

CONSIDER THIS . . .



Why Is the Unemployment Rate in Europe So High?

Several European economies have had exceptionally high unemployment rates recently. For example, based on U.S. measurement concepts, the percentage unemployment rate in 2007 in France was 8.6 percent; in Germany, 8.7 percent; in Spain, 8.3 percent; and in Italy, 6.2 percent. Those numbers compare very unfavorably with the 4.6

percent in the United States that year. Furthermore, the high European unemployment rates do not appear to be cyclical. Even during business cycle peaks, the unemployment rates are higher than those in the United States. Unemployment rates are particularly high for European youth. For example, the unemployment rate for 20- to 24-year-olds in France was 18 percent in 2007 (compared to 8.2 percent in the United States).

The causes of high unemployment rates in these countries are complex, but European economists generally point to government policies and union contracts that have increased the business costs of hiring workers and have reduced the individual cost of being unemployed. Examples: High legal minimum wages have discouraged employers from hiring low-skilled workers. Generous welfare benefits and unemployment benefits have encouraged absenteeism, led to high job turnover, and weakened incentives for people to take available jobs.

Restrictions on firing of workers have made firms leery of adding workers during expansions. Short workweeks mandated by government or negotiated by unions have limited the ability of employers to spread their recruitment and training costs over a longer number of hours. Paid vacations and holidays of 30 to 40 days per year have boosted the cost of hiring workers. Also, high employer costs of pension and other benefits have discouraged hiring.

Attempts to make the labor market more flexible in France, Germany, Italy, and Spain have met with stiff political resistance—including large rallies and protests. The direction of future employment policy is unclear, but economists do not expect the high rates of unemployment in these nations to decline anytime soon.

Inflation

We now turn to inflation, another aspect of macroeconomic instability. The problems inflation poses are subtler than those posed by unemployment.

Meaning of Inflation

Inflation is a rise in the general level of prices. When inflation occurs, each dollar of income will buy fewer goods and services than before. Inflation reduces the “purchasing power” of money. But inflation does not mean that *all* prices are rising. Even during periods of rapid inflation, some prices may be relatively constant and others may even fall. For example, although the United States experienced high rates of inflation in the 1970s and early 1980s, the prices of video recorders, digital watches, and personal computers declined.

Measurement of Inflation

The main measure of inflation in the United States is the **Consumer Price Index (CPI)**, compiled by the Bureau of Labor Statistics (BLS). The government uses this index to report inflation rates each month and each year. It also uses the CPI to adjust Social Security benefits and income tax brackets for inflation. The CPI reports the price of a “market basket” of some 300 consumer goods and services that are purchased by a typical urban consumer. (The GDP price index of Chapter 24 is a much broader measure of inflation since it includes not only consumer goods and services but also capital goods, goods and services purchased by government, and goods and services that enter world trade.)

The composition of the market basket for the CPI is based on spending patterns of urban consumers in a specific period, presently 2005–2006. The BLS updates the composition of the market basket every 2 years so that it reflects the most recent patterns of consumer purchases and captures the inflation that consumers are currently experiencing. The BLS arbitrarily sets the CPI equal to 100 for 1982–1984. So the CPI for any particular year is found as follows:

$$\text{CPI} = \frac{\text{price of the most recent market basket in the particular year}}{\text{price estimate of the market basket in 1982–1984}} \times 100$$

The rate of inflation is equal to the percentage growth of CPI from one year to the next. For example, the CPI was 207.3 in 2007, up from 201.6 in 2006. So the rate of inflation for 2007 is calculated as follows:

$$\text{Rate of inflation} = \frac{207.3 - 201.6}{201.6} \times 100 = 2.8\%$$

In Chapter 25, we discussed the mathematical approximation called *the rule of 70*, which tells us that we can find the number of years it will take for some measure to double, given its annual percentage increase, by dividing

that percentage increase into the number 70. So a 3 percent annual rate of inflation will double the price level in about 23 ($= 70 \div 3$) years. Inflation of 8 percent per year will double the price level in about 9 ($= 70 \div 8$) years. (Key Question 8)

Facts of Inflation

Figure 26.4 shows the annual rates of inflation in the United States between 1960 and 2007. Observe that inflation reached double-digit rates in the 1970s and early 1980s but has since declined and has been relatively mild recently.

