

Solutions to Online Mini-Cases

To access the mini-cases, please visit the Companion Website at www.pearsonhighered.com/mishkin_eakins.

■ Chapter 2 Mini-Case

1. Moral hazard is the problem created by asymmetric information after the transaction occurs. In the financial institutions if the borrower is engaged in undesirable an (immoral) activity that causes them unlikely to pay off the debts, then we have moral hazard. The above case is an example of moral hazard as the company was engaged in risky derivative activities.
2. Moral hazard can be reduced by monitoring, higher collateral, restrictive covenants, and more capital requirement for the risk activities that companies are involved in.
3. Less lending will take place, then less economic activities. If moral hazard is significant, it could contribute to financial crisis.
4. Unequal information between two parties; one has more knowledge on a given activity than the other party.
5. Yes, that is the reason behind the regulation of the financial institutions. Government regulation of financial institutions is done for two main reasons: to increase the information available to the investors and to ensure the soundness of the financial system. The more information investors have, the less likely they are to make undesirable investment decisions. For example, the SEC asking all financial institutions to report their financial statements and accuracy of information is critical since enforcement of the regulation is another important issue.

■ Chapter 3 Mini-Case

1. \$40.00
2. \$840.00
3. \$55.77
4. a. 10.75%
b. 11.63%
5. a. 12.25%
b. 12.50%
6. a. -3.28%
b. 4.71%
7. a. \$968.30
b. \$940.20
c. \$37.80
d. \$80.70
e. 4.06%
f. 9.39%
g. Changes in interest rates make investments in long-term bonds more risky. Prices and returns for long-term bonds are more volatile than those for short-term bonds.
8. a. 400
b. 1000
c. \$1,433
d. \$1,452
e. $13.50\% = \{[(1,433 - 930.50)/930.50] \times 100\} \div 4$
f. $14.01\% = \{[(1,452 - 930.50)/930.50] \times 100\} \div 4$
g. Because earning interest on interest affects total return on the investment.
h. 3.5 years
9. 4.38%
10. 7.00%

■ Chapter 4 Mini-Case

1.
 - a. 25.00%
 - b. 17.65%
 - c. 11.11%
 - d. 5.26%
 - e. 0.00%
2. \$833.33
3. Wealth
 Expected returns on bonds relative to alternative assets
 Risk of bonds relative to alternative assets
 Liquidity of bonds relative to alternative assets
4. Expected profitability of investment opportunities
 Expected inflation
 Government activities
5. The Fisher effect is named for Irving Fisher, who pointed out that “When expected inflation rises, interest rates will rise.”
6. The loanable funds framework provides a theory of how interest rates are determined by examining the supply and demand for bonds. The liquidity preference framework focuses on the supply and demand for money, indicating how interest rates are determined. Both theories attempt to monitor the direction and degree of change in interest rates.
7. **Note:** Various predictions are possible in some of the following statements, leading to in-class discussions. Consider the following possible initial responses:
 - a. If supply curve shifts more than demand, equilibrium interest rates rise.
 - b. With other economic variables constant, interest rates rise.
 - c. In general, interest rates rise.
 - d. As demand falls, interest rates rise.
 - e. Equilibrium interest rates fall.
 - f. If government securities supplied exceeds demand, interest rates rise.
 - g. As income increases, interest rates rise.
 - h. As the price level increases, interest rates rise.
 - i. Increases interest rates.
 - j. Demand shifts from bonds, raising interest rates.

■ Chapter 5 Mini-Case

1. Use your favorite search engine to find such key words/phrases as: “Yield Curve,” “Expectations Theory,” “Preferred Habitat Theory,” “Liquidity Premium Theory.” Consider sites from Bloomberg, Stocktrader, Bondbasics and various FRB sites.
2. Obtain the most recent yield curve information from Internet site. (**Note:** Consider the most recent site at www.bloomberg.com).
3. Plot U.S. Treasury Yield Curve.
Note: Plot is provided at the Bloomberg site.
 - a. Pure expectations theory views long-term interest rates as equaling the average of future short-term interest rates.
 - b. Market segmentation theory views the curve as a result of supply/demand within market segments.
 - c. Liquidity premium theory combines features of pure expectations and market segmentation theories.
 - d. Answers differ based on current picture of the curve and student opinion—showing no clear answer to this question ever exists.
4. Given the information in responses 1, 2, and 3 above, use the pure expectations theory to determine and predict interest rates as follows:
 - a. If the one-year interest rate is expected to be the same as the current yield curve over the next three years, what interest rate is expected on a two-year bond? **Note:** Answer varies based on current Internet search. Use Chapter 5 equation for calculating the interest rate on a two-year bond.
 - b. What interest rate is expected on a three-year bond? **Note:** Answer varies based on current Internet search. Use Chapter 5 equation for calculating the interest rate on a three-year bond.
 - c. As maturities rise, interest rates also rise.
 - d. If investors attach term premiums of 0.0025, 0.0075, and 0.0085 to the one-, two-, and three-year bonds:
 - i. Adjust answer to liquidity premium theory by adding 2-year premium to answer above.
 - ii. Adjust answer to liquidity premium theory by adding 3-year premium to answer above.
 - iii. Answer based on Internet findings and equation in Chapter 5 for the forward rate.
 - iv. Answer based on Internet findings and equation in Chapter 5 for adjusted forward rate.
5. After describing the current yield curve and forecasting interest rates, using the pure expectations hypothesis:
 - a. Answer depends upon initial Internet data and selection of preferred model for term structure. Answer must include 2% add-on and accounting for term premium.
 - b. The interest rate charged would have to be adjusted up accordingly by the amount of credit risk.

