CHAPTER 8

Introduction to Economic Growth and Instability

The economic health of a nation relies on ***economic growth*** because it reduces the burden of scarcity. Small differences in real growth rates result in large differences in the standards of living in nations. The first short section of the chapter introduces you to this important concept and identifies the two main sources of growth. It also presents data on the long-term growth record of the United States.

This record has been interrupted by periods of economic instability, a topic that is the major focus of the chapter. The second section of the chapter discusses the ***business cycle:*** the ups and downs in the employment of labor and real output of the economy that occur over the years. What may not be immediately evident to you, but will become clear as you read this chapter, is that these alternating periods of prosperity and hard times have taken place over a long period in which the trends in real output, employment, and the standard of living have been upward. During this long history booms and busts have occurred quite irregularly; their duration and intensity have been so varied that it is better to think of them as economic instability rather than regular business cycles.

Two principal problems result from the instability of the economy. The first problem is described in the third section of the chapter. Here you will find an examination of the ***unemployment*** that accompanies a downturn in the level of economic activity in the economy. You will first learn how economists measure the unemployment rate in the economy and the problems they encounter. You will also discover that there are three different kinds of unemployment, and that full employment means that less than 100% of the labor force is employed. You will also find out how unemployment imposes an economic cost on the economy and this cost is unequally distributed among different groups in our society.

The second major problem that results from economic instability is ***inflation.*** It is examined in the fourth section of the chapter, and also in the following two sections. Inflation is an increase in the general (or average) level of prices in an economy. It does not have a unique cause: It may result from increases in demand, from increases in costs, or from both sources.

Regardless of its cause, inflation may impose a real hardship on different groups in our society as you will learn in the fifth section of the chapter. ***Inflation arbitrarily redistributes real income and wealth*** in the economy. Unanticipated inflation hurts those on fixed incomes, those who save money, and those who lend money. If inflation is anticipated some of its burden can be reduced, but that depends on whether a group can protect their income with cost-of-living or interest rate adjustments.

Finally, inflation has redistribution effects on the real output of the economy as described in the last section of the chapter. ***Cost-push inflation*** and ***demand-pull inflation*** have different effects on output and employment that vary with the severity of the inflation. In the extreme, an economy can experience very high rates of inflation—***hyperinflation***—that can result in its breakdown.

Understanding the basics of economic growth and the twin problems of unemployment and inflation are important because it prepares you for later chapters and the explanations of how the macroeconomy works.

■ CHECKLIST

When you have finished this chapter you should be able to

☐ Define economic growth in two different ways.
☐ Explain why economic growth is an important goal.
☐ Describe how different growth rates affect real domestic output over time.
☐ Identify the two main sources of economic growth and indicate their relative importance.
☐ Describe the growth record of the U.S. economy since 1940, its rates of economic growth since 1950, and several qualifications to this record.
☐ Explain what the business cycle means.
☐ Describe the four phases of a generalized business cycle.
☐ Identify the immediate case of the cyclical changes in the levels of real output and employment.
☐ Explain differences in the way cyclical fluctuations affect industries producing capital and consumer durable goods, and how they affect those producing consumer nondurable goods and services.
☐ Describe how the Bureau of Labor Statistics (BLS) measures the rate of unemployment, and list the two criticisms of their survey data.
☐ Distinguish among frictional, structural, and cyclical types of unemployment, and explain the causes of these three kinds of unemployment.
☐ Define full employment and the full-employment unemployment rate (the natural rate of unemployment).

☐ Identify the economic and noneconomic costs of unemployment.
☐ Define the GDP gap and state Okun's law.
☐ Discuss the unequal burdens of unemployment.
☐ Define inflation and the rate of inflation.
☐ Make international comparisons of inflation rate and unemployment rate data.
☐ Define demand-pull inflation and explain its effects in ranges 1, 2, and 3 of a price level and real domestic output graph.
☐ Define cost-push inflation and its relation to per unit production costs.
☐ Describe the complexities involved in distinguishing between demand-pull and cost-push inflation.
☐ Distinguish between real and nominal income and calculate real income when given data on nominal income and the price level.
☐ List groups that are hurt by and groups that are unaffected or benefit from unanticipated inflation.
☐ Describe how the redistributive effects of inflation are changed when it is anticipated.
☐ Explain the difference between the real and the nominal interest rates.
☐ Make three final points about the redistribution effects of inflation.
☐ Describe the effect of cost-push inflation on real output.
☐ Explain the contrasting views on the effects of demand-pull inflation.
☐ Define hyperinflation and explain its effects on prices and real output.

