Economics of Money Banking and Financial Markets Business School Edition 4th edition Mishkin Solutions Manual

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PART THREE

Answers to End-of-Chapter Questions and Problems

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Chapter 1

ANSWERS TO QUESTIONS

1. *What is the typical relationship among interest rates on three-month Treasury bills, long-term Treasury bonds, and Baa corporate bonds?*

   The interest rate on three-month Treasury bills fluctuates more than the other interest rates and is lower on average. The interest rate on Baa corporate bonds is higher on average than the other interest rates.

2. *What effect might a fall in stock prices have on business investment?*

   The lower price for a firm's shares means that it can raise a smaller amount of funds, so investment in facilities and equipment will fall.

3. *What effect might a rise in stock prices have on consumers' decisions to spend?*

   Higher stock prices mean that consumers' wealth is higher, and they will be more likely to increase their spending.

4. *Why are financial markets important to the health of the economy?*

   They channel funds from people who do not have a productive use for them to people who do, thereby resulting in higher economic efficiency.

5. *What was the main cause of the recession that began in 2007?*

   The United States economy was hit by the worst financial crisis since the Great Depression. Defaults in subprime residential mortgages led to major losses in financial institutions, producing not only numerous bank failures, but also the demise of two of the largest investment banks in the United States. These factors led to the "Great Recession" which began late in 2007.

6. *What is the basic activity of banks?*

   The basic activity of banks is to accept deposits and make loans.

7. *What are the other important financial intermediaries in the economy, besides banks?*

   Savings and loan associations, mutual savings banks, credit unions, insurance companies, mutual funds, pension funds, and finance companies.

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8. *Can you think of any financial innovation in the past ten years that has affected you personally? Has it made you better off or worse off? Why?*

   Answers will vary.

9. *Has the inflation rate in the United States increased or decreased in the past few years? What about interest rates?*

   In the period from 2007 to 2011, both inflation and interest rates have generally trended downward compared to before that period.

10. *If history repeats itself and we see a decline in the rate of money growth, what might you expect to happen to*

    a. *real output?*

    b. *the inflation rate?*

    c. *interest rates?*

    The data in Figures 3, 5, and 6 suggest that real output, the inflation rate, and interest rates would all fall.

11. *When interest rates decrease, how might businesses and consumers change their economic behavior?*

    Businesses would increase investment spending because the cost of financing this spending is now lower, and consumers would be more likely to purchase a house or a car because the cost of financing their purchase is lower.

12. *Is everybody worse off when interest rates rise?*

    No. It is true that people who borrow to purchase a house or a car are worse off because it costs them more to finance their purchase; however, savers benefit because they can earn higher interest rates on their savings.

13. *Why do managers of financial institutions care so much about the activities of the Federal Reserve System?*

    Because the Federal Reserve affects interest rates, inflation, and business cycles, all of which have an important impact on the profitability of financial institutions.

14. *How does the current size of the U.S. budget deficit compare to the historical budget deficit or surplus for the time period since 1950?*

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The deficit as a percentage of GDP has expanded dramatically since 2007; in 2010 the deficit to GDP ratio was 10%, well above the historical average of around 2% since 1950.

15. *How would a fall in the value of the pound sterling affect British consumers?*

    It makes foreign goods more expensive, so British consumers will buy fewer foreign goods and more domestic goods.

16. *How would an increase in the value of the pound sterling affect American businesses?*

    It makes British goods more expensive relative to American goods. Thus American businesses will find it easier to sell their goods in the United States and abroad, and the demand for their products will rise.

17. *How can changes in foreign exchange rates affect the profitability of financial institutions?*

    Changes in foreign exchange rates change the value of assets held by financial institutions and thus lead to gains and losses on these assets. Also changes in foreign exchange rates affect the profits made by traders in foreign exchange who work for financial institutions.

18. *According to Figure 8, in which years would you have chosen to visit the Grand Canyon in Arizona rather than the Tower of London?*

    In the mid- to late 1970s and in the late 1980s and early 1990s, the value of the dollar was low, making travel abroad relatively more expensive; thus it was a good time to vacation in the United States and see the Grand Canyon. With the rise in the dollar's value in the early 1980s, travel abroad became relatively cheaper, making it a good time to visit the Tower of London. This was also true, to a lesser extent, in the early 2000s.

