

EC1B5 | Chapter 10

Credit Markets

Additional Practice Questions:

Book Question 4

Many kinds of loans, like student loans and mortgages, can be taken out at either a fixed or variable rate. A fixed rate loan allows the borrower to pay the same nominal interest rate for the entire lifetime of the loan, while a variable rate loan may experience changes in the nominal interest rate as the rate that banks charge each other for overnight loans changes. For this problem, assume that this variable nominal interest rate adjusts such that the associated real interest rate remains constant over time.

- In the first year, inflation is 2.75 percent and the nominal interest rate for both the fixed and variable rate loans is 5 percent. What is the real interest rate for the fixed rate loan? What about for the variable rate loan?
- In the second year, inflation rises to 3 percent. Calculate the nominal and real interest rates for the fixed rate and the variable rate loans described in part a.
- What happens if the inflation rate falls? Could a borrower end up facing a much higher real interest rate with a variable rate loan? With a fixed rate loan?
- Suppose you are deciding between a fixed rate and a variable rate loan and that you dislike risk (variability) in the real interest rate you pay. Should you opt for a fixed rate or a variable rate loan? Are there any reasons for a borrower to dislike variability in the nominal interest rate rather than the real interest rate she faces?

Answer:

- The real interest rate for the fixed rate loan is given by

$$r = i - \pi$$

where r = the real interest rate, i = the nominal interest rate, and π = the rate of inflation.

Plugging in, then, we get that the real interest rate for both the fixed and variable rate loans is 2.25 percent.

- Again, we use the equation from above. The fixed rate loan is simple—the nominal rate is still 5 percent, so the real interest rate is 2 percent. For the variable rate loan, the nominal rate should adjust so that the real interest rate remains at 2.25 percent. Rearranging the equation above, we get that the nominal rate for the variable rate loan should be at 5.25 percent.
- The real interest rate could, indeed, go up with a fixed rate loan (particularly with deflation, when inflation would be negative, and the real interest rate would be higher than the nominal interest rate). With a variable interest rate, however, the real interest rate will always remain the same.
- If you dislike variability in the real interest rate, then you're better off choosing the variable rate loan, because it will adjust to keep the real interest rate constant. It's possible, though, that you want to keep the nominal interest rate constant, perhaps because you get paid in nominal dollars and like the predictability of paying a certain percentage of your wage each month.

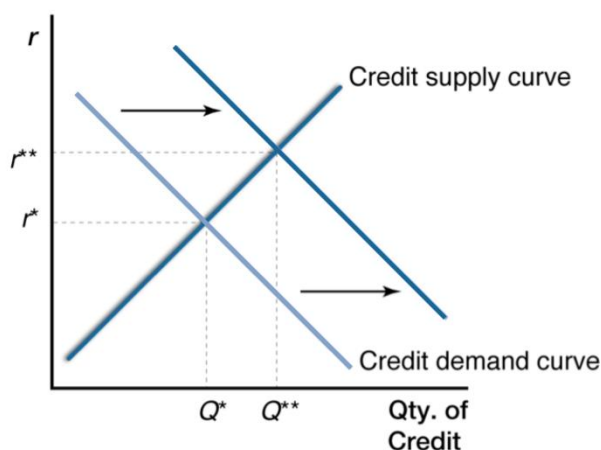
Book Question 5

Explain how the equilibrium real interest rate and the equilibrium quantity of credit would change in each of the following scenarios and illustrate your answer with a well-labeled graph of the credit market.

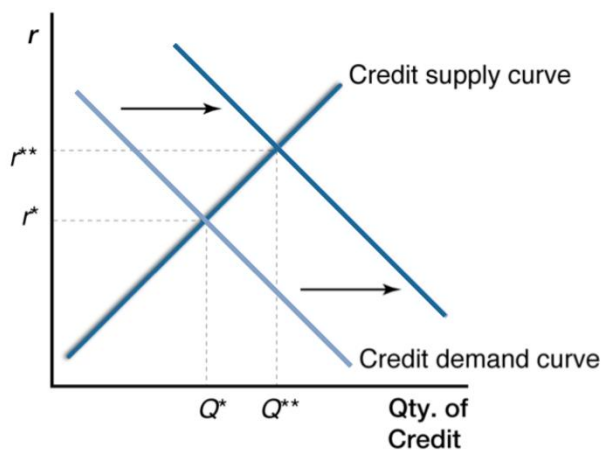
- As the real estate market recovers from the 2007 – 2009 financial crisis, households begin to buy more houses and condominiums, and they apply for more mortgages to enable those purchases.
- Congress agrees to a large tax cut which increases the level of the government deficit.
- Households begin to fear that a growing pandemic may cause them to lose their jobs and they increase their savings for a rainy day.
- Businesses become more optimistic about the future of the economy and decide to distribute more of their earnings as dividends to their shareholders.

Answer:

- As households apply for more mortgages to purchase real estate, the demand for credit increases, and the credit demand curve shifts to the right. This increases the equilibrium real interest rate as well as the quantity of credit, as shown in the graph below.



