Fiscal policy can also be used to indirectly increase spending through a tax cut. Lower taxes (with a constant level of government spending) mean that consumers have a higher level of disposable income. Higher income should encourage increased consumer spending and cause the AD curve to shift to the right, thus mitigating the effects of a recession.

In addition to fiscal policy, the Federal Reserve can use monetary policy instruments to offset short-run economic fluctuations. By varying the amount of money it supplies to the economy, the Federal Reserve can control the interest rate. And, as we have seen, changes in the interest rate can affect the level of both investment and consumption spending. If the economy is producing above potential output, a situation that would cause inflationary pressures, the Federal Reserve can help to reduce consumption and investment spending by decreasing the money supply and causing interest rates to rise. Conversely, if the economy is in recession, increasing the money supply will lower interest rates and stimulate additional consumption and investment spending.

The main argument in favor of using monetary or fiscal policy to stabilize the economy is that deviations of actual output from potential output are costly. In recessions, when some resources are not fully employed, the economy forever loses the output that these resources could have produced. Moreover, unemployment imposes significant hardships on those who lose their jobs or see their incomes reduced. When output is above potential, inflation will accelerate. We have seen that inflation is costly for a variety of reasons.

Controversy about the desirability of fiscal and monetary policy interventions arises for two reasons. The first is the difficulty of identifying precisely what the economy's potential output is and thus the difficulty in determining when interventions are needed. The second and more significant concern centers on the practicality of carrying out such fiscal and monetary policy effectively.

One of the biggest challenges that economic policymakers face is that information about the aggregate economy takes time to collect. It takes about three months to calculate the first estimates of GDP, and these estimates are subject to substantial revision over the next few months as additional data becomes available. Other data are available more quickly, but almost all economic information has some lags, meaning that policymakers must act on partial and incomplete evidence about the state of the economy.

Moreover, the effects of their actions take time to be felt. When interest rates are reduced, for example, it can take many months for businesses to undertake new investment projects since they often require considerable planning. Efforts to increase government spending operate with even longer lags. It can easily take six months or a year from the time Congress authorizes additional spending until projects are actually undertaken. So, even if Congress acts quickly, which is not usually the case, the additional spending may not begin to take effect until the economy has already begun to recover.

If the effects of increased government spending begin to be felt only after the economy has begun to recover on its own, they may cause the economy to overshoot full employment and contribute to inflationary pressures rather than mitigating the effects of the recession. For this reason, many economists believe that activist policies are as likely to be counterproductive as to be helpful.

SECTION III SUMMARY

- Macroeconomics is concerned with two questions: (1) What determines the long-run growth in the size of economies? (2) What are the causes and consequences of short-run fluctuations in the level of economic activity, employment, and inflation?
- Economists measure the total output of the economy using Gross Domestic Product (GDP). GDP is the market value of all final goods and services produced within a country during a specified period of time.
- In the United States, output has grown much faster than population. Since 1900, the U.S. population has increased by a factor of four, while GDP has grown by a factor of approximately thirty-two.
- The rate of growth of output is quite variable. A period between a trough and a peak in economic activity is called an expansion; a period between a peak and a trough in economic activity is called a recession.
- The alternation of periods of expansion and recession is referred to as the business cycle.
- The labor force is the total of all individuals who are either working or are available for work but are not currently working. The unemployment rate is the percentage of the labor force who would

like to work but cannot find jobs. Economists often break down unemployment into frictional unemployment, structural unemployment, and cyclical unemployment.

- Inflation occurs when prices in the economy are all increasing. The Consumer Price Index and the Gross Domestic Product Deflator provide two different measures of inflation.
- Gross Domestic Product is defined as a measure of production; but at the level of the economy, production equals expenditures equals income.
- Economists divide expenditures into four categories: Consumption, Investment, Government Purchases of Goods and Services, and Net Exports.
- The quantity of GDP per capita that an economy produces is closely related to the level of average labor productivity. Labor productivity depends on many things, the most important of which are the quantities of physical and human capital an economy has accumulated, its natural resource supplies, the level of technological knowledge, and the political and legal environment.
- Economists use the term "savings" to describe income that is not spent on the consumption of goods and services in the current period. "Investment" is the term used to describe the purchase of new capital equipment.
- Financial markets are the institutions through which individuals who have money they wish to save can supply these funds to persons or companies who wish to borrow money to invest.
- Because of the way they are defined, savings must equal investment in a closed economy. In an open economy, savings equals investment plus net capital outflows.
    - In the financial markets, the interest rate adjusts to equate the supply of saving to the demand for saving (investment).
    - Money is any asset that serves the functions of: (1) a medium of exchange, (2) a unit of account, and (3) a store of value. Because it is not easy to draw an absolute distinction between assets that are and are not money, economists use several different measures of money. The most common are M1 and M2.
    - The Federal Reserve System is the central bank of the United States. It was established in 1913 and consists of twelve district banks located in major cities across the country and the Federal Reserve Board, which is located in Washington, D.C.
    - The Federal Reserve controls the supply of money in the economy and acts as lender of last resort for the banking system.
- In the long run, increases in the supply of money do not affect the real economy, but affect only prices. But, in the short run, changes in the supply of money alter credit conditions and influence the level of economic activity.
- To analyze short-run variations in the level of economic activity, economists divide actual output into two parts: potential output and the output gap. Potential output is the quantity of goods and services that would be produced if all resources were fully employed. The output gap is the difference between actual output and potential output.
- In the long run, an economy's output is determined by its potential output. But, in the short run, many firms set prices and sell as much or as little as is demanded. As a result, output is determined by the level of aggregate demand, which may be more or less than potential output.
- Deviations of actual output from potential output eventually cause the aggregate price level to change so that the economy returns to potential output.
- When actual output deviates from potential output, monetary and fiscal policy tools can be used to help speed up the adjustment process. In practice, however, changes in government spending or the money supply affect the economy with long and variable lags. Consequently, attempts to stabilize the economy may actually magnify economic fluctuations.