■ CHAPTER OUTLINE

1. ***Economic growth*** can be defined as an increase in real GDP *or* an increase in real GDP per capita over some time period. With either definition economic growth is calculated as a percentage rate of growth per year.

a. Economic growth is important because it lessens the burden of scarcity; it provides the means of satisfying economic wants more fully and fulfilling new wants.
b. One or two percentage point differences in the rate of growth result in substantial differences in annual increases in the economy's output.
c. Economic growth can be increased by increasing the inputs of resources and by increasing the ***productivity*** of those inputs. In the United States about one-third of growth comes from more inputs and two-thirds comes from improved productivity.
d. Over the past 50 years the U.S. economy has an impressive record of economic growth. The growth record may be understated because it does not take into account improvements in product quality or increases in leisure time. The effects of growth on the environment or quality of life could be negative *or* positive.
e. The growth record of the United States over the past 50 years lagged behind other major nations, but in the past decade it has surged ahead of those nations.

2. Economic growth in the U.S. economy has been interrupted by periods of inflation, recession, or both.

a. The ***business cycle*** means alternating periods of prosperity and recession. These recurrent periods of ups and downs in employment, output, and prices are irregular in their duration and intensity, but the typical pattern is ***peak, recession, trough,*** and ***recovery,*** to another peak.
b. Most economists think that changes in the levels of output and employment are largely the result of changes in the level of ***total spending*** in the economy.
c. The business cycle affects almost the entire economy, but it does not affect all parts in the same way and to the same degree: The production of capital and consumer durable goods fluctuates more than the production of consumer nondurable goods and services during the cycle, because the purchase of capital and consumer durable goods can be postponed.

3. One of the twin problems arising from economic instability is ***unemployment.***

a. The ***unemployment rate*** is calculated by dividing the number of persons in the ***labor force*** who are unemployed by the total number of persons in the labor force. Unemployment data have been criticized for at least two reasons:
(1) Part-time workers are considered fully employed.
(2) ***Discouraged workers*** who have left the labor force are not counted as unemployed.
b. Full employment does not mean that all workers in the labor force are employed and there is no unemployment; some unemployment is normal. There are at least three types of unemployment.
(1) ***Frictional unemployment*** is due to workers searching for new jobs or waiting to take new jobs; this type of unemployment is generally desirable.
(2) ***Structural unemployment*** is due to the changes in technology and in the types of goods and services consumers wish to buy; these changes affect the total demand for labor in particular industries or regions.
(3) ***Cyclical unemployment*** is due to insufficient total spending in the economy; this type of unemployment arises during the recession phase of the business cycle.
c. "Full employment" is less than 100% because some frictional and structural unemployment is unavoidable. The ***full-employment unemployment rate*** or the ***natural rate of unemployment*** is the sum of frictional and structural unemployment, and is achieved when cyclical unemployment is zero (the real output of the economy is equal to its potential output). The natural rate is about 4 to 5% of the labor force. It is not automatically achieved and changes over time.
d. Unemployment has an economic cost.
(1) The economic cost is the difference between ***potential GDP*** and actual GDP (or the *GDP gap*). ***Okun's law*** is that for every 1% the actual unemployment rate exceeds the natural rate of unemployment, there is a GDP gap of about 2%.
(2) This cost is unequally distributed among different groups of workers in the labor force.
e. Unemployment also has noneconomic costs in the form of social and psychological problems.

f. Unemployment rates differ across nations because of differences in phases of the business cycle and natural rates of unemployment.

4. Over its history, the U.S. economy has experienced not only periods of unemployment but periods of ***inflation.***

a. Inflation is an increase in the general level of prices in the economy; a decline in the level of prices is deflation.

b. The rate of inflation in any year is equal to the percentage change in the price index between that year and the preceding year. ***The rule of 70*** can be used to calculate the number of years it will take for the price level to double at any given rate of inflation.

c. The United States has experienced both inflation and deflation, but the past half-century has been a period of inflation. Other industrial nations also experienced inflation.

d. There are at least two causes of inflation. These may operate separately or simultaneously to raise the price level.

(1) ***Demand-pull inflation*** is the result of excess total spending in the economy. Increases in total spending do not increase the price level when real output is low (range 1) and the unemployment rate is high. They do bring about inflation as the economy nears and reaches full employment output (range 2) and maximum output (range 3). (See graph for multiple-choice question #20.)

