Chapter 4

A FIRST LOOK AT MACROECONOMICS*

Key Concepts

Origins and Issues of Macroeconomics

Modern macroeconomics began during the **Great Depression**, 1929–1939. The Great Depression was a decade of high unemployment and stagnant production throughout the world. Macroeconomics initially focused on short-term problems, such as high unemployment. Recently long-term problems, such as economic growth, are also considered vital.

Economic Growth

Economic growth is the expansion of the economy's production possibilities. It is measured by the increase in **real gross domestic product**, also called **real GDP**. Real GDP is the value of the total production of all the nation's farms, factories, shops, and offices measured in the prices of a single year.

Potential GDP is the quantity of real GDP that is produced when all the economy's labor, capital, land, and entrepreneurial ability are fully employed.

- The **productivity growth slowdown** was the slowing of the growth rate of output per person that occurred during the 1970s.

The periodic but irregular up-and-down movement in production is the **business cycle**. It occurs as real GDP fluctuates irregularly around potential GDP. A business cycle has four parts:

- *Trough* — the lower turning point, when a recession ends and an expansion begins.
- **Expansion** — a period of time during which real GDP increases.
- *Peak* — the upper turning point, when an expansion ends and a recession begins.
- **Recession** — a period during which real GDP decreases for at least two successive quarters.

The most recent recession began in the first quarter of 2001 and ended in the third quarter of 2001. This recession was milder than previous recessions.

- Between 1972 and 2002, the growth rate of real GDP in the United States was about equal to that of the rest of the world but was more variable.
- Between 1992 and 2002, of the advanced economies Japan grew the slowest and the newly industrialized nations of Asia grew the fastest.

The *Lucas wedge* is the accumulated loss of output that results from a slowdown in the growth rate of real GDP per person. The productivity growth slowdown of the 1970s has created a Lucas wedge of $48 trillion. The *Okun gap* (the *output gap*) is the gap between real GDP and potential GDP. The recessions since 1973 have created an accumulated Okun gap of $2.5 trillion.

Economic growth expands future consumption possibilities. However, economic growth allows less current consumption as resources must be devoted to capital accumulation and might lead to more rapid depletion of resources and more pollution.

Jobs and Unemployment

In 2003, 137 million people had jobs. More new jobs are created during expansions and jobs are lost during recessions.

A person is unemployed if he or she does not have a job but is looking for work. The **unemployment rate** is the number of unemployed workers as a percentage of all the people who have jobs or are looking for one.

- Unemployment increases during a recession and decreases during an expansion.
- The average unemployment rate in the United States is higher than in Japan, but lower than in Canada and Europe.

Unemployment is a serious problem because unemployed workers lose income and can find their future job prospects limited.

* This is Chapter 20 in *Economics*.

Inflation

The **price level** is the average level of prices. **Inflation** occurs when prices rise. The inflation rate is the percentage change in the price level. **Deflation** occurs when the inflation rate is negative so that the price level falls. In recent years, deflation has been rare in the United States.

Inflation was high in the 1970s and early 1980s, but has been lower since then. The U.S. experience with inflation has been similar to that of other industrialized nations.

Inflation reduces the value of money, so unpredictable inflation makes transactions spread over time more difficult to carry out. In times of high inflation, people use resources to predict inflation rather than to produce goods and services. A *hyperinflation* is a period when the inflation rate exceeds 50 percent per month. At such rates, inflation causes economic chaos.

Surpluses and Deficits

A **government budget surplus** occurs when the government collects more in taxes than it spends; a **government budget deficit** occurs when the government spends more than it collects in taxes. The U.S. federal government had a surplus between 1998 to 2000 and a deficit after 2001.

The **current account** balance equals exports minus imports plus interest income minus interest expense. Payments greater than (less than) receipts create a current account deficit (surplus). The United States has had a current account deficit since 1980.

Deficits used to finance investment are not necessarily harmful; deficits used to finance consumption may be troublesome because such deficits do not create the income necessary to repay the debt incurred.

Macroeconomic Policy Challenges and Tools

Five widely agreed upon challenges for macroeconomic policy are:

- Boost economic growth
- Keep inflation low
- Stabilize the business cycle
- Reduce unemployment
- Reduce the government and international deficits

Achieving these challenges will help the economy.

The two general macroeconomic policy tools the government has at hand to help attain the five goals are:

- **Fiscal policy** — setting and changing tax rates and the amount of government spending. The federal government can use fiscal policy in efforts to accomplish some of the policy challenges.
- **Monetary policy** — changes in the interest rate and the amount of money in the economy. Monetary policy is under the control of the Federal Reserve, or Fed. The Federal Reserve can use monetary policy in order to meet some of the policy challenges.

