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Macroeconomics
Robert J. Gordon
Twelfth Edition

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interest-sensitive spending, particularly business investment, residential construction, and consumer durable goods purchases. This further reduces the multiplier.

This type of crowding out effect can be avoided if the central bank raises the money supply, thus pushing the *LM* curve to the right at the same time as the fiscal stimulus is pushing the *IS* curve to the right. The only reason for interest rates to go up is an insufficient money supply, and the Fed's control over the federal funds' short-term interest rate gives it the power to avert the interest-rate mechanism of crowding out.

Whenever the Fed boosts the money supply in order to support a fiscal stimulus, *the Fed is buying government securities issued as a by-product of the stimulus.* Because of the Fed's securities purchases, the net public debt does not go up. The government does not have to sell any securities to any other economic entity except the Fed. This type of cooperative monetary and fiscal expansion is sometimes called a **helicopter drop** of money. This counts as fiscal policy because the government counts the money floating down to the eager population as a transfer payment.

A **helicopter drop** is a figurative phrase to describe a combined monetary and fiscal policy expansion. A fiscal stimulus creates a larger deficit, and the government has to sell bonds to pay for the deficit. But instead of selling those bonds to the private sector, it sells them to the Fed. The Fed's assets and liabilities increase but the net public debt does not increase.

The interest-rate crowding out effect becomes less important when the economy is weak and the Fed is holding the short-term interest rate at zero, the so-called zero lower bound. The Fed can maintain the zero short-term interest rate, and there will be no investment-stifling increase in the borrowing rates faced by business firms and consumers as long as neither the term premium nor risk premium increase. Thus in a year like 2010 the federal government can conduct a fiscal stimulus without any necessity for interest rates to rise.

The Crowding Out Effect: Capacity Constraints

Economists have found that it is difficult to use statistical techniques to measure the crowding out effect. Throughout history many of the sharpest fiscal expansions have occurred at the beginning of wars, as in 1940–42 for World War II, 1950–51 for the Korean War, and during 1965–66 during the Vietnam War period. In each of these three cases the fiscal expansion occurred when the economy was close to full capacity, operating at or above the desired natural output level. In these episodes fiscal multipliers may have been quite low because government purchases literally pushed aside private purchases. For instance in the United States six months before Pearl Harbor, firms were planning to *reduce* auto production (a negative multiplier) because of shortages of steel and other components for which government weapons purchases had a higher priority.[7]

An important lesson of this section is that the case for stimulative fiscal policy is much stronger when the economy is weak, as in 2009–10, than when it is strong. In a weak economy interest rates are low, so it costs relatively little to pay the interest on the government debt. The Fed can buy up the securities issued to pay for the fiscal stimulus programs, yet higher inflation, the traditional downside of expansive Fed policies, is no threat because of the economy's weakness. In contrast when the economy is strong with actual real GDP at or above natural real GDP, fiscal multipliers are small due to the

[7] See Robert J. Gordon and Robert Krenn, "The End of the Great Depression 1939–41: Policy Contributions and Fiscal Multipliers," NBER working paper 16380. September 2010.

crowding out and capacity constraint effects. Yet this contrast represents an opportunity rather than a problem. Fiscal stimulus is only needed when the economy is weak and is inappropriate when the economy is strong, at which point monetary and fiscal restraint is needed, not stimulus.

SELF-TEST 3

For each of the following examples, indicate whether the multiplier for an increase in government expenditures is made larger or smaller:

1. A high personal income tax rate
2. A low share of consumption going to imports
3. A high share of corporate profits in GDP
4. Decision by the Fed to buy all the bonds issued as a result of higher government spending
5. A high level of capacity utilization

9 CASE STUDY

The Fiscal Policy Stimulus of 2008–11

The standard textbook analysis states that the government expenditure multiplier for tax changes is lower than for changes in government expenditures. The multiplier for *both* government spending and tax changes is substantially lower due to leakages into income taxes and imports. And in the previous section we have added corporate profits as another type of leakage. We also have discussed higher interest rates and capacity constraints as additional reasons why the real-world multipliers might be smaller than their textbook simplification.

