18 Fiscal Policy

Chapter 18 Contents

A. Topics and Tools

The economics of government expenditures and taxation can be viewed on either a microeconomic or macroeconomic level. In microeconomics we study the reasons why governments might undertake economic activity—providing public goods, assuring a mechanism for security of property rights, redressing externalities, redistributing income, etc. We also study the details of how different methods of collecting revenue and distributing benefits affect the incentives for private economic activity.

On a macroeconomic level, we are usually more concerned with the aggregate levels of spending, taxes, and transfers. This includes both variations in the overall size of government—big government vs. small government— and changes in the balance of government income and outlays—issues of government deficits and debt. These are the issues we put in the category of ***fiscal policy***.

Economists' interest in fiscal policy evolved greatly in the twentieth century. Before Keynes, the microeconomic view dominated. Government programs should be based on one of the microeconomic justifications for government intervention in the economy, and they should be funded by direct taxation. Only in emergencies (usually wars) was it thought to be appropriate for governments to borrow.

Keynes took a radically different view of fiscal policy. He interpreted the Great Depression as a case of insufficient aggregate demand. With short-term nominal interest rates hovering near zero (a liquidity trap), Keynes did not believe that falling prices or expansionary monetary policy could provide the needed stimulation to aggregate demand. His primary policy recommendation was that government should increase spending (without raising taxes) to put more income into the hands of the public, "priming the pump" for additional private expenditures through the multiplier. Thus, the Keynesian economists who dominated post-World-War-II policymaking were positively disposed to the use of fiscal policy for countercyclical stabilization.

In some ways, fiscal policy is ideal for stabilization. With progressive taxes and entitlement-based transfer programs, taxes fall and transfer payments rise automatically when the economy enters a recession, providing an ***automatic stabilizer*** to the economy. However, discretionary fiscal policy proved more problematic because it often took a long time to put a fiscal policy action into place, raising the likelihood of mistimed policies that could prove destabilizing.

By the 1970s, most economists placed responsibility for countercyclical policy with monetary policy, and fiscal stabilization policy became an intellectual backwater. However, at the same time a theoretical controversy arose (provoked by, who else, Robert Barro) over the potential effects of government deficits. Because government budgets in most of the world careened wildly into the red during the last part of the century, the impact of these deficits and the resulting debts became the target of an extensive theoretical and empirical debate. The ***Ricardian equivalence*** controversy kept interest in fiscal policy alive through the 1980s and 1990s.

Now that most industrial countries have their deficits under control, interest has swung back to the possibility of using fiscal policy for stabilization. This revival has been sparked by the actions of many countries—especially those of the European Union—to unite their currencies or to peg them "irrevocably" to a foreign currency. This action eliminates monetary policy as a potential tool for stabilization, since the money supply must be used to preserve the fixed exchange rate or, in the case of currency

union, the money supply is no longer under the country's control. That leaves fiscal policy as the only candidate for macroeconomic stabilization.

B. Issues in Fiscal Policy

Countercyclical fiscal policy

Increasing government spending or lowering taxes should stimulate aggregate demand in the economy, making fiscal policy a potential tool for countercyclical stabilization. In the traditional Keynesian framework, fiscal policy affects aggregate demand by shifting the *IS* curve. Thus, the magnitude of the demand shift that results from a given change in the fiscal variables depends on the amount by which the *IS* curve shifts and on the slope of the *LM* curve.

The basis for arguing that expansionary fiscal policy leads to higher demand rests on the assumptions that increases in government spending do not cause equal reductions in other components of spending and that tax cuts raise households' disposable income (or wealth) and thus induce higher consumption spending. As we shall see below, both of these assumptions are open to challenge. Some kinds of government spending are close substitutes for private spending, thus may simply lead to direct reductions in other expenditures. If current tax cuts imply higher future taxes and households are forward-looking, then lifetime wealth and consumption may be unaffected by changes in taxes.

