CHAPTER 23

FISCAL POLICY: COPING WITH INFLATION AND UNEMPLOYMENT

Chapter in a Nutshell

To say that an economy is in equilibrium tells us very little about the general state of the economy. The model showing the equilibrium level of national income presented in Chapter 22 allows for an economy to be in equilibrium at high levels of unemployment. Some of the unemployment is caused by insufficient aggregate expenditures. But unemployment can have other causes. Economists identify five types: **frictional unemployment**, **structural unemployment**, **cyclical unemployment**, **discouraged workers**, and the **underemployed**.

The Bureau of Labor Statistics (BLS), which establishes the official unemployment count and rate of unemployment for the economy, calculates the rate of unemployment by surveying households. Those who are either working or seeking employment are counted as being in the **labor force**. That excludes discouraged workers. The unemployment rate is the number of people who are not working but are seeking work, divided by the labor force. That excludes underemployed workers. The BLS defines this rate as the actual rate of unemployment.

Economists distinguish between the **actual rate of unemployment** and the **natural rate of unemployment**. The natural rate of unemployment consists of workers who are frictionally and structurally unemployed. It is "natural" and the result of positive dynamic forces in the economy — people looking for better jobs and technological change occurring — so the natural rate is not at all worrisome. What remains is cyclical unemployment. To economists, the economy is at **full employment** when the actual rate of unemployment is equal to the natural rate of unemployment. In other words, the economy is at full employment when cyclical unemployment is zero.

When inflation occurs, some groups of people are harmed while others benefit. Those who are hurt by inflation include people living on fixed incomes, such as landlords and savers. Those who gain from inflation include borrowers and, to some extent, the government. The government benefits from inflation when it borrows. Unions bargain for cost-of-living allowances in their wage contracts to protect themselves from the erosion of real wages.

What's the relationship between the full-employment level of national income and the equilibrium level? A **recessionary gap** exists when the equilibrium level of national income falls below the full-employment level. The amount by which spending must increase in order to achieve full employment defines the recessionary gap. An **inflationary gap** exists when the equilibrium level of national income is above the full-employment level. The inflationary gap defines the amount by which spending must decrease in order to achieve full employment without inflation.

Fiscal policy involves the government not only increasing or decreasing its spending, but also increasing or decreasing its tax take. Just as an increase in government spending creates a multiple increase in national income, an increase in taxes creates a multiple decrease in national income. The **tax multiplier** is $-MPC/(1 - MPC)$. When the government increases its spending and taxes by the same amount, both the income and tax multipliers are at work. The net effect is an increase in national income that equals the increase in spending and taxes. The **balanced budget multiplier** equals one. The government can create a **balanced budget** where $G = T$, a **surplus budget** where $T > G$, or a **deficit budget** where $G > T$.

Thus far, our analysis of fiscal policy to close recessionary and inflationary gaps has assumed that the policy options are aimed at fixed targets. In reality, the economy is in a constant state of motion characterized by a series of recurring cycles. What the government needs to do is to engage in **countercyclical fiscal policy** in order to temper the recurring cycles. What causes the business cycle? Some cycles are believed to be caused by external factors such as wars, housing starts, clusters of innovation, or stock market and credit bubbles. Other cycles can be generated by the economy itself so they are called internal cycles. The multiplier and accelerator cycle is an example where, for example, a multiplier increase in national income stimulates new investment, induced investment, to support the higher level of income. The **accelerator** is the investment induced by the change in national income that the multiplier created. However, national income must continue to grow in order to support the higher level of investment.

Real business cycle theorists challenge whether business cycles exist at all. They argue that the economy is highly dynamic, competitive, and operates at close to full employment. The apparent cyclical performance of the economy is a reflection of large numbers of random, minor, and unconnected technological changes that serve to increase productivity that are more apparent in some years than in others, hence, the up-and-down fluctuations in GDP.

After you study this chapter, you should be able to:

- Describe the different types of unemployment.
- Calculate the **unemployment rate**, given the appropriate data.
- Explain the meaning of the **natural rate of unemployment**.
- Identify winners and losers from inflation.
- Understand **recessionary gaps** and **inflationary gaps** in the aggregate expenditure model.
- Show how **recessionary** and **inflationary gaps** can be closed using **fiscal policy**.
- Derive the **tax multiplier** and the **balanced budget multiplier**.
- Explain the need for **countercyclical fiscal policy**.
- Contrast external and internal factors that may cause business cycles.
- Connect the multiplier with the induced investment created by the **accelerator**
- Compare external and internal theories of the business cycle with real business cycle theory

Concept Check — See how you do on these multiple-choice questions.