Widely Different Multipliers for Different Types of Fiscal Policy

Modern econometric models can include all of these different factors together and sort them out. A prominent recent model produced the estimates of fiscal multipliers as displayed in Table 1. As we look down the multiplier column, we notice that the multipliers range from 1.74 to 0.32.

Why do we care about the multiplier of different types of fiscal policy? One dollar of government spending or tax cuts raises the fiscal deficit by one dollar, yet the effects on GDP are clearly very different. The most effective policy would be a temporary increase in food stamps; the second most effective would be an extension of unemployment insurance. The least effective fiscal policy, shown at the bottom of Table 1, would be to reduce corporate tax rates, with a multiplier of 0.32.

There is a systematic reason why these multipliers differ. If the government spends a dollar that goes directly into the pocket of a household, that will make the most difference to a low-income household living from paycheck to paycheck or to an unemployed person who has no paycheck at all. This is why the programs with the highest multipliers, listed at the top of Table 1, are those that directly target poor people (food stamps) or unemployed people (extension of unemployment benefits).

Table 1 Multiplier Estimates for Selected Types of Fiscal Stimulus

Measures with Relatively High Multipliers	
Expenditures	
Temporary Increase in Food Stamps	1.74
Extending Unemployment Insurance	1.61
Increased Infrastructure Spending	1.57
General Aid to State Governments	1.41
Taxes	
Job Tax Credit	1.30
Payroll Tax Holiday	1.24
Across the Board Tax Cut	1.01
Measures with Relatively Low Multipliers	
Taxes	
Make Bush Dividend and Capital Gains Cuts Permanent	0.37
Make Bush Income Tax Cuts Permanent	0.32
Cut in Corporate Tax Rate	0.32

Source: Alan S. Blinder and Mark Zandi, "How the Great Recession Was Brought to an End," Moody's Analytics working paper, July 27, 2010. Table 11, p. 16.

The lowest multipliers by the same reasoning are those where the benefits flow mainly to rich people who already have incomes high enough so that they can spend what they want. The three bottom lines in the table with multipliers of only 0.32 to 0.37 involve tax cuts that mainly benefit individuals and families in the top 10 percent or even the top 1 percent of the income distribution.

What difference is made by the estimated multipliers in Table 1? According to these numbers a $100 billion increase in the federal deficit that increases the federal debt by $100 billion would have very different effects on real GDP and therefore on employment. A $100 billion increase in food stamps would boost GDP by $174 billion and raise the public debt by $100 billion. In contrast a reduction in the corporation income tax would boost GDP by only $32 billion while raising the public debt by same $100 billion. Since the reason for the fiscal stimulus is to raise GDP by as much as possible per dollar of spending, the high multiplier types of stimulus in Table 1 should be used and the low multiplier types of stimulus should not be used.

The Weak Effects of the Tax Cuts

The main components of the 2008–11 fiscal stimulus measures are listed in Table 2, where their total amounts are expressed as a percentage of GDP. The first two items in the table are tax cuts and rebates instituted by the Bush administration in the spring of 2008 and as part of the Obama stimulus measures in the spring of 2009. Lower- and middle-income households have received tax rebate checks, paid less in payroll taxes, and benefited from tax credits to purchase homes and appliances.

Table 2 Size of Fiscal Stimulus Measures in 2008–10

	Percent of GDP
Tax Cuts and Rebates	
2008 Bush Tax Cuts and Rebates	1.2
2009 Obama Stimulus Tax Cuts	1.4
Expenditure Increases, all from 2009–11 Obama Stimulus	
Infrastructure and Related Spending	1.1
Transfers to State and Local Governments	1.2
Transfers to Persons of which: Unemployment Benefits (1.6) 2010 extensions of unemployment benefits (0.4)	2.3
Other components	0.4
Total Stimulus, 2008–11	7.6

Source: Adapted from Table 10 in the same source as used for Table 1.