(2) ***Cost-push inflation*** is the result of factors that raise ***per unit production costs.*** This average cost is found by dividing the total cost of the resource inputs by the amount of output produced. With cost-push inflation, output and employment decline as the price level rises. The major source of this inflation has been supply shock from an increase in the prices of resource inputs.

e. It is difficult to distinguish between demand-pull and cost-push inflation in the real world.

5. Inflation arbitrarily redistributes real income and wealth. It benefits some groups and hurts other groups in the economy.

a. Whether someone benefits or is hurt by inflation is measured by what happens to real income. Inflation injures those whose real income falls and benefits those whose real income rises.

(1) ***Real income*** is determined by dividing ***nominal income*** by the price level expressed in hundredths.

(2) The percentage change in real income can be approximated by subtracting the percentage change in the price level from the percentage change in nominal income.

(3) The redistribution effects of inflation depend on whether it is anticipated or unanticipated.

b. ***Unanticipated inflation*** hurts *fixed-income receivers, savers,* and *creditors* because it lowers the real value of their assets.

c. Unanticipated inflation may not affect or may help *flexible-income receivers.* It helps *debtors* because it lowers the real value of debts to be repaid.

d. When there is ***anticipated inflation*** people can adjust their nominal incomes to reflect the expected rise in the price level, and the redistribution of income and wealth is lessened. To reduce the effects of inflation on a nominal interest rate, an inflation premium (the expected rate of inflation) is added to the ***real interest rate.***

6. Inflation also has an effect on ***real output*** that varies by the type of inflation and its severity.

a. Cost-push inflation reduces real output, employment, and income.

b. Views of mild demand-pull inflation vary. It may reduce real output, or it may be a necessary by-product of economic growth.

c. ***Hyperinflation***—extremely high rates of inflation—can lead to a breakdown of the economy by redistributing income and reducing real output and employment.

■ HINTS AND TIPS

1. Some students get confused by the seemingly contradictory term *full-employment unemployment rate* and related unemployment concepts. Full employment does not mean that everyone who wants to work has a job; it means that the economy is achieving its potential output and has a natural rate of unemployment. Remember that there are three types of unemployment: frictional, structural, and cyclical. There will always be some unemployment arising from frictional reasons (e.g., people searching for jobs) or structural reasons (e.g., changes in industry demand), and these two types of unemployment are "natural" for an economy. When there is cyclical unemployment because of a downturn in the business cycle, the economy is not producing its potential output. Thus, full-employment unemployment rate means that there are no cyclical reasons causing unemployment, only frictional or structural reasons.

2. To verify your understanding of how to calculate the unemployment rate, GDP gap, or inflation rate, do Problems 3, 4, and 5 in this *Study Guide* chapter.

3. Inflation is a rise in the *general* level of prices, not just a rise in the prices of a few products. An increase in product price is caused by supply or demand factors. You now know why the prices for many products rise in an economy. The macroeconomic reasons given in Chapter 8 for the increase in the general level of prices are different from the microeconomic reasons for a price increase that you learned about in Chapter 3.

■ IMPORTANT TERMS

economic growth	**potential output**
productivity	**GDP gap**
business cycle	**Okun's law**
peak	**inflation**
recession	**rule of 70**
trough	**demand-pull inflation**
recovery	**cost-push inflation**

labor force
unemployment rate
discouraged workers
frictional unemployment
structural unemployment
cyclical unemployment
full-employment unemployment rate
natural rate of unemployment
per unit production cost
nominal income
real income
anticipated inflation
unanticipated inflation
cost-of-living adjustment
real interest rate
nominal interest rate
deflation
hyperinflation

SELF-TEST

FILL-IN QUESTIONS

1. Economic growth is best measured either by an increase in (nominal, real) ________ GDP over a time period or by an increase in ________ GDP per capita over a time period.

2. A rise in real output per capita (increases, decreases) ________ the standard of living and ________ the burden of scarcity in the economy.

3. Assume an economy has a real GDP of $3600 billion. If the growth rate is 5%, real GDP will increase by ($360, $180) ________ billion next year; but if the rate of growth is only 3%, the annual increase in real GDP will be ($54, $108) ________ billion. A two percentage point difference in the growth rate results in a ($72, $254) ________ billion difference in the annual increase in real GDP.

