inflation. Following the Taylor Principle, the central bank reacts by raising the nominal interest rate above its target by more than the increase in expected inflation, thus raising the real interest rate. The increase in the real interest rate convinces consumers to postpone spending, which reduces the excess demand and eliminates inflation. In the next period, the demand increase disappears, bringing expected inflation back to target. The central bank can therefore lower the nominal interest rate back to its target level. The transitory movement in the nominal interest rate eliminates the inflation that would have occurred had the nominal interest rate stayed the same.

Now suppose there is a transitory negative supply shock, such as a fall in the supply of energy, which raises the price of energy and therefore the cost of production. The higher cost of production implies a fall in potential output, which creates excess demand. (Note that a permanent supply shock would not create excess demand since the present value of future income would fall by the same amount as current supply.) Once again, the excess demand creates higher expected inflation, and the central bank reacts exactly as it did in the case of the demand shock. The increase in the nominal interest rate raises the real interest rate, convincing consumers to postpone consumption while supply is low. In the next period, when supply returns to normal, excess demand and anticipated inflation vanish, and the central bank returns the interest rate to target. So, once again, raising the nominal interest rate eliminates the need for prices to rise, maintaining price stability.

Finally, suppose there is a financial market disturbance, perhaps due to changes in financial technology. Since financial market disturbances affect demand through interest rates, they cannot have inflationary effects under inflation targeting. Keeping the interest rate at target prevents changes in financial markets from ever creating expected or actual inflation.

Thus, no matter what the source of the transitory shock to the economy, if the central bank follows the Taylor Principle—that is, if it reacts to expected inflation with an increase in the nominal interest rate that is larger than the increase in expected inflation—it will be successful in balancing its concerns about inflation and output.

But does the Taylor Principle work so well when the economy faces *permanent* demand shocks? And is the recent tax cut a case of a permanent demand shock?

### **How tax cuts might create inflation**

How can fiscal policy create a permanent demand shock? A tax cut raises the present value of disposable income, and, as a result, the forward-looking consumer has a greater demand for consumption not only

today but also into the future. This can be considered a permanent increase in demand. This excess demand causes an increase in expected inflation.

A central bank that follows the Taylor Principle reacts to the increase in expected inflation by raising the nominal interest rate sufficiently to raise the real interest rate. This convinces consumers to postpone consumption in the current period and prevents inflation from occurring.

But the permanent demand shock scenario in the next period is quite different from the transitory demand shock scenario. In the next period, consumption is higher than its original level both because the tax cut has led to a permanent increase in demand and because consumers deliberately postponed consumption due to the higher interest rate. So excess demand is higher than in the first period *and* expected inflation is higher. The central bank's policy of raising interest rates to reduce demand works only if what is needed is a temporary reduction in demand to offset a transitory shock. When the shock is permanent, raising the nominal interest rate only postpones inflation. And when inflation does occur, it is higher than it would have been originally due to the buildup of excess demand resulting from postponed consumption.

The excess demand created by the tax cut can be resolved only by inflation. Inflation reduces the real value of the consumer's nominal assets (money and nominal government bonds), acting as a capital levy on dollar-denominated wealth. Once the fall in private wealth matches the reduction in the present value of tax liabilities, then demand returns to its original level. This inflation is caused by fiscal policy, and this inflation is necessary to restore equilibrium between demand and supply. So, according to the "fiscal theory of the price level," the central bank is powerless to prevent this inflation—it can only determine how large it is and when it occurs.

### **How tax cuts might not create inflation**

There is another side to the way people react to a tax cut. If people believe that the tax cut will be offset in the future by higher taxes or reduced spending, then the tax cut does not create a permanent demand shock. (This view is known as "Ricardian Equivalence.")

For example, if consumers expect a tax cut to be followed by a tax increase in the future under some other administration, such that present value taxes do not change, then there is no demand shock at all. Forward-looking consumers base their consumption decision on the present value of disposable income. The timing of taxes should not affect consumption demand, as long as the present value of taxes is constant.

Additionally, if consumers expect a tax cut to be followed by future government spending cuts, then the tax cut generates only a temporary increase in demand. The excess demand vanishes when government spending falls in the future, offsetting the increase in private demand. The central bank can then use the Taylor Principle to raise the real interest rate and postpone the increase in consumption, keeping inflation from rising. Inflation is not necessary.

Whether or not the latest round of tax cuts creates inflation depends on people's beliefs about future fiscal policy decisions. If they do not expect the tax cuts to be fully offset by an increase in future present value taxes or a reduction in future present value government spending, then the tax cuts must create inflation. The Fed is powerless to prevent that inflation—following the Taylor Principle in this case only postpones it and makes it larger. If they do expect tax cuts to be offset, then any surge in demand will be only temporary, and following the Taylor Principle would help the Fed contain inflation.

### **Conclusion**

In the U.S. economy in the last year or so, output growth has slowed, inflation has not increased, and the Fed has reacted to the possibility of a recession and reduced expected inflation with multiple cuts in

short-term interest rates. Does this mean that the Fed will keep inflation near target by continuing to follow the Taylor Principle and that we need not be concerned about tax-cut-induced inflation?

Unfortunately, not. At any point in time, the economy faces numerous disturbances. The economy is currently influenced not only by tax cuts, but also by an energy crisis and a considerably deflated stock market, just to mention the obvious shocks. These other shocks seem relatively more important than the recent tax cuts in determining current economic activity and Fed policy. Even so, if people do not believe that the tax cuts will eventually be offset fully by higher taxes, reductions in government spending, or some combination of the two, then the tax cuts will stimulate demand and raise inflation above what it would have been otherwise. And the Fed's policy concerning when to accept that inflation will determine how large it ultimately is.

Betty C. Daniel

*Professor of Economics, University at Albany,*

*Visiting Professor, UC Santa Cruz*

*and Visiting Scholar, FRBSF*

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