

Chapter 10

Fiscal Policy

Macroeconomics In Context (Goodwin, et al.)

Chapter Overview

This chapter introduces you to a formal analysis of fiscal policy, and puts it in context with real-world data and examples. The basic analysis you will be presented here follows the Keynesian model, although you will also learn about the “classical” or “supply-side” perspectives. You will gain an understanding of budgets, deficits, and debt, and how these affect the economy. The chapter clarifies the difference between automatic stabilizers and discretionary policy, and discusses recent fiscal policies in terms of their economic impact. Finally, the foreign sector is added to give a complete macroeconomic model including saving, investment, taxes, government spending, exports and imports.

Chapter Objectives

After reading and reviewing this chapter, you should be able to:

1. Understand the impact of changes in government spending, taxes, and transfers on aggregate demand and output.
2. Carry out calculations using “multipliers.”
3. Describe the major types of government outlays, and major government revenue sources.
4. Distinguish between government deficits and government debt.
5. Describe the recent history of U.S. debt and deficits, and the controversies surrounding them.
6. Discuss the issue of lags in fiscal policy, and the relative advantages and disadvantages of automatic and discretionary policies.
7. Understand how international trade can be included in the model of aggregate demand.

Key Terms

fiscal policy
transfer payments
disposable income
tax multiplier
balanced budget multiplier
expansionary fiscal policy
contractionary fiscal policy

government outlays
government bond
automatic stabilizers
time lags
supply-side economics
trade deficit

Active Review

Fill in the Blank

1. If the government uses tax cuts to expand the economy, it would be using _____ policy.
2. Social security payments that are paid by the government to households are an example of a _____.
3. Suppose a household receives a wage income of \$4,000 a month, and receives \$400 in transfers and pays \$800 in taxes per month. Then the household's _____ income (the income after paying taxes and receiving transfers) would be equal to \$3,600 per month.
4. To determine the impact on a change in lump sum taxes on equilibrium output, one would use the _____ multiplier, which equals $-(mult)(mpc)$.
5. If one were to increase government spending by \$50 million, and simultaneously raise taxes by \$50 million in order to keep the government budget in balance, one would discover that the _____ multiplier is equal to positive one.
6. Government spending on goods and services (such as new bridges and mass transit) and government transfer payments (such as unemployment compensation and food stamps) are two categories of government _____.
7. The government can finance its deficits by selling _____, which are essentially promises to pay back, with interest, the amount borrowed at a specific time in the future.
8. The progressive income tax and transfer payments such as unemployment compensation are examples of _____, because these tax and spending institutions increase government revenues and lower government outlays during an expansion (and decrease government revenues and raise government outlays during a contraction) thereby smoothing out the business cycle.
9. Suppose the Congress passes a stimulus package, but it takes time for recipients of the stimulus payments to spend the money. The effect may not be seen on the wider economy for a period of time, due to the presence of _____.
10. The policies that use tax cuts and other incentives in an attempt to increase work, saving and investment, and thereby overall economic output, are called _____ economics.

True or False

11. There is no way to expand an economy using fiscal policy without incurring (or increasing) a budget deficit.
12. With an *mpc* of 0.8, the multiplier for U.S. government spending is equal to a value of 5, and this value is a fairly accurate reflection of the multiplier in the real world.
13. A policy tool that can be used to fight inflation (brought about by excessive aggregate demand) is contractionary fiscal policy.
14. If $T - (G + TR)$ is positive, there is a government budget surplus. If $T - (G + TR)$ is negative, there is a government budget deficit.
15. The existence of budget deficits must mean that the government is conducting an expansionary fiscal policy.
16. The equation for aggregate demand with government in an open economy is: $AD = C + I + G + NX$

Short Answer

17. What multiplier is used for calculating the change in output resulting from a change in government spending?
18. What are the three expansionary fiscal policy tools the government can use to expand an economy that is in a recession?
19. What are the three ways the government can finance its expenditures?
20. What are the largest two sources of federal revenues? What are the largest three categories of federal outlays?
21. What role does the size of the economy (GDP) have to play in whether or not a government deficit is burdensome to the economy?