The strongest case for fiscal policy as a tool of stabilization policy can be made when the *LM* curve is relatively flat. There are several situations in which this may arise. The first is the ***liquidity trap***, which occurs when nominal interest rates are near zero. In a liquidity trap, interest rates become insensitive to changes in the money and asset markets because individuals in the economy have an insatiable desire to hold money rather than bonds at a zero nominal interest rate. This means that expansionary fiscal policy can effect large changes in aggregate demand without incurring the dampening effect of rising interest rates. Many think that a liquidity trap occurred in the United States in the 1930s, when interest rates on short-term government securities were very small. Interest in the liquidity trap has revived recently as nominal interest rates in Japan have hovered near zero.

A second situation where the *LM* curve is flat is when the central bank is strongly committed to an interest-rate pegging policy. Fixing the interest rate with monetary policy amounts to making the *LM* curve horizontal at the chosen interest rate. Thus, the effect of expansionary fiscal policy will again be strong, reinforced by accommodating monetary expansion in order to keep interest rates from rising.

Finally, although it is no longer covered in Romer's text, the Mundell-Fleming model of an open economy with perfect capital mobility has much the same effect as a horizontal *LM* curve in the case where the central bank pegs the exchange rate. This model is highly relevant to countries in a currency union such as the members of the euro area. In this case, expansionary fiscal policy would start to push domestic interest rates up above the world level, which would put upward pressure on the domestic currency. To counter this pressure and maintain the exchange-rate peg, the central bank would be forced to expand the domestic money supply as it buys foreign currency, which again reinforces the expansionary effects of fiscal policy.

Thus, the strongest cases for using fiscal policy as a tool of countercyclical stabilization are in situations where monetary policy is either ineffective (the liquidity trap) or being dedicated to an alternative goal (stabilization of interest rates or the exchange rate). Keynes made a plea in the *General Theory* for the use of fiscal policy to get out of the Great Depression:

> If the Treasury were to fill old bottles with banknotes, bury them at suitable depths in disused coal-mines which are then filled up to the surface with town rubbish, and leave it to private enterprise on well-tried principles of *laissez-faire* to dig the notes up again …, there need be no more unemployment and, with the help of the repercussions, the real income of the community, and its capital wealth also, would probably become a good deal greater than it actually is. It would, indeed, be more sensible to build houses and the like; but if there are political and practical difficulties in the way of this, the above would be better than nothing. (Keynes (1936))

Automatic stabilizers

Some fiscal policy actions occur automatically without a policy decision. These are called ***automatic stabilizers***. In most countries, taxes are not fixed in amount but depend on the amount of income, expenditure, or production that goes on in the economy. The amount of income tax collected increases and decreases with the amount of income earned. Similarly, taxes on sales or production move in parallel with GDP.

This means that during recessions, when GDP falls, tax payments will decrease. This provides a degree of expansionary fiscal policy that tends to boost the economy and mitigate the depth of the downturn—automatic stabilization.

Similarly, many government transfer payments are distributed as entitlements. Anyone who meets the qualifications of being unemployed or of having low income can receive unemployment benefits or income-support payments such as welfare or food

stamps. Since the number of people qualifying for assistance increases during a recession, the volume of transfer payments increases automatically, again providing a degree of stabilizing fiscal policy.

Automatic stabilizers can only work if it is feasible for the governmental unit to run ex-post deficits and surpluses. For the U.S. federal government, this is obviously not a problem because the credit market has lenders eager to buy Treasury bills and bonds. This is not true for some developing countries, who must rely on the central bank to finance recession-induced deficits through money creation. Moreover, many U.S. state and local governments are prevented by their own constitutions from running deficits. In these cases, they may be forced to cut discretionary expenditures or increase tax rates during downturns in order to keep their budgets balanced—hardly an appropriate fiscal policy stance.

Fiscal policy lags

One of the biggest problems with using discretionary fiscal policy to counteract business cycles is the lag involved in fiscal-policy action. As with monetary policy, the makers of fiscal policy must first recognize the need for a policy change. This ***recognition lag*** can cause policy action to be initiated many months after the beginning of a cyclical turnaround.

For monetary policy, once the need for action has been recognized, the actual policymaking process can be very quick. It is usually quite easy for the Federal Open Market Committee to agree to raise or lower the federal funds rate. The members of the FOMC are all economists or bankers, so they tend to share a common view of the world. None is elected to his or her position, so there is no posturing for the voters, and their meetings are held in secrecy anyway. Finally, the federal funds rate is a single number—the only debate is over whether and how much to change it.