Helpful Hints

1. **THE MACROECONOMIC CHALLENGES :** The chapter discusses five widely agreed upon macroeconomic challenges. As you study the forthcoming chapters, keep these challenges in mind because ultimately we return to see what policies, if any, the government might adopt to help meet these goals.

   While these challenges are widely agreed upon, there is dispute among economists about ranking their importance as well as dispute about the proper polices necessary to attain some of them. The first disagreement matters because at times the goals collide, so that achieving one causes setbacks in others. In this case, the decision whether attaining the first goal is worth the cost of falling behind in others will differ from person to person. The second area of contention can arise even with agreement on the ranking of the goals. You will see in future chapters that there is disagreement amongst macroeconomists about how to meet the macroeconomic challenges and that this can lead to different policy advice.

Questions

True/False and Explain

Origins and Issues of Macroeconomics

1. Modern macroeconomics was developed during the decade of the Great Depression.
2. All macroeconomic goals are long-term goals.

Economic Growth

3. Real GDP is the amount of goods and services that are produced in a year when resources are fully employed.
4. Real GDP per person grew slowly in the 1960s and quite rapidly in the 1970s.
5. The trough is the lower turning point of the business cycle.
6. Since 1992, the growth rate of real GDP has been lower in the United States than in Japan.

Jobs and Unemployment

7. Unemployment rates in recent years have been lower than those during the Great Depression.
8. In the recession phase of a business cycle, the unemployment rate rises.

Inflation

9. The inflation rate can never be negative.
10. Inflation in the United States has been similar to that in other industrialized nations.

Surpluses and Deficits

11. Ignoring interest income and expense, if U.S. exports exceed U.S. imports, the United States has a current account deficit.
12. A current account deficit definitely harms the nation.

Macroeconomic Policy Challenges and Tools

13. The government can use fiscal policy and monetary policy to pursue its macroeconomic goals.
14. Fiscal policy includes government engineered changes in the interest rate.

Multiple Choice

Origins and Issues of Macroeconomics

1. During the Great Depression,
   a. the major focus of macroeconomics switched to preventing inflation.
   b. the productivity growth slowdown occurred.
   c. economists switched their focus so that macroeconomics began to emphasize business cycles.
   d. long-term economic growth was the major problem facing capitalist nations.

Economic Growth

2. Real GDP
   a. measures only the output of real goods, such as machines and food, not "unreal" things such as services.
   b. includes all the goods and services produced in the economy, including those produced in the home.
   c. is measured in the prices of a single year in order to eliminate the effects of inflation.
   d. is the amount of goods and services that the nation is able to produce when its resources are fully employed.

3. Which is the proper order for the business cycle?
   a. Peak, recession, trough, expansion
   b. Peak, trough, expansion, recession
   c. Peak, expansion, trough, recession
   d. Peak, recession, expansion, trough

4. Real GDP rose in all four quarters of 2003; thus 2003 was definitely a year
   a. of expansion.
   b. with a business cycle peak.
   c. of recession.
   d. with a business cycle trough.

5. Which of the following statements about the productivity growth slowdown is correct?
   a. The productivity growth slowdown was confined to the United States.
   b. The productivity growth slowdown occurred in the 1960s.
   c. The growth of potential GDP slowed during the productivity growth slowdown.
   d. Extremely low oil prices were a major cause of the productivity growth slowdown.

6. Between 1972 and 2002, compared to the rest of the world, real GDP growth in the United States was ____ variable than in the rest of the world and was ____ than in the rest of the world.
   a. more; faster
   b. less; faster
   c. more; at about the same rate
   d. less; slower.

7. The accumulated loss of output that results from a slowdown in the growth rate of real GDP per person is called the ____
   a. Lucas wedge.
   b. Okun gap.
   c. output gap.
   d. growth gap.

8. Which of the following is NOT a cost of more rapid economic growth?
   a. Current consumption must be foregone in order to develop new technology or new capital.
   b. Environmental damage may increase because of economic growth.
   c. Consumption possibilities expand in the future because of economic growth.
   d. The Lucas wedge increases in size.

Jobs and Unemployment

9. In 2003, ____ people had jobs in the United States.
   a. 1,000,000
   b. 137,000,000
   c. 85,000,000
   d. 180,000,000

10. The unemployment rate generally rises during ____ in the business cycle.
    a. a peak
    b. a recession
    c. a trough
    d. an expansion

11. Comparing the United States, Western Europe, and Japan, in recent years the unemployment rate has been highest in
    a. the United States.
    b. Western Europe.
    c. Japan.
    d. the United States and Japan.

Inflation

12. In the United States, the average inflation rate was highest over the decade of the
    a. 1960s.
    b. 1970s.
    c. 1980s.
    d. 1990s.

13. Which of the following is a cost of unpredictable inflation?
    a. People use resources to predict inflation rather than to produce output.
    b. It becomes too easy to obtain loans.
    c. Deflation becomes an increasing problem.
    d. All of the above are costs of unpredictable inflation.