22. What is the difference between a government budget deficit versus debt?
23. What is the current level (in 2006) of Government deficit and debt (as % of GDP)?
24. What role did automatic stabilizers and discretionary fiscal policies have in the emergence of budget surpluses during the late 1990s?
25. Are tax cuts always directed at stimulating aggregate demand? Explain why some supply-siders think tax cuts may actually increase tax revenues.
26. Imports are a leakage from the circular flow, and end up stimulating the economy of the country producing the goods that are imported. But are imports always bad for an economy? Provide two reasons why not.

Problems

1. Suppose in a simple economy with no foreign sector, the mpc equals 0.8. Intended investment spending has suddenly fallen, reducing AD and output to a level that is 100 million below Y^* .
- If the government decided to try to get the economy back to full employment using only an increase in government spending (ΔG), by how much would G need to be increased?
 - If the government, instead, decided to try to get the economy back to full employment using only a lump-sum tax cut (ΔT), how big of a tax cut would be needed?

- c. Alternatively, if the government decided to try to get the economy back to full employment using only an increase in transfers (ΔTR), how large would this increase need to be?
- d. Which fiscal policy--increasing G, decreasing T, or increasing TR--would do the least amount of damage to the government budget deficit?

2. Suppose it was found that the *mpc* varied by income level in the following manner, with lower income households spending a greater portion of every dollar of income than higher income households.

Household income	<i>mpc</i>	<i>Income/spending multiplier</i>	<i>Tax multiplier</i>
0-\$30,000	0.9		
\$31,000 – 50,000	0.8		
\$51,000 – 80,000	0.75		
\$80,000 and above	0.6		

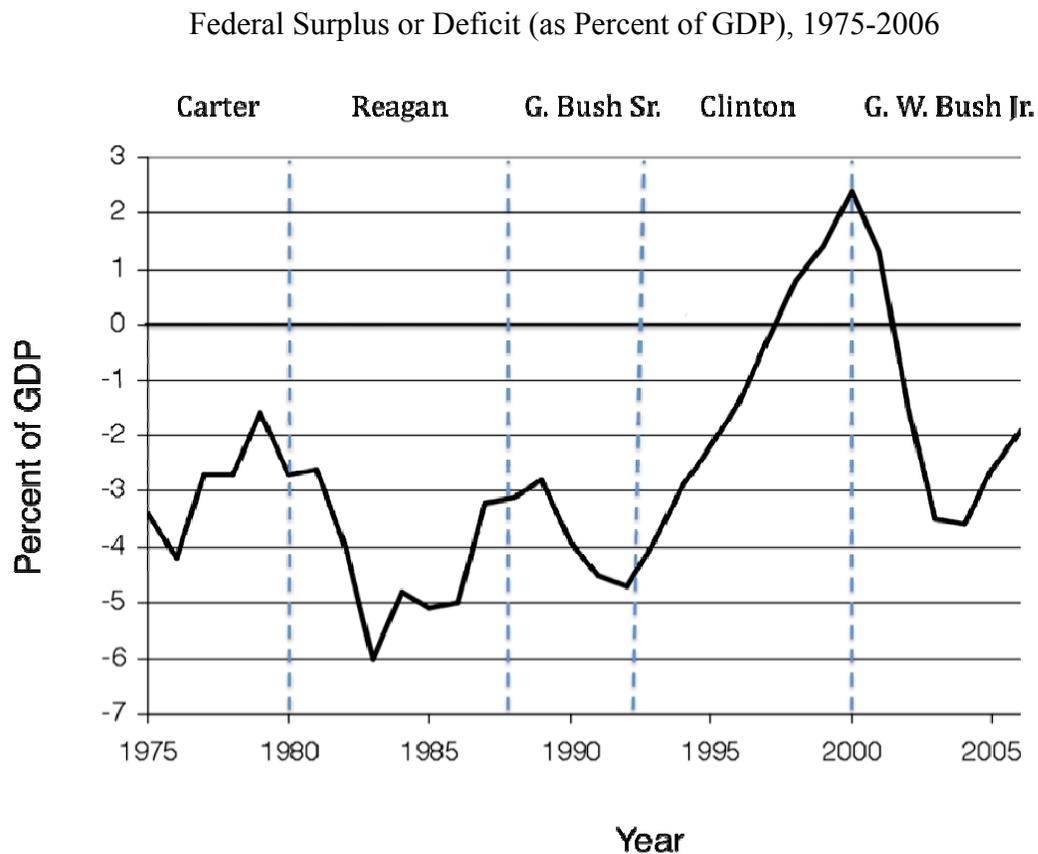
- a. Calculate the government spending and tax multipliers for each income bracket, considered separately.
- b. Suppose the government decided to use tax cuts to expand the economy, and was debating whether to direct tax cuts to high income households or low income households. Which choice would provide a greater stimulus? Thus, which would do the least amount of damage to the government budget deficit to achieve a given amount of stimulus?