19. *When the dollar is worth more in relation to currencies of other countries, are you more likely to buy American-made or foreign-made jeans? Are U.S. companies that manufacture jeans happier when the dollar is strong or when it is weak? What about an American company that is in the business of importing jeans into the United States?*

    When the dollar increases in value, foreign goods become less expensive relative to American goods; thus you are more likely to buy French-made jeans than American-made jeans. The resulting drop in demand for American-made jeans because of the strong dollar hurts American jeans manufacturers. On the other hand, the American company that imports jeans into the United States now finds that the demand for its product has risen, so it is better off when the dollar is strong.

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20. Much of the U.S. government debt is held by foreign investors as treasury bonds and bills. How do fluctuations in the dollar exchange rate affect the value of that debt held by foreigners?

As the dollar becomes stronger (worth more) relative to a foreign currency, one dollar is equivalent to (can be exchanged for) more foreign currency. Thus, for a given face value of bond holdings, a stronger dollar will yield more home currency to foreigners, so the asset will be worth more to foreign investors. Likewise, a weak dollar will lead to foreign bond holdings worth less to foreigners.

ANSWERS TO APPLIED PROBLEMS

21. The following table lists foreign exchange rates between U.S. dollars and British pounds (GBP) during April. Which day would have been the best for converting $200 into British pounds? Which day would have been the worst? What would be the difference in pounds?

Date	U.S Dollars per
4/1	1.9564
4/4	1.9293
4/5	1.914
4/6	1.9374
4/7	1.961
4/8	1.8925
4/11	1.8822
4/12	1.8558
4/13	1.796
4/14	1.7902
4/15	1.7785
4/18	1.7504
4/19	1.7255
4/20	1.6914
4/21	1.672
4/22	1.6684
4/25	1.6674
4/26	1.6857
4/27	1.6925
4/28	1.7201
4/29	1.7512

The best day is 4/25. At a rate of $1.6674/pound, you would have £119.95. The worst day is 4/7. At $1.961/pound, you would have £101.99, or a difference of £17.96.

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ANSWERS TO DATA ANALYSIS PROBLEMS

1. *Go to the St. Louis Federal Reserve FRED database and find data on the three-month treasury bill rate (TB3MS), the three-month AA nonfinancial commercial paper rate (CPN3M), the 30-year treasury bond rate (GS30), the 30-year conventional mortgage rate (MORTG), and the NBER recession indicators (USREC).*

   a. *In general, how do these interest rates behave during recessions and during expansionary periods?*

      Generally speaking, the interest rates fall during recessions, and rise during expansionary periods.

   b. *In general, how do the three-month rates compare to the 30-year rates? How do the treasury rates compare to the respective commercial paper and mortgage rates?*

      In nearly all instances, the 30-year rates are significantly higher than the three-month rates. Likewise, in most cases the 30-year mortgage rate is higher than the 30-year treasury rate, and the three-month commercial paper rate is higher than the three-month treasury rate.

   c. *For the most recent available month of data, take the average of each of the three-month rates and compare it to the average of the three-month rates from January 2000. How do the averages compare?*

	April 2014	January 2000
Three-month rate avg.	0.07%	5.53%
30 year rate avg.	3.93%	7.42%

   d. *For the most recent available month of data, take the average of each of the 30-year rates and compare it to the average of the 30-year rates from January 2000. How do the averages compare?*

      See table above. For both rate averages, they have decreased significantly since January 2000.

2. *Go to the St. Louis Federal Reserve FRED database and find data on the M1 money supply (M1SL) and the 10-year treasury bond rate (GS10). Add the two series into a single graph by using the "Add Data Series" feature. Transform the M1 money supply variable into the M1 growth rate by adjusting the units for the M1 money supply to "Percent Change from Year Ago."*

   a. *In general, how have the growth rate of the M1 money supply and the 10-year treasury bond rate behaved during recessions and during expansionary periods since the year 2000?*

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Generally, the 10-year treasury rate fell during the recessionary periods of 2001 and 2007-2009; during expansionary periods, there was less of a pattern. The money growth rate increased significantly during recessionary periods, however during expansions there is less of a pattern; following the 2001 recession, money growth gradually declined, but after the 2007-2009 recession, money growth was relatively high and variable.

b. *In general, is there an obvious, stable relationship between money growth and the 10-year interest rate since the year 2000?*

When money growth rises, the 10-year treasury rate appears to fall, and vice-versa, however this effect is more obvious over some periods than others.

c. *Compare the money growth rate and the 10-year interest rate for the most recent month available to the rates for January 2000. How do the rates compare?*

	April 2014	January 2000
M1 Money Growth	10.33%	2.19%
10-year Treasury rate	2.71%	6.66%

The money growth rate is significantly higher in April 2014 than it was in January 2000. The 10-year treasury rate is significantly lower in April 2014 than it was in January 2000.