As you consider the responses to this question, recall that when the cyclical rate of unemployment is zero, the economy is at full employment.

1. **Cyclical unemployment** refers to workers who are unemployed because
   a. they have left one job to look for a better one
   b. of technological changes in production
   c. they are close to the retirement phase of the life cycle and no one will hire them
   d. new goods have been substituted for the goods they were trained to produce
   e. the economy is in a recession phase

If a recession results from insufficient aggregate expenditure in the economy, then what is the recessionary gap?

2. A **recessionary gap** exists when
   a. structural unemployment is excessive
   b. frictional unemployment is excessive
   c. aggregate expenditure falls short of that needed to generate full employment
   d. aggregate supply falls short of that needed to generate full employment
   e. supply creates its own demand

Should fiscal policy increase or decrease aggregate expenditure to close a recessionary gap?

3. An appropriate **fiscal policy** to close a **recessionary gap** is to
   a. increase government spending
   b. decrease taxes
   c. decrease government spending
   d. increase taxes
   e. a and b are both appropriate policies

Suppose that taxes are decreased. Do households spend the full amount of the tax cut? How does this impact the size of the tax multiplier compared to the income multiplier?

4. Compared to the income multiplier, the **tax multiplier**
   a. causes a weaker income magnification
   b. is better for closing a recessionary gap
   c. is better for closing an inflationary gap
   d. causes a stronger income magnification
   e. causes an equal income magnification.

Is the multiplier effect the end of the story as national income increases due to an increase in aggregate expenditures?

5. Once the economy experiences a multiplier increase in national income,
   a. the economy stops growing because the multiplier effect has died
   b. spending falls as consumers cut back on purchases
   c. saving causes the equilibrium level of national income to fall
   d. innovation occurs randomly to increase productivity
   e. new investment is induced by the **accelerator** to support the higher level of income

Am I on the Right Track?

Your answers to the questions above should be **e**, **c**, **a**, **a**, and **e**. Along with learning about the different types of unemployment and the impact of inflation on different groups in the economy, you need to be able to use a graph to distinguish between recessionary and inflationary gaps. A recessionary gap occurs when aggregate expenditure is insufficient to generate a full-employment level of GDP. An inflationary gap results when aggregate expenditure is more than is needed to generate a full-employment level of GDP. A variety of fiscal policy options exists to close both gaps. Also, countercyclical fiscal policy is necessary to temper the business cycle which results from external factors and internal factors such as the accelerator.

Key Terms Quiz — Match the terms on the left with the definitions in the column on the right.

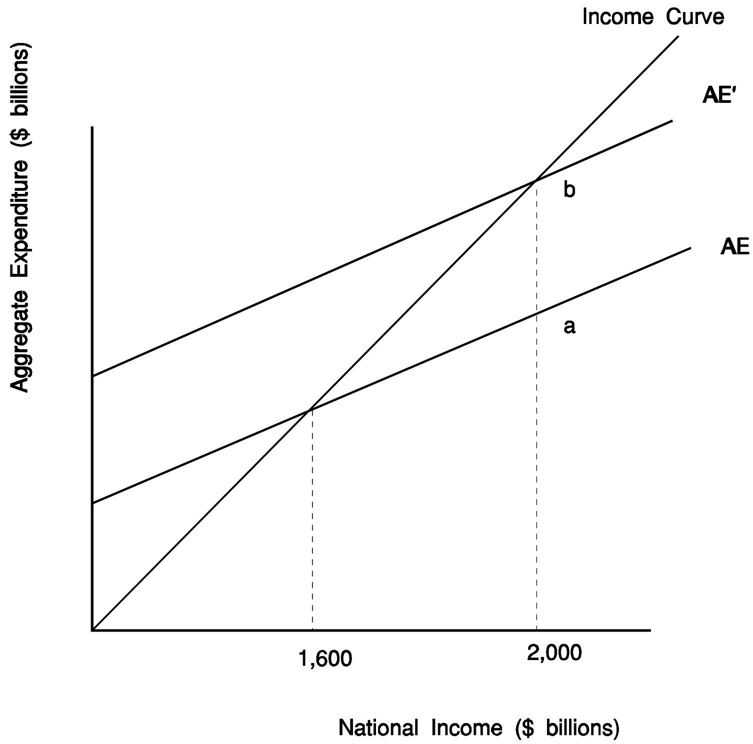
.