In contrast, the ***decision lag*** for fiscal policy can be a serious impediment. In order to enact a fiscal policy change, both houses of Congress must agree on changes in the federal budget. This is done in partisan, public debate with all sides trying to score points with their constituents. Moreover, even if everyone agreed that government spending should go up by $100 billion, there are thousands of different programs on which this additional money could be spent. Before the budget bill can be passed, the majority must agree not only on the fiscal policy aspect (the overall amount of spending and taxes), but on the composition of expenditures and taxes. The frequency with which Congress misses its deadline for passing the budget and must keep the government operating with "continuing resolutions" testifies to the difficulty of achieving consensus on fiscal policy.

Crowding out

As noted above, it is possible that the expansion of demand resulting from an increase in government spending could be offset, partially or even completely, by a decline in other components of spending. When government spending simply replaces private spending, the latter is said to be ***crowded out***.

Direct crowding out occurs when the government buys something, say school lunches, that private buyers would otherwise have purchased for themselves. To the extent that overall private consumption or investment falls as the government buys things for people, the aggregate demand expansion is reduced.

Indirect crowding out happens when an increase in government spending raises interest rates, leading to a reduction in private investment (and perhaps consumption). If the *LM* curve is steep, then interest rates will rise substantially when fiscal policy expands, and there will be a large offsetting effect on private spending.

Of course, the long-run aggregate supply curve is vertical. Therefore, in the long run the economy tends to return to the full-employment level of output after any shock. With overall output fixed, any change in government spending must be offset by a long-run decline in another spending component. Thus, crowding out is more complete in the long run than the short run.

Ricardian equivalence

While most of the above discussion of fiscal policy has used a Keynesian framework such as *IS*/*LM*, much of the recent research on fiscal policies has focused around a strongly neoclassical proposition. Robert Barro posed the question in the title of a 1974 article: "Are government bonds net wealth?" The prevailing wisdom at the time was that people in the economy would treat government bonds as net wealth. They are assets of the individuals who own them without being liabilities of other individuals.

Barro pointed out that while no individual owes repayment of government bonds, all individuals bear this debt collectively. Since the government will have to use future tax revenues to make principal and interest payments on these bonds, forward-looking taxpayers should recognize this liability and accordingly lower their assessments of their wealth. If they do, then the taxpayers' liability will offset the bond-owner's asset and the net wealth associated with government bonds will be zero.

Barro went on to show analytically that consumers of the kind assumed in the Ramsey growth model (infinitely lived and consumption smoothing) will respond to a change in government spending in the same way whether it is financed by an increase in current taxes or by borrowing and running a deficit (*i.e.*, by future taxes). This remarkable result, which we discuss further below in support of Romer's analysis, is called the ***Ricardian equivalence theorem***. A good survey of opinions for and against

Ricardian equivalence can be found in a *Journal of Economic Perspectives* symposium cited at the end of this chapter.

Sustainability of debt

A final issue that has attracted a lot of attention from economists in recent decades is the degree to which government debt can be sustained indefinitely by simply borrowing more money in the future to repay current bonds. The conventional way of assessing whether an individual is overly indebted is to compare her net debt to her income. For governments, "income" is the capacity to collect tax revenue, which is probably roughly proportional to real GDP in the economy. Thus, the debt/GDP ratio is often used as a guideline for measuring the degree to which a country's debt is potentially problematic.

In the United States, the debt/GDP ratio has varied widely, as shown in Figure 1, which shows data taken from Table B-79 of the 2012 *Economic Report of the President*. The lower line represents the part of the debt that is held by the public; the remainder is owned by government agencies such as the Federal Reserve and the Social Security Trust Fund, so the lower line is the net federal debt. Figure 1 shows that the net U.S. federal debt has varied from as high as 108.6% of GDP at the end of World War II down to 23.8% in 1974.

The change in the debt from year to year depends on the government's deficit. It is convenient to look at the government's "primary deficit," which excludes government interest payments on the debt. The total deficit is the primary deficit plus interest payments. If the real value of the debt at time t is $D(t)$ and the primary deficit is $G(t) - T(t)$, then

$$\dot{D}(t) = rD(t) + G(t) - T(t), \tag{1}$$

where r is the real interest rate on government bonds. Consider a government that balances its primary budget, so that $G(t) - T(t) = 0$ for all future time. Would that government ever have to pay back its current debt or could it "roll it over" forever?