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Chapter 2

ANSWERS TO QUESTIONS

1. *If I can buy a car today for $5,000 and it is worth $10,000 in extra income to me next year because it enables me to get a job as a traveling salesman, should I take out a loan from Larry the Loan Shark at a 90% interest rate if no one else will give me a loan? Will I be better or worse off as a result of taking out this loan? Can you make a case for legalizing loan sharking?*

   Yes, I should take out the loan, because I will be better off as a result of doing so. My interest payment will be $4,500 (90% of $5,000), but as a result, I will earn an additional $10,000, so I will be ahead of the game by $5,500. Since Larry's loan-sharking business can make some people better off, as in this example, loan sharking may have social benefits. (One argument against legalizing loan sharking, however, is that it is frequently a violent activity.)

2. *Some economists suspect that one of the reasons economies in developing countries grow so slowly is that they do not have well-developed financial markets. Does this argument make sense?*

   Yes, because the absence of financial markets means that funds cannot be channeled to people who have the most productive use for them. Entrepreneurs then cannot acquire funds to set up businesses that would help the economy grow rapidly.

3. *Why is a share of Microsoft common stock an asset for its owner and a liability for Microsoft?*

   The share of Microsoft stock is an asset for its owner, because it entitles the owner to a share of the earnings and assets of Microsoft. The share is a liability for Microsoft, because it is a claim on its earnings and assets by the owner of the share.

4. *If you suspect that a company will go bankrupt next year, which would you rather hold, bonds issued by the company or equities issued by the company? Why?*

   You would rather hold bonds, because bondholders are paid off before equity holders, who are the residual claimants.

5. *"Because corporations do not actually raise any funds in secondary markets, secondary markets are less important to the economy than primary markets are." Is this statement true, false, or uncertain?*

   This statement is false. Prices in secondary markets determine the prices that firms issuing securities receive in primary markets. In addition, secondary markets make securities more liquid and thus easier to sell in the primary markets. Therefore, secondary markets are, if anything, more important than primary markets.

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6. *Describe who issues each of the following money market instruments:*
   a. *Treasury bills*
   b. *Certificates of deposit*
   c. *Commercial paper*
   d. *Repurchase agreement*
   e. *Fed funds*

   Treasury bills are short-term debt instruments issued by the United States government to cover immediate spending obligations, i.e. finance deficit spending. Certificates of deposit (CDs) are issued by banks and sold to depositors. Corporations and large banks issue commercial paper as a method of short-term funding in debt markets. Repos are issued primarily by banks, and funded by corporations and other banks through loans in which treasury bills serve as collateral, with an explicit agreement to pay off the debt (repurchase the treasuries) in the near future. Fed funds are overnight loans from one bank to another.

7. *What is the difference between a mortgage and a mortgage-backed security?*

   Mortgages are loans to households or firms to purchase housing, land, or other real structures, where the structure or land itself serves as collateral for the loans. Mortgage-backed securities are bond-like debt instruments that are backed by a bundle of individual mortgages, whose interest and principal payments are collectively paid to the holders of the security. In other words, when an individual takes out a mortgage, that loan is bundled with other individual mortgages to create a composite debt instrument, which is then sold to investors.

8. *The U.S. economy borrowed heavily from the British in the nineteenth century to build a railroad system. Why did this make both countries better off?*

   The British gained because they were able to earn higher interest rates as a result of lending to Americans, while the Americans gained because they now had access to capital to start up profitable businesses such as railroads.

9. *A significant number of European banks held large amounts of assets as mortgage-backed securities derived from the U.S. housing market, which crashed after 2006. How does this demonstrate both a benefit and a cost to the internationalization of financial markets?*

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The international trade of mortgage-backed securities is generally beneficial in that the European banks that held the mortgages could earn a return on those holdings, while providing needed capital to U.S. financial markets to support borrowing for new home construction and other productive uses. In this sense, both European banks and U.S. borrowers should have benefitted. However, with the sharp decline in the U.S. housing market, default rates on mortgages rose sharply, and the value of the mortgage-backed securities held by European banks fell sharply. Even though the financial crisis began primarily in the United States as a housing downturn, it significantly affected European markets; Europe would have been much less affected without such internationalization of financial markets.