1. frictional unemployment	_____ a. workers employed in jobs that do not utilize their productive talents or experience
2. recessionary gap	_____ b. an employment level at which the actual rate of unemployment is equal to the economy's natural rate of unemployment
3. structural unemployment	_____ c. unemployment that results from technological changes in production, or from the substitution of new goods for customary ones
4. inflationary gap	_____ d. the relationship between the level of investment and the change in the level of national income

5. cyclical unemployment	_____	e. people who are gainfully employed or actively seeking employment
6. fiscal policy	_____	f. brief periods of unemployment caused by people who quit work to seek more attractive employment
7. discouraged workers	_____	g. government spending and taxation policy to achieve macroeconomic goals of full employment without inflation
8. balanced budget	_____	h. the effect on the equilibrium level of national income of an equal change in government spending and taxes
9. underemployed workers	_____	i. the amount by which aggregate expenditure exceeds the aggregate expenditure level needed to generate equilibrium national income at full employment without inflation
10. tax multiplier	_____	j. unemployment associated with the downturn and recession phases of the business cycle
11. labor force	_____	k. the multiple by which the equilibrium level of national income changes when a dollar change in taxes occurs
12. balanced budget multiplier	_____	l. the rate of unemployment caused by frictional plus structural unemployment
13. natural rate of unemployment	_____	m. the amount by which aggregate expenditure falls short of the level needed to generate equilibrium national income at full employment without inflation
14. budget deficit	_____	n. fiscal policy designed to moderate the severity of the business cycle
15. full employment	_____	o. unemployed people who give up looking for work after repeated failures trying to find work
16. budget surplus	_____	p. government spending exceeds tax revenues
17. countercyclical fiscal policy	_____	q. tax revenues exceed government spending
18. accelerator	_____	r. government spending equals tax revenues

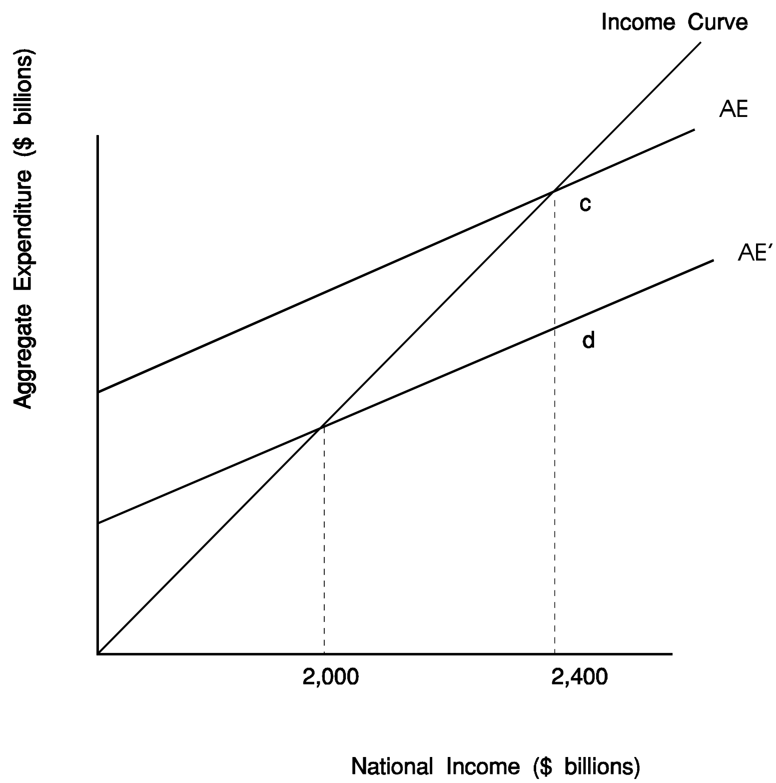
Graphing Tutorial

This chapter uses the model of equilibrium national income presented in Chapter 22 to show recessionary gaps and inflationary gaps and the ways they can be closed with fiscal policy. Suppose we have an economy that is in equilibrium at a national income equal to $1,600 billion and the full-employment level of national income is $2,000 billion. The graph shown on the following page reflects this situation.



The vertical distance between the aggregate expenditure curves *AE* and *AE*′ labeled *ab* defines the recessionary gap. It can be closed with a variety of fiscal policy options. Suppose that we choose to close the gap with an increase in government spending. Assuming the marginal propensity to consume is .75, the income multiplier is $1/(1 - MPC) = 1/(1 - .75) = 4$. We know that $\Delta Y = 4\Delta G$. National income must increase by \$400 billion. So, $\$400 = 4\Delta G$, and $\Delta G = \$100$ billion. An increase in government spending equal to \$100 billion will close the recessionary gap.