The peak month for output and employment was December 2007, and initially the decline into the recession of 2008–09 was quite moderate. Even so, as early as April 2008, the Bush administration devised a set of tax rebates and tax cuts that added up to 1.2 percent of GDP, or about $170 billion. Then a year later the Obama stimulus program included another 1.4 percent of GDP in additional tax cuts. Were these effective?

To see whether the tax rebates and cuts were effective, we can compare the behavior of personal disposable income, which goes up by the amount that taxes are cut, with personal consumption expenditures. If consumption jumps by most or all of the increase in disposable income following a tax cut, then we can infer that the tax cut was effective. If consumption does not respond positively, then we can conclude that the tax cut was ineffective.

Figure 6 shows the behavior of personal disposable income and personal consumption expenditures from early 2007 to mid-2010. Each number plotted represents the value in a particular quarter above or below the value of the same variable in 2007:Q4. Thus all three lines come together at zero in 2007:Q4. Note that the Bush tax cuts and rebates caused real disposable income to jump about 2.5 percent in 2008:Q2 relative to 2007:Q4, but consumption did not rise at all. Instead consumption remained at the same level as in 2007:Q4, and subsequently it began to decline.

Why did the tax stimulus fail to boost consumption? In a separate study based on telephone interviews, three-quarters of respondents said that they would save the stimulus payments or use them to pay down credit card debt and other types of debt.[8] The survey evidence suggests that only about one-third of the tax stimulus resulted in extra consumption, but in Figure 6 consumption failed to increase by even that small amount because of other factors putting

[8] Claudia Sahm, Matthew Shapiro, and Joel Slemrod, "Household Response to the 2008 Tax Rebate: Survey Evidence and Aggregate Implications," NBER Working Paper 15421, October 2009.