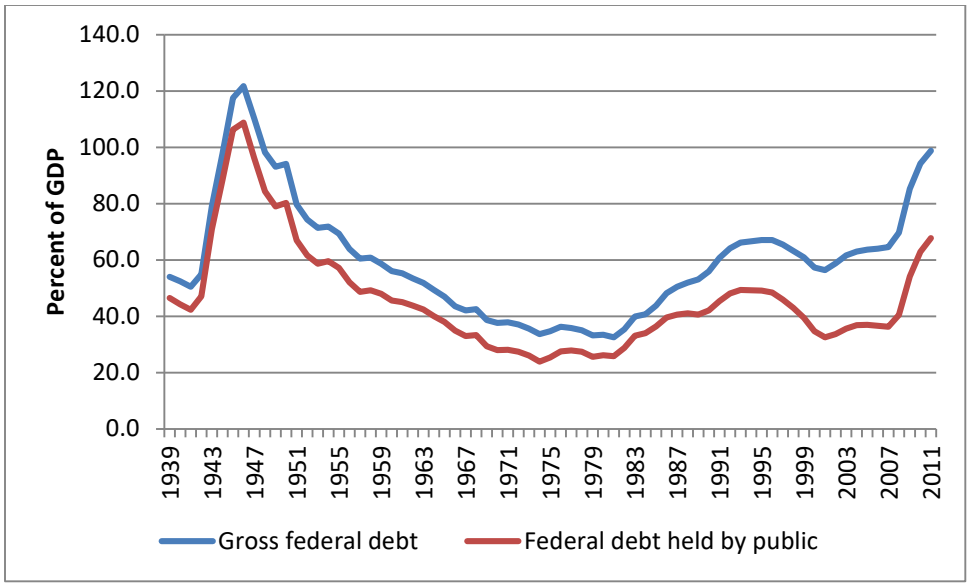

Figure 1. U.S. debt/GDP ratio, 1939–2011

If the government's debt evolves according to (1) with $G(t) - T(t) = 0$, then the change in the debt/GDP ratio is

$$\frac{d\left(\frac{D}{Y}\right)}{dt} = \frac{D}{Y}\left(\frac{\dot{D}}{D} - \frac{\dot{Y}}{Y}\right) = \frac{D}{Y}(r - g),$$

where g is the growth rate of real output. Thus, the debt/GDP ratio will be growing, even if the primary deficit is zero, if the real interest rate exceeds the growth rate of the economy. Countries that have growth rates that exceed the interest rate seem to be able to roll over their existing debt forever. However, in a country where the interest rate exceeds growth, the debt/GDP ratio will keep accelerating until lenders begin to question the government's ability to repay. As that begins to happen, the interest rate on government bonds is likely to rise, making the debt/GDP ratio grow even faster.

C. Understanding Romer's Chapter 13

Government budget constraint

Just like individuals and firms, governments must generate revenue to support their expenditures. Credit-worthy governments may borrow at some times in order to

spend more than their current revenues, but the creditors who finance such deficits must eventually be repaid.

Romer describes the budget constraint of a government in his equations (13.1) through (13.4). Coupled with the discussion of the role of inflation in the following section, the bottom line is that all government expenditures must be financed by one of three means:

- present taxes,
- future taxes, or
- the inflation tax.

Romer also points out some serious difficulties with how government deficits are measured. From the standpoint of private accounting systems, government accounting is peculiar in emphasizing liabilities (debt) but ignoring assets. Financial analysts would look very differently at a private company that goes into debt to finance a highly productive factory than at one that incurs debt to pay high salaries to its executives. Thus, looking at government debt but ignoring assets that will provide governmental services for many future years may not give an accurate picture of a government's financial position.

Another issue that Romer mentions is ***unfunded liabilities***, which are promises that the government makes to spend money in the future, without making corresponding changes in the tax structure to provide supporting revenue. Most advanced countries are facing huge prospective deficits in pension and medical care programs as the baby boom generation reaches retirement. Thus, today's government deficit may easily become a huge deficit in twenty years even with no change in fiscal policy.