In recent years U.S. inflation has been neither unusually high nor low relative to inflation in several other industrial countries (see Global Perspective 26.2). Some nations (not shown) have had double-digit or even higher annual rates of inflation in recent years. In 2007, for example, the annual inflation rate in Burma was 40 percent; Venezuela, 20 percent; Iran, 17 percent; and in Mongolia, 15 percent. Recall from the chapter opener that inflation was 26,000 percent in Zimbabwe that year. For 2008, Zimbabwe's inflation rate was expected to exceed 100,000 percent!

Types of Inflation

Nearly all prices in the economy are set by supply and demand. Consequently, if the economy is experiencing inflation and the overall level of prices is rising, we need to look for an explanation in terms of supply and demand.

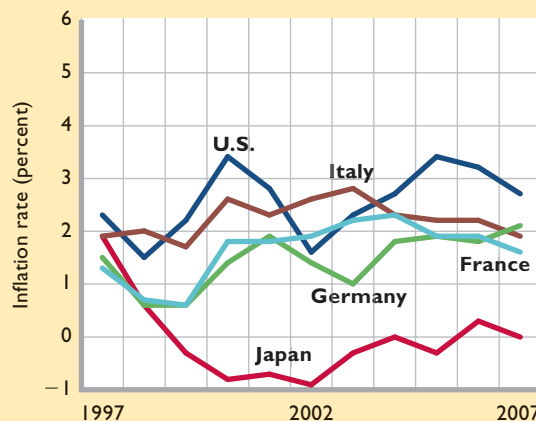
Demand-Pull Inflation Usually, increases in the price level are caused by an excess of total spending beyond



GLOBAL PERSPECTIVE 26.2

Inflation Rates in Five Industrial Nations, 1997–2007

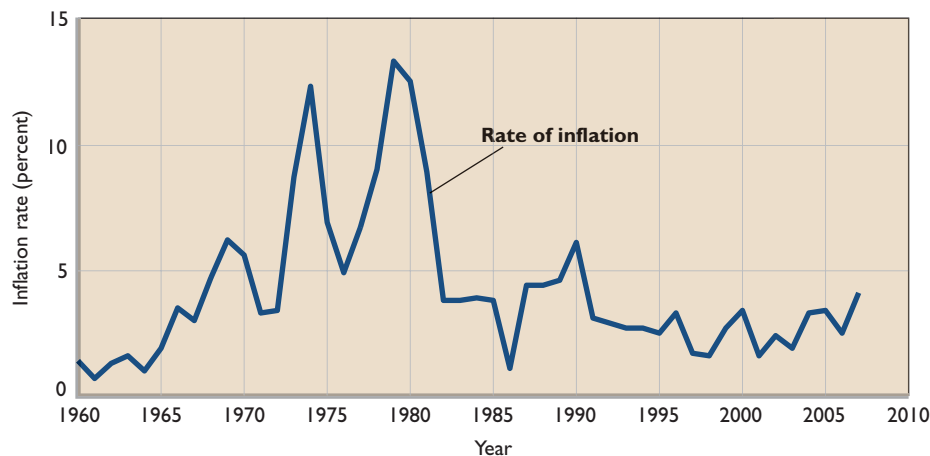
Inflation rates in the United States in recent years were neither extraordinarily high nor extraordinarily low relative to rates in other industrial nations.



Source: International Monetary Fund, www.imf.org.

the economy's capacity to produce. Where inflation is rapid and sustained, the cause invariably is an overissuance of money by the central bank (the Federal Reserve in the United States). When resources are already fully employed, the business sector cannot respond to excess demand by expanding output. So the excess demand bids

FIGURE 26.4 Annual inflation rates in the United States, 1960–2007. The major periods of inflation in the United States in the past 47 years were in the 1970s and 1980s.



