《银行管理学》教学大纲

Chapter 1 Fundamental Forces of Change in Banking

Chapter Objectives

- 1. Examine how recent competitive trends affect the banking industry.
- 2. Demonstrate how the forces of change (deregulation and reregulation, financial innovation, securitization, globalization, and technological advances) reflect increased competition and have lead to industry consolidation, increased diversification of products and services, higher capital requirements, and entry into banking by nonbank firms, such as, investment banks, insurance companies, finance companies, and others.
- 3. Describe the activities of non-bank financial institutions, such as investment banks and captive automobile finance companies.
- 4. Introduce the structure and activities of GE Capital Services as a non-bank financial conglomerate.

- 1. Competition in banking is evidenced by five fundamental forces of change that transform the structure and operation of financial institutions and markets:
 - a. deregulation and reregulation
 - b. financial innovation
 - c. securitization
 - d. globalization
 - e. technological advances
- 2. Increased competition brought about by deregulation has induced banks to take on greater portfolio risks in search of acceptable returns. Many banks have moved to nontraditional banking services to earn fees that can offset the volatility in earnings from traditional loans and better help grow earnings. Increased competition has also induced traditional nonbank firms to enter traditional banking businesses.
- 3. Since the 1980s deregulation efforts have removed interest rate ceilings on allowable rates paid depositors and charged on certain loans and also expanded the range of products and services that banks can offer. Interstate banking and branching restrictions have similarly been eliminated.
- 4. In response to regulation, financial institutions create new financial instruments and financial markets, and restructure the means by which they deliver products to consumers. This financial innovation enables them to circumvent restrictions and continue growth.

- 5. Securitization is the process of converting assets into marketable securities. It enables banks to move assets off-balance sheet and increase fee income. It increases competition for the types of standardized products, such as mortgages and other credit-scored loans, and eventually lowers the prices paid by consumers by increasing the supply and liquidity of these products. Given the problems of Enron, and Citicorp's and J.P. Morgan's efforts to make Enron's financial statements appear less risky, analysts now focus carefully on which parties bear risk in securitization agreements.
- 6. Financial markets and institutions are becoming increasingly global in scope. Firms must recognize that businesses in other countries as well as their own are competitors, and that international events affect domestic operations.
- 7. Banks' traditional loan operations have been seriously undermined by the development of the commercial paper and junk bond markets as alternatives to bank loans. Corporations that issue these securities view them as cheaper substitutes for bank credit. Generally, any loan that can be credit scored can potentially be securitized. Securitization allows nonbank firms to originate loans, package them into pools, and sell securities collateralized by securities in the pools. This increases the competition for the securitized asset and will eventually lead to lower rates.
- 8. Technological advances in banking are constantly changing the competitive environment. Many of these advances relate to payment services and how customers conduct banking business. Many bankers and bank analysts believe that the greatest growth in the delivery of banking services will be through debit and smart cards, telephone banking and the internet. Such electronic payments systems will transform how people conduct their banking business and how banking firms compete.
- 9. GE Capital represents a financial services company that is itself part of General Electric. In July 2002, Jeff Immelt, GE's CEO, split GE Capital into four separate businesses: GE Commercial Finance, GE Consumer Finance, GE Insurance, and GE Equipment Management. GE Capital had almost \$460 billion in assets in mid-2002, which made it the largest non-bank finance company in the U.S. GE Capital can offer services in all areas and compete directly with banks, yet avoid regulation as a bank because it does not own or manage a commercial bank or savings and loan. In 2001, GE Capital accounted for 40% of GE's total earnings and 46% of GE's total revenue.
- 10. Many firms obtained unitary thrift charters during the 1990s to offer nationwide banking services, yet avoid regulation as a commercial bank. Formally, a firm obtains a federal savings bank charter, which allows it to issue deposits and make loans without hindering the nonfinancial products and services that it might otherwise offer. The firm can operate in a wide range of businesses not allowed traditional commercial banks. Thus, many insurance companies, finance companies, investment banks, and firms like Ford, Archer Daniel Midland, and State Farm Insurance operate unitary thrifts.

Teaching Suggestions

• This chapter represents an opportunity to link bank management topics to current events. As a semester project, students should be encouraged to keep a file or log of events from recent newspapers or magazines that demonstrate the existence and impact of deregulation/reregulation, financial innovation, securitization, globalization, and technological advances. Ask students to i) obtain a list of nonbank firms that have obtained unitary thrift charters , ii) identify the number of internet banks that offer traditional banking products/services only via the internet, iii) keep a record of banks that buy banking and other firms outside their home country, and iv) provide a list of recent financial innovations in banking. Regular reference to the *Wall Street Journal* and the *American Banker* contributes to student understanding and interest.

Chapter 2 Analyzing Bank Performance

Chapter Objectives

- 1. Introduce bank financial statements, including the basic balance sheet and income statement, and discuss the interrelationship between them.
- 2. Provide a framework for analyzing bank performance over time and relative to peer banks. Introduce key financial ratios that can be used to evaluate profitability and the different types of risks faced by banks. Focus on the trade-off between bank profitability and risk.
- 3. Identify performance measures that differentiate between small independent banks (specialty banks) and larger banks that are part of multibank holding companies.
- 4. Distinguish between types of bank risk; credit, liquidity, interest rate, capital, operational, and reputational.
- 5. Describe the nature of and meaning of regulatory CAMELS ratings for banks.
- 6. Provide applications of data analysis to sample banks' financial information.
- 7. Describe performance characteristics of different-sized banks.
- 8. Describe how banks can manipulate financial information to 'window-dress' performance.

- Bank managers must balance banking risks and returns because there is a fundamental trade-off between profitability, liquidity, asset quality, market risk and solvency. Decisions that increase banking risk must offer above average profits. The more liquid a bank is and the more equity capital used to fund operations, the less profitable is a bank, ceteris paribus.
- 2. Banks face five basic types of risk in day-to-day operations: credit risk, liquidity risk, market risk, capital/solvency risk, and operational risk. Market risk encompasses interest

rate risk, foreign exchange risk and price risk. Each type of risk refers to the potential variation in a bank's net income or market value of stockholders' equity resulting from problems that affect that part of the bank's activities.

- 3. Banks also face risks in the areas of country risk associated with loans or other activity with foreign government units and off-balance sheet activities, which create contingent liabilities. More recently, banks have focused on reputation risk. For example, in 2002 Citigroup found that even though it continued to report strong profits, the firm experienced strong criticism for 1) its role in facilitating strategies to disguise Enron's true financial status, 2) problems in its sub-prime lending programs via the Associates and its own internal finance company activities, and 3) problems with its Salomon Smith Barney subsidiary with analyst conflicts between stock reports and the firm's investment banking relationships. For much of 2002, Citigroup's stock price reflected the continued barrage of reputation problems more than the firm's reported earnings.
- 4. A bank's return on equity (ROE) can be decomposed in terms of the duPont system of financial ratio analysis. This examination of historical balance sheet and income statement data enables an analyst to evaluate the comparative strengths and weaknesses of performance over time and versus peer banks. The Uniform Bank Performance Report (UBPR) data reflect the basic ratios from this return on equity model.
- 5. Different-sized commercial banks exhibit different operating characteristics and thus performance measures. Small banks typically report a higher return on assets (ROA) than large banks because they earn higher gross yields on assets and pay less interest on liabilities.
- 6. High performance banks generally benefit from lower interest and non-interest expense and limit credit risk so that loan losses are relatively low. They also operate with above average stockholders' equity.
- 7. Many banks can successfully "window-dress" performance by manipulating the reporting of financial data. They may accelerate revenue recognition and defer expenses or selectively alter when they take securities gains or losses and time when to charge off loans or report loans as non-performing. As such, they may inappropriately smooth earnings with provisions for loan losses or by other means. Analysts must be careful when evaluating extraordinary transactions that have one-time gain or loss features.