4. The two main ways that society can increase its real output and income are by increasing outputs of (products, resources) ________ and by increasing the (consumption, productivity) ________ of these inputs.

5. Since 1940, real GDP has increased (fourfold, sixfold) ________ and real GDP per capita has increased almost ________. These figures do not fully account for (better, worse) ________ products and services and (more, less) ________ leisure.

6. The business cycle is a term which encompasses the recurrent ups, or (decreases, increases) ________, and downs, or ________, in the level of business activity in the economy. The order of the four phases of a typical business cycle are peak, (recovery, trough, recession) ________, ________, and ________.

7. Expansion and contraction of the economy affect to a greater extent the production and employment in the consumer (durables, nondurables) ________ and (capital, consumer) ________ goods industries than they do (durable, nondurable) ________ goods and service industries.

8. The unemployment rate is found by dividing the number of (employed, unemployed) ________ persons by the (population, labor force) ________ and (multiplying, dividing) ________ by 100.

9. When workers are searching for new jobs or waiting to start new jobs, this type of unemployment is called (structural, frictional, cyclical) ________, but when workers are laid off because of changes in the consumer demand and technology in industries or regions, this unemployment is called ________; when workers are unemployed because of insufficient total spending in the economy, this type of unemployment is called ________.

10. The full-employment unemployment rate is called the (Okun, natural) ________ rate of unemployment. It is equal to the total of (frictional and structural, cyclical and frictional) ________ unemployment in the economy. It is realized when the (frictional, cyclical) ________ unemployment in the economy is equal to zero and when the actual output of the economy is (less than, equal to) ________ its potential output. When the economy achieves its natural rate of unemployment, the number of job seekers is (greater than, equal to) ________ the number of job vacancies.

11. The GDP gap is equal to the potential GDP (minus, plus) ________ the actual GDP. For every percentage point the unemployment rate rises above the natural rate, the GDP gap will, according to Okun's law, (increase, decrease) ________ by (1, 2, 5) ____%.

12. The burdens of unemployment are borne more heavily by (black, white) ________, (adult, teenage) ________, and (white-collar, blue-collar) ________ workers, and the percentage of the labor force unemployed for 15 or more weeks is much (greater, less) ________ than the unemployment rate.

13. Inflation means (an increase, a decrease) ________ in the general level of (unemployment, prices) _______________ in the economy. To calculate the rate of inflation from year 1 to year 2, subtract the price index for year 1 from year 2, then (multiply, divide) _______________ the result by the price index for year 1, and _______________ by 100.

14. To find the approximate number of years it takes the price level to double, (multiply, divide) _______________ 70 by the percentage annual increase in the rate of inflation. This approximation is called (Okun's law, rule of 70) _______________.

15. The basic cause of demand-pull inflation is (an increase, a decrease) _______________ in total spending beyond the full employment output rate in the economy. Cost-push inflation is explained in terms of factors that raise per-unit (inflation, production) _______________ costs. In practice, it is (easy, difficult) _______________ to distinguish between the two types of inflation.

16. The amount of goods and services one's nominal income can buy is called (variable, real) _______________ income. If one's nominal income rises by 10% and the price level by 7%, the percentage of increase in (variable, real) _______________ income would be (1, 2, 3) _______. If nominal income was $60,000 and the price index, expressed in hundredths, was 1.06, then (variable, real) _______________ income would be ($56,604, $63,600) _______________.

17. Unanticipated inflation hurts those whose nominal incomes are relatively (fixed, flexible) _______________, penalizes (savers, borrowers) _______________, and hurts (creditors, debtors) _______________.

18. The redistributive effects of inflation are less severe when it is (anticipated, unanticipated) _______________. Clauses in labor contracts that call for automatic adjustments of workers' incomes from the effects of inflation are called (unemployment benefits, cost-of-living) _______________ adjustments.

19. The percentage increase in purchasing power that the lender receives from the borrower is the (real, nominal) _______________ rate of interest; the percentage increase in money that the lender receives is the _______________ rate of interest. If the nominal rate of interest is 8% and the real interest rate is 5%, then the inflation premium is (8, 5, 3)_______%.

20. Despite considerable disagreement and uncertainty among economists, it seems that demand-pull inflation, unless there is full employment in the economy, will (increase, decrease) _______________ total output and employment, cost-push inflation will _______________ output and employment in the economy, and an economic collapse or breakdown can result from (cost-push, hyperinflation) _______________.