

example, during expansions, the government automatically takes in more revenue because people are making more money that is taxed.

10. The *full-employment budget* is an economist's construction of what the federal budget would be if the economy were

producing at a full-employment level of output. The *structural deficit* is the federal deficit that remains even at full employment. A *cyclical deficit* occurs when there is a downturn in the business cycle.

REVIEW TERMS AND CONCEPTS

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automatic stabilizers, p. 212

balanced-budget multiplier, p. 206

budget deficit, p. 199

cyclical deficit, p. 214

discretionary fiscal policy, p. 198

disposable, or after-tax, income (Y_d), p. 198

federal budget, p. 207

federal debt, p. 211

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net taxes (T), p. 198

privately held federal debt, p. 212

structural deficit, p. 214

tax multiplier, p. 205

1. Disposable income $Y_d = Y - T$

2. $AE \equiv C + I + G$

3. Government budget deficit $= G - T$

4. Equilibrium in an economy with a government: $Y = C + I + G$

5. Saving/investment approach to equilibrium in an economy with a government: $S + T = I + G$

6. Government spending multiplier

$$= \frac{1}{MPS}$$

7. Tax multiplier $= -\left(\frac{MPC}{MPS}\right)$

8. Balanced-budget multiplier $\equiv 1$

PROBLEMS

All problems are available on www.myeconlab.com



- You are appointed secretary of the treasury of a recently independent country called Rugaria. The currency of Rugaria is the lav. The new nation began fiscal operations this year, and the budget situation is that the government will spend 10 million lavs and taxes will be 9 million lavs. The 1-million-lav difference will be borrowed from the public by selling 10-year government bonds paying 5 percent interest. The interest on the outstanding bonds must be added to spending each year, and we assume that additional taxes are raised to cover that interest. Assuming that the budget stays the same except for the interest on the debt for 10 years, what will be the accumulated debt? What will the size of the budget be after 10 years?
- Suppose that the government of Lumpland is enjoying a fat budget surplus with fixed government expenditures of $G = 150$ and fixed taxes of $T = 200$. Assume that consumers of Lumpland behave as described in the following consumption function:

$$C = 150 + 0.75(Y - T)$$

Suppose further that investment spending is fixed at 100. Calculate the equilibrium level of GDP in Lumpland. Solve for equilibrium levels of Y , C , and S . Next, assume that the Republican Congress in Lumpland succeeds in reducing taxes by 20 to a new fixed level of 180. Recalculate the equilibrium level of GDP using the tax multiplier. Solve for equilibrium levels of Y , C , and S after the tax cut and check to ensure that the multiplier worked. What arguments are likely to be used in support of such a tax cut? What arguments might be used to oppose such a tax cut?

- For each of the following statements, decide whether you agree or disagree and explain your answer:
 - During periods of budget surplus (when $G < T$), the government debt grows.
 - A tax cut will increase the equilibrium level of GDP if the budget is in deficit but will decrease the equilibrium level of GDP if the budget is in surplus.
 - If the $MPS = .90$, the tax multiplier is actually larger than the expenditure multiplier.
- Define *saving* and *investment*. Data for the simple economy of Newt show that in 2011, saving exceeded investment and the government is running a balanced budget. What is likely to happen? What would happen if the government were running a deficit and saving were equal to investment?
- Expert economists in the economy of Yuk estimate the following:

	BILLION YUKS
Real output/income	1,000
Government purchases	200
Total net taxes	200
Investment spending (planned)	100

Assume that Yukkers consume 75 percent of their disposable incomes and save 25 percent.

- You are asked by the business editor of the *Yuk Gazette* to predict the events of the next few months. By using the data given, make a forecast. (Assume that investment is constant.)

- b. If no changes were made, at what level of GDP (Y) would the economy of Yuk settle?
- c. Some local conservatives blame Yuk's problems on the size of the government sector. They suggest cutting government purchases by 25 billion Yuks. What effect would such cuts have on the economy? (Be specific.)
6. A \$1 increase in government spending will raise equilibrium income more than a \$1 tax cut will, yet both have the same impact on the budget deficit. So if we care about the budget deficit, the best way to stimulate the economy is through increases in spending, not cuts in taxes. Comment.
7. Assume that in 2011, the following prevails in the Republic of Nurd:

$$\begin{aligned} Y &= \$200 & G &= \$0 \\ C &= \$160 & T &= \$0 \\ S &= \$40 \\ I(\text{planned}) &= \$30 \end{aligned}$$

Assume that households consume 80 percent of their income, they save 20 percent of their income, $MPC = .8$, and $MPS = .2$. That is, $C = .8Y_d$ and $S = .2Y_d$.