Ricardian equivalence

On pages 669 and 670, Romer uses the household intertemporal budget constraint from the Ramsey growth model along with the government budget constraint to derive equation (13.11). This equation establishes the remarkable result that the household's lifetime budget constraint depends only on the present value of lifetime government spending (and lifetime taxes) and not at all on when tax revenues are collected.

Since households' consumption decisions depend only on their utility functions and the budget constraint, and since both of these are unaffected by a change in the timing of taxes, this demonstrates the remarkable conclusion of Ricardian equivalence: financing current government spending by borrowing rather than by current taxes does not affect households' consumption paths. Because a reduction in current taxes gives more current income to households, the only way that their consumption can be unaffected is if they save all of the tax cut.

Why would rational households save all of the money that the government gives back with a deficit-financed tax cut? As taxpayers, they recognize that the government has incurred a liability on their behalf. The bonds being issued today to finance the tax

cut will have to be repaid in the future out of tax revenues. In order to accumulate the money to pay these future taxes (while keeping consumption smooth), households must "invest" the tax savings in an interest-earning asset. In fact, they can just buy government bonds with the money that they would have paid in taxes, using the proceeds from the maturing bond to pay the future taxes. If we think of one individual doing all of this, it is obvious that she is simply paying herself back: sending in extra taxes and getting them back by redeeming the bond.

Thus, the Ricardian equivalence hypothesis shows that rational, infinitely lived households would respond to government borrowing by increasing the supply of saving, leaving interest rates in credit markets unaffected. This implies that there would be no crowding out due to a tax cut. In fact, the *IS* curve would not shift at all because consumption would not increase.

Problems with Ricardian equivalence

Critics have pointed out that many of the assumption underlying the Ramsey model (and therefore the Ricardian proposition) are unrealistic. Among the more obvious difficulties are the assumption of infinite lifetimes and perfect credit markets.

If lifetimes are finite and present-day citizens do not care about their descendents, then it is possible that today's consumers will not be consider the repayment of current deficits as a liability. Since everyone agrees that lifetimes are finite, the crucial empirical question is whether the current generation values the utility of the next generation. If the next generation's utility is valued as highly as the present generation's (appropriately discounted for the fact that it is in the future), then the Ricardian result still holds with finite lifetimes.

Liquidity constraints can also lead to non-Ricardian outcomes. An individual with low current income who lacks access to credit markets will usually spend nearly all of her current income—that is as close to consumption smoothing as she can get. Reducing such an individual's taxes gives her more current income and she is likely to spend most of it.

Tax smoothing

In section 13.3, Romer points out another crucial assumption of Ricardian equivalence—that taxes are lump-sum. With lump-sum taxes, it does not matter when they are collected because they do not distort economic decisions. However, taxes in the real world are never of a lump-sum nature. Instead the tax an individual pays depends on his income, expenditures, or other economic decisions.

Given these distortions, it is likely to be beneficial to avoid raising tax rates to extremely high levels at any point in time. Thus, the most efficient way to finance a given long-run pattern of government expenditure is by smoothing tax rates over time.

Political-economy models

Beginning in Section 13.5, Romer introduces a series of models of fiscal policy that endogenize the political decision-making process. Models in which political and economic variables and modeled jointly are often called ***political-economy models***.[1]

The political decision-making process in these models can feature varying degrees of sophistication. The simplest specification is to assume perfectly democratic decision making by agents whose distribution of preferences over outcomes is known. If the preferences of the voting population has certain regular properties, then the democratic outcome is the one preferred by the ***median voter***, whose preferences lie at the center (50^{th} percentile) of the population.

Consider voting for the amount of a public good to provide. If the amount proposed is above the amount preferred by the median voter, then a majority of voters would favor reducing provision. If the amount is below the median voter's preference, then a majority favor increasing the amount. Only if the amount is exactly at the median voter's preferred level will there be no majority in favor of changing. Thus, we often model democratic decisions by appealing to the preferences of the median voter.