10. *How does risk sharing benefit both financial intermediaries and private investors?*

    Financial intermediaries benefit by carrying risk at relatively low transaction costs. Since higher risk assets on average earn a higher return, financial intermediaries can earn a profit on a diversified portfolio of risky assets. Individual investors benefit by earning returns on a pooled collection of assets issued by financial intermediaries at lower risk. The financial intermediary lowers risk to individual investors through the pooling of assets.

11. *How can the adverse selection problem explain why you are more likely to make a loan to a family member than to a stranger?*

    Because you know your family member better than a stranger, you know more about the borrower's honesty, propensity for risk taking, and other traits. There is less asymmetric information than with a stranger and less likelihood of an adverse selection problem, with the result that you are more likely to lend to the family member.

12. *One of the factors contributing to the financial crisis of 2007–2009 was the widespread issuance of subprime mortgages. How does this demonstrate adverse selection?*

    The issuance of subprime mortgages represents lenders loaning money to the pool of potential homeowners who are the highest credit risk and have the lowest net wealth and other financial resources. In other words, this group of borrowers most in need of mortgage credit was also the highest risk to lenders, a perfect example of adverse selection.

13. *Why do loan sharks worry less about moral hazard in connection with their borrowers than some other lenders do?*

    Loan sharks can threaten their borrowers with bodily harm if borrowers take actions that might jeopardize their paying off the loan. Hence borrowers from a loan shark are less likely to increase moral hazard.

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14. If you are an employer, what kinds of moral hazard problems might you worry about with regard to your employees?

They might not work hard enough while you are not looking or may steal or commit fraud

15. If there were no asymmetry in the information that a borrower and a lender had, could a moral hazard problem still exist?

Yes, because even if you know that a borrower is taking actions that might jeopardize paying off the loan, you must still stop the borrower from doing so. Because that may be costly, you may not spend the time and effort to reduce moral hazard, and so the problem of moral hazard still exists.

16. "In a world without information costs and transaction costs, financial intermediaries would not exist." Is this statement true, false, or uncertain? Explain your answer.

True. If there are no informational or transactions costs, people could make loans to each other at no cost and would thus have no need for financial intermediaries.

17. Why might you be willing to make a loan to your neighbor by putting funds in a savings account earning a 5% interest rate at the bank and having the bank lend her the funds at a 10% interest rate, rather than lend her the funds yourself?

Because the costs of making the loan to your neighbor are high (legal fees, fees for a credit check, and so on), you will probably not be able earn 5% on the loan after your expenses even though it has a 10% interest rate. You are better off depositing your savings with a financial intermediary and earning 5% interest. In addition, you are likely to bear less risk by depositing your savings at the bank rather than lending them to your neighbor.

18. How do conflicts of interest make the asymmetric information problem worse?

Potentially competing interests may lead an individual or firm to conceal information or disseminate misleading information. A substantial reduction in the quality of information in financial markets increases asymmetric information problems and prevents financial markets from channeling funds into the most productive investment opportunities. Consequently, the financial markets and the economy become less efficient. That is, false information as a result of a conflict of interest can lead to a more inefficient allocation of capital than just asymmetric information alone.

19. How can the provision of several types of financial services by one firm be both beneficial and problematic?

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Financial firms that provide multiple types of financial services can be more efficient through economies of scope, that is, by lowering the cost of information production. However, this can be problematic since it can also lead to conflicts of interest, in which the financial firm provides false or misleading information to protect its own interests. This can lead to a worsening of the asymmetric information problem, making financial markets less efficient.

20. *If you were going to get a loan to purchase a new car, which financial intermediary would you use: a credit union, a pension fund, or an investment bank?*

    You would likely use a credit union if you were a member, since their primary business is consumer loans. In some cases it is possible to borrow directly from pension funds, but it can come with high borrowing costs and tax implications. Investment banks do not provide loans to the general public.

21. *Why would a life insurance company be concerned about the financial stability of major corporations or the health of the housing market?*

    Most life insurance companies hold large amounts of corporate bonds and mortgage assets, thus poor corporate profits or a downturn in the housing market can significantly adversely impact the value of asset holdings of insurance companies.

22. *In 2008, as a financial crisis began to unfold in the United States, the FDIC raised the limit on insured losses to bank depositors from $100,000 per account to $250,000 per account. How would this help stabilize the financial system?*

    During the financial panic, regulators were concerned that depositors worried their banks would fail, and that depositors (especially with accounts over $100,000) would pull money from banks, leaving cash-starved banks with even less cash to satisfy customer demands and day-to-day operations. This could create a contagious bank panic in which otherwise healthy banks would fail. Raising the insurance limit would reassure depositors that their money was safe in banks and prevent a bank panic, helping to stabilize the financial system.