- a. Is the economy of Nurd in equilibrium? What is Nurd's equilibrium level of income? What is likely to happen in the coming months if the government takes no action?
- b. If \$200 is the "full-employment" level of Y , what fiscal policy might the government follow if its goal is full employment?
- c. If the full-employment level of Y is \$250, what fiscal policy might the government follow?
- d. Suppose $Y = \$200$, $C = \$160$, $S = \$40$, and $I = \$40$. Is Nurd's economy in equilibrium?
- e. Starting with the situation in part d, suppose the government starts spending \$30 each year with no taxation and continues to spend \$30 every period. If I remains constant, what will happen to the equilibrium level of Nurd's domestic product (Y)? What will the new levels of C and S be?
- f. Starting with the situation in part d, suppose the government starts taxing the population \$30 each year without spending anything and continues to tax at that rate every period. If I remains constant, what will happen to the equilibrium level of Nurd's domestic product (Y)? What will be the new levels of C and S ? How does your answer to part f differ from your answer to part e? Why?
8. Some economists claim World War II ended the Great Depression of the 1930s. The war effort was financed by borrowing massive sums of money from the public. Explain how a war could end a recession. Look at recent and back issues of the *Economic Report of the President* or the *Statistical Abstract of the United States*. How large was the federal government's debt as a percentage of GDP in 1946? How large is it today?
9. Suppose all tax collections are fixed (instead of dependent on income) and all spending and transfer programs are fixed (in the sense that they do not depend on the state of the economy, as, for example, unemployment benefits now do). In this case, would there be any automatic stabilizers in the government budget? Would there be any distinction between the full-employment deficit and the actual budget deficit? Explain.
10. Answer the following:
- $MPS = .4$. What is the government spending multiplier?
 - $MPC = .9$. What is the government spending multiplier?
 - $MPS = .5$. What is the government spending multiplier?
 - $MPC = .75$. What is the tax multiplier?
 - $MPS = .1$. What is the tax multiplier?
 - If the government spending multiplier is 6, what is the tax multiplier?
 - If the tax multiplier is -2 , what is the government spending multiplier?
 - If government purchases and taxes are increased by \$100 billion simultaneously, what will the effect be on equilibrium output (income)?
11. For the data in the following table, the consumption function is $C = 200 + 0.8(Y - T)$. Fill in the columns in the table and identify the equilibrium output.
12. Use your answer to the previous problem to calculate the MPC , MPS , government spending multiplier, and tax multiplier. Draw a graph showing the data for consumption spending, planned aggregate expenditures, and aggregate output. Be sure to identify the equilibrium point on your graph.
13. What is the balanced-budget multiplier? Explain why the balanced-budget multiplier is equal to 1.
14. Evaluate the following statement: For an economy to be in equilibrium, planned investment spending plus government purchases must equal saving plus net taxes.
15. [Related to the *Economics in Practice* on p. 213] At a June 2010 summit of the G-20, President Obama urged member nations to continue stimulus spending to maintain economic growth. Obama successfully argued the same case at a summit in 2009, resulting in increased fiscal spending by the G-20 in both 2009 and 2010, but attitudes had changed by the June 2010 summit as many members were weighing fiscal austerity measures to counteract the previous spending increases. Do some research on the G-20 nations to see what happened to fiscal spending in these nations in 2011. In which nations did fiscal spending increase and in which did it decrease? What happened to the unemployment rates and GDP levels in these nations in 2011? Do you see any correlation between the change in fiscal spending and the changes in unemployment rates and GDP? Explain.

OUTPUT	NET TAXES	DISPOSABLE INCOME	CONSUMPTION SPENDING	SAVING	PLANNED INVESTMENT SPENDING	GOVERNMENT PURCHASES	PLANNED AGGREGATE EXPENDITURES	UNPLANNED INVENTORY CHANGE
1,050	50				150	200		
1,550	50				150	200		
2,050	50				150	200		
2,550	50				150	200		
3,050	50				150	200		
3,550	50				150	200		
4,050	50				150	200		