Teaching Suggestions

 It is extremely important that students fully understand the material in this chapter before attempting more difficult analysis. The text introduces actual balance sheet and income statement data for PNC Bank, the principal subsidiary of PNC Bank Corp., and data for a hypothetical community bank that is representative of the typical independent bank. You should take a substantial amount of time to describe the basic balance sheet items, emphasizing the dominant holdings of loans, securities, and cash/cash equivalents among assets, and the role of core deposits versus noncore or purchased (hot money) liabilities. Demonstrate how the income statement is structured to emphasize the financial nature of banks by focusing on net interest income and the comparison on noninterest income and noninterest expense. Contrast this with the income statement of a nonfinancial corporation. It is also useful to discuss the role of provision for loan losses, its noncash expense feature, and the linkage with the contra-asset account for loan loss reserves. Many banks view provisions as an easily managed figure that can produce whatever earnings figure is desired.

- 2. The application of the return on equity (ROE) model to PNC's data and the risk measures can be used to demonstrate the trade-off between profitability and risk. Carefully walk students through the calculations of ROE, ROA, EM, AU, ER and TAX, but focus on interpreting the ratios.
- 3. As an assignment, it is useful to have the students evaluate the profitability and risk ratios for Community National Bank (CNB) and write-up an analysis to be discussed in class. This works best after completing a detailed analysis of PNC's data. It is easy to get bogged down in data. Students should be encouraged to focus on interpreting the financial ratios rather than on the calculations. The template provided with the text can be used to handle subsequent computations and cases. Emphasize the importance of reviewing at least 3 years of historical financial data to determine key trends, and comparing the most recent performance ratios with those of peer banks to determine where significant deviations occur.
- 4. The financial ratios are provided in a framework that follows reporting in the Uniform Bank Performance Report (UPBR), which bankers obtain from federal regulators. The BANK template provided with the text can be used by students to evaluate the performance of any financial institution once students have entered the raw data.

Special Projects

- 1. Have the students perform the analysis in Case 1: Southwestern State Bank. The use of the Lotus template is encouraged because it allows students to focus on interpreting the data rather than calculating the ratios. Have students write up a report that examines the bank's performance over the past 3 years and versus peer banks.
- 2. Select two or more well-known Global Banks, Nationwide Banks or Super Regional Banks and obtain their most recent annual reports and 10-K statements, if possible. Have students perform the risk versus return analysis as summarized in Exhibits 3.4 3.8 using the BANK template. Require that students carefully review footnotes to the financial statements for additional information and ask them to read the chairman's letter to stockholders. Students should submit a written report as if they are a consultant responsible for identifying strengths and weaknesses in firm performance, and recommending strategic changes in management policies to improve performance.
- 3. Have students collect financial information for savings and loan associations, credit unions, investment banks, and finance companies. Use the Bank template to conduct the profit and risk analysis outlined in Exhibits 3.4, 3.6, 3.7 and 3.8. After interpreting the data in line with that described in part B above, have students compare the performance with that of commercial banks. Ask students to specifically identify where differences exist in financial reporting and in the profit versus risk trade-off.
- 4. PNC Bank reported significant problems in 2001 and 2002 having to re-state earnings multiple times. By mid-2002, the regulators restricted PNC's activities due to

questionable management practices. Have students conduct a literature search to assess PNC's reported problems and how these problems altered the financial results reported for year-end 2001. Have students comment on what this says about the quality of financial information?

Chapter 3 Managing Noninterest Income and Non-interest

Expense

Chapter Objectives

- 1. Introduce financial ratios that characterize a bank's ability to generate noninterest income and control noninterest expense.
- 2. Document the sources of bank noninterest income.
- 3. Explain the significance of the efficiency ratio and operating risk ratio.
- 4. Explain the importance of knowing which customers are profitable.
- 5. Describe the link between business mix and fee income.
- 6. Describe various strategies to manage noninterest expense.

- 1. Because banks face strong competition in pricing loans and deposits, their net interest income and NIMs are likely to remain stable or decline over time. To grow earnings, banks must increasingly rely noninterest income and expense controls.
- 2. The bulk of bank noninterest income comes from deposit service charges and fees from services such trust management, securitization, mortgage banking, asset management, and investment banking trading for the largest banks.
- 3. Bankers and analysts typically measure performance over time and versus peer banks via their burden, expense minus noninterest income, the net overhead expense equal to the burden as a of total assets, and the efficiency ratio, equal to noninterest expense divided by the sum of net income and noninterest income. In each case, better performance is indicated by a smaller or percentage.
- 4. Productivity ratios help indicate how efficiently banks are using their employees relative to capital. Two commonly cited ratios are assets per employee and average personnel expense. The more productive bank typically has fewer employees per dollar of assets held and often controls personnel expense per employee better. Still, this latter ratio is often high for high performance banks because operate with fewer people but pay them more.
- 5. Typical analyses of customer profitability profiles suggest that banks make most of their profit from a small fraction of customers. The traditional view is that up to 80 percent of a bank's customers are unprofitable when all services are fully costed. Such figures support the increase in fees assessed by most banks over the past few years.

6. Banks pursue a variety of cost management strategies to control non-interest expense. Four different are: 1) expense reduction, 2) increase operating efficiency, 3) changing product pricing, and) pursuing contribution growth whereby non-interest revenues rise by more than non-interest expense.

Teaching Suggestions

- 1. One of the most significant trends in bank performance over the past 10 years is the increasing reliance on noninterest income versus net interest income. It is important to motivate the discussion of noninterest income and noninterest expense by documenting the flat or declining net interest margins at most banks during the latter 1990s and early 2000s, and emphasizing the fact that banks' future earnings growth will depend strongly on how much a bank can charge fees and control costs. Note that the types of noninterest income available to community banks are substantially different from that available to the largest banks. In fact, large banks' interest in investment banking and insurance is driven primarily by the motivation to diversify activities and enter businesses that generate fee income.
- 2. Spend time discussing the key financial ratios that measure a bank's ability to generate noninterest income and control expenses. Examine changes in bank's burden over time and versus peers. Use the UBPR data for PNC Bank at the end of Chapter 2 as an example. Discuss analysts' and management's focus on the efficiency ratio in recent years. Obtain a copy of virtually any large bank's most recent annual report, and have students document trends in the bank's efficiency ratio. Most large banks discuss the efficiency ratio in the first 5-8 pages of the report because it reflects a key part of their current strategy. Discuss the operational risk ratio and why it might provide different insights than the efficiency ratio, and the two productivity ratios related to assets per employee and average personnel expense. Again look at PNC's UBPR data as an example.
- 3. Describe in general how a bank might measure how profitable a customer's account is. Have students discuss why many banks believe that only 20 percent of the bank's customers are profitable. Why are so many unprofitable. Have students suggest fees that could be charged to improve profitability.
- 4. Finally, while the text emphasizes recent efforts to reduce noninterest expense at banks, it is important to demonstrate that costs should be managed, and it is acceptable to pursue strategies that raise costs if significant revenues are similarly generated.