Source: Bureau of Labor Statistics, www.bls.gov. Inflation rates reflect December-to-December changes in the Consumer Price Index.

up the prices of the limited output, producing **demand-pull inflation**. The essence of this type of inflation is “too much spending chasing too few goods.”

Cost-Push Inflation Inflation also may arise on the supply, or cost, side of the economy. During some periods in U.S. economic history, including the mid-1970s, the price level increased even though total spending was not excessive. These were periods when output and employment were both *declining* (evidence that total spending was not excessive) while the general price level was *rising*.

The theory of **cost-push inflation** explains rising prices in terms of factors that raise **per-unit production costs** at each level of spending. A per-unit production cost is the average cost of a particular level of output. This average cost is found by dividing the total cost of all resource inputs by the amount of output produced. That is,

$$\text{Per-unit production cost} = \frac{\text{total input cost}}{\text{units of output}}$$

Rising per-unit production costs squeeze profits and reduce the amount of output firms are willing to supply at the existing price level. As a result, the economy’s supply of goods and services declines and the price level rises. In this scenario, costs are *pushing* the price level upward, whereas in demand-pull inflation demand is *pulling* it upward.

The major source of cost-push inflation has been so-called *supply shocks*. Specifically, abrupt increases in the costs of raw materials or energy inputs have on occasion driven up per-unit production costs and thus product prices. The rocketing prices of imported oil in 1973–1974 and again in 1979–1980 are good illustrations. As energy prices surged upward during these periods, the costs of producing and transporting virtually every product in the economy rose. Cost-push inflation ensued.

Complexities

The real world is more complex than the distinction between demand-pull and cost-push inflation suggests. It is difficult to distinguish between demand-pull inflation and cost-push inflation unless the original source of inflation is known. For example, suppose a significant increase in total spending occurs in a fully employed economy, causing demand-pull inflation. But as the demand-pull stimulus works its way through various product and resource markets, individual firms find their wage costs, material costs, and fuel prices rising. From their perspective they must raise their prices because production costs (someone else’s prices) have risen. Although this inflation is clearly demand-pull in origin, it

CONSIDER THIS . . .



Clipping Coins

Some interesting early episodes of demand-pull inflation occurred in Europe during the ninth to the fifteenth centuries under feudalism.

In that economic system *lords* (or *princes*) ruled individual fiefdoms and their *vassals* (or *peasants*) worked the fields. The peasants initially paid parts of their harvest as taxes to the princes. Later, when the princes began issuing “coins of the realm,” peasants began paying their taxes with gold coins.

Some princes soon discovered a way to transfer purchasing power from their vassals to themselves without explicitly increasing taxes. As coins came into the treasury, princes clipped off parts of the gold coins, making them slightly smaller. From the clippings they minted new coins and used them to buy more goods for themselves.

This practice of clipping coins was a subtle form of taxation. The quantity of goods being produced in the fiefdom remained the same, but the number of gold coins increased. With “too much money chasing too few goods,” inflation occurred. Each gold coin earned by the peasants therefore had less purchasing power than previously because prices were higher. The increase of the money supply shifted purchasing power away from the peasants and toward the princes just as surely as if the princes had increased taxation of the peasants.

In more recent eras some dictators have simply printed money to buy more goods for themselves, their relatives, and their key loyalists. These dictators, too, have levied hidden taxes on their population by creating inflation.

The moral of the story is quite simple: A society that values price-level stability should not entrust the control of its money supply to people who benefit from inflation.

may mistakenly appear to be cost-push inflation to business firms and to government. Without proper identification of the source of the inflation, government and the Federal Reserve may be slow to undertake policies to reduce excessive total spending.