■ Chapter 6 Mini-Case

1. a. 5%
b. 6%
2. Forecast errors may occur since people may find it takes too much effort to make their expectation the best guess, and/or people might be unaware of some relevant information.
3. The rational expectations theory leads to the efficient markets implications that (1) a change in the way a variable moves will change expectations of the variable, and (2) forecast errors of expectations will on average be zero and cannot be predicted ahead of time.
4. a. 8%
b. Efficient markets theory views expectations of future prices as equal to optimal forecasts using currently available information.
5. The expected return equals the equilibrium return, which equates the quantity supplied and demanded for that security.
6. Current prices will be set so that the optimal forecast of a security's return using all available information equals the security's equilibrium return.
7. If the market is efficient, all unexploited profit opportunities will be eliminated.
8. Past performance success does not indicate that an investment adviser or a mutual fund will perform well in the future.
9. If prices follow a "random walk," future changes in stock prices should, for all practical purposes, be unpredictable.
10. Evaluations of technical analysis rules indicate that this approach does not outperform the market, beat financial analysts, or produce consistently repeatable results. In general, technical analysis is discredited.
11. a. Research shows that small firms earn abnormally higher risk-adjusted returns.
b. Over the long run, stock prices tend to rise abnormally from December to January.
c. Stock prices may overreact to news and correct slowly.
d. Stock prices vary more than is warranted by fundamentals.
e. Mean reversion indicates stocks with low returns today tend to have high returns in the future, and vice versa.
12. Exchange rates should approximately follow random walks since people would immediately bid up (or down) currency prices to match predictions, stopping only when the predictable change in the exchange rate dropped to zero, matching the optimal forecast of return.

■ Chapter 8 Mini-Case

1. Financial innovation without many regulations could increase risk taking. Government has incentive to try to reduce the moral hazard problem created by asymmetric information. When there is any product in the market that investors don't know enough about, then asymmetric information is higher and this can contribute to more risk taking, and if it is broad, it could lead to a financial crisis.

But too much regulation can discourage innovation of new products in the market.

Advances in computer technology enabled lending institutions to bundle together smaller loans into standard debt securities (Mortgage-Backed Securities); the process is known as securitization. This provided a new source of financing for banks to offer subprime mortgages to borrowers with low credit records. In addition these securities were used as collateral to issue additional debt obligations known as collateralized debt obligations (CDOs). Since the originator of the debts was not the holder of those loans, it has less incentive to care about the quality of the borrowers. This originate-to-distribute business model was exposed to principal-agent problems in which the agent didn't have the investor's best interest at heart.

2. Loans were given to people without adequate income-adverse selection and also too much risk taking by investors based on lack of knowledge on proper rating of the securities. Thus, we had a case of market failure as too many funds were allocated, and information reflected on those securities was not accurate.
3. Yes, without government intervention, the Recession could probably be deeper, employment could be higher, and the extent of the global crisis could be more adverse.
4. More government spending can contribute to greater national debt, which is \$14.1 trillion, and by April of 2011 it will reach its ceiling of \$14.3 trillion. Then government has the option to limit spending or increase taxes or a combination of both. This is not an easy task since deciding which program(s) to cut can create problems of its own.