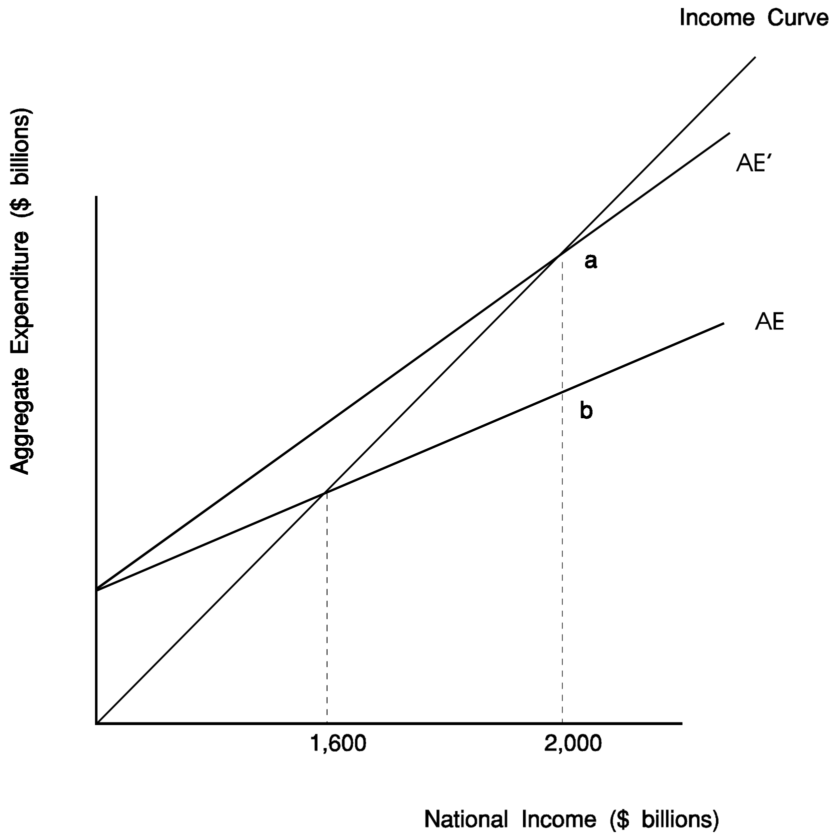
To illustrate an inflationary gap, suppose that the equilibrium level of national income is \$2,400 billion and the full-employment level of national income is \$2,000 billion. This situation is shown in the graph on the following page.



In this case, aggregate expenditure exceeds the amount necessary to achieve a full-employment level of national income. The vertical distance between *AE* and *AE′* labeled *cd* defines the inflationary gap — the amount by which aggregate expenditure must decrease to achieve the full employment level of national income. Suppose that we choose to close the inflationary gap with a tax increase and the $MPC = .75$. We know that the tax multiplier is $-MPC/(1 - MPC) = -.75/(1 - MPC) = -3$. Therefore, $\Delta Y = -3\Delta T$, and national income must decrease by \$400 billion. So, $-\$400 = -3\Delta T$ and $\Delta T = \$133.33$ billion. A tax increase equal to \$133.33 billion will shift the aggregate expenditure curve downward to achieve the full-employment level of national income.

Graphing Pitfalls

Closing a recessionary gap with an increase in government spending, a decrease in taxes, or some combination of the two results in an upward shift of the aggregate expenditure curve parallel to the original curve so that it intersects the income curve at the full-employment level of national income. Both the increase in government spending and the increase in consumption spending due to a tax cut compensate for a shortfall in autonomous investment that prevented the economy from reaching the full-employment level. You may think of the increase in government spending as public investment. In the context of our model, the impact of increased government spending is the same as an increase in autonomous investment — an upward shift of the aggregate expenditure curve parallel to the old curve. So don't make the mistake of rotating the aggregate expenditure curve upward so that its slope becomes steeper as shown in the graph on the following page. Remember, the marginal propensity to consume is the slope of the aggregate expenditure curve, and an increase in government spending (or a decrease in taxes of the kind discussed in your text) does not change the MPC.



When a recessionary gap is closed with an increase in government spending, a cut in taxes, or some combination of the two, the aggregate expenditure curve shifts upward parallel to the original curve. It doesn't rotate upward as shown in this graph.

True-False Questions — If a statement is false, explain why.