Another complexity is that cost-push inflation and demand-pull inflation differ in their sustainability. Demand-pull inflation will continue as long as there is excess total spending. Cost-push inflation is automatically self-limiting; it will die out by itself. Increased per-unit costs will reduce supply, and this means lower real output and employment. Those decreases will constrain further per-unit cost

increases. In other words, cost-push inflation generates a recession. And in a recession, households and businesses concentrate on keeping their resources employed, not on pushing up the prices of those resources.

QUICK REVIEW 26.3

- Inflation is a rising general level of prices and is measured as a percentage change in a price index such as the CPI.
- For the past several years, the U.S. inflation rate has been within the general range of the rates of other advanced industrial nations and far below the rates experienced by some nations.
- Demand-pull inflation occurs when total spending exceeds the economy's ability to provide goods and services at the existing price level; total spending *pulls* the price level upward.
- Cost-push inflation occurs when factors such as rapid increases in the prices of imported raw materials drive up per-unit production costs at each level of output; higher costs *push* the price level upward.

Redistribution Effects of Inflation

Inflation redistributes real income. This redistribution helps some people and hurts some others while leaving many people largely unaffected. Who gets hurt? Who benefits? Before we can answer, we need some terminology.

Nominal and Real Income There is a difference between money (or nominal) income and real income. **Nominal income** is the number of dollars received as wages, rent, interest, or profits. **Real income** is a measure of the amount of goods and services nominal income can buy; it is the purchasing power of nominal income, or income adjusted for inflation. That is,

$$\text{Real income} = \frac{\text{nominal income}}{\text{price index (in hundredths)}}$$

Inflation need not alter an economy's overall real income—its total purchasing power. It is evident from the above equation that real income will remain the same when nominal income rises at the same percentage rate as does the price index.

But when inflation occurs, not everyone's nominal income rises at the same pace as the price level. Therein lies the potential for redistribution of real income from some to others. If the change in the price level differs from the change in a person's nominal income, his or her real

income will be affected. The following approximation (shown by the \cong sign) tells us roughly how much real income will change:

$$\begin{array}{rcl} \text{Percentage} & \text{percentage} & \text{percentage} \\ \text{change in} & \cong \text{change in} & - \text{change in} \\ \text{real income} & \text{nominal income} & \text{price level} \end{array}$$

For example, suppose that the price level rises by 6 percent in some period. If Bob's nominal income rises by 6 percent, his real income will *remain unchanged*. But if his nominal income instead rises by 10 percent, his real income will *increase* by about 4 percent. And if Bob's nominal income rises by only 2 percent, his real income will *decline* by about 4 percent.¹

WORKED PROBLEMS

W 26.3

Nominal and real income

Anticipations The redistribution effects of inflation depend upon whether or not it is expected. We will first discuss situations involving **unanticipated inflation**. As you will see, these cause real income and wealth to be redistributed, harming some and benefiting others. We will then discuss situations involving **anticipated inflation**. These are situations in which people see an inflation coming in advance. With the ability to plan ahead, people are able to avoid or lessen the redistribution effects associated with inflation.

Who Is Hurt by Inflation?

Unanticipated inflation hurts fixed-income recipients, savers, and creditors. It redistributes real income away from them and toward others.

Fixed-Income Receivers People whose incomes are fixed see their real incomes fall when inflation occurs. The classic case is the elderly couple living on a private pension or annuity that provides a fixed amount of nominal income each month. They may have retired in, say, 1991 on what appeared to be an adequate pension. However, by 2007 they would have discovered that inflation had cut the purchasing power of that pension—their real income—one-third.

¹A more precise calculation uses our equation for real income. In our first illustration above, if nominal income rises by 10 percent from \$100 to \$110 and the price level (index) rises by 6 percent from 100 to 106, then real income has increased as follows:

$$\frac{\$110}{1.06} = \$103.77$$

The 4 percent increase in real income shown by the simple formula in the text is a reasonable approximation of the 3.77 percent yielded by our more precise formula.