■ Chapter 10 Mini-Case

1. Lower interest rates can increase borrowing to finance durable goods items. Also, lower interest rates can increase the value of financial securities, and cause an increase in consumption through wealth effects. Capital investment can increase as businesses can borrow more money and issue more bonds to spend on investment projects. Government spending is somehow less interest sensitive, but state and local governments may issue more municipal bonds at lower rates. Value of dollars can be affected due to several factors including real interest rates. Lower interest rates make the U.S. less attractive to foreign investment, thus leading to depreciation of dollars – *ceteris paribus*. Then depreciation of the dollar can increase exports and decrease imports. As a result of all of these, GDP will increase. That is why the Fed uses expansionary monetary policy to stimulate the economy through all different channels.
2. In the 1920s, capital began flowing from Massachusetts to North Carolina, a process that continued until after World War II as textile mills migrated to the South from New England. Beginning in the 1950s capital moved again as textile manufacturing moved to Mexico, India, and Malaysia. Capital has long moved to where it can be used most productively, and by and large, that has been a good thing. Whether capital moves within a country or between countries, its flow addresses imbalances between available local capital and uses for capital (otherwise known as investments). Through much

of history, the major capital flows have been from rich countries to poorer ones. England financed canals in this country and railroads in Australia and India. That's no longer the case. The most notable importer of capital in recent times has been the United States. Australia, Spain, and the United Kingdom have also been importers of capital. Germany, Japan, China, and Switzerland have been significant exporters of capital. Over the past 10 years, oil-exporting countries have been exporters of capital. These facts are collectively referred to as "global imbalances."

3. The standard view in policy circles is that they represent a serious threat to economic stability rather than a sensible market reallocation of capital. In the standard view, such imbalances are "unsustainable," and the longer they last, the more drastic and painful will be the ultimate "adjustment." After 25 years of such threats, you might think positions would change. Instead, the same people are now arguing that these capital flows were one of the root causes of the financial crisis as it kept interest rates too low for a long period of time.
4. There are several reasons:
 - a. The dollar is the de facto international reserve currency. Speculations that other currencies will replace the dollar in the near future are simply not credible. China could create a basket of currencies to peg the yuan to instead of pegging to the dollar, but that is not a practical alternative at the moment.
 - b. U.S. Treasuries are the deepest and most liquid market of safe securities in the world.
 - c. The U.S. has good institutions. Despite obvious issues with financial regulation, the U.S. has one of the most investor-friendly capital markets in the world. Investors from China, Norway, and Saudi Arabia understand this.
 - d. The U.S. has favorable demographics. This is a subtle, and often overlooked, reason capital flows to the U.S. Populations in the European Union, Japan, and China are aging more rapidly than ours is. If young and middle-aged workers save more than the old retirees, you would expect to see them export capital initially, as they save for retirement, and import capital once enough people are retired. The U.S. population, in contrast, is aging more slowly, in part due to immigration.
 - e. High energy prices don't last forever. Oil exporters know that the high prices of a couple years ago are unlikely to be permanent. They therefore decided to save some of the increased income and invest it in safe markets abroad. The U.S. is on the receiving end. We saw this in the 1970s, and again in the early part of this decade.
5. As soon as foreign funds find alternatives to investment in other places, funds can be redirected to other places, and the impacts of that on the U.S. flow of funds and interest rates will be harmful as rates will increase and government will have a hard time to finance the budget.
6. Problems in the U.S. are domestic ones; we spend beyond our limit, we don't save enough, we cannot blame others for our lack of savings that makes the U.S. rely heavily on foreign funds.

■ Chapter 11 Mini-Case

1.
 - a. U.S. Treasury Department
Federal Reserve System
Commercial banks
Businesses
Investment companies
Finance companies
Insurance companies
Pension funds
Individuals
Money market mutual funds
 - b. Treasury bills
Federal funds
Repurchase agreements
Negotiable certificates of deposit
Commercial paper
Banker's acceptances
Eurodollars
2. The question should include weights from instructor, e.g. 20% in commercial paper, 20% in negotiable certificates of deposit, 20% in treasury bills, and 40% in money market mutual funds. Assuming the following findings from Internet resources:

Assumed	Weights	Expected Rates	
		1 yr	6 months
ComPap	20.00%	5.75%	5.74%
CDs	20.00%	5.42%	5.19%
Tbills	20.00%	5.36%	5.12%
MMMF	40.00%	4.91%	4.61%

- a. 5.27%
- b. It depends on the data students collect.
- c. 5.00%
- d. It depends on the data students collect.
- e. 12 months