Special Project

• The Contemporary Issues segment on the merger of Chemical Bank and Manufacturers Hanover indicates that bankers believe that there is over capacity in banking and that mergers can be motivated by cost cutting opportunities to realize economies of scale and scope with greater volumes of business. Have students review current and recent issues of *The Wall Street Journal, American Banker, Business Week,* etc. to document the pace of mergers and to evaluate the rationales provided. Ask them to obtain estimates of the amount and nature of cost savings projected by management of the merged funds.

Chapter 4 Managing Interest Rate Risk: GAP and Earnings Sensitivity

Chapter Objectives

- 1. Identify factors that cause a bank's net interest income and net interest margin to change.
- 2. Describe the traditional static GAP model used to assess a bank's interest rate risk.
- 3. Identify the strengths and weaknesses of the static GAP model.
- 4. Describe how embedded options in assets and liabilities make it difficult to assess actual repricing frequencies and the ultimate impact on expected cash flows.
- 5. Demonstrate the basic features of earnings sensitivity analysis.
- 6. Introduce a rate sensitivity report and earnings at risk report.
- 7. Analyze strategies to manage interest rate risk. Address whether banks can vary GAP to take advantage of perceived movements in interest rates.

- Asset and liability management involves managing a bank's entire balance sheet as a dynamic system of interrelated accounts and transactions. A bank's asset & liability management committee (ALCO), or its risk management committee, considers decisions related to the composition of assets and liabilities, the pricing of loans and deposits, meeting liquidity needs, capital management, and controlling noninterest expense or generating noninterest income. The term, asset and liability management, has come to refer generally, however, to managing interest rate risk.
- 2. Banks typically focus on either net interest income or the market value of stockholders' equity as a target measure of performance. GAP models are commonly associated with net interest income (margin) targeting.
- Many factors can cause a bank's net interest income to vary over time. The most prevalent include a change in 1) the level of interest rates, 2) the slope of the yield curve, 3) the volume of earning assets and interest-bearing liabilities, and 4) the composition of assets and liabilities, and the exercise of embedded options, which alters the cash flows of underlying assets and liabilities.
- 4. Rate sensitive assets and liabilities are those than can be repriced within a fixed time interval. They include maturing instruments, floating and variable rate instruments, and any full or partial principal payments. A bank's GAP is defined as the difference between a bank's rate sensitive assets and rate sensitive liabilities. It is a balance sheet figure measured in dollars for U.S. banks over a specific period of time.

- 5. A rate sensitivity report classifies a bank's assets and liabilities into time intervals according to the minimum number of days until each instrument can be repriced. It then reports GAP values on a periodic basis for each time interval, and on a cumulative basis through each time interval. The better reports incorporate a specific interest rate forecast and assign cash flows to time intervals based on when assets and liabilities are expected to reprice given the rate environment.
- 6. A positive GAP indicates that a bank has more rate sensitive assets than liabilities, and that net interest income will generally rise (fall) when interest rates rise (fall). A negative GAP indicates that a bank has more rate sensitive liabilities than rate sensitive assets, and that net interest income will generally fall (rise) when interest rates rise (fall).
- 7. A bank that is positioned to gain when rates rise and lose when rates fall is labeled asset sensitive. A bank that is positioned to gain when rates fall and lose when rates rise is labeled liability sensitive.
- 8. There is no general optimal value for a bank's GAP in all environments. GAP is a measure of interest rate risk. The best GAP for a bank can be determined only by evaluating a bank's overall risk and return profile and objectives. Generally, the farther a bank's GAP is from zero, the greater is the bank's risk. Many banks establish GAP policy targets to control interest rate risk by specifying that GAP as a fraction of earning assets should be plus or minus 15%, or the ratio of RSAs to RSLs should fall between 0.9 and 1.1. Generally, these static measures of risk are bad because they ignore the dynamic nature of rate sensitive assets and liabilities.
- 9. The primary advantage of GAP analysis is its simplicity. The primary weakness is that it ignores the time value of money. GAP analysis typically assumes that all rates change at the same time in the same direction and by the same amount, which never happens. GAP further ignores the impact of embedded options. For this reason, most banks conduct earnings sensitivity analysis, or pro forma analysis, to project earnings and the variation in earnings under different interest rate environments.
- 10. Earnings sensitivity analysis consists of six general steps: forecasting interest rates, identifying changes in the composition of assets and liabilities in different rate environments, forecasting when embedded options will be exercised, identifying when specific assets and liabilities will reprice given the rate environment, estimating net interest income and net income, and repeating the process to compare forecasts of net interest income and net income across rate environments.
- 11. The concept of earnings at risk indicates the potential variation in net interest income and/or net income across different interest rate environments, given different assumptions about balance sheet composition, when embedded options will be exercised and the timing of repricings. It demonstrates the potential volatility in earnings across these environments.
- 12. The greater is the potential variation in earnings (earnings at risk), the greater is the amount of risk assumed by a bank. Alternatively, some banks focus on the risk of loss. As such, the greater is the potential reduction in earnings from target, the greater is the amount of risk.

- 13. Many bank managers attempt to adjust the interest rate risk exposure of a bank in anticipation of changes in interest rates. This activity is speculative because it assumes that management can forecast rates better than forward rates embedded in the yield curve.
- 14. A bank's asset and liability management committee (ALCO) coordinates all policy decisions and strategies that determine a bank's risk profit and profit objectives. Interest rate risk management is the primary responsibility of this committee.

