

rates in recent years. For example, the unemployment rate in Germany reached 10.7 percent in 2005. The inflation rate was 26,000 percent in Zimbabwe in 2007.

In this chapter we provide an introductory look at macroeconomic instability. Our specific topics are the business cycle, unemployment, and inflation.

The Business Cycle

The long-run trend of the U.S. economy is one of economic growth. But growth has been interrupted by periods of economic instability usually associated with **business cycles**. Business cycles are alternating rises and declines in the level of economic activity, sometime over several years. Individual cycles (one “up” followed by one “down”) vary substantially in duration and intensity.

ORIGIN OF THE IDEA

26.1

Business cycles

Phases of the Business Cycle

Figure 26.1 shows the four phases of a generalized business cycle:

- At a **peak**, such as the middle peak shown in Figure 26.1, business activity has reached a temporary maximum. Here the economy is near or at full employment and the level of real output is at or very close to the economy’s capacity. The price level is likely to rise during this phase.
- A **recession** is a period of decline in total output, income, and employment. This downturn, which lasts 6 months or more, is marked by the widespread

contraction of business activity in many sectors of the economy. Along with declines in real GDP, significant increases in unemployment occur. Table 26.1 documents the 9 recessions in the United States since 1950.

- In the **trough** of the recession or depression, output and employment “bottom out” at their lowest levels. The trough phase may be either short-lived or quite long.
- A recession is usually followed by a recovery and **expansion**, a period in which real GDP, income, and employment rise. At some point, the economy again approaches full employment. If spending then expands more rapidly than does production capacity, prices of nearly all goods and services will rise. In other words, inflation will occur.

Although business cycles all pass through the same phases, they vary greatly in duration and intensity. Many economists prefer to talk of business “fluctuations” rather than cycles because cycles imply regularity while fluctuations do not. The Great Depression of the 1930s resulted in a 27 percent decline in real GDP over a 3-year period in the United States and seriously impaired business activity for a decade. By comparison, the more recent U.S. recessions detailed in Table 26.1 were relatively mild in both intensity and duration.

FIGURE 26.1 The business cycle. Economists distinguish four phases of the business cycle; the duration and strength of each phase may vary.

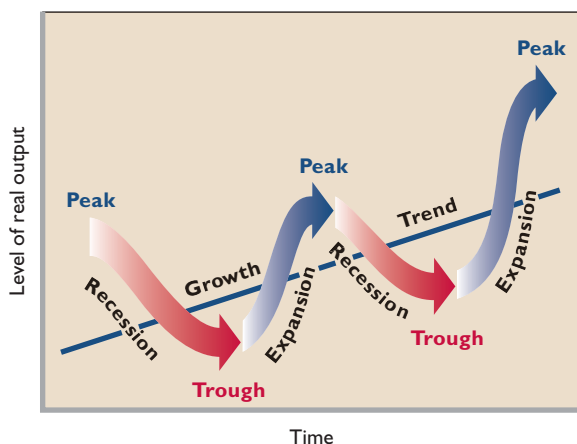


TABLE 26.1 U.S. Recessions since 1950

Period	Duration, Months	Depth (Decline in Real Output)
1953–54	10	–3.7%
1957–58	8	–3.9
1960–61	10	–1.6
1969–70	11	–1.0
1973–75	16	–4.9
1980	6	–2.3
1981–82	16	–3.3
1990–91	8	–1.8
2001	8	–0.5

Source: *Economic Report of the President, 1993*, p. 58. We have extended the 1993 table by appending 2001 data from the Council of Economic Advisers.

Recessions, of course, occur in other countries, too. At one time or another during the past 10 years, Argentina, Brazil, Colombia, Japan, Indonesia, Mexico, Germany, and South Korea experienced recessions.

Causation: A First Glance

The long-run trend of the U.S. economy is expansion and growth. That is why the business cycles in Figure 26.1 are drawn against a trend of economic growth. A key issue in macroeconomics is why the economy sees business cycle fluctuations rather than slow, smooth growth. In terms of Figure 26.1, why does output move up and down rather than just staying on the smooth growth trend line?

Economists have come up with several theories. But before turning to them, recall that in Chapter 23 we explained that these theories are founded on the idea that fluctuations are driven by shocks—unexpected events that individuals and firms may have trouble adjusting to. Also recall that short-run price stickiness is widely believed to be a major factor preventing the economy from rapidly adjusting to shocks. With prices sticky in the short run, price changes cannot quickly equalize the quantities demanded of goods and services with their respective quantities supplied after a shock has happened. Instead, the economy is forced to respond to shocks in the short run primarily through changes in output and employment rather than through changes in prices.

That being said, economists fall into several different camps when it comes to the types of shocks they believe to be responsible for business cycles. One group, for instance, stresses supply shocks caused by momentous innovations such as the railroad, the automobile, microchips, and the Internet. They believe that major inventions like these have a large impact on investment spending and consumption spending—and therefore on output, employment, and the price level. Because such major inventions occur irregularly and unexpectedly, they contribute to the variability of economic activity.