(Note: Technically, while tax cuts can, by design of the policy, be targeted so that their initial impact is on the incomes of a particular group, the feedback effects represented by the multiplier probably in general depend on the *economy-wide average* value of the *mpc*. We abstract from this issue in this question.)

3. Assume a simple closed economy, with an *mpc* equal to 0.75. The government has passed a balanced budget amendment. The economy goes into a recession, so the government increases government spending by 40 million to try to expand the economy.

- a. Calculate the change in output (ΔY) from the increase in government spending (ΔG).
- b. The balanced budget amendment requires the government to also raise taxes by 40 million. Calculate the change in output (ΔY) from the tax hike.
- c. What is the net effect on output from these two policies? Was there any expansionary effect?
- d. Why is a balanced budget amendment problematic or undesirable?

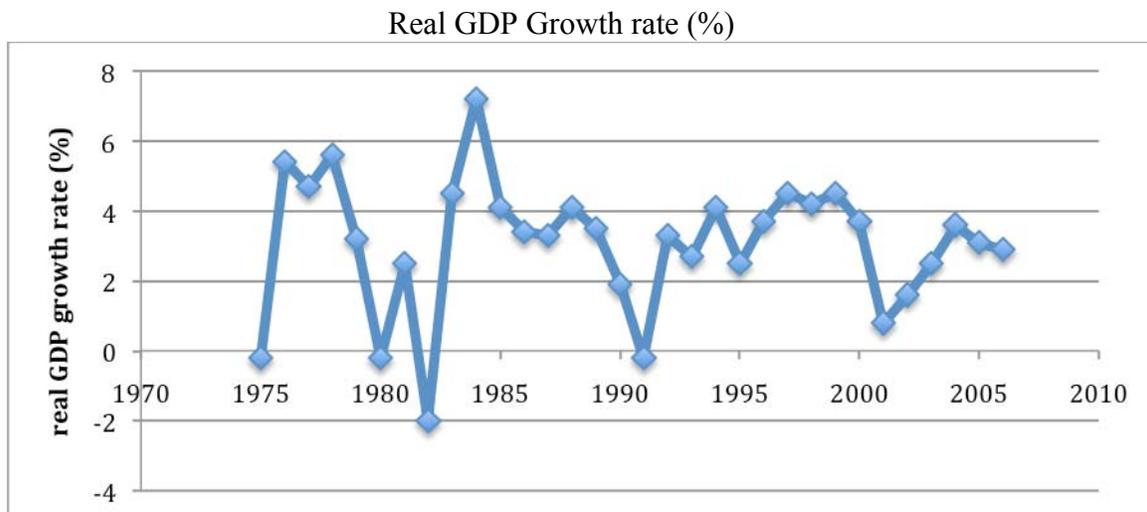
4. Use the Figure below to answer the following questions:



- a. It is sometimes said that Republicans are the party of “small government”, whereas Democrats are the “big spenders” and the party of “big government.” Is this confirmed by the historical evidence of the 1975-2006 period?

- b. What changes in discretionary Government outlays (G , TR) and Tax revenues (T) might explain the emergence of the huge deficits under Reagan, G. Bush Sr., and G.W. Bush Jr? And what might explain the surpluses under Clinton?

- c. Are changes in discretionary fiscal policy sufficient in explaining the emergence of deficits and surpluses? What role do automatic stabilizers play? Consider in your answer the figure of the U.S. real GDP growth rate, below.



source: www.OECD.org

- d. When Clinton came into office, he increased taxes (the top income bracket was raised somewhat) and cut government spending. These are both considered to be contractionary fiscal policies. And yet the economy boomed. What could explain this? Could the surpluses under his administration come about only from his discretionary fiscal policies?