1. Keynesians believe that the economy naturally moves toward equilibrium at full employment. (T/F)

2. The reason the economy may be at an equilibrium below full employment is that wages and prices are inflexible. (T/F)

3. The upward-sloping segment of the aggregate supply curve shows that increases in real GDP can only occur with increases in the price level. (T/F)

4. An inflationary gap can be closed by cutting taxes. (T/F)

5. The actual rate of unemployment is equal to the natural rate of unemployment when the rate of cyclical unemployment is zero. (T/F)

6. According to Keynesians, reducing the budget deficit closes a recessionary gap, while increasing the budget deficit closes an inflationary gap. (T/F)

7. Structural unemployment is included in the natural rate of unemployment. (T/F)

8. Countercyclical fiscal policy is designed to temper the business cycle, thus timing is critical. (T/F)

9. Stock market and credit bubbles are examples of causes of internal business cycles. (T/F)

10. People living on a fixed income, such as retirees, are harmed by inflation. (T/F)

11. The tax multiplier is larger than the income multiplier. (T/F)

12. According to Keynesians, an increase in government spending generates an increase in national income equal to that created by an increase in private investment of the same magnitude. (T/F)

13. Closing a recessionary gap using deficit financing requires less government spending than financing the closing with a balanced budget. (T/F)

14. A deficit budget results when tax revenues are greater than the government's spending. (T/F)

15. Real business cycle theorists believe that innovations are clustered, as did Schumpeter. (T/F)

Multiple-Choice Questions

1. The economy is considered to be at full employment when the rate of ___________ is zero.
   a. cyclical unemployment
   b. seasonal unemployment
   c. frictional unemployment
   d. structural unemployment
   e. discouraged workers

2. When a balanced budget increases by $120 billion, national income increases by
   a. $60 billion
   b. $120 billion
   c. $240 billion
   d. $600 billion
   e. national income does not increase

3. Frictional unemployment can be the result of
   a. a change in the technology of production
   b. a recession
   c. people quitting one job to look for a better one
   d. a decrease in government spending
   e. friction in the workplace between workers and their employers

4. The type of unemployment associated with technological displacement of labor is
   a. cyclical
   b. structural
   c. frictional
   d. discouraged workers
   e. underemployed workers

5. When the economy is in equilibrium at a point on the vertical segment of the aggregate supply curve, an increase in government spending will
   a. cause a dramatic increase in national income
   b. cause the price level to increase with no change in national income
   c. close a recessionary gap
   d. decrease the budget deficit
   e. be followed by an increase in taxes

6. All of the following groups tend to be harmed by inflation **except**
   a. retirees
   b. minimum wage workers
   c. landlords
   d. lenders
   e. renters

7. The economy is considered to be at full employment when the rate of ___________ is zero.
   a. frictional unemployment
   b. seasonal unemployment
   c. cyclical unemployment
   d. structural unemployment
   e. discouraged workers

8. According to the Bureau of Labor Statistics (BLS), all of the following make up the labor force **except**
   a. discouraged workers
   b. underemployed workers
   c. frictionally unemployed workers
   d. cyclically unemployed workers
   e. structurally unemployed workers

9. The government budget is balanced when
   a. taxes are increased
   b. government spending is decreased
   c. taxes are decreased
   d. government spending is increased
   e. government spending equals tax revenues

10. Assuming that the government starts with a balanced budget, a subsequent $100 billion deficit results from a(n)
    a. increase in G by $140 billion and an increase in T by $40 billion
    b. increase in G by $140 billion and an increase in T by $140 billion
    c. decrease in G by $140 billion and an increase in T by $40 billion
    d. decrease in G by $140 billion and a decrease in T by $140 billion
    e. decrease in G by $40 billion and an increase in T by $100 billion

11. Suppose national income is $2,000 billion and the full-employment level is $2,400 billion. Given a marginal propensity to consume equal to 0.80, the amount by which taxes must change in order to reach full employment is
    a. $80 billion
    b. −$80 billion
    c. −$400 billion
    d. $100 billion
    e. −$100 billion

12. In Schumpeter's innovation cycle,
    a. technological change dampens the cycle, forcing the economy to equilibrium
    b. government's randomly distributed investments in research and development trigger the cycle
    c. innovations cause uneven changes in labor productivity, which trigger the cycle
    d. clusters of innovations propel an economy into prosperity and, once exhausted, create a downturn
    e. innovations cause nominal GDP to depart from real GDP, which triggers the cycle

13. One problem with increased government spending to eliminate recessionary gaps is that
    a. the government usually wastes the money it spends
    b. there is no need for the government to purchase more goods and services
    c. once government spending is started, it is very hard to cut it back
    d. government spending is usually inflationary
    e. the government cannot go into debt