Another school of thought sees shocks to productivity as the major cause of business cycles. When productivity unexpectedly increases, the economy booms; when productivity unexpectedly falls, the economy goes into a recession. Others view the business cycle as a purely monetary phenomenon. They say that when a country's central bank shocks the economy by creating more money than people were expecting, an inflationary boom occurs. By contrast, printing less money than people were expecting triggers a decline in output and employment and, eventually, in the price level. Still others say that business cycles result from unexpected financial bubbles and bursts, which spill over through optimism or pessimism to affect the production of

goods and services. And, finally, unexpected political events like wars or the 9/11 terrorist attacks also constitute major economic shocks to which the economy must adjust.

But whatever they see as the underlying forces driving economic shocks, most economists agree that the *immediate* cause of the large majority of cyclical changes in the levels of real output and employment is unexpected changes in the level of total spending. If total spending unexpectedly sinks and firms cannot lower prices, firms will find themselves selling fewer units of output (since with prices fixed, a decreased amount of spending implies fewer items purchased). Slower sales will cause firms to cut back on production. As they do, GDP will fall. And since fewer workers will be needed to produce less output, employment also will fall. The economy will contract and enter a recession.

By contrast, if the level of spending unexpectedly rises, output, employment, and incomes will rise. This is true because, with prices sticky, the increased spending will mean that consumers will be buying a larger volume of goods and services (since, with prices fixed, more spending means more items purchased). Firms will respond by increasing output. This will increase GDP. And because they will need to hire more workers to produce the larger volume of output, employment also will increase. The economy will boom and enjoy an expansion. Eventually, as time passes and prices become more flexible, prices are also likely to rise as a result of the increased spending.

Cyclical Impact: Durables and Nondurables

Although the business cycle is felt everywhere in the economy, it affects different segments in different ways and to different degrees.

Firms and industries producing *capital goods* (for example, housing, commercial buildings, heavy equipment, and farm implements) and *consumer durables* (for example, automobiles, personal computers, and refrigerators) are affected most by the business cycle. Within limits, firms can postpone the purchase of capital goods. For instance, when the economy goes into recession, producers frequently delay the purchase of new equipment and the construction of new plants. The business outlook simply does not warrant increases in the stock of capital goods. In good times, capital goods are usually replaced before they depreciate completely. But when recession strikes, firms patch up their old equipment and make do. As a result, investment in capital goods declines sharply. Firms that have excess plant capacity may not even bother to replace all the capital that is depreciating. For them, net investment may be negative.

The pattern is much the same for consumer durables such as automobiles and major appliances. When recession occurs and households must trim their budgets, purchases of these goods are often deferred. Families repair their old cars and appliances rather than buy new ones, and the firms producing these products suffer. (Of course, producers of capital goods and consumer durables also benefit most from expansions.)

In contrast, *service* industries and industries that produce *nondurable consumer goods* are somewhat insulated from the most severe effects of recession. People find it difficult to cut back on needed medical and legal services, for example. And a recession actually helps some service firms, such as pawnbrokers and law firms that specialize in bankruptcies. Nor are the purchases of many nondurable goods such as food and clothing easy to postpone. The quantity and quality of purchases of nondurables will decline, but not so much as will purchases of capital goods and consumer durables. (**Key Question 1**)

QUICK REVIEW 26.1

- The typical business cycle goes through four phases: peak, recession, trough, and expansion.
- Fluctuations in output and employment are caused by economic shocks combining with sticky prices.
- Sources of shocks include unexpected innovations, unexpected changes in productivity, unexpected changes in the money supply, unexpected changes in the level of total spending in the economy, and financial crises.
- During a recession, industries that produce capital goods and consumer durables normally suffer greater output and employment declines than do service and nondurable consumer goods industries.

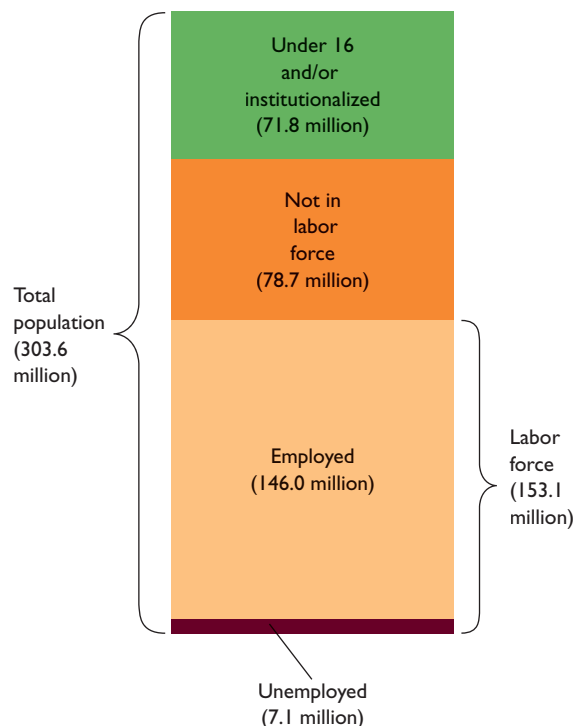
Unemployment

Two problems that arise over the course of the business cycle are unemployment and inflation. Let's look at unemployment first.