- This chapter is highly technical, but extremely important to understand the most popular procedures to assess a bank's interest rate risk. It is important to differentiate between a bank's periodic GAP and cumulative GAP and to note that this is a static snapshot of a bank's profile at a fixed point in time. The cumulative GAP figure is the more useful one. There is a different GAP profile or rate sensitivity profile that applies in each different rate environment. Spend some time discussing GAP-based targets for policies on how much interest rate risk is acceptable.
- 2. Have students collect rate sensitivity report data from current annual reports of large banking organizations. Many of these describe the problems in interpreting GAP data and introduce the concept of earnings sensitivity and earnings at risk. Use this information to lead a discussion of embedded options. Ask students to identify which assets and liabilities of a bank contain embedded options, is the bank a buyer or seller of the option, in what environment will the option be exercised, and what will option exercise do to the rate sensitivity of the bank's assets and liabilities. It is beneficial to work through the example for ABC bank. The earnings sensitivity data in Exhibit 8.9 demonstrate the process and describe the bank's aggregate risk exposure. It is important to understand the basic assumptions underlying the analysis. What is the benchmark interest rate? What is the most likely (base case) rate forecast? What does a rate shock of +1% or -1% mean? Refer also to the data in Exhibit 8.11, which reflects one of the popular effective GAP reports used by community banks. Finally, students will want to discuss how banks manage GAP to either hedge or speculate.
- 3. To demonstrate proficiency, students should answer the questions and problems at the end of the chapter. The emphasis should be on interpreting the information and not the calculations. Finally, it is important to clarify that GAP and earnings sensitivity models simply provide methods for assessing risk. There are many weaknesses to each model, but managers can use the models to track when and how risk is changing over time and how much relative risk a bank has assumed.

Chapter 5 Managing Interest Rate Risk: Duration Gap and Market Value of Equity

Chapter Objectives

- 1. Demonstrate the importance of measuring interest rate risk in terms of price sensitivity of assets, liabilities, and stockholders' equity.
- 2. Demonstrate applications of Macaulay's duration, modified duration, and effective duration in estimating price sensitivity.
- 3. Introduce duration Gap and duration-based models of interest rate risk.
- 4. Describe how sensitivity analysis is applied to a bank's market value of equity (MVE).
- 5. Document the strengths and weaknesses of GAP and duration gap analysis.
- 6. Critique various strategies to manage earnings and MVE in terms of what a bank's bets are versus the prevailing yield curve.

- 1. Duration is an approximate elasticity measure of how much the market value of a security or portfolio will change when the level of interest rates changes. The longer is duration, the greater is relative price sensitivity.
- 2. For securities with options, analysts typically estimate an effective duration. This calculation recognizes that cash flows on the security may change when interest rates change as the underlying options are exercised.
- 3. The market value of equity (MVE) is a plug figure representing the market value of assets minus the market value of liabilities. It does not equal market capitalization (share price times the number of shares outstanding). Thus, by itself the MVE figure does not equal the true value of the bank.
- 4. Duration gap (DGAP) measures the comparative price sensitivity of a bank's assets with the price sensitivity of its liabilities when the target measure of performance is the market value of stockholders' equity (MVE). DGAP equals the weighted average duration of assets minus the product of a bank's liabilities to assets ratio and the weighted average duration of liabilities.
- 5. A positive DGAP indicates that assets are more price sensitive than liabilities, on average. Thus, when interest rates rise (fall), assets will fall proportionately more (less) in value than liabilities and the MVE will fall (rise) accordingly. A negative DGAP indicates that liabilities are more price sensitive than assets. Thus, when interest rates rise (fall), assets will fall proportionately less (more) in value than liabilities and the MVE will rise (fall).
- 6. MVE sensitivity analysis effectively involves the same steps as earnings sensitivity analysis. In this case, however, the bank focuses on the relative durations of assets and

liabilities, how much the durations change in different interest rate environments, and what happens to the market value of equity across different rate environments.

- 7. Generally, if a bank is liability sensitive in the sense that net interest income falls when rates rise and vice versa, it will likely have a positive DGAP suggesting that assets are more price sensitive than liabilities, on average. If a bank is asset sensitive in the sense that net interest income rises when rates rise and vice versa, it will likely have a negative DGAP suggesting that liabilities are more price sensitive than assets, on average.
- 8. DGAP analysis has the advantage of focusing on all cash flows from the underlying assets and liabilities and not just cash flows that are expected to arise over short time intervals. Interest rate risk can be summarized in one measure for the entire portfolio.
- 9. MVE sensitivity analysis focuses on long-term interest rate effects because it incorporates the present values of all expected cash flows. However, it is a liquidation analysis. The value for MVE is measured as the market value of assets minus the market value of liabilities. As such, it ignores other factors that affect the value of the firm, such as franchise value, contingent liabilities, the value of off-balance sheet activities, etc.
- 10. It is difficult to consistently alter either GAP or DGAP on balance sheet and increase earnings or the market value of stockholders' equity. Whenever management chooses to change asset and liability maturities and/or durations in anticipation of rate changes, it is placing a bet against forward rates from the yield curve.
- 11. The general level of interest rates and the shape of the yield curve appear to follow the U.S. business cycle. In expansionary stages, rates rise until they reach a peak as the Federal Reserve tightens credit availability. In contractionary stages, rates fall until they reach a trough when the U.S. economy falls into recession. Portfolio managers should consider this information when making choices regarding the maturities and durations of assets and liabilities and how to price them.

- It is important to point out that both GAP/Earnings Sensitivity and duration gap/MVE Sensitivity models are two ways of looking at the same type of phenomena. GAP and Earnings Sensitivity analysis focus on rate sensitivity. Duration gap and MVE Sensitivity focus on price sensitivity. Carefully distinguish between the two. An asset or liability that is extremely rate sensitive is not very price sensitive. If the asset or liability is extremely price sensitive, it is not very rate sensitive. Earnings sensitivity analysis focuses on short-term income effects and is important to bankers in their budgeting as well as their risk assessment. MVE sensitivity analysis focuses on longer-term interest rate effects on aggregate firm value. It is closely tied to ensuring that the bank remain solvent.
- 2. An example of the relationship between GAP and duration gap is helpful. Consider a bank that borrows federal funds overnight to buy 30-year zero coupon Treasury bonds. The liability is extremely rate sensitive as it reprices every day. It is not price sensitive because it will always trade near par. The zero coupon T-bond, however, is extremely price sensitive because it has a 30-year Macaulay's duration, but is not rate sensitive because the rate will not change for 30 years. The bank will have a negative GAP with this transaction and a positive DGAP.

- 3. Work carefully through the examples applying duration measures to emphasize the price sensitivity of individual assets and liabilities. Then work through the ABC Bank example. Focus on the output represented by the variability in MVE in Exhibit 9.5. The percentage change in MVE and the absolute change in MVE across different rate environments indicate how much risk a bank has assumed.
- 4. Finally, work with students to help them understand the importance of prevailing yield curve information in managing GAP and duration gap. Many students will believe that banks can simply adjust the rate sensitivity or price sensitivity of assets and liabilities to take advantage of perceived changes in interest rates. Emphasize that this involves placing an explicit interest rate bet. Work through examples to document what that specific bet is.

Chapter 6 Managing Liabilities

Chapter Objectives

- 1. Describe the composition and characteristics of bank liabilities.
- 2. Introduce the Federal Reserve System's Functional Cost and Profit Analysis data.
- 3. Describe how to estimate the average cost of transactions accounts.
- 4. Demonstrate how Eurodollar deposits and loans originate.
- 5. Provide a method for calculating the marginal cost of a single source of bank funds
- 6. Present an application of the calculation of the weighted-average marginal cost of funds.
- 7. Describe the usefulness and interpretation of historical cost of funds analysis.
- 8. Examine the role and impact of Federal deposit insurance.