Of course, few decisions in modern economies are made by direct democracy. More sophisticated models take into account the behavior of elected officials. Depending on the model, elected officials may be purely opportunistic, advocating whatever policies will get them elected (or re-elected). Or they may have preferences of their own, which must be balanced against the need to appeal to a majority of voters.

In Section 13.5, Romer describes a model of "strategic debt accumulation." This model builds on the work of Tabellini and Alesina (1990) looking at how incumbents may strategize to constraint their successors. This paper was motivated by the paradox of a conservative president (Ronald Reagan) running massive budget deficits. The essence of their argument is that by accumulating a huge amount of debt and spending the proceeds on his preferred targets (military spending), he would effectively constrain his successor's ability to spend on alternative priorities.

The "delayed stabilization" model of Section 13.6 shows how undesirable policies such as deficits may persist because of strategic behavior on the part of two parties who attempt to steer reform in opposite directions. The inability to agree on a reform may cause deficits to persist longer than they otherwise would.

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[1] The term "political economy" has a long and varied history. The earliest economists were professors of political economy. More recently, the term was used in the 1960s and 1970s as a euphemism for Marxist models. Lately, the term has resurfaced to refer to models in which both political and economic outcomes are endogenous.

A final puzzle

One of the most intriguing criticisms of the Ricardian equivalence hypothesis comes from Gordon Tullock and is called Tullock's Fallacy:

> In general, we have to pay our taxes to the government in the year that they come due. Clearly, however, we would be better off if that were loosened up. For example, suppose that I can pay this year's taxes and next year's taxes in the corresponding years, or I can pay them both this year having a discount on next year's taxes equivalent to the rate of interest, or I can pay them next year with an interest payment added on this year's taxes. Clearly, I have added flexibility and would be better off.
>
> As a matter of fact, that is the present situation for those members of the population with good credit. I can pay next year's taxes this year by the simple expedient of buying an adequate quantity of government bonds, and I can borrow money to pay this year's taxes and then pay it back with interest next year. Clearly, these additional opportunities benefit me: I have greater freedom in making my tax payments.
>
> But let us suppose that the government decides to benefit me even further. Suppose they notice that the interest rate that they have to pay is lower than the interest rate that I have to pay and, in additional, their credit is good so they can always borrow money. They, thus, borrow money for all of their expenditures this year and permit individuals to purchase an adequate quantity of bonds to cover this year's tax liability or wait until next year. The interest that the individual pays if he or she waits until next year will be lower although the interest received if he or she pays this year will be the same. Clearly this is a "super-Pareto" move. Not only is nobody injured, a great many people would be benefited.
>
> From this line of reasoning, we reach the conclusion that the government should collect no taxes this year, they should borrow money and then should collect this year's taxes plus interest next year. But note that the same line of reasoning would apply next year, and the next, and the next.... This is Tullock's fallacy, and I should warn the reader that although it is obviously a fallacy, it is very hard to put your finger on exactly what is wrong with it. (Tullock (1991))

D. Suggestions for Further Reading

Measuring the government deficit

Blejer, Mario J., and Adrienne Cheasty, "The Measurement of Fiscal Deficits: Analytical and Methodological Issues," *Journal of Economic Literature* 29(4), December 1991, 1644-78.

Ricardian equivalence and the effects of deficits

Barro, Robert J., "Are Government Bonds Net Wealth?" *Journal of Political Economy* 82(6), November/December 1974, 1095–1117.

Bernheim, B. Douglas, "A Neoclassical Perspective on Budget Deficits," *Journal of Economic Perspectives* 3(2), Spring 1989, 55-72.

Barro, Robert J., "The Ricardian Approach to Budget Deficits," *Journal of Economic Perspectives* 3(2), Spring 1989, 37-54.

Sustainability of deficits

Sargent, Thomas J., and Neil Wallace, "Some Unpleasant Monetarist Arithmetic," Federal Reserve Bank of Minneapolis *Quarterly Review* 9(1), Winter 1985, 15-31.

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Tabellini, Guido, and Alberto Alesina. 1990. "Voting on the Budget Deficit." *American Economic Review* 80 (1):37-49.

Tullock, Gordon. 1991. "Random Thoughts on the Debt." In *Debt and the Twin Deficits Debate*, edited by J.R. Rock, 189-205. Mountain View, Calif.: Bristlecone Books.