- e. The G.W. Bush Jr. administration has increased government spending and passed sizeable tax cuts, primarily benefitting the rich. Critics argue that these tax cuts

will only lead to deficits and do little to stimulate the economy. Explain their point of view.

Self Test

1. Suppose in a simple economy with no foreign sector, the mpc is equal to 0.75. How much government spending (ΔG) would be needed to raise output by 100 million?
 - a. 25 million
 - b. 33.3 million
 - c. 75 million
 - d. 400 million
 - e. None of the above

2. Which of the following is *not* an example of a transfer payment?
 - a. Welfare payments to firms or individuals
 - b. Social Security payments
 - c. Unemployment compensation
 - d. A corporate tax cut
 - e. Payments of interest to holders of government bonds.

3. Suppose in a simple economy with no foreign sector, the mpc is equal to 0.9. How much of a lump sum tax (ΔT) would be needed to raise output by 100 million?
 - a. 10 million
 - b. 11.1 million
 - c. 33.3 million
 - d. 100 million
 - e. None of the above

4. Suppose in a simple economy with no foreign sector, the mpc is equal to 0.8. If the government increased government spending by \$30 million, and it simultaneously raised taxes by \$30 million, how much will be the change in output (ΔY)?
 - a. Output will increase by \$15 million
 - b. Output will increase by \$30 million
 - c. There will be no change in output
 - d. Output will decrease by \$30 million
 - e. None of the above

5. Which of the following is *not* an example of a government outlay?
- Government spending on a national health care system
 - Government spending on light rail systems and bicycle paths
 - Housing subsidies for low-income households
 - Tax cuts for wind and solar energy producers
 - Child care vouchers for working single parents
6. Which of the following was one of the major sources of federal revenues in 2006?
- Personal income taxes
 - Corporate income taxes
 - Excise and estate taxes
 - Both A and B
 - None of the above
7. Which of the following was the largest category of government spending in 2006?
- Social programs, such as welfare
 - Defense spending
 - Social security, Medicare, and retirement
 - Net interest on the debt
 - None of the above
8. During what period of time did the U.S. experience federal government budget surpluses?
- 1980 - 1988
 - 1989 - 1992
 - 1993 - 1997
 - 1998 - 2001
 - 2002 - 2008
9. Which of the following was responsible for putting the budget back into deficit in 2001?
- The recession that started in the Spring of 2001.
 - The 2001 Bush tax cuts
 - The increased government spending of the Bush administration.
 - Both A and B.
 - None of the above.

10. Approximately how large was the U.S. federal debt at the end of 2006?
- a. \$300 billion
 - b. \$500 billion
 - c. 1 trillion dollars
 - d. 5 trillion dollars
 - e. 8 trillion dollars
11. Approximately how large was the U.S. federal debt (as % of GDP) in 2006?
- a. about 3%
 - b. about 6%
 - c. about 35%
 - d. almost 50%
 - e. None of the above
12. Which of the following is a reason why the federal government debt in the U.S. may *not* be a problem?
- a. When the debt is owed to a U.S. citizens themselves, it stays within the circular flow of the economy.
 - b. As long as the debt does not grow too fast, it can be rolled over to other willing lenders (buyers of government bonds).
 - c. The interest payments on the debt are denominated in U.S. dollars, posing less of a significant problem in repayment than otherwise.
 - d. The debt may be used for productive purposes, serving as an investment for future growth.
 - e. All of the above.
13. Which of the following is a reason why the U.S. federal government debt may indeed be a problem?
- a. A larger share of future budgets must be devoted to paying interest, leaving less for other needs.
 - b. Since more of the debt is held by wealthy households, most of the interest paid by the government go to people who are better off, thereby exacerbating income inequality.
 - c. An increasing proportion of the debt is held by foreign individuals and institutions.
 - d. When the debt is spent on wasteful, speculative, risky, or poorly planned projects.
 - e. All of the above.