- 1. Banks can pay market rates of interest on virtually all deposits except commercial demand deposits.
- 2. Depositors have become increasingly rate conscious and move their balances between institutions on the basis of relative yields offered.
- 3. Banks price transactions accounts and small time deposits by requiring minimum balances before paying interest, charging monthly maintenance fees or service charges, and imposing per check charges.
- 4. Most large transactions handled by banks are settled in immediately available funds, which include collected deposits at banks and deposit balances held at Federal Reserve Banks.
- 5. Eurodollar deposits are dollar-denominated deposits in banks located outside the United States. They arise when customers open a Eurodollar account outside the U.S., but the deposit is supported by dollar balances at a bank located in the U.S.
- 6. Bank borrowing from the Federal Reserve discount window takes the form of adjustment credit, seasonal credit, or emergency credit. Only short-term adjustment credit is sensitive

to interest rates. Seasonal borrowing is being phased out and regulators are under pressure to reduce emergency credit provided.

- 7. Average interest costs are based on historical performance. They provide no information as to whether future interest costs will rise or fall. Average costs should be used in evaluating historical performance, but not current pricing decisions.
- 8. The marginal cost of debt is the effective cost paid to acquire one additional dollar of investable funds. The marginal cost of equity is a measure of the minimum acceptable rate of return required by shareholders.
- 9. Banks should use marginal costs as inputs in their deposit and asset pricing decisions.
- 10. The composition and cost of bank funds are closely associated with a banks risk profile. The lower the amount of core deposits, the higher is the cost of funds and the greater is liquidity risk.
- 11. The FDIC uses either a payout option or purchase and assumption option in handling a failed bank. It is supposed to choose the one that is lowest cost. Under the payout option, uninsured deposits are not paid in full by the FDIC, while uninsured deposits are paid in full under the purchase and assumption option. This creates the potential for discriminatory treatment.

- Students enjoy debating the merits of different transactions account pricing schemes. Have them identify the characteristics of the average student's monthly account activity, minimum balances, and number of deposits. Using the Functional Cost and Profit Analysis data in Exhibit 12.3, have students calculate a bank's monthly cost of handling the average account. Estimate the amount of fee income and investment income from investable deposit balances that a bank earns, on average. The typical conclusion is that student activity is high, especially when ATM transactions are included, deposit balances are low, and without fees such as insufficient funds charges, a bank would not earn a profit on the average student's account.
- 2. Also, the advent of Internet banking will intrigue many students who are more computer-literate than the general population. Open a discussion of who the users of Internet account likely are and the growth opportunities of this type of banking. Have students identify the costs and benefits of Internet accounts and online sales, in general.
- 3. It is important to demonstrating why cost analysis is useful and which cost estimates are useful for different purposes. Much of the material follows from topics and calculations presented in an introductory corporate finance class on estimating a firm's cost of capital. The basic calculations are the same except for differences in the nature of some bank liabilities.
- 4. Students should compare the issues raised in measuring a small bank's cost of funds versus measuring a large bank's cost of funds. Discuss differences in access to the money and capital markets, especially the national versus local nature of the demand for bank stocks. Questions at the end of the chapter serve as a useful stimulant to additional questions.

- 5. The handling of failed banks by regulators also stimulates considerable discussion. Identify failed banks where insured depositors were fully protected (Bank of New England), while uninsured depositors lost part of their balances (Freedom National Bank in Harlem). Why do regulators not allow large banks to fail? Ask the students what the consequences of a large, money center or multinational bank failing might be.
- 6. Finally, discuss whether federal deposit insurance is truly insurance. Are premiums based on risk in the traditional insurance context? What does the government doe with the premiums paid by banks and savings and loans? Have students suggest alternative schemes.

Chapter 7 The Effective Use of Capital

Chapter Objectives

- 1. Explain the structure of risk-based capital standards at U.S. commercial banks.
- 2. Explain what the function of bank capital is both from the view of bank regulators and bank managers.
- 3. Demonstrate the influence of regulatory capital requirements on bank operating policies.
- 4. Describe what balance sheet items constitute bank capital.
- 5. Explain how the FDIC Improvement Act (FDICIA) established capital categories and prompt regulatory corrective actions associated with a bank's capital profile.
- 6. Discuss the characteristics and advantages and disadvantages of different types of internal and external capital.
- 7. Describe the role and impact of Federal Deposit Insurance and proposals to improve current weaknesses the system.

Key Concepts

- Effective in 1992, U.S. commercial banks have been required to meet risk-based capital standards that require i) at least 4% tier 1 capital, primarily stockholders' equity, and ii) at least 8% total capital (tier I + tier 2 capital), primarily stockholders' equity, a portion of loan loss reserves and qualifying subordinated debt, as a fraction of risk assets to be adequately capitalized.
- The importance of risk-based capital standards is that:
 a. minimum capital requirements are linked to a bank's credit risk. The greater is assumed credit risk, the more capital is required.

b. stockholders' equity is recognized as the most important type of capital.

c. minimum capital requirements for risky banks exceed the requirements for low risk banks

d. capital requirements are now roughly equal across most of the industrialized countries throughout the world.

e. capital is required in support of selected off-balance sheet activities.

3. To determine minimum capital requirements, bank managers must follow a four-step process:

a. classify assets into one of the four risk classes

b. classify off-balance sheet commitments and guarantees into the appropriate risk class c. multiply the dollar amount of assets in each risk class by the appropriate risk weight, and sum across classes

d. multiply risk-weighted assets by the minimum capital percentages, 4% or 8% to be adequately capitalized, to determine the dollar amount of required capital

- 4. Bank capital serves to reduce risk. It does so by 1) providing a cushion against losses, and thus lowering the risk of failure, 2) providing access to financing via the money and capital markets, and 3) limiting a bank's ability to grow rapidly. Banks with limited amounts of capital can grow only at low rates, which restricts risk taking.
- 5. Regulatory capital requirements affect bank operating policies by 1) limiting growth in assets, 2) forcing banks that choose to grow to obtain capital externally when sufficient internally-generated funds are not available, 3) changing asset composition, and 4) changing the pricing of loans and certain securities.
- 6. Subordinated debt constitutes tier 2 capital. It has the advantage that the issuing bank can deduct interest expense for tax purposes. Dividends paid to equity stockholders are not deductible. In recent years, many banks have used trust preferred stock to help meet capital requirements. Trust preferred stock is a hybrid form of equity that was created to take advantage of the tax laws and thereby allows banks to deduct dividends paid on this stock.
- 7. The Banking Act of 1933 established the FDIC and authorized federal deposit insurance for certain bank deposits. During the late 1980s and early 1990s, the large number of bank failures put pressure on the reserves that the FDIC had to close problem banks. FIRREA created two insurance funds for banks (BIF) and for savings and loans (SAIF) and increased deposit insurance premiums. The Deposit Insurance Funds Act of 1996 mandated the eventual elimination of BIF and SAIF and combination into one insurance fund.
- 8. FDIC insurance premiums are based on perceived risk of the insured institution. Well-capitalized banks paid no insurance premiums under the current system during the late 1990s and early 2000s because the insurance fund was overfunded relative to minimum funding requirements. In late 2002, estimates were that the insurance fund would fall below the minimum requirement and that all banks would find that their deposit insurance premiums (payments) would increase. Adequately and undercapitalized banks pay much higher premiums than well-capitalized banks.