■ Chapter 12 Mini-Case

1.
 - a. A financial market in which longer-term debt and equity instruments are traded
 - b. The largest organized security exchange in the U.S., trading about 2,675 firms
 - c. The second-largest security exchange in the U.S., trading about 2,500 firms
 - d. Security exchange made up of computer networks called NASDAQ
 - e. National Association of Securities Dealers Automated Quote System
 - f. A debt security the promises to make payments for a period of time
 - g. A security that is a claim on the earnings and assets of a corporation
 - h. A long-term loan secured by real estate
 - i. Separate trading of registered interest and principal securities
 - j. Bonds issued by certain agencies of the U.S. government
 - k. Issued by local, county, and state governments
 - l. Issued by business corporations
 - m. Bond provision forcing holder to sell a bond back according to sinking fund provisions
 - n. Bonds rated below investment grade, as speculative
 - o. A security that represents voting ownership of the firm
 - p. A form of equity that differs from common stock in fixed dividend and voting rights
 - q. Analyze, price, and sell securities of a firm to another entity
 - r. Municipal bonds backed by the full faith and credit of the issuer
 - s. Municipal bonds backed only by cash flows from project using the funds
2. Guideline responses from this question depend upon research findings of the students. After finding current rates, they are asked to calculate weighted average returns and compare this to the money market portfolio from Chapter 9.

Assuming the following findings from Internet resources:

			Equal Weights	Assumed Beg Rates	
a.	T-Notes	2 yr	12.5%	5.75%	
b.	T-Bonds	20 yr	12.5%	6.40%	
c.	GNMA	10 yr	12.5%	6.90%	
d.	Munis	10 yr	12.5%	4.50%	
e.	Corp Bond	20 yr	12.5%	7.20%	
f.	Junk Bond	10 yr	12.5%	12.50%	
g.	Com Stock		12.5%	15.50%	(based on market premium ••RFR)
h.	Pref Stock		<u>12.5%</u>	8.50%	(based on market average)
	Total		100.0%		
i.	Weighted average return = 8.41%				
j.	Return from money market is less, indicating current state of the economy and liquidity preferences.				

■ Chapter 13 Mini-Case

Each student will have different value for beta depending on what stock they choose.

1. Stocks are valued as PV of the dividends. Unfortunately, some stocks (newer companies) don't pay dividends, and also we don't have a precise estimate of what these dividends will be if and when they do pay. This introduces a great number of errors to the valuation process. Gordon growth model is based on the assumption of constant growth forever, which can be unrealistic as well. That is why there is another method, price earning valuation model (P/E). The problem with this model is that firms in the same industry are expected to have similar PE ratios in the long run.
2. Total risk will be less as the number of securities increases.
3. If the market decreases by 20%, the value of this stock will decrease by more than 20% since this is a risky stock. If the beta is positive, then the direction of changes in stock price will be the same as the market. If it is negative, then it will be the opposite.
4. Beta of less than one means it is a defensive stock, as when the market changes, this stock value will change by less than the market volatility. For example, if market increases by 10%, the value of this stock will change by 4.4%.

■ Chapter 14 Mini-Case

1.
 - a. Based on 28% PTI of the monthly gross income of \$3,000 minus \$400 of existing debt obligation.
 - i. \$50,510
 - ii. \$66,135
 - iii. The same as (i) above since the mortgage rate is the same whether the down payment is 10% or 20%.
 - iv. The same as ii. above for the same reason.
 - b. Based on 33% PTI minus \$400 obligation on existing debt,
 - i. \$67,729
 - ii. \$88,681
 - iii. The same as (i)
 - iv. The same as (ii)
 - c.
 - i. \$665
 - ii. \$871
 - iii. \$790
 - iv. \$6,640
 - v. \$5,174
 - d.
 - i. For the first 36 months, it stays at a 2% loan regardless of interest rate declines.
 - ii. Again, for the first 36 months, it stays the same regardless of rate increases.
 - iii. If the rate is locked for three years, the adjustable rate loan seems preferable.
2. Responses for this question depend upon the Internet rate findings of the students. As for suggestions to improve the company's competitiveness as a mortgage lender, they could include an online banking and lending business.
3. 0.0669
4. 0.0651
5.
 - a. Issuing more adjustable rate mortgages is easier said than done. Otherwise the bank would already have more of them and, consequently, less of an asset-liability mismatch problem.
 - b. Making adjustable rate mortgages more attractive will cut into the company's profit margin.