14. The tax multiplier is
    a. 1/MPS
    b. −MPC/(1 − MPC)
    c. −1/(1 − MPC)
    d. MPS/(1 − MPS)
    e. T − G/(1+T)

15. People who are on fixed incomes can by adversely affected by inflation because
    a. their incomes buy fewer goods and services
    b. while their income may increase with inflation, it increases at a lower rate than the rate of inflation
    c. they typically have large outstanding debts like a mortgage
    d. the minimum wage that they receive does not increase
    e. they are unable to pick cheaper goods and services to buy as they did before the inflation

16. If the income multiplier is 4, government spending can increase by ________ and taxes by _________ to generate a $300 increase in national income.
    a. $250; $200
    b. $150; $100
    c. $200; $200
    d. $200; $250
    e. $300; $250

17. All of the following apply to the multiplier-accelerator model of the business cycle **except**
    a. the level of investment depends on changes in national income, which in turn depend on changes in investment
    b. the cycle is internally fueled, that is, it is inherent to the economic system
    c. the cycle dampens to a steady-state equilibrium in the long run
    d. the cycle, once triggered, will repeat
    e. it is not dependent on some external shock to the economic system, such as a war or population boom

18. A budget surplus arises when
    a. the balanced budget multiplier generates a level of national income greater than the full-employment level
    b. the tax multiplier is greater than the income multiplier
    c. tax revenues exceed government spending
    d. the income multiplier is greater than the tax multiplier
    e. the tax increase necessary to balance the budget is more than the increase in government spending

19. If a $100 billion cut in government spending causes national income to fall by $500 billion, then the marginal propensity to consume is
    a. .75
    b. .8
    c. .9
    d. .25
    e. .2

20. Given a $10 billion recessionary gap and an MPC = 0.75, we know that the equilibrium level of national income is
    a. at the full-employment level of national income
    b. $30 billion below the full-employment level of national income
    c. $50 billion above the full-employment level of national income
    d. $30 billion above the full-employment level of national income
    e. $40 billion below the full-employment level of national income

The following questions relate to the interdisciplinary, historical, and applied perspectives in the text.

21. A discouraged workers is one who
    a. cannot find a job and has quit searching for work
    b. is suicidal as a result of lack of success on the job market
    c. takes a job that is below his or her skill level
    d. is laid-off due to an unexpected downturn in the business cycle
    e. is stuck in a low-paying low-skill job with no prospects for improvement

22. Which of the following is not a characteristic of hyperinflation?
    a. an inflation rate in excess of 50 percent per month
    b. a storeowner's willingness to accept a promise to pay a bill in cash in one month's time
    c. workers demanding to be paid twice a day
    d. people spending cash as soon as they get it
    e. an inability to save for the future

23. The validity of Say's Law, which states that supply creates its own demand, depends on the assumption that
    a. firms will cut output when there is a decline in demand
    b. most workers are unionized
    c. firms do not compete with one another over price
    d. prices, wages, and interest rates are flexible
    e. the economy produces mostly goods rather than services

24. Keynes argued that budget deficits were appropriate
    a. most of the time since a deficit does not harm the economy
    b. when the economy is at full employment in order to further stimulate growth
    c. during a cyclical downturn in the economy
    d. to help combat inflation
    e. as a political tool used to curb government spending

25. In the Applied Perspective, "The Making of a Bubble: The Movie," one of the causes of the bubble in the housing market is
    a. excessive government regulation of the housing market
    b. the presumption on the part of all parties involved that housing prices always go up
    c. the stock market bubble that accompanied the housing market bubble
    d. a drop in foreign investment in mortgage-backed securities
    e. a reluctance on the part of investments bankers to purchase mortgage-backed securities

Fill in the Blanks

1. The natural rate of unemployment consists of workers who are __________________________ and

   ______________________ unemployed.

2. A __________________________ exists when the equilibrium level of national income is below the full-

   employment level.

3. Some groups of people hurt by inflation include ______________________, ________________________,

   and _______________________.

4. Unions bargain for _______________________________ in their wage contracts in order to protect

   themselves from the _________________________ of real wages due to inflation.

Discussion Questions

1. Suppose that the economy is below full employment. Is it necessary to use fiscal policy in order to eliminate the recessionary gap? Explain.

2. Define the unemployment rate. Does the definition include all the people of working age who don't have jobs? Explain.

3. Why do bankers lose because of inflation?

4. Which is the most difficult type of unemployment to eliminate and why?

5. How does real business cycle theory compare to the innovation business cycle theory?

Problems

1. Graph a recessionary gap and an inflationary gap using the aggregate expenditure model of equilibrium national income determination.

