

THE AGGREGATE DEMAND (AD) CURVE p. 237

12. The *aggregate demand (AD) curve* graphs the negative relationship between aggregate output (income) and the price level. Each point on the AD curve is a point at which both the goods market and the money market are in equilibrium for a given value of the price level. The AD curve is *not* the sum of all the market demand curves in the economy.
13. An increase in the quantity of money supplied, an increase in government purchases, or a decrease in net taxes at a given price level shifts the aggregate demand curve to the right. A decrease in the quantity of money supplied, a decrease in government purchases, or an increase in net taxes shifts the aggregate demand curve to the left.

REVIEW TERMS AND CONCEPTS

aggregate demand (AD) curve, *p. 237*
 contractionary fiscal policy, *p. 235*
 contractionary monetary policy, *p. 236*
 crowding-out effect, *p. 233*
 expansionary fiscal policy, *p. 233*

expansionary monetary policy, *p. 233*
 goods market, *p. 229*
 interest sensitivity or insensitivity of planned investment, *p. 234*

money market, *p. 230*
 policy mix, *p. 236*
 real wealth, or real balance, effect, *p. 239*

PROBLEMS

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- On June 5, 2003, the European Central Bank acted to decrease the short-term interest rate in Europe by half a percentage point, to 2 percent. The bank's president at the time, Willem Duisenberg, suggested that, in the future, the bank could reduce rates further. The rate cut was made because European countries were growing very slowly or were in recession. What effect did the bank hope the action would have on the economy? Be specific. What was the hoped-for result on C , I , and Y ?
- [Related to the Economics in Practice on p. 231]** In response to concerns of both the Treasury Department and the Congressional Oversight Panel regarding the value of loans being made to small businesses, the four largest U.S. banks (Bank of America, Citigroup, JP Morgan Chase, and Wells Fargo) all agreed to increase their small business lending practices in 2010. Search the Internet and describe any changes that have occurred in lending to small businesses since 2010. The text states that it is unclear whether the reduced lending is due more to a lack of lenders or a lack of borrowers. Go to www.sba.gov/advo/research and click on "Small Business Indicators." Select the most recent quarter from the quarterly indicator menu and describe what happened to demand for commercial and industrial loans as well as the level of optimism for small businesses. What correlation do you see between the changes in lending, the demand for loans, and the level of optimism for small businesses?
- During the third quarter of 1997, Japanese GDP was falling at an annual rate of over 11 percent. Many blamed the big increase in Japan's taxes in the spring of 1997, which was designed to balance the budget. Explain how an increase in taxes with the economy growing slowly could precipitate a recession. Do not skip steps in your answer. If you were head of the Japanese central bank, how would you respond? What impact would your policy have on the level of investment?
- Some economists argue that the "animal spirits" of investors are so important in determining the level of investment in the economy that interest rates do not matter at all. Suppose that this were true—that investment in no way depends on interest rates.
 - How would Figure 12.1 be different?
 - What would happen to the level of planned aggregate expenditures if the interest rate changed?
 - What would be different about the relative effectiveness of monetary and fiscal policy?
- For each of the following scenarios, tell a story and predict the effects on the equilibrium levels of aggregate output (Y) and the interest rate (r):
 - During 2005, the Federal Reserve was tightening monetary policy in an attempt to slow the economy. Congress passed a substantial cut in the individual income tax at the same time.
 - During the summer of 2003, Congress passed and President George W. Bush signed the third tax cut in 3 years. Many of the tax cuts took effect in 2005. Assume that the Fed holds M^s fixed.
 - In 1993, the government raised taxes. At the same time, the Fed was pursuing an expansionary monetary policy.
 - In 2005, conditions in Iraq led to a sharp drop in consumer confidence and a drop in consumption. Assume that the Fed holds the money supply constant.
 - The Fed attempts to increase the money supply to stimulate the economy, but plants are operating at 65 percent of their capacities and businesses are pessimistic about the future.
- Occasionally, the Federal Open Market Committee (FOMC) sets a policy designed to "track" the interest rate. This means that the FOMC is pursuing policies designed to keep the interest rate constant. If, in fact, the Fed were acting to counter any increases or decreases in the interest rate to keep it constant, what specific actions would you expect to see the Fed take if the following were to occur? (In answering, indicate the effects of each set of events on Y , C , S , I , M^s , M^d , and r .)
 - An unexpected increase in investor confidence leads to a sharp increase in orders for new plants and equipment.
 - A major New York bank fails, causing a number of worried people (not trusting even the FDIC) to withdraw a substantial amount of cash from other banks and put it in their cookie jars.