■ Chapter 15 Mini-Case

1.
 - a. The market in which exchange rates are determined and currencies traded.
 - b. Reduction in exchange rate volatility.
 - c. Current day transactions at the current exchange rate.
 - d. Foreign exchange rate for a transaction at some specified future rate.
 - e. Agreement to transact foreign exchange at some specified future date.
 - f. Currency that increases in value.
 - g. Currency that decreases in value.
 - h. Exchange rate falls more in short run than in long run as money supply increases.
 - i. Exchange rate that is fixed to an anchor currency.
 - j. Adoption of the U.S. dollar as their own currency by another country.
2. If the increase in the interest rate in Europe is due to domestic inflationary pressures, the euro will depreciate according to the interest parity condition. If the interest rate increase is due to a rise in the real interest rate, then the euro will appreciate against the dollar. However, this parity condition assumes a free flow of international capital with no restrictions in the exchange market.
3.
 - a. The interest rate in all the Euro-zone countries will converge.
 - b. There will be no direct effect on the U.S. interest rate.
 - c. The capital market will grow in Europe thanks to a lower foreign exchange risk and a lower cost of investing across the Euro-zone.
 - d. The average size of banks will become larger.
 - e. The number of banks will be reduced, as is already happening.
 - f. Foreign exchange revenues for banks will go down.
 - g. In so far as the euro becomes a stronger international currency, the dollar will lose strength on the margin.
 - h. Euro-zone countries will lose some fiscal policy flexibility. For example, they will not be able to incur large federal budget deficits.
 - i. Euro-zone countries will lose all monetary policy flexibility as they will not be able to set interest rates.
4. Exchange rates are important because the company expects a growth in international sales. If the dollar appreciates relative to the euro, the company's goods will become more expensive and foreign goods cheaper. In the presence of substitutes, the company's sales and profits will suffer.
5. The advantage of dealing with just one currency will cut the foreign exchange risk-related cost. Other things being equal, this lower cost will lead to higher profits initially and a greater international business volume.
6. It will not matter whether you hire a Dutch bank or an Italian bank as long as they are equally competent and competitive.
7. When U.S. real interest rates rise, the dollar appreciates. On the other hand, if the U.S. interest rate rise is due to increases in inflation, the dollar depreciates.
8.
 - a. $3\% + 10\% = 13\%$
 - b. $3\% - 20\% = -17\%$
 - c. 5.5%
 - d. The required interest rate on euro deposits is now 5% higher than before.

■ Chapter 16 Mini-Case

1. Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.
2. Other countries will be forced to bail out Portugal. This will increase the interest rates as perceived risk will be higher. This will increase the possibility of debt crisis in the Euro-zone. This may lead to lower economic growth because the interest rates will be higher, which means that it will be more expensive for consumers to borrow money, and therefore economic development would come to a standstill.

Increasing the size of the bailout fund may help prevent crisis in the near future, but it may have negative impacts in the long run because economically sound countries would be forced to contribute to the fund for countries in trouble. The downside of this would be that other countries contributing to the bailout would end up with fewer funds for their own economies. In the longrun this may even increase moral hazard problems as more countries may take more risk, knowing sound countries will bail them out.

3. Germany seems to be the Euro-zone country that is leading the push towards greater fiscal integration as a means to greater financial stability. Why? What does Germany stand to gain by a fiscal union? Because Germany is clearly the economic motor of the Euro-zone, it is committed to preserving the euro. Germany has more to lose as troubles continue. Germany would accept steps towards fiscal unions if the attempts to improve the Euro-zone's governance failed. Germany, as the strongest country in the Euro-zone, would be the best fit country to lead a charge toward fiscal union because they feel that their commitment to the euro is their "historical responsibility."

■ Chapter 17 Mini-Case

1. Using the balance sheet for each year.
 - a. Balance sheet with assets as a percentage of total assets, and liabilities as a percentage of total liabilities:

	Your Bank, Year 3	Your Bank, Year 2	Your Bank, Year 1	Banks in Your Region, Year 3
Assets (Use of Funds)				
Reserves	7.25	5.78	6.22	5.61
Cash items in process of collection	3.00	2.10	1.88	3.00
Deposits at other banks	2.00	1.11	2.00	1.95
Securities				
Federal government	16.75	20.00	18.89	18.43
Provincial and local governments	6.00	6.00	6.00	6.00
Loans				
Commercial and industrial	16.00	16.01	16.01	16.00
Real estate	22.00	22.00	22.01	22.00
Consumer	15.00	15.00	15.01	15.00
Interbank	2.83	2.84	2.83	2.83
Other	2.17	2.17	2.16	2.17
Other assets (i.e., physical capital)	<u>7.00</u>	<u>7.00</u>	<u>7.00</u>	<u>7.00</u>
Total	100.00	100.00	100.00	100.00
Liabilities (Sources of Funds)				
Checkable deposits	24.00	24.00	23.99	24.00
Nontransaction deposits				
Savings deposits	21.00	16.54	21.00	21.00
Small-denomination time deposits	14.00	14.00	14.00	14.00
Large-denomination time deposits	11.00	11.00	11.00	11.00
Borrowings	24.00	24.00	24.00	18.93
Bank capital	<u>6.00</u>	<u>10.46</u>	<u>6.00</u>	<u>11.07</u>
Total	100.00	100.00	100.00	100.00

Items increasing: reserves, cash items; items decreasing: U.S. government securities.