14. The President drafts a budget proposal with new tax cuts and increases in government spending, and has it passed by Congress. This would be an example of:
- Automatic stabilizers
 - Discretionary policy
 - Contractionary fiscal policy
 - Supply side policy
 - None of the above.
15. Which of the following is *not* an example of an inside time lag?
- data lag
 - recognition lag
 - legislative lag
 - transmission lag
 - response lag
16. The historical evidence of the supply side tax cuts (of the Reagan administration in the 1980s and Bush in the 2000s) is that:
- they were successful in increasing output, increasing tax revenues and lowering deficits.
 - they led to lower tax revenues and higher deficits.
 - they left output, tax revenues and deficits unchanged.
 - while the Reagan tax cuts were successful in increasing tax revenues and lowering deficits, those of the Bush administration were not.
 - None of the above.
17. Which of the following characterizes the U.S. trade balance?
- The U.S. runs a trade deficit, with imports exceeding exports.
 - U.S. net exports were negative
 - In 2006 the U.S. trade deficit was about 5.5 percent of GDP.
 - The U.S. trade deficit is a negative contribution to aggregate demand and a net leakage from the circular flow.
 - All of the above.
18. Assume an economy with an *mpc* equal to 0.75. Then an increase in exports (ΔX) by 50 million will increase in output (ΔY) by:
- 12.5 million
 - 16.67 million
 - 150 million
 - 200 million
 - None of the above

19. In the macroeconomic model with government and an open economy, which of the following is a leakage from the circular flow?

- a. Government spending
- b. Government transfers payments
- c. imports
- d. exports
- e. intended investment

20. Which of the following characterizes the classical economists' view of how the economy works at the macro level?

- a. Leakages and injections will balance themselves automatically and keep the economy at the full employment level of output.
- b. Sometimes there is a “slip from the lip to the cup” and a leakage can turn into a big messy spill.
- c. Leakages may be greater than injections, which may keep the economy stuck at an equilibrium below the full employment level of output.
- d. Government policy interventions are often essential to achieve acceptable levels of income and employment.
- e. All of the above.

Answers to Active Review Questions

1. fiscal policy
2. transfer payment
3. disposable
4. tax
5. balanced budget
6. outlays
7. government bonds
8. automatic stabilizers
9. outside lag
10. supply side
11. False. It is still possible to expand an economy with a balanced budget. The balanced budget multiplier equals 1.
12. False. In the real world the multiplier is rarely this large. Econometric studies of the U.S. economy have suggested the multiplier is 2.0 or lower.
13. True.
14. True.
15. False. The existence of deficits does not necessarily mean an expansionary fiscal policy is being implemented. It could be that the economy is going through a downturn, so the automatic stabilizers are kicking in, with government outlays increasing and tax revenues declining.
16. False. It is: $AD = C + I + G + NX$

17. The multiplier used in this case is the same as the multiplier introduced in chapter 9:
 $\text{multiplier} = 1/(1-mpc)$
18. The government could increase government spending, increase transfer payments, or cut taxes.
19. It can either raise taxes, borrow, or print money.
20. The two largest sources of federal revenues are: personal income taxes and social security taxes. The three largest categories of federal outlays are: Social security and Medicare, social programs, and defense spending.
21. The larger the economy, the easier it is to handle a deficit. A larger economy means higher incomes, and a greater ability for the government to collect tax revenues or sell government bonds to finance its deficit.
22. The deficit is a flow variable representing an annual shortfall (when tax revenues < government outlays), whereas the debt is a stock variable representing the accumulation of deficits over many years.
23. In 2006 the U.S. deficit as % of GDP was about 2%, and the debt as % of GDP was slightly over 35%.
24. As the economy boomed, the automatic stabilizers kicked in and tax revenues rose. The Clinton administration also used discretionary policy, by raising taxes and thereby raising revenues that helped turn deficits into surpluses.
25. No, tax cuts have also been a component of supply-side policy, which attempts to use tax cuts to stimulate work, saving, investment, and thereby output. Some supply-siders think that the growth in output can actually lead to an increase of tax revenues into the government coffers.
26. One reason is that U.S. consumers and U.S. industry benefit from the imports whose prices tend to be cheaper than the domestically-produced alternatives. The second reason is that at least some of the money spent on imports is likely to return to the United States as demand for exports, which stimulates GDP.