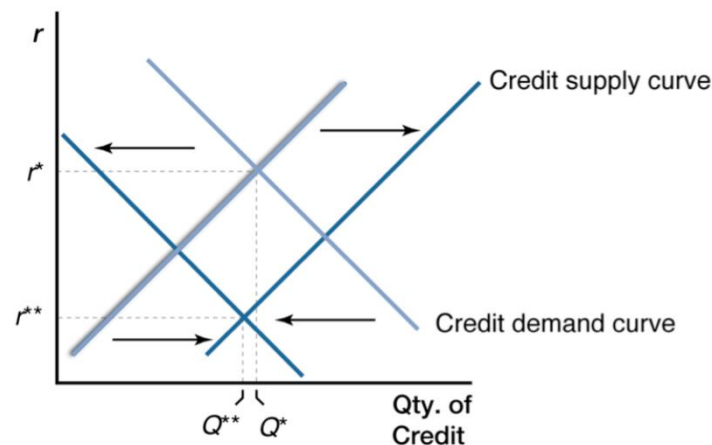
- As government borrowing increases, there is a consequent increase in the demand for credit. The credit demand curve shifts to the right, raising the equilibrium interest rate and the equilibrium quantity of credit. This is illustrated in the graph below.



- c. The increase in household pessimism would result in a decline in borrowing by households, reflected in a leftward shift in the credit demand curve. By itself, this would lower the equilibrium real interest rate and the equilibrium quantity of credit.

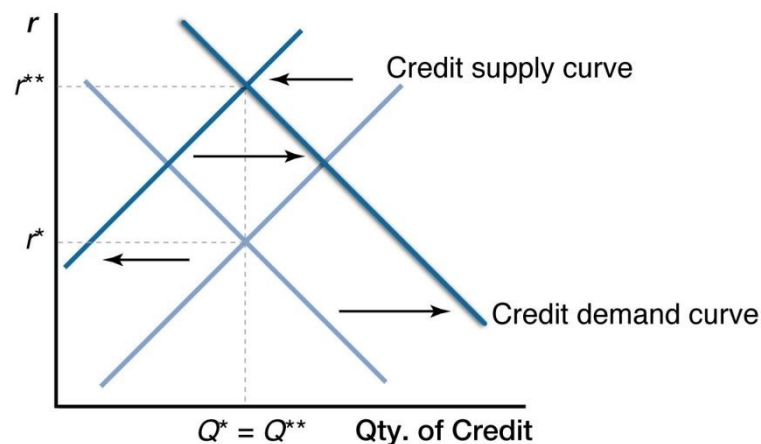
However, households would also tend to increase their saving, thus shifting the credit supply curve to the right. This action further lowers the real interest rate but increases the quantity of credit.

Hence, the combination of a decrease in credit demand and an increase in credit supply would definitely lower the equilibrium real interest rate but have an ambiguous effect on the quantity of credit. (Note: The graph below shows a small decrease in the equilibrium quantity of credit because the credit demand curve shifted to the left by a greater horizontal distance than the credit supply curve shifted to the right.)



- d. If the business community becomes more optimistic about the economy, they will tend to increase their borrowing to fund investment and expansion. This will shift the credit demand curve to the right. At the same time, distributing more of their earnings to shareholders as dividends will decrease the supply of credit (assuming that the shareholders spend those dividends), shifting the credit supply curve to the left.

The net result of these two effects is shown in the graph below. The equilibrium real interest rate will definitely increase, but the effect on the equilibrium quantity of credit is ambiguous and depends on which curve shifts by the greater horizontal distance. (Note: The graph below shows a situation where the leftward shift in the credit supply curve is exactly offset by the rightward shift in credit demand, resulting in no change in the equilibrium quantity of credit.)



Book Question 8

If you have studied microeconomics, you may recall a concept called “moral hazard.” Moral hazard occurs when an economic agent is incentivized to take risks because some (or all) of the losses that might result will be borne by other economic agents. Discuss how federal deposit insurance, administered by the FDIC as described in the chapter, might lead to moral hazard.

Answer: Moral hazard occurs whenever a policy changes incentives, which in turn changes behavior. Because of federal deposit insurance, the majority of depositors need not pay any attention to the lending practices of their bank. Depositors are more likely to decide where to bank based on the interest rate offered, or on convenience. Consequently, a bank’s customers won’t worry about whether a bank is badly run, nor will they worry about whether a bank is making unprofitable long-term investments. The depositors will get their deposits back in any case because of deposit insurance.

Likewise, knowing that their depositors’ funds are covered gives banks’ management more incentive to acquire riskier assets, e.g., to make riskier loans than they otherwise would. If the assets perform well, the bank will earn higher profits. If the assets decline in value, and lead to losses, the bank’s depositors are still covered.

Book Question 11

The sharpest one-day percentage decline in the Dow Jones Industrial Average (DJIA) took place on October 19, 1987. The DJIA fell 23 percent on this one day. Foreign exchange markets and other asset markets also exhibit large fluctuations on a daily basis. Based on the information given in this chapter, discuss some factors that could explain why asset prices fluctuate.

Answer: According to theory of efficient markets, asset prices are based exclusively on fundamentals. In this view, any fluctuation in a stock price is attributed to a rational appraisal of new information about the profitability of the company, not a tendency for investors to let their emotions get in the way. On the other hand, another view has been gaining traction in recent decades. Asset bubbles occur when asset prices deviate from their fundamental value. This can occur due to a herd effect, limited investor rationality, or other psychological factors or biases. Bubbles are also likely to be followed by a market crash. This can be another source of fluctuations in asset prices.

Based on: <https://www.philadelphiafed.org/-/media/frbp/assets/economy/articles/business-review/1996/january-february/brjf96lo.pdf>