- b. The bank's liquidity has improved over the last three years. Moreover, the bank's liquidity position is better than that of the regional banks. The bank will have insufficient reserves if deposits increased 40%.
- c. Equity Multiplier Ratio = Assets/Equity Capital:

Your Bank, Year 3	Your Bank, Year 2	Your Bank, Year 1	Banks in Your Region, Year 3
6.66	9.56	16.67	9.04

Equity multiplier starts high in Year 1, declines in Year 2, and returns to Year 1 level in Year 3. Also, equity multiplier is higher than regional banks.

- d. Each year it starts high, declines in Year 2, and returns to Year 1 level in Year 3. Equity multiplier is higher than regional banks.
2. a. Income statement with operating income items as a percentage of total operating income:

Operating Income	Your Bank, Year 3	Your Bank, Year 2	Your Bank, Year 1	Banks in Your Region, Year 3
Interest on loans	42.22	44.78	44.73	47.18
Interest on securities	9.28	11.25	9.84	8.74
Other interest	<u>3.63</u>	<u>3.50</u>	<u>3.85</u>	<u>3.40</u>
<i>Total interest income</i>	55.13	59.54	58.42	59.32
Service charges on deposit accounts	27.84	27.87	29.51	26.22
Other noninterest income	<u>17.03</u>	<u>12.59</u>	<u>12.07</u>	<u>14.47</u>
<i>Total noninterest income</i>	<u>44.87</u>	<u>40.46</u>	<u>41.58</u>	<u>40.68</u>
Total operating income	100.00	100.00	100.00	100.00

Noninterest income is rising—your bank needs to reverse that. Compared to regional banks, the bank has lower interest income and higher noninterest income.

- b. Income statement with operating expenses as a percentage of total operating expenses:

Operating Expenses	Your Bank, Year 3	Your Bank, Year 2	Your Bank, Year 1	Banks in Your Region, Year 3
Interest expenses				
On deposits	24.11	33.42	32.69	38.31
On overnight funds and repos	8.25	2.58	2.86	2.08
Other	4.84	4.66	5.14	3.61
Noninterest expenses				
Salaries and employee benefits	24.35	22.61	34.97	20.67
Premises and equipment	14.12	13.47	3.43	12.98
Other	13.72	13.13	10.97	12.60
Provisions for loan losses	<u>10.63</u>	<u>10.14</u>	<u>9.94</u>	<u>9.74</u>
Total operating expenses	100.00	100.00	100.00	100.00

The bank has declining interest on deposits and salaries. It has increasing interest on overnight funds and premises and equipment. Compared to regional banks, your bank has lower interest on deposits, higher interest on overnight funds, salaries and employee benefits, premises and equipment, and other.

3. a. Return on Assets (ROA) = Net Profit after Taxes/Assets

Your Bank, Year 3	Your Bank, Year 2	Your Bank, Year 1	Banks in Your Region, Year 3
1.17	1.01	1.00	1.00

Hence, ROA increased over the last 3 years. It is higher than regional banks.

- b. Return on Equity (ROE) = Net Profit after Taxes/Equity Capital

Your Bank, Year 3	Your Bank, Year 2	Your Bank, Year 1	Banks in Your Region, Year 3
19.49	9.63	16.73	9.07

Clearly, ROE is down in Year 2 but back up in Year 3. It is much higher than regional banks.

4. Your bank has a much greater ROE and ROA than the regional banks and trends toward higher profitability than the regional banks. It needs to work on generating interest income and controlling cost of salaries, premises, equipment and other expenses relative to the regional banks.

■ Chapter 20 Mini-Case

Suppose the mutual fund contains 390 shares of Stock A, currently trading at \$48.39, 1,000 shares of Stock B currently trading at \$43.70, and 2,690 shares of stock C, currently trading at \$13.00. The mutual fund has 15,000 shares outstanding held by investors. Calculate NAV for the fund.