Answers to Problems

1. a. the income/spending multiplier = $1/(1 - 0.8) = 5$

So solving for $\Delta Y = \text{mult} \times \Delta G$,

$$100 \text{ million} = 5 \times \Delta G$$

$$\Delta G = 20 \text{ million}$$

b. now we need to use the tax multiplier, - mpc (*mult*)

So solving for $\Delta Y = -mpc$ (*mult*) $\times \Delta T$

$$100 \text{ million} = -0.8 \times 5 \times \Delta T$$

$$\Delta T = 100 \text{ million}/-4$$

$$\Delta T = -25 \text{ million (a tax cut of 25 million would be needed)}$$

c. the calculation is like part b, above, except instead of ΔT we have ΔTR . Thus, transfers of +25 million would be needed.

d. Increasing G (government spending) would do the least damage to the deficit, raising it by 20 million, rather than 25 million.

2. a.

Household income	<i>mpc</i>	<i>Income/spending multiplier</i>	<i>Tax multiplier</i>
0-\$30,000	0.9	10	9
\$31,000 – 50,000	0.8	5	4
\$51,000 – 80,000	0.75	4	3
\$80,000 and above	0.6	2.5	1.5

b. Directing the spending increase or tax cuts to the lower income households would provide a greater stimulus, because it has a higher tax multiplier. Thus, it would do less damage to the budget deficit to achieve a given amount of stimulus. In other words, if the government directed tax cuts to the low-income households, it would need a smaller tax cut to expand the economy by a given amount, and this would do less damage to the deficit.

(Note: If one takes into account that *mult* may depend on an economy-wide average *mpc*, this answer would still be correct, but the difference would not be as large.)

3.

a. the income/spending multiplier = $1/(1-0.75) = 4$

$$\Delta Y = \text{mult} \times \Delta G$$

$$\Delta Y = 4 \times 40 \text{ million}$$

$$\Delta Y = 160 \text{ million}$$

b. the tax multiplier = $-0.75(4) = -3$

$$\Delta Y = -3 \times \Delta T$$

$$\Delta Y = -3 \times 40 \text{ million} = -120 \text{ million}$$

c. The net effect of the two policies is:

$$\Delta Y_{(a+b)} = 160 \text{ million} - 120 \text{ million}$$

$$\Delta Y_{(a+b)} = 40 \text{ million}$$

Yes, it expanded output by 40 million

d. A balanced budget rule means that one can't respond to severe emergencies, such as a natural disaster, war, or deal with a severe recession. Because the multiplier is only equal to one, it provides a fairly weak stimulus.

4.

a. No, this is not confirmed by the historical evidence of the 1975-2006 period, as in this period the Republicans (Reagan, G. Bush Sr., G.W. Bush Jr.) appear to be the big spenders, with their accumulation large deficits.

b. The emergence of the huge deficits under Reagan, G. Bush Sr., and G.W. Bush Jr could be from increasing government outlays (*G* and *TR*), and/or cutting taxes (*T*). The surpluses under Clinton could be from cutting government outlays (*G* and *TR*), and/or raising taxes (*T*).

- c. No, changes in discretionary fiscal policy are not sufficient in explaining the emergence of deficits and surpluses, because a recessionary economy could trigger automatic stabilizers (increases in G and TR , and falling tax revenues), whereas a booming economy could bring forth increases in tax revenues and cuts in government outlays. Indeed, the figure of the U.S. real GDP growth shows a deep recession in 1981-82, which could help explain the emergence of deficits in the early Reagan period. And the figure shows strong growth rates in the late 1990s, which could help explain the emergence of surpluses under Clinton.
- d. The economy under Clinton could have boomed for other reasons, such as the increased investor and consumer confidence, leading to increases in investment and consumption spending. These could have outweighed the contractionary effect of his fiscal policies. The surpluses came about not only from the tax increases of his discretionary policies, but also from the booming economy, which brought in increases in tax revenues as the automatic stabilizers kicked in.
- e. The tax cuts for the rich will do little to stimulate the economy because they are directed to households with relatively lower mpc s, and thus have a smaller multiplier effect.

Answers to Self Test Questions

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|-------|-------|
| 1. A | 11. C |
| 2. D | 12. E |
| 3. B | 13. E |
| 4. B | 14. B |
| 5. D | 15. E |
| 6. A | 16. B |
| 7. C | 17. E |
| 8. D | 18. D |
| 9. D | 19. C |
| 10. E | 20. A |