7. Paranoia, the largest country in central Antarctica, receives word of an imminent penguin attack. The news causes expectations about the future to be shaken. As a consequence, there is a sharp decline in investment spending plans.
 - a. Explain in detail the effects of such an event on the economy of Paranoia assuming no response on the part of the central bank or the Treasury. (M^s , T , and G all remain constant.) Make sure you discuss the adjustments in the goods market and the money market.
 - b. To counter the fall in investment, the king of Paranoia calls for a proposal to increase government spending. To finance the program, the chancellor of the exchequer has proposed three alternative options:
 - (1) Finance the expenditures with an equal increase in taxes
 - (2) Keep tax revenues constant and borrow the money from the public by issuing new government bonds
 - (3) Keep taxes constant and finance the expenditures by printing new money

Consider the three financing options and rank them from most expansionary to least expansionary. Explain your ranking.
8. Why might investment not respond positively to low interest rates during a recession? Why might investment not respond negatively to high interest rates during a boom?
9. The aggregate demand curve slopes downward because when the price level is lower, people can afford to buy more and aggregate demand rises. When prices rise, people can afford to buy less and aggregate demand falls. Is this a good explanation of the shape of the *AD* curve? Why or why not?
10. By late summer 2010, the target fed funds rate was between zero and 0.25 percent. At the same time, “animal spirits” were dormant and there was excess capacity in most industries. That is, businesses were in no mood to build new plant and equipment if they were not using their already existing capital. Interest rates were at or near zero, and yet investment demand remained quite low. The unemployment rate was 9.6 percent in August 2010. These conditions suggest that monetary policy is likely to be a more effective tool to promote expansion than fiscal policy. Do you agree or disagree? Explain your answer.
11. Describe the policy mix that would result in each of the following situations.
 - a. The interest rate decreases, investment increases, and the change in aggregate output is indeterminate.
 - b. Aggregate output increases, and the interest rate change is indeterminate.
 - c. The interest rate increases, investment decreases, and the change in aggregate output is indeterminate.
 - d. Aggregate output decreases, and the interest rate change is indeterminate.
12. In the first few chapters of this book, we introduced the notion of supply and demand. One of the first things we did was to derive the relationship between the price of a product and the quantity demanded per time period by an individual household. Now we have derived what is called the **aggregate demand curve**. The two look the same and both seem to have a negative slope, but the logic is completely different. Tell one story that explains the negative slope of a simple demand curve and another story that explains the more complex aggregate demand curve (*AD*).
13. Expansionary policies are designed to stimulate the economy by increasing aggregate output. Explain why expansionary fiscal policy and expansionary monetary policy have opposite effects on the interest rate despite having the same goal of increasing aggregate output. Illustrate your answer with graphs of the money market.
14. Explain the effect, if any, that each of the following occurrences should have on the aggregate demand curve.
 - a. The Fed lowers the discount rate.
 - b. The price level decreases.
 - c. The federal government increases federal income tax rates in an effort to reduce the federal deficit.
 - d. Pessimistic firms decrease investment spending.
 - e. The inflation rate falls by 3 percent.
 - f. The federal government increases purchases to stimulate the economy.

CHAPTER 12 APPENDIX

The *IS-LM* Model

There is a useful way of depicting graphically the determination of aggregate output (income) and the interest rate in the goods and money markets. Two curves are involved in this diagram, the *IS* curve and the *LM* curve. In this Appendix, we will derive these two curves and use them to see how changes in government purchases (G) and the money supply (M^s) affect the equilibrium values of aggregate output (income) and the interest rate. The effects we describe here are the same as the effects we described in the main text; here we illustrate the effects graphically.

The *IS* Curve

We know that in the goods market there is an equilibrium level of aggregate output (income) (Y) for each value of the interest rate (r). For a given value of r , we can determine the

equilibrium value of Y . The equilibrium value of Y falls when r rises and rises when r falls. There is thus a *negative* relationship between the equilibrium value of Y and r . The reason for this negative relationship is the negative relationship between planned investment and the interest rate. When the interest rate rises, planned investment (I) falls, and this decrease in I leads to a decrease in the equilibrium value of Y . The negative relationship between the equilibrium value of Y and r is shown in Figure 12A.1. This curve is called the ***IS* curve**.¹ Each point on the *IS* curve represents the equilibrium point in the goods market for the given interest rate.

¹ The letter *I* stands for investment, and the letter *S* stands for saving. *IS* refers to the fact that in equilibrium in the goods market, planned investment equals saving.