Teaching Suggestions

 Bank regulators rely on the risk-based capital requirements to help control risk-taking by banks. The presumption is that banks with the greatest amounts of capital relative to risk assets and other risks associated with bank activities are the least likely to fail. It is useful to start a discussion of bank capital by having students describe how a bank might fail. Make sure that they understand how capital helps 'prevent' failure.

- 2. It is also useful to emphasize that what bank regulators call capital differs from what accountants call capital. The role of loan loss reserves and subordinated debt as qualifying capital often confuses students until you link it to regulators' interests in protecting the deposit insurance fund. A bank fully financed via subordinated debt would not concern bank regulators like traditional banks, regardless of the volume of risk assets, because any bank failure would be absorbed by the debtholders and the insurance fund would be unaffected.
- 3. Use the example for Regional National Bank in Exhibit 13.2 to demonstrate the application of risk-based capital requirements. Emphasize the fact that the risk classes are general in nature and apply uniformly to all banks. Emphasize also the fact that certain off-balance sheet activities require a bank to hold capital in support of the associated risks. This ultimately raises the cost of such activities.
- 4. Have students debate the following ideas:

a. Capital is king in today's banking environment. Banks with adequate capital will be the survivors in the competitive environment that exists today.

b. Subordinated debt is a reasonable form of capital from a bank regulator's perspective.c. The risk-based capital standards are deficient because they ignore interest rate risk, operational risk, foreign exchange risk, etc.

d. Capital is like a cookie jar. Any time a bank needs funds, it can reach into its capital account and use the proceeds to help bail the bank out of its problems.

e. A bank can have too much capital. If so, an acquirer can step in, buy the bank, and increase profits by increasing financial leverage.

- 5. It is important for students to understand the implications of the capital categories and prompt corrective actions outlined in Exhibit 13.9. First, deposit insurance premiums are determined, in part, by whether a bank is well-capitalized or not. Second, the mandatory provisions under prompt corrective actions can be extremely restrictive. Consider a bank that is undercapitalized. If it is part of a holding company and the bank cannot pay dividends or management fees, the holding company may not have revenues to service its debt. The provision suspending dividends and fees effectively forces the bank to quickly meet to minimum standards to be adequately capitalized if it wants to remain independent. Finally, students should understand how the capital requirements affect decisions about asset growth, asset composition, and loan pricing. This is easily done using the examples in the text.
- 6. Trust preferred stock is introduced in the section on external sources of capital. Trust preferred is a hybrid of debt and equity in the sense that banks that issue this stock get the tax deductibility of payments as if it were debt, yet get to report it as equity for capital purposes. As such, they get the best of both worlds. In fact, the process of issuing trust preferred stock is the same process that Enron and other corporations used to move debt off-balance sheet. Conceptually, banks are doing the same thing that Enron did. They create special purpose vehicles (SPVs) to make the balance sheet look less risky. Ignoring the financial benefits, have students discuss the ethical issues associated with issuing trust preferred stock. If it is misleading to the investing public, is it ethical to issue such claims?

Chapter 8 Liquidity Planning and Managing Cash Assets

Chapter Objectives

- 1. Identify the nature of cash assets and objectives of managing the bank's cash position.
- 2. Describe the relationships between cash holdings and liquidity requirements.
- 3. Demonstrate the requirements for meeting legal reserves.
- 4. Explain the impact of sweep accounts on legal reserves at banks.
- 5. Describe procedures and problems in clearing checks and managing float.
- 6. Describe the rationale for correspondent balances and the associated pricing.
- 7. Describe the link between bank liquidity, credit risk, interest rate risk, and profitability.
- 8. Examine the strengths and weaknesses of traditional balance sheet measures of liquidity.
- 9. Introduce liquidity planning models for the reserve maintenance period and longer periods. Construct liquidity GAP measures which indicate a funding surplus or need.
- 10. Analyze the liquidity problems of Continental Illinois in 1984 and the regulatory response.

- 1. Cash assets, such as value cash, demand balances held at Federal Reserve Banks, demand balances held at other financial institutions, and CIPC, produce no interest income. Banks prefer to hold as few cash assets as possible, yet still meet payments and service requirements.
- Banks hold deposit balances at the fed or correspondent banks, in part, to clear checks. Deposit flows represent a link between a banks cash position and its liquidity position. When deposit balances are reduced, a bank must replenish the funds via asset sales or new debt issues. When deposit balances increase, a bank has additional funds to invest.
- 3. From 1968 through February 1984, the Federal Reserve employed lagged reserve accounting (LRA). In this system, banks held legal reserves that were determined primarily by their deposit liabilities that were outstanding over a prior two-week period. From March 1984 through June 1998, the Federal Reserve employed a contemporaneous reserve accounting system. Under this system, the amount of required bank reserves was determined largely by the volume of bank deposit liabilities over the same period and not by lagged, known deposit amounts. Thus, contemporaneous reserve accounting forced banks to monitor both their deposit balances and qualifying reserve assets concurrently and make adjustments under less certainty. In July 1998, the Federal Reserve moved back to LRA.
- 4. Many banks sweep customer funds from deposit accounts that are subject to a 10% legal reserve requirement into MMDA accounts that are not subject to legal reserves. The sweep has the effect of removing the 10% reserve requirement against certain deposit accounts. Since mid -1995, banks have sharply increased the volume of sweep accounts such that the Federal Reserve has less direct control over bank deposits in the aggregate.

- 5. It normally takes several days for a check to clear as the item is transferred between financial institutions. Banks thus place "holds" on checks which represent periods of time before a depositor can spend the proceeds of a deposit.
- 6. Banks hold correspondent balances as payment for services obtained from another financial institution. Minimum balances are based on an estimate of the cost of services provided and the correspondent bank's average interest yield from investing available balances.
- 7. Bank liquidity needs arise from net deposit outflows. Unanticipated loan demand and deposit withdrawals force banks to position their portfolios to provide quick access to cash.
- 8. The more liquid a bank is, the lower is its profitability as measured by ROE and ROA.
- 9. Banks frequently experience deposit losses after market participants perceive that the bank has assumed too much credit risk, interest rate risk, or foreign exchange risk.
- 10. Banks can partially meet liquidity needs by holding liquid assets, such as short-term, unpledged marketable securities with low default risk.
- 11. Liability liquidity represents a bank's ability to access cash via new borrowing and is closely tied to a banks capital position and asset quality.
- 12. Liquidity planning during the 2-week reserve maintenance period focuses on projecting the reserves impact of discretionary and nondiscretionary transactions that alter reserve assets.
- 13. Liquidity planning beyond 2 weeks analyzes loan and deposit growth in terms of trend, seasonal, and cyclical components in order to predict net deposit outflows, which are then compared with potential sources of funds. This contingency planning helps prevent crises.
- 14. Continental Illinois' financial problems and subsequent regulatory rescue in 1984 provide useful insights into how a liquidity crisis originates.