Measurement of Unemployment

The U.S. Bureau of Labor Statistics (BLS) conducts a nationwide random survey of some 60,000 households each month to determine who is employed and who is not employed. In a series of questions, it asks which members of the household are working, unemployed and looking for work, not looking for work, and so on. From the answers, it determines an unemployment rate for the entire nation.

FIGURE 26.2 The labor force, employment, and unemployment, 2007. The labor force consists of persons 16 years of age or older who are not in institutions and who are (1) employed or (2) unemployed but seeking employment.



Source: Bureau of Labor Statistics, www.bls.gov (civilian labor force data, which excludes military employment).

Figure 26.2 helps explain the mathematics. The BLS divides the total U.S. population into three groups. One group is made up of people under 16 years of age and people who are institutionalized, for example, in mental hospitals or correctional institutions. Such people are not considered potential members of the labor force.

A second group, labeled “Not in labor force,” is composed of adults who are potential workers but are not employed and are not seeking work. For example, they are homemakers, full-time students, or retirees.

The third group is the **labor force**, which constituted about 50 percent of the total population in 2007. The labor force consists of people who are able and willing to work. Both those who are employed and those who are unemployed but actively seeking work are counted as being in the labor force. The **unemployment rate** is the percentage of the labor force unemployed:

$$\text{Unemployment rate} = \frac{\text{unemployed}}{\text{labor force}} \times 100$$

The statistics included in Figure 26.2 show that in 2007 the unemployment rate averaged

$$\frac{7,078,000}{153,124,000} \times 100 = 4.6\%$$

WORKED PROBLEMS

W 26.1

Unemployment rate

Unemployment rates for selected years appear on the inside covers of this book.

Despite the use of scientific sampling and interviewing techniques, the data collected in this survey are subject to criticism:

- **Part-time employment** The BLS lists all part-time workers as fully employed. In 2007 about 20 million people worked part-time as a result of personal choice. But another 4.6 million part-time workers either wanted to work full-time and could not find suitable full-time work or worked fewer hours because of a temporary slack in consumer demand. These last two groups were, in effect, partially employed and partially unemployed. By counting them as fully employed, say critics, the official BLS data understate the unemployment rate.
- **Discouraged workers** You must be actively seeking work in order to be counted as unemployed. An unemployed individual who is not actively seeking employment is classified as “not in the labor force.” The problem is that many workers, after unsuccessfully seeking employment for a time, become discouraged and drop out of the labor force. The number of such **discouraged workers** was 396,000 in 2007. By not counting discouraged workers as unemployed, say critics, the official BLS data understate the unemployment problem. (**Key Question 3**)

Types of Unemployment

There are three *types* of unemployment: frictional, structural, and cyclical.

Frictional Unemployment At any given time some workers are “between jobs.” Some of them will be moving voluntarily from one job to another. Others will have been fired and will be seeking reemployment. Still others will have been laid off temporarily because of seasonal demand. In addition to those between jobs, many young workers will be searching for their first jobs.

As these unemployed people find jobs or are called back from temporary layoffs, other job seekers and laid-off workers will replace them in the “unemployment pool.” It is important to keep in mind that while the pool itself

persists because there are always newly unemployed workers flowing into it, most workers do *not* stay in the unemployment pool for very long. Indeed, when the economy is strong, the majority of unemployed workers find new jobs within a couple of months. One should be careful not to make the mistake of confusing the permanence of the pool itself with the false idea that the pool’s membership is permanent, too. On the other hand, there are workers who do remain unemployed and in the pool for very long periods of time—sometimes for many years. As we discuss the different types of unemployment below, notice that certain types tend to be transitory while others are associated with much longer spells of unemployment.

Economists use the term **frictional unemployment**—consisting of *search unemployment* and *wait unemployment*—for workers who are either searching for jobs or waiting to take jobs in the near future. The word “frictional” implies that the labor market does not operate perfectly and instantaneously (without friction) in matching workers and jobs.

Frictional unemployment is inevitable and, at least in part, desirable. Many workers who are voluntarily between jobs are moving from low-paying, low-productivity jobs to higher-paying, higher-productivity positions. That means greater income for the workers, a better allocation of labor resources, and a larger real GDP for the economy.

Structural Unemployment Frictional unemployment blurs into a category called **structural unemployment**. Here, economists use “structural” in the sense of “compositional.” Changes over time in consumer demand and in technology alter the “structure” of the total demand for labor, both occupationally and geographically.

Occupationally, the demand for certain skills (for example, sewing clothes or working on farms) may decline or even vanish. The demand for other skills (for example, designing software or maintaining computer systems) will intensify. Unemployment results because the composition of the labor force does not respond immediately or completely to the new structure of job opportunities. Workers who find that their skills and experience have become obsolete or unneeded thus find that they have no marketable talents. They are structurally unemployed until they adapt or develop skills that employers want.

Geographically, the demand for labor also changes over time. An example: the migration of industry and thus of employment opportunities from the Snow Belt to the Sun Belt over the past few decades. Another example is the movement of jobs from inner-city factories to suburban industrial parks. As job opportunities shift from one place to another, some workers become structurally unemployed.