Questions for Review

1. The aggregate demand curve represents the negative relationship between the price level and the level of national income. In Chapter 9, we looked at a simplified theory of aggregate demand based on the quantity theory. In this chapter, we explore how the *IS–LM* model provides a more complete theory of aggregate demand. We can see why the aggregate demand curve slopes downward by considering what happens in the *IS–LM* model when the price level changes. As Figure 11–1(A) illustrates, for a given money supply, an increase in the price level from P_1 to P_2 shifts the *LM* curve upward because real balances decline; this reduces income from Y_1 to Y_2. The aggregate demand curve in Figure 11–1(B) summarizes this relationship between the price level and income that results from the *IS–LM* model.
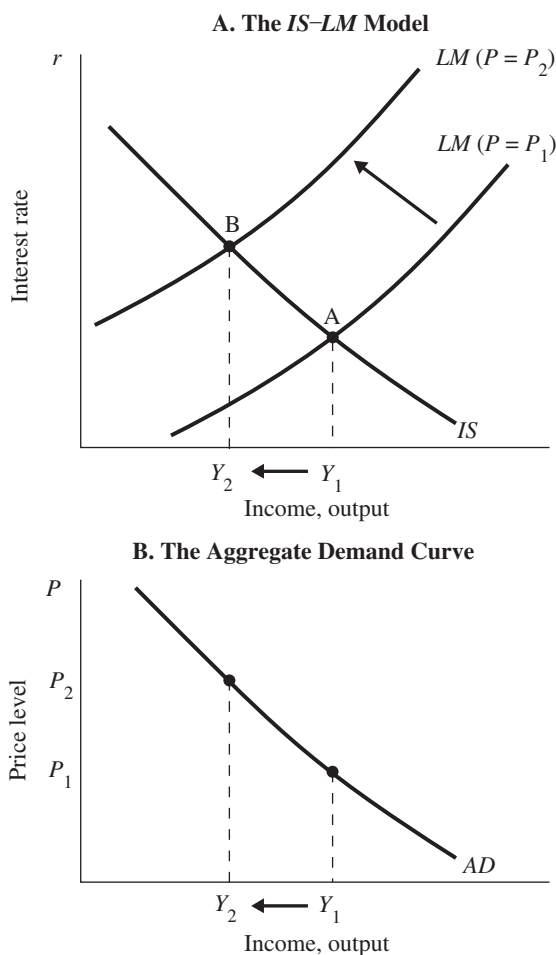
A. The *IS–LM* Model

Figure 11–1

B. The Aggregate Demand Curve

2. The tax multiplier in the Keynesian-cross model tells us that, for any given interest rate, the tax increase causes income to fall by $\Delta T \times [-MPC/(1 - MPC)]$. This *IS* curve shifts to the left by this amount, as in Figure 11–2. The equilibrium of the economy moves from point A to point B. The tax increase reduces the interest rate from r_1 to r_2 and reduces national income from Y_1 to Y_2. Consumption falls because disposable income falls; investment rises because the interest rate falls.
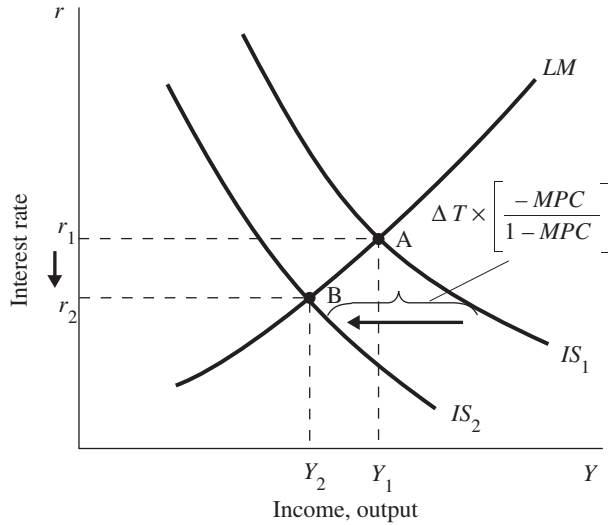

Figure 11–2

   Note that the decrease in income in the *IS–LM* model is smaller than in the Keynesian cross, because the *IS–LM* model takes into account the fact that investment rises when the interest rate falls.

3. Given a fixed price level, a decrease in the nominal money supply decreases real money balances. The theory of liquidity preference shows that, for any given level of income, a decrease in real money balances leads to a higher interest rate. Thus, the *LM* curve shifts upward, as in Figure 11–3. The equilibrium moves from point A to point B. The decrease in the money supply reduces income and raises the interest rate. Consumption falls because disposable income falls, whereas investment falls because the interest rate rises.
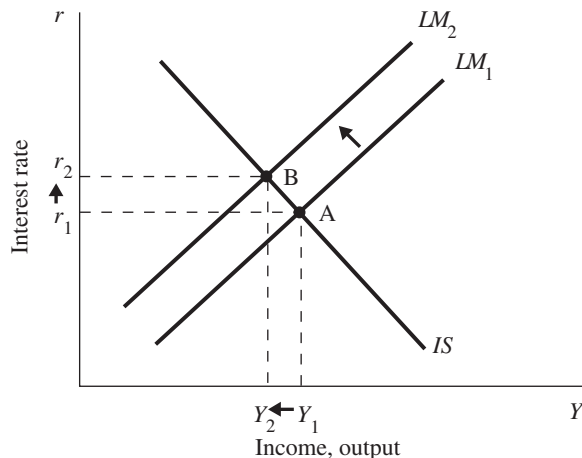

Figure 11–3

4. Falling prices can either increase or decrease equilibrium income. There are two ways in which falling prices can increase income. First, an increase in real money balances shifts the *LM* curve downward, thereby increasing income. Second, the *IS* curve shifts to the right because of the Pigou effect: real money balances are part of household wealth, so an increase in real money balances makes consumers feel wealthier and buy more. This shifts the *IS* curve to the right, also increasing income.

There are two ways in which falling prices can reduce income. The first is the debt-deflation theory. An unexpected decrease in the price level redistributes wealth from debtors to creditors. If debtors have a higher propensity to consume than creditors, then this redistribution causes debtors to decrease their spending by more than creditors increase theirs. As a result, aggregate consumption falls, shifting the *IS* curve to the left and reducing income. The second way in which falling prices can reduce income is through the effects of expected deflation. Recall that the real interest rate r equals the nominal interest rate i minus the expected inflation rate π^e: $r = i - \pi^e$. If everyone expects the price level to fall in the future (i.e., π^e is negative), then for any given nominal interest rate, the real interest rate is higher. A higher real interest rate depresses investment and shifts the *IS* curve to the left, reducing income.