- Reserve requirements are typically discussed in the aggregate for all banks in a traditional Money and Banking class. The mechanics of the process require new interpretations of the terms total reserves and excess reserves. Because of the averaging process over a 14-day maintenance period, all reserves are excess reserves during the first 13 days because a bank can make adjustments on the last day of the maintenance period to meet legal requirements applicable for the entire period.
- 2. Students also enjoy criticizing bank check hold policies, and should be made aware of the risks that banks face in clearing checks, as well as the rationale for holds. An example that demonstrates a check-kiting scheme will help clarify the issues.
- 3. Discuss also the corresondent banking relationship. Many students do not understand why a bank might have a checking account at another bank. Use the information in the text to discuss the different types of relationships between banks and how banks pay for any services. This is also a good time to introduce Bankers Banks, which exist throughout the U.S. These institutions are owned by member banks and generally provide correspondent banking services that community banks once purchased from large superregional banks that are now often direct competitors.

- 4. Students are often confused regarding the importance of the relationship between liquidity, capital adequacy, and a bank's asset quality. It is useful to begin discussion by emphasizing the interrelationships, particularly the significance of positive equity market value. Distinguish carefully between a bank's use of assets for liquidity and a bank's ability to borrow (liability liquidity). Many banks now use Federal Home Loan Bank advances as a source of funding and worry less about having assets to sell. In fact, it is often possible for banks to borrow at lower rates via FHLB advances than by marketing and issuing their own large CDs. However, many bankers are not careful in the types of advances they use. Today, many FHLB advances come with options that a bank effectively writes (sells) the FHLB. For example, a callable advance typically gives the FHLB the option to demand immediate payment of the advance prior to final maturity, after some deferment period. Not surprisingly, the FHLB will 'call' the advance after interest rates have risen and will give the bank the opportunity to replace the advance with another at higher rates. This type of borrowing has significant amounts of interest rate risk. Discuss key measures of asset liquidity and liability liquidity, especially contingency funding plans in the latter case.
- 5. Many banks track a static liquidity needs estimate that follows by comparing deposits and other funds that a bank might lose near-term with short-term liquid assets. They also compare estimates of cash flow needs arising over longer periods by looking at maturing deposits and new loan demand versus maturing loans, securities and new funding sources. Discuss these planning models. Have students complete the Liberty National Bank case available via the Internet after reading the chapter. This case represents an application of the liquidity-planning model over a 1 -year horizon.

Special Project

- 1. Have students conduct a survey of local banks' policies regarding holds on checks. Have them interview bank employees for background information on problems that banks have in clearing checks; either losses they have taken or problems in meeting regulations.
- 2. Have students read the Appendix, which outlines the liquidity problems faced by Continental Illinois during the 1980s. This case analysis effectively introduces how liquidity problems arise and how the regulatory agencies often respond when a bank has problems.

Chapter 9 Overview of Credit Policy and Loan

Characteristics

Chapter Objectives

- 1. Describe recent trends in bank loan growth and quality and data for different-size banks.
- 2. Provide an overview of the credit process at commercial banks.

- 3. Describe the characteristics of different types of loans.
- 4. Explain what negative and positive (affirmative) loan covenants are.
- 5. Introduce cash-to-cash cycle comparisons for working capital loans.

- 1. Loans are the dominant earning asset at most commercial banks comprising between 50% and 80% of total
- 2. assets. Real estate loans are the dominant loans for most banks, but loan composition for individual banks reflects management's strategies and target markets.
- 3. Since the early 1990s, loan quality has improved dramatically as loan charge-offs and noncurrent loans have decreased sharply. Only credit card loans experienced rising loss rates, which is particularly disturbing given the robust economic conditions in the U.S. during the 1990s. Starting in 2000, recent data show an increase in noncurrent and problem loans across many different types of credits. The increase appears to be particularly strong for commercial and industrial loans and loans to individuals. The number of bankruptcy filings and credit card charge-off rates continue to rise as well.
- 4. The credit process involves three functions: business development and credit analysis, credit execution and administration, and credit review. Credit analysis involves the examination of the risks inherent in making a loan and largely determines whether a bank wants to extend credit to the prospective borrower.
- 5. Two types of commercial loans are short-term working capital loans and term loans for the purchase of depreciable assets and/or facilitating mergers and acquisitions. Working capital loans typically require a complete payoff within one year as trading assets are liquidated. Term loans have maturities beyond one year and are repaid from operating cash flow.
- 6. The working capital cycle compares the timing difference between converting current assets to cash and making cash payments on current liabilities and operating expenses. The cash-to-cash cycle is a measure in days of the time it takes for the underlying firm to convert assets or liabilities to cash. The difference in the asset cash-to-cash cycle and liability cash-to-cash cycle provides information about a firm's potential working capital borrowing requirement. The greater is the asset cash-to-cash cycle, the greater is a firm's potential borrowing needs.
- 7. Loans for real estate, agriculture, and other specific purposes generally exhibit features associated with the assets financed or cash flow sources of the borrower. Such loans are priced according to the specific terms of each loan.
- 8. Consumer loans differ from commercial loans because they are smaller in size, are often repaid in installments, and generally carry fixed rates. Today, many of the largest institutions credit score most consumer loans and most small business loans. This centralizes the decision-making, but makes the credit granting process less personal. There is an obvious trade-off between offering the personal service in a timely fashion and cutting costs and mechanizing the credit approval process. Both approaches have been successful.

Teaching suggestions

- 1. It introduces recent trends in loan composition at different banks and the quality of different types of loans. It then describes the characteristics of different types of loans, all of which serve as background material for the detailed credit analysis discussed in later chapters. See if they can explain why loan quality has generally improved for all types of loans. Why then have personal bankruptcy filings and credit card charge-off rates increased so sharply since the early 1990s when economic growth has been so strong in the U.S.?
- 2. It is also useful to differentiate between short-term loans and term loans. Make sure that students understand why banks distinguish between the two. What are the expected sources of repayment for each? Emphasize that one way to analyze working capital loan needs is to estimate them using the cash-to-cash cycle comparison.
- 3. Have students select a non-financial firm, obtain its most recent annual report, and analyze the firm's cash-to-cash working capital cycle. Compare the estimated timing differential with the firm's actual short-term bank credit outstanding. Students should recognize the impact of seasonal trends in a firm's production process and operations, and thus the importance of interim financial statements.

Chapter 10 Evaluating Commercial Loan Requests

Chapter Objectives

- 1. Introduce a procedure for analyzing the quantifiable aspects of commercial loan requests.
- 2. Introduce the fundamental credit issues when analyzing a loan request.
- 3. Demonstrate the importance and use of spreading financial statements.
- 4. Demonstrate how to obtain estimates of operating cash flow from a firm's financial data.
- 5. Demonstrate the role and importance of pro forma projections of a borrower's financial condition when evaluating repayment prospects.
- 6. Provide an application of commercial credit analysis using a simplified loan request.