ANSWERS TO APPLIED PROBLEMS

23. *Suppose you have just inherited $10,000 and are considering the following options for investing the money to maximize your return:*

    - ***Option 1:*** *Put the money in an interest-bearing checking account that earns 2%. The FDIC insures the account against bank failure.*
    - ***Option 2:*** *Invest the money in a corporate bond with a stated return of 5%, although there is a 10% chance the company could go bankrupt.*

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- ***Option 3:*** *Loan the money to one of your friend's roommates, Mike, at an agreed-upon interest rate of 8%, even though you believe there is a 7% chance that Mike will leave town without repaying you.*
- ***Option 4:*** *Hold the money in cash and earn zero return.*

24. *If you are risk-neutral (that is, neither seek out nor shy away from risk), which of the four options should you choose to maximize your expected return? (Hint: To calculate the expected return of an outcome, multiply the probability that an event will occur by the outcome of that event.)*

    With Option 1, since deposits are insured it can be assumed a riskless investment. Thus, the expected total payoff would be $10,000 × 1.02 = $10,200. With Option 2, a bond return of 5% implies a potential payoff of $10,000 × 1.05 = $10,500, and there is a 90% chance that this outcome will occur, thus the expected payoff is $10,500 × 0.9 = $9450. Under Option 3, the expected payoff is $10,000 × 1.08 × 0.93 = $10,044. Option 4 is riskless, so the expected total payoff is $10,000. Given these choices and the assumption that you don't care about risk, Option 1 is the best investment.

25. *Suppose Option 3 is your only possibility. If you could pay your friend $100 to find out extra information about Mike that would indicate with certainty whether he will leave town without paying, would you pay the $100? What does this say about the value of better information regarding risk?*

    This option implies the very real possibility of either receiving nothing (if he actually leaves town), or $10,800 (if he indeed pays as promised). If you don't pay Mike, you have an expected return of $10,044 as shown above. If you paid your friend the $100 and learned that Mike would leave without paying, then obviously you wouldn't loan Mike the money, and you would be left with $9900. However, if you paid the friend $100 and learned that Mike would pay, you would have $10,700 (= $10,000 × 1.08 - $100). After paying your friend Mike, but before knowing the true outcome, your expected return would be $10,644 ($9900 × 0.07 + $10,700 × 0.93). Paying your friend the $100 is definitely worth it because it increases your expected return and in addition dramatically reduces the downside risk that you make a bad loan, and increases the certainty of the payoff amount. That is, with asymmetric information (not paying your roommate), you have a range of payoffs of $0 to $10,800 versus $9900 to $10,700 without asymmetric information. Thus, paying a small amount to improve risk assessment can be very beneficial, a task for which financial intermediaries are well suited.

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ANSWERS TO DATA ANALYSIS PROBLEMS

1. *Go to the St. Louis Federal Reserve FRED database, and find data on federal debt held by the Federal Reserve (FDHBFRBN), by private investors (FDHBPIN), and by international and foreign investors (FDHBFIN). Using these series, calculate the total amount held and the percentage held in each of the three categories for the most recent quarter available. Repeat for the first quarter of 2000, and compare the results.*

   See table. Since the year 2000, the Fed has increased its share of federal debt held, and foreign investors have significantly increased its share of debt held. This reflects a significant decline in the share of federal debt held by private investors.

	2014:Q1		2000:Q1	
	Held ($bil.)	% Share	Held ($bil.)	% Share
Fed	2319.6	12.5%	501.7	10.5%
Private Investors	10,300.0	55.5%	3182.8	66.7%
Foreign Investors	5949.4	32.0%	1085.0	22.7%
Total	18569.0		4769.5	

2. *Go to the St. Louis Federal Reserve FRED database, and find data on the total assets of all commercial banks (TLAACBM027SBOG) and the total assets of money market mutual funds (MMMFFAQ027S). Transform the commercial bank assets series to quarterly by adjusting the Frequency setting to "Quarterly." Calculate the percent increase in growth of assets for each series, from January 2000 to the most recent quarter available. Which of the two financial intermediaries has experienced the most growth?*

   See table below. Commercial bank assets have increased by 147% from 2000:Q1 to 2013:Q4, while money market mutual fund assets have increased also, but by less than commercial banks during that time, at 60.9%

	2013:Q4	2000:Q1
Commercial Banks	$13,929.9 Bil.	$5,639.2 Bil.
Money Market Mutual Funds	$2,678.3 Bil.	$1,664.8 Bil.

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