$$1. \quad 390(48.39) + 1000(43.70) + 2690(13) = \$97,542.1$$

$$\text{NAV} = 97542.1/15000 = 6.5$$

$$2. \quad 390(68) + 1000(36.75) + 2690(23.91) = \$127,587.9$$

$$\text{NAV} = 127,587/15000 = 8.5$$

$$3. \quad (8.5 - 6.5)/6.5 = 30.8\%$$

$$4. \quad 6.5 \times 1000 = 6,500$$

$$6500/23.91 = 271 \text{ shares of Stock C}$$

$$2690 + 271 = 2961$$

$$390(48.39) + 1000(43.70) + 2961(23.91) = 133,340$$

$$\text{NAV} = 133,340/16000 = 8.33$$

$$5. \quad 20,000(1 - 0.04) = \$19,200$$

$$\text{Annual operating expenses} = \text{average NAV} \times \text{annual operating expenses}$$

$$= [19200 + 19200(1.05)]/2 \times 0.0085 = \$167.28$$

$$\text{Value of the investment at the end of the year} = \$19200(1.05) - 167.28 = \$19,992.72$$

The investor's return on this mutual fund investment after one year:

$$(19992.72 - 20000)/20,000 = -0.036\%$$

6. Assets of Closed-End Funds by Type, End of period

Millions of dollars

	3Q 2010	2Q 2010	2009	2008
Total Equity	98,098	88,088	92,399	75,682
Domestic	58,365	52,294	53,848	46,830
Global	39,733	35,795	38,552	28,851
Total Bond	145,745	138,872	135,991	112,551
Domestic	48,069	45,337	43,910	33,727
Taxable				
Domestic	82,874	79,519	78,420	67,933
Municipal				
Global	14,802	14,016	13,660	10,891
All	243,843	226,961	228,390	188,232

Comparing 3rd quarter of 2010 with 2008, it has increased by 29.5%

■ Chapter 23 Mini-Case

1. (Using assumptions in the chapter example):
 - a. $29 = 4 + 9 + (20\% \text{ of } 15) + 13$
 - b. $59.4 = 5 + 21 + (20\% \text{ of } 17) + 30$
2. a. $55.4 = 10\% \text{ of } 10 + 5 + (20\% \text{ of } 12 + 6 + 19 + 10) + 12$
 b. $71.6 = 10\% \text{ of } 14 + 9 + (20\% \text{ of } 16 + 12 + 14 + 14) + 18$
3. a. The income on assets declines by $0.03 \times \$29 \text{ million} = \$0.87 \text{ million}$. The payments on the liabilities decline by $0.03 \times \$55.4 \text{ million} = \$1.662 \text{ million}$. Hence, profits increase by $\$0.792 \text{ million}$ and the net interest margin is $[-0.87 - (-1.662)]/150 = 0.792/150 = 0.00528 = 0.53\%$.
 b. Doing the same calculations as in (a), $\text{NIM} = 0.22\%$.
4. a. 0.31%
 b. 0.31%
5. a. -26.4
 b. -12.2
6. Calculate the weighted duration of each asset and liability.

Assets (Your Firm)

Asset	Amount	Duration	Amount $\times$ Duration	Weighted Duration
	3	0	0	0.000
	4	0.6	2.4	0.016
	3	1.6	4.8	0.032
	7	5	35	0.233
	9	0.4	3.6	0.024
	15	5.5	82.5	0.550
	13	0.9	11.7	0.078
	31	1.8	55.8	0.372
	55	6	330	2.200
	10	0	0	0.000
	150			3.505

Liabilities (Your Firm)

Amount	Duration	Amount × Duration	Weighted Duration
10	1	10	0.069
5	0.6	3	0.021
12	1	12	0.083
6	0.4	2.4	0.017
19	0.3	5.7	0.039
8	1.1	8.8	0.061
15	2.9	43.5	0.300
10	0	0	0.000
12	0.4	4.8	0.033
9	1.2	10.8	0.074
39	2.9	113.1	0.780
145			1.477

Assets (Your Competition)

Asset Amount	Duration	Amount × Duration	Weighted Duration
4	0	0	0.000
5	0.3	1.5	0.010
7	1.2	8.4	0.056
9	4	36	0.240
21	0.9	18.9	0.126
17	4.4	74.8	0.499
30	0.6	18	0.120
22	1.4	30.8	0.205
30	5.4	162	1.080
25	0	0	0.000
170			2.336

Liabilities (Your Competition)

Amount	Duration	Amount × Duration	Weighted Duration
14	1	14	0.097
9	0.5	4.5	0.031
16	1	16	0.110
12	0.6	7.2	0.050
14	0.5	7	0.048
10	1.8	18	0.124
10	2.2	22	0.152
14	0	0	0.000
18	0.7	12.6	0.087
12	1.8	21.6	0.149
31	3.8	117.8	0.812
160			1.660

7. a. 3.50
b. 2.33
c. 1.47
d. 1.66
8. a. $2.07 = [3.50 - (145/150) \times 1.47]$
b. $0.767 = [2.33 - (160/170) \times 1.66]$
(Assuming an initial interest rate of 10%)
9. a. $5.65\% = \{-2.07 \times [-0.03/(1 + 0.10)]\}$
b. $2.09\% = \{-0.767 \times [-0.03/(1 + 0.10)]\}$
(Assuming an initial interest rate of 10%)
10. a. -5.65%
b. -2.09%
11. a. Shorten the duration of assets.
b. Adjust assets and liabilities to GAP of zero.