- 1. The basic issue in credit analysis is to determine whether a borrower has the commitment and ability to repay a loan in line with the terms of the agreement-
- 2. Banks should obtain satisfactory answers to at least the following basic questions before extending credit.
 - a) What is the character of the borrower and quality of information provided?
 - b) What are the loan proceeds going to be used for?
 - c) How much does the customer need to borrow?
 - d) What is the primary source of repayment, and when will the loan be repaid?
 - e) What secondary source of repayment or collateral is available?

 After assessing character and other subjective elements of a loan request, lenders often perform a three-stage analytical evaluation of the borrower's financial condition. Stage 1: Review of historical financial data to identify trends and peer comparisons. Stage 2: Analyze historical cash flow from operations used to service debt and make other discretionary expenditures.

Stage 3: Project balance sheet and income statement data into the future to obtain cash flow estimates to compare with debt service requirements.

This information allows a lender to estimate whether cash flow will be sufficient to cover debt service requirements as a loan is structured.

- 4. A statement of changes reconciled to cash converts a firm's balance sheet and income statement data into a cash-based income statement. The statement differentiates between sources of cash and uses of cash. This provides an estimate of a firm's cash flow from operations. A strong signal of potential problems is the situation where cash flow from operations is not large enough to cover current maturities of long-term debt (mandated principal payments on long-term debt) plus cash dividends paid.
- 5. Cash flow analysis is critical to understanding a borrower's ability to repay a loan. Earnings figures can be especially misleading given how firms historically managed earnings and manipulated the data. Still, cash flow figures can be manipulated as well. Students need to review financial statements carefully, including footnotes to get a sense of management's approach to financial reporting. The requirement that CEOs sign-off on the accuracy of financial statements, introduced in August 2002, should help improve the quality of data.
- 6. The example for Wade's Office Furniture demonstrates the credit analysis process and issues that commonly arise.

- Chapter 10 introduces the quantifiable aspects of commercial credit analysis. It serves as a foundation for making credit decisions. Emphasize that credit analysis is risk analysis. There are no definite answers, only an assessment of the risks associated with lending funds. Discuss the basic questions that must be answered appropriately before a lender should advance funds to a borrower. The answers determine the risk of the loan request, which affects the terms and pricing of the eventual loan agreement if the loan is made.
- 2. The discussion in Chapter 2 regarding bank financial statements and performance data and the discussion in Chapter 10 should emphasize the quality of financial information and reporting errors and fraud that was found during the early 2000s. You should spend time discussing issues related to the accuracy of accounting information, the conflicts accounting firms have when they sell consulting services to the same firms that they audit, and the propensity of CEOs and other managers during the early 2000s to inflate profits by strategically understating expenses or overstating revenues. The role of the credit analyst is to peer through the data to get a reasonable assessment of a firm's true risk exposure. Still, the quality of the analysis is tied to the quality of the financial data, so students should learn to look for tricks that firms play in reporting.

- 3. Start with a review of traditional ratio analysis for a hypothetical firm. Then introduce the statement of changes reconciled to cash to demonstrate the importance of cash flow from operations. This is the source of funds that will repay most term loans. Discuss other sources of cash for repayment (asset liquidation, borrowing from other sources, etc.). A key point is that cash flow from operations differs from reported profits of a firm. Debts are repaid from cash flow and not profits.
- 4. Use the problem with Southwest Trading Company at the end of the chapter to introduce pro forma analysis. This problem demonstrates how a bank can answer the four basic questions in credit analysis using basic forecast information. It also represents a basic application of the statement of changes reconciled to cash. Use this to compare the statement to the firm's cash budget and demonstrate that the implications are the same.
- 5. Work through the analysis of Wade's Office Furniture as an application to demonstrate the stages of credit analysis. If you use the Credit file from the Excel template, you can analyze any firm's data via the file that includes Wade's data. The other cases available on the Internet have data already entered in this format.
- 6. Select one of the cases and have students conduct the credit analysis. Provide them with the template and encourage them to work in teams. It is a useful exercise in teamwork and credit analysis to have students submit a formal written credit analysis as if they were presenting their results and conclusions to a loan review committee.

Chapter 11 Evaluating Consumer Loans

Chapter Objectives

- 1. Describe the characteristics of different consumer loans.
- 2. Evaluate the competitive environment in the credit card business.
- 3. Explain why subprime loans are popular at many lending institutions.
- 4. Discuss various consumer credit regulations and their impact.
- 5. Introduce fundamental issues when analyzing a consumer loan request.
- 6. Describe the standard features of credit scoring models. Explain why credit scoring is becoming increasingly and, on occasion, abused.
- 7. Describe the features of indirect consumer lending.

Key Concepts

 Consumer loans are generally classified as either installment loans, credit card/revolving credit lines, or non-installment loans. Installment loans have fixed maturities and require periodic principal and interest payments. Credit cards and revolving credit lines are commitments to consumers for any expenditure, and require monthly payments with no fixed maturity. Non-installment loans are used for virtually any purpose and are typically repaid in a single payment.

- 2. Credit card lending has been extremely profitable for banks with large portfolios. Card issuers get revenue from annual fees, charges against merchants who accept the cards, and interest paid on outstanding consumer credit card balances. Since the early 1990s, charge-off rates on credit card loans have been far higher than charge-off rates on other types of loans. Similarly, personal bankruptcy filings have generally increased. These latter trends appeared in spite of the sustained economic growth in the U.S. economy during the 1990s and with the economic slowdown in 2000 2001.
- 3. Many lenders have increased their exposure to "subprime" borrowers. As the label suggests, these borrowers are high risk compared to traditional bank borrowers. Often, the loans are labeled "B," "C," and "D" paper. Not surprisingly, lenders charge high interest rates and high fees on such loans because the borrowers have limited alternatives. Many subprime lenders experienced high defaults and ultimately closed operations.
- 4. The federal government has authorized a broad range of regulations to protect individuals when obtaining or requesting credit. These include:
 a. Equal Credit Opportunity Act: prohibits discrimination and requires proper reporting.
 b. Truth in Lending: requires lenders to disclose finance charges on loans in a standardized format so borrowers can compare credit terms across lenders.
 c. Fair Credit Reporting: enables individuals to examine credit reports filed on themselves.
 d. Community Reinvestment Act: prohibits lenders from selectively not extending credit within specific geographic markets.
- 5. Credit scoring models use information supplied by prospective borrowers to quantitatively determine whether a bank should accept or reject a loan. The basic framework involves identifying the key characteristics of borrowers who regularly repay their loans as promised and the key characteristics of borrowers who systematically default. These factors are weighted by statistical models and used to assign a score to a potential loan application. If the score exceeds some threshold value, the loan is accepted. If the score falls below another threshold value, the loan is rejected. If the score fall between these threshold values, the loan is subjectively evaluated. The presumed benefits of credit scoring include lower costs, objectivity, and nondiscriminatory lending because the factors are structured to eliminate biases.
- 6. In recent years, non-lenders have started using credit scoring models and their