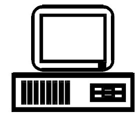
2. Suppose that the full-employment level of national income is $3,000 billion, the equilibrium level of national income is $2,500 billion, and the marginal propensity to consume is 0.8. By how much will government spending have to increase in order to reach full employment?

3. Suppose that the full-employment level of national income is $2,000 billion and the equilibrium level of national income is $2,500 billion. Given a marginal propensity to consume equal to 0.80, how much will taxes have to change in order to reach full employment?

4. Show how the inflationary gap in problem 3 above can be closed with the increase in taxes limited to $50 billion. By how much will government spending have to increase to achieve this goal? What is the size of the surplus or deficit budget that results?

Everyday Applications

During the winter and spring of 1998, a massive spending bill to finance highway repairs and new highway construction made its way through the U.S. Congress at a time when the economy was operating with the lowest levels of unemployment since 1970. Viewed from the perspective of fiscal policy, was this bill appropriate? Why or why not? Can large amounts of new spending on America's highways be justified on grounds other than fiscal policy? Explain.



Economics Online

The Joint Economic Committee of Congress was created when Congress passed the Employment Act of 1946 that committed the government to designing fiscal policy that would promote full employment with low inflation. You can visit the home page for the JEC to find out more about the formulation of fiscal policy (*http://www.house.gov/jec/welcome.htm*).

Answers to Questions

Key Terms Quiz

a. 9	**f.** 1	**k.** 10	**p.** 14
b. 15	**g.** 6	**l.** 13	**q.** 16
c. 3	**h.** 12	**m.** 2	**r.** 8
d. 18	**i.** 4	**n.** 17	
e. 11	**j.** 5	**o.** 7	

True-False Questions

1. False. Keynesians believe that the economy can be in equilibrium either below or above a full-employment level of national income.
2. True
3. True
4. False. A recessionary gap can be closed by cutting taxes; an inflationary gap can be closed by increasing taxes.
5. True
6. False. Closing a recessionary gap requires an increase in the budget deficit while closing an inflationary gap requires a budget surplus.
7. True
8. True.
9. False. Stock market and credit bubbles are examples of causes of external business cycles.
10. True
11. False. The income multiplier is $1/(1 - MPC)$ which generates a larger income magnification than the tax multiplier, equal to $-MPC/(1 - MPC)$
12. True
13. True
14. False. A deficit budget results when government spending is greater than tax revenues.
15. False. Real business cycle theorists believe that innovations are random and unconnected.

Multiple-Choice Questions

1. a	**6.** e	**11.** e	**16.** b	**21.** a
2. b	**7.** c	**12.** d	**17.** c	**22.** b
3. c	**8.** a	**13.** c	**18.** c	**23.** d
4. b	**9.** e	**14.** b	**19.** b	**24.** c
5. b	**10.** a	**15.** a	**20.** e	**25.** b

Fill in the Blanks

1. frictionally; structurally
2. recessionary gap
3. savers; landlords; people on fixed incomes
4. cost-of-living allowances; erosion

Discussion Questions

1. Keynesians believe that it is usually necessary to use fiscal policy to eliminate a recessionary gap. They argue that the equilibrium level of national income is determined primarily by aggregate expenditure. The equilibrium level of national income can be at less than the full-employment level. Since this is an equilibrium level, there is no reason for income to change by itself. Therefore, fiscal policy will be necessary to eliminate the recessionary gap — either an increase in government spending, a decrease in taxes, or some combination.

   Other economists believe it may not be necessary to use fiscal policy because the economy will eventually adjust back to full employment automatically. For example, there may be a change in technology that prompts many entrepreneurs to invest in new capital equipment, causing an increase in aggregate expenditure. Or, old capital may just wear out and have to be replaced, causing an increase in investment. The drawback to such automatic adjustment is that it may take a very long time.

2. The unemployment rate is the percentage of the labor force that is looking for work. This definition does not include all people of working age who don't have jobs. Some people of working age are not in the labor force so they can't be unemployed. For example, discouraged workers are not included in the calculation of the unemployment rate.

3. Bankers lend money and are repaid the principal plus interest at a future date. If they lend $100 in 1995 and receive the full loan of $100 back in 2000 while but in the five intervening years, inflation totaled 50 percent, the quantity of goods and services that $100 buys for the bankers is only 50 percent of what they could have bought with the $100 in 1995. Bankers and other who lend money may try to anticipate the impact of inflation on the purchasing power of the money they lend. The interest rate that bankers charge typically includes a premium that is equal to their best estimate of the future rate of inflation. In this way, bankers can protect themselves to a degree from the impact of inflation on the purchasing power of the money they lend.