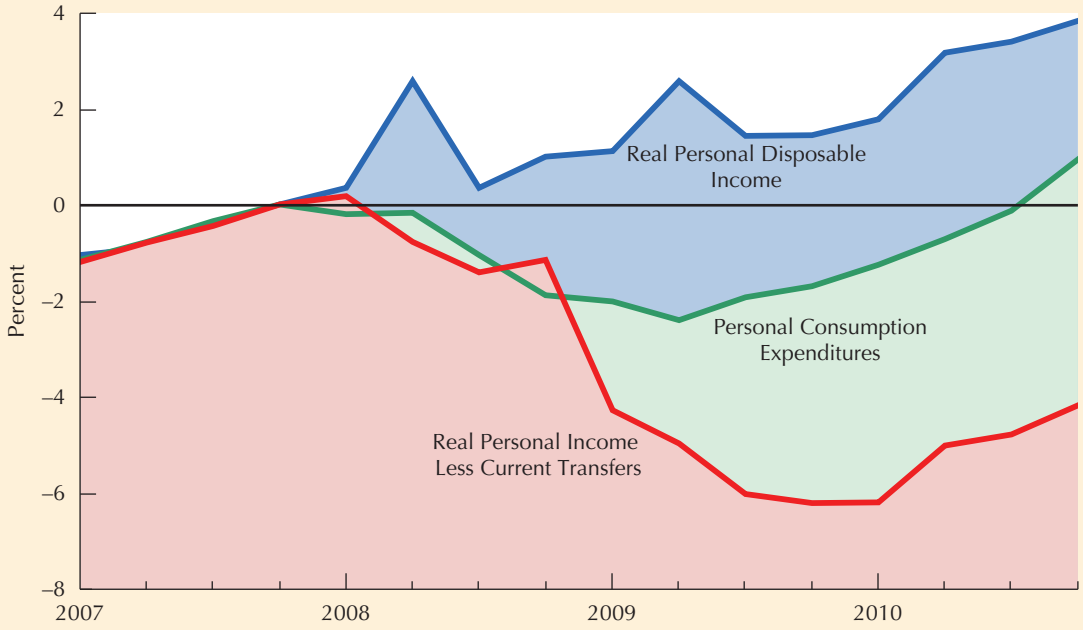

Figure 6 **The Role of the Automatic Stabilizers in the Recession of 2008–09**

All lines show the change in a particular variable as compared to the fourth quarter of 2007 (2007:Q4). The blue line shows that Real Personal Disposable Income never declined in the recession and was particularly high in 2008:Q2 and 2009:Q2, the quarters when the Bush and Obama tax cuts had their major impact. The green line shows that Personal Consumption Expenditures fell relative to Personal Disposable Income, which by definition means that the Personal Saving Rate increased. The effect of automatic stabilizers is shown by the vertical distance between the blue line and the red line, which shows how much taxes fell and transfers rose as part of the normal automatic stabilization role of fiscal policy.

downward pressure on consumption, such as declining net worth due to falling stock and house prices.

The same fate awaited the Obama tax cuts, most of which had their impact on disposable income in 2009:Q2. But once again consumption failed to respond positively. The turnaround in consumption spending shown by the green line in Figure 6 occurred one quarter after the tax cuts in 2009:Q3 and could possibly be cited as representing a delayed and partial impact of the tax cuts.

Contribution of the Automatic Stabilizers

We have seen that the two jumps in disposable income in spring 2008 and spring 2009 did not boost consumption. But there is another less recognized aspect to the disposable spending line in Figure 6. Despite the largest recession since the Great Depression, real disposable income *never fell below its value at the previous business cycle peak quarter of 2007:Q4.* How was disposable income immunized from the decline in income that occurred as millions lost their jobs and corporate profits collapsed?

The answer is given by the blue and green shaded areas in Figure 6 that extend between the blue disposable income line on the top to the red "personal income less current transfers" line at the bottom. The red line shows how much personal income before taxes would have dropped if changes in transfers were excluded. In 2009:Q3 the blue line had risen by 1.4 percent since 2007:Q4 while the red line had dropped by 6.0 percent, a distance of 7.4 percent indicated by the blue and green shading.

This 7.4 percent difference is accounted for by four elements:

1. Tax rebates and cuts that were part of the fiscal stimulus
2. Transfer increases that were part of the fiscal stimulus
3. Reductions in tax revenues due to the automatic stabilizers
4. Increases in transfers due to the automatic stabilizers

We have already discussed the tax cuts and rebates listed in the first two lines of Table 2. The same table shows that transfers to persons were increased as part of the Obama stimulus program by 2.3 percent of real GDP. Most of these transfers consisted of the extension of unemployment benefits from an eligibility period of 26 weeks, which is the time limit of these benefits in normal times, to 99 weeks. The extra transfers flowing to the unemployed were a major factor in boosting disposable income, and as we learned in Table 1 these extensions of unemployment benefits have relatively large multiplier effects. Most unemployed workers spend their benefits immediately, and without this form of fiscal stimulus unemployed workers and their families would have been forced to drastically cut their spending.

But a large part of the blue and green areas in Figure 6 is explained not by the Bush or Obama stimulus programs, but by the normal operation of the automatic stabilizers. As real incomes declined in 2008 and 2009, tax collections fell for personal, payroll, sales, and corporate taxes. Transfer payments also increased due to higher unemployment benefits and also because more people who could not find jobs decided to sign up for Social Security benefits at the earliest possible age.[9] ◆

10 Government Spending and Transfers to States/Localities

Our explanation of the Obama stimulus program has now covered the first two lines of Table 2, the tax rebates and tax cuts, and the line recording higher transfers to persons. An additional component was infrastructure and other spending, amounting to 1.1 percent of GDP, and transfers to state and local governments, amounting to 1.2 percent of GDP. The total of the Bush and Obama stimulus programs adds up to 7.6 percent of GDP, as shown on the bottom line of Table 2.

The infrastructure spending component has an important weakness, the very slow pace at which projects can be authorized and the money can actually be

[9] The increase in the unemployment rate automatically generated additional benefit payments within the normal 26-week eligibility rule, and this is counted as an automatic stabilizer. The extra payments created by an extension from 26-week to 99-week eligibility is counted as part of the Obama stimulus program.