Surpluses and Deficits

14. Which of the following statements about the government budget is correct?
    a. Whenever tax revenues exceed government spending, the government has a budget deficit,
    b. As a fraction of GDP, the budget deficit has increased steadily since 1980.
    c. The government has had a budget deficit every year since 1970.
    d. None of the above are correct.

15. Since 1980, the U.S. current account has had
    a. a deficit.
    b. a surplus that has been consistently large.
    c. a deficit that has gotten consistently larger.
    d. alternating small surpluses and deficits.

Macroeconomic Policy Challenges and Tools

16. Which of the following is NOT a policy challenge?
    a. Boosting long-term growth.
    b. Lowering unemployment.
    c. Stabilizing the business cycle.
    d. Raising the government budget deficit.

17. Which of the following is an example of monetary policy?
    a. Changing the interest rate.
    b. Changing government spending.
    c. Changing tax rates.
    d. Changing the government's deficit.

Short Answer Problems

1. What was the productivity growth slowdown? Why is it important?
2. Suppose that real GDP per person in the United States in 2003 is $30,000.
   a. If the U.S. real GDP per person grows at 2 percent per year, what is real GDP per person in 2004? In 2005? In 2008? In 2013?

b. If the U.S. real GDP per person grows at 3 percent per year, what is real GDP per person in 2004? In 2005? In 2008? In 2013?
c. In 2013 what is the difference in real GDP per person if the growth rate is 3 percent per year versus 2 percent? What does this result illustrate?

3. Between 1992 and 2002, how has the growth rate of real GDP in the United States compared to that in Japan? To that of the European Union? To that of the newly industrialized nations of Asia?
4. What happens to real GDP and the unemployment rate during each of the four phases of the business cycle?
5. What are the costs of unemployment?
6. How has inflation in the United States compared to inflation in other countries?

You're the Teacher

1. After class, your friend asks you: "You know, I wonder what's more important: stabilizing the business cycle or boosting long-term economic growth. Both seem important, and it would be cool if we could achieve both of these goals, but do you think one is more important than the other? You know, what I mean is that if we can actually achieve only one of these goals, which one do you think it ought to be?" Your friend has posed a very thoughtful question; what is your equally thoughtful response?

Answers

True/False Answers

Origins and Issues of Macroeconomics

1. **T** The initial focus of modern macroeconomics was on overcoming the very high unemployment that existed in the Great Depression.
2. **F** Short-term goals, such as avoiding a depression, as well as long term goals, such as the rate of economic growth, are both important parts of macroeconomics.

Economic Growth

3. **F** Potential real GDP is the amount of goods and services produced when all resources are fully employed.
4. **F** Real GDP per person started growing more slowly in the 1970s. Indeed, that was the "productivity growth slowdown."
5. **T** After the trough, the economy enters the expansion phase of the business cycle.
6. **T** Between 1992 and 2002, the United States has grown more rapidly than Japan.

Jobs and Unemployment

7. **T** In the Great Depression, unemployment rates approximated 25 percent; during the past 50 years, at its monthly peak, the unemployment rate was approximately 12 percent.
8. **T** As real GDP falls during a recession, the unemployment rate rises.

Inflation

9. **F** The inflation rate can be negative (called deflation), though in recent years inflation has rarely been negative.
10. **T** In industrial nations worldwide, the inflation rate was very high in the 1970s and lower in recent years.

Surpluses and Deficits

11. **F** If exports exceed imports, the United States has a current account *surplus*.
12. **F** If the current account deficit occurs because the nation is buying capital equipment and other investments from abroad, the deficit can help the nation; if the nation is buying consumption goods and services, it can prove harmful to the nation.

Macroeconomic Policy Challenges and Tools

13. **T** In chapters to come, we explore fiscal and monetary policy in detail.
14. **F** Interest rate changes are part of monetary policy.

Multiple Choice Answers

Origins and Issues of Macroeconomics

1. **c** During the Great Depression, the extraordinarily high unemployment rates caused economists to stress short-term goals, such as reducing the severity of recessions or depressions.

Economic Growth

2. **c** By measuring prices in a single year, real GDP eliminates the effects of inflation.
3. **a** Keep in mind that the business cycle is not a "smooth" cycle; some expansions last longer than others, some troughs are deeper than others, and so on.
4. **a** By definition, an expansion is a period of time during which real GDP increases.
5. **c** The slowdown in productivity growth is reflected in the slower growth rate of potential GDP.
6. **a** Because the United States has grown at about the same rate as the rest of the world, the U.S. share of world GDP has remained constant at about 21 percent.
7. **d** The question gives the definition of the Lucas wedge.
8. **c** The expansion of future consumption possibilities is a benefit of economic growth.