4. Structural unemployment is probably the most difficult type of unemployment to eliminate. Structural unemployment is the result of changes in tastes for goods that cause the demand for them to fall and/or changes in production technology that decrease the demand for certain skills. Either way, the workers affected may have difficulty finding other jobs because their skills are not immediately suited to the types of employment that are available. To ameliorate the problem of structural unemployment, retraining and education may be necessary to equip workers with skills that are in greater demand by employers. The problem of structural unemployment is compounded by the extent to which the affected workers are late in

their careers.

5. Real business cycle theorists don't believe in a business cycle. Rather, they argue that the economy experiences periodic bursts of rapid growth associated with rapid technological changes that occur randomly in the economy. On the other hand, the innovation cycle focuses on technological changes that are significant enough to lead to major changes in investment, which starts the cycle process. The innovation business cycle theory maintains that innovations are clustered and related to one another, rather than random and unrelated.

Problems

1. Graphs of a recessionary gap and an inflationary gap are presented in the graphing tutorial.

2. The change in national income required in this case is $500 billion. The multiplier is equal to $1/(1 - MPC) = 1/(1 - .8) = 5$. Therefore, $500 = 5\Delta G$, so $\Delta G = \$100$ billion.

3. The change in national income required is -$500 billion. The tax multiplier is equal to $-MPC/(1 - MPC) = -.8/(1 - .8) = -4$. Therefore, $-500 = -4\Delta T$, so $\Delta T = \$125$ billion.

4. The change in national income required is −$500 and the tax increase is limited to $50 billion. The tax multiplier is −4, so national income will decrease by 4($50) = $200 billion due to the tax increase. The level of national income must be reduced by another $300 billion with cuts in government spending. The income multiplier is 5; therefore a cut in government spending equal to $60 billion will decrease national income by $300 billion. The increase in taxes equal to $50 billion plus the cut in government spending equal to $60 billion combine to generate a $110 billion budget surplus, assuming the original budget was balanced.

Homework Questions

True-False Questions — If a statement is false, explain why.

1. An appropriate fiscal policy to introduce when unemployment is low would be a combination of tax cuts and government spending increases. (T/F)

2. The recessionary gap is the amount by which aggregate expenditures must decrease in order to reach full employment. (T/F)

3. Structural and frictional unemployment cannot be controlled with fiscal policy. (T/F)

4. There is a universal consensus among economists that business cycles exist. (T/F)

5. A decrease in taxes produces a larger increase in national income than would an equivalent increase in government spending. (T/F)

Multiple-Choice Questions

1. Given a choice among the following fiscal policy options, the best one to combat cyclical unemployment would be
   a. a tax cut and a government spending decrease
   b. a tax increase and a government spending increase
   c. an increase in government spending matched by an equal increase in taxes
   d. a tax increase and a government spending decrease
   e. a tax cut and a government spending increase

2. The three types of unemployment that fiscal policy is unlikely to significantly reduce are
   a. natural, cyclical, and discouraged workers
   b. structural, frictional, and discouraged workers
   c. discouraged workers, cyclical, and frictional
   d. cyclical, frictional, and natural
   e. frictional, structural, and natural

3. If government policy creates a surplus budget while the economy is already at full employment, then
   a. national income is falling
   b. fiscal policy is inflationary
   c. fiscal policy is recessionary
   d. the balanced budget multiplier must be less than 1
   e. the balanced budget multiplier must be greater than 1

4. Suppose national income is \$6,000 billion and the full-employment level is \$4,800 billion. Given a marginal propensity to consume equal to 0.75, the amount by which taxes must change in order to reach full employment is
   a. \$900 billion
   b. -\$900 billion
   c. \$40 billion
   d. \$1,200 billion
   e. \$400 billion

5. The accelerator is the
   a. relationship between the level of investment and changes in the level of national income
   b. reciprocal of the multiplier
   c. rate of economic growth in the recovery phase of a business cycle
   d. relationship between changes in investment that cause changes in national income
   e. speed at which policy decisions are made in response to changes in the economy

Discussion Questions/Problems

1. Distinguish inflation and high inflation from hyperinflation. Give some examples of hyperinflations.

2. a. Suppose that $C = 100 + .75Y$, $I = 150$ and $G = 50$ (units are billions of dollars). Calculate the equilibrium level of national income.

   b. If the full employment level of national income is \$1800 billion, is there a recessionary gap or an inflationay gap? Explain.

   c. By how much would government spending have to change in order to reach full employment? By how much would taxes have to change in order to reach full employment? How do you account for the difference in your answers?