■ Chapter 24 Mini-Case A

1. Short
2. 1.17 [$HR = \Delta P_a / \Delta P_f \times \beta_{af} = 1.3 \times 0.90 = 1.17$]
3. 81.9 [Contracts = $HR \times \Delta V_a / \Delta V_f = 1.17 \times 7,000,000 / 100,000$]
4. a. \$560,000 [= $7,000,000 \times 0.08$]
b. \$655,200 [= $81.9 \times 100,000 \times 0.08$]
5. a. -\$3
Because: $\% \Delta NW = -DUR_{gap} \times \Delta i / (1 + i) = -2.2 \times 0.01 / (1 + 0.06) = -0.0207 = -2.07\%$. Hence, when i increases by 1% from 6% to 7%, NW declines by 3 million [= $150 \text{ million} \times (-0.0207)$]
b. offsets decline in net worth
c. zero for a perfect hedge
6. a. 75
Because: $V_f = -DUR_{gap} \times V_a / DUR_f = -150 \text{ million} \times 2.2 / 4.4 = -75 \text{ million}$
b. exact amount to offset change in net worth
c. same as above
d. no change
7. Prices of hedged asset and underlying asset may not move together over time, creating less than a perfect hedge.
8. Bank is required to show profits or losses from hedges without recognizing offsetting events.
9. 54 contracts
10. [= $\beta \times (\text{value of portfolio}) / (\text{value of contract}) = 0.90 \times (12 \text{ million}) / (200,000)$]
a. -1,080,000
b. +1,080,000
c. zero for a perfect hedge
11. Bank would set up the hedge to offset adverse changes in foreign exchange rates relative to the U.S. dollar. Gains in futures market would offset losses in cash markets, and losses in futures market positions would be offset by gains in the cash markets.
12. (Same general answer as found in question 11 above.) Bank would set up the hedge to offset adverse changes in foreign exchange rates relative to the U.S. dollar. Gains in futures market would offset losses in cash markets, and losses in futures market positions would be offset by gains in the cash markets.

■ Chapter 24 Mini-Case B

1. \$7 million/\$100,000 = 70
2. Yes. With options, the bank manager will not exercise the options if interest rates fall, eliminating any additional losses. The bank then benefits from interest-rate declines after the effect of premiums.
3. a. $HR = (7\%/6\%) \times 1.1 = 1.28$
b. $\text{Contracts} = 1.28 \times 70 = 89.6$
4. The accounting problems created from hedging with financial futures are avoided by removing the requirement to exercise the option position when losses would otherwise be recorded under futures hedges.
5. Size of interest-rate swap must match the gap of $90 - 120 = -30$ million.
6. a. There is insufficient information to solve for the swap's duration. However, if we assume the swap's duration is -3.3 , the rest, b through d, can be solved as follows:
b. \$100 million
c. Assuming the initial interest rate is 6%, the percentage change in net worth is 2.08%.
d. Again, assuming the initial interest rate is 6%, the percentage net change in the value of the asset is 3.11%.
e. Approximately zero for a perfect hedge
7. Foreign exchange rate risk may be hedged using currency options, currency swaps, futures contracts and/or combinations of these derivatives. The advantage of options is that we can choose not to exercise the contract. Currency swaps provide similar protection at possibly lower costs and longer holding periods. Futures options contracts provide similar risk protection and advantages regarding exercise, including the opportunity to avoid exercise of the contract.

■ Chapter 26 Mini-Case-Web

1. 7% or \$20
2. 50% or \$140
3. 24% of assets or \$67
4. 3% of assets or \$8
5. 11% (= 30/280) or \$30
6. Company has high real estate loans, bank loans, and commercial paper with low other assets, debt not elsewhere, and other liabilities.
7. Consolidation of data processing systems and management personnel
8. Concentration of services for one-stop centers and increased flexibility in support of customer needs
9. Finance companies have no deposits at risk, therefore they are less regulated than banks and thrifts. Regulations are limited to consumer laws that focus on full disclosure of the cost of loans.
10. The bank could obtain advantages in facilitating the availability of cutting-edge computer technologies as well as certain tax/timing of cash flow benefits not otherwise available.