Jobs and Unemployment

9. **b** In recessions, jobs are destroyed and in expansions more jobs are created.
10. **b** As real GDP falls in a recession, the unemployment rate rises.
11. **b** Relatively high unemployment rates in Western Europe have emerged as a major economic problem in those countries.

Inflation

12. **b** The inflation rate was markedly highest during the 1970s.
13. **a** By becoming "amateur inflation predictors," people take time and effort away from their occupations and so the nation produces fewer goods and services.

Surpluses and Deficits

14. **d** Until 1998 to 2000, when it had a budget surplus, the government had had a budget deficit every year since 1970.
15. **a** The United States has had a deficit that initially became large, diminished in size, and then became even larger than before.

Macroeconomic Policy Challenges and Tools

16. **d** *Lowering* any government budget deficit is the macroeconomic policy challenge.
17. **a** Monetary policy includes changing the interest rate and/or the nation's money supply. The other answers are examples of fiscal policy.

Answers to Short Answer Problems

1. The productivity growth slowdown refers to period that started in the 1970s when growth in real GDP fell. During the 1970s, growth in real GDP slowed and has remained lower since than. Growth in real GDP is important because economic growth increases people's consumption possibilities; the larger real GDP, then the more goods and services people can consume. Basically, because of the productivity growth slowdown, today we all have smaller incomes than we would have had if productivity growth had not slowed.
2. a. In 2004 real GDP per person equals \$30,600; in 2005 it equals \$31,212; in 2008 it equals \$33,122.42; and in 2013 it equals \$36,569.83.

   b. In 2004 real GDP per person equals \$30,900; in 2005 it equals \$31,827; in 2008 it equals 34,778.22; and in 2013 it equals \$40,317.49.

   c. The difference is \$3,747.66, or almost \$4,000 per person. This result illustrates the point that a relatively small difference in the growth rate of real GDP per person can eventually make a large difference in the total amount of real GDP per person.
3. Between 1992 and 2002, real GDP has grown most rapidly in the new industrialized nations of Asia and has grown most slowly in Japan. The growth rate of real GDP in the European Union tops that in Japan, but the growth rate of real GDP in the United States exceeds that in the European Union.
4. During the recession phase of the business cycle, real GDP falls. During this phase of the cycle, the unemployment rate rises, although the rise in unemployment starts somewhat after the time that real GDP starts falling. At the trough, real GDP reaches its lowest point below trend, and soon thereafter the unemployment rate is at its highest point over the business cycle. The trough is the turning point between the recession phase and the expansion phase. During the expansion, real GDP grows and the unemployment rate generally falls. At the end of an expansion, the economy reaches the peak of the business cycle. The peak is characterized by real GDP at its highest point above its trend and the rate of unemployment is either then or soon thereafter at its lowest point over the business cycle.
5. There are two important costs of unemployment: one "paid" immediately and the other incurred over a longer time horizon. First, and immediately, unemployed workers suffer a loss of income and the nation loses production. Second, and perhaps equally significant, when workers are unemployed for long periods of time, their skills and abilities deteriorate, which hurts their future job prospects.
6. Inflation in the United States has been similar to that in other industrialized countries. In particular, inflation rates rose in the 1970s and early 1980s and have fallen substantially since then.

You're the Teacher

1. "You are talking about the Lucas wedge and the Okun gap and it's an excellent question. I asked our teacher about it, and our teacher said that economists don't agree about which of these macroeconomic challenges is more important.

   "Some economists think that boosting long-term growth is most important. They point to the Lucas wedge—it's almost \$50 trillion!! That's an immense amount. They also point out that if we are able to increase the growth rate of potential real GDP by 1 percentage point, after one generation, or two decades, real GDP per person would be over 22 percent higher than otherwise. That means that our consumption possibilities would expand by 22 percent so that, on the average, we could buy 22 percent more goods and services than otherwise. These economists also point out that this 22 percent increase in consumption possibilities dwarfs the fall of real GDP per person in a recession. So they argue that increasing the growth rate of potential GDP is more important than eliminating business cycles.

"Other economists disagree. Although they agree that boosting the growth rate of potential real GDP is important, they point out that sustaining even a 1 percent increase in real GDP over 20 years is extremely difficult. And they say that eliminating the Lucas wedge simply isn't possible. Instead, they argue that taming the business cycle should be considered the major goal of macroeconomic policy. They contend that this task is easier than increasing the growth rate of potential real GDP. Indeed, some of these economists suggest that we have tamed the business cycle a bit because there hasn't been a recession nearly as severe as the Great Depression since 1940.

"But our teacher says that *neither* of these objectives is easy to meet because if either were easy, we'd already be doing it. But, both challenges really are important. You know, I learned that our instructor became an economist exactly because these are crucial challenges and that by becoming a professional economist, our instructor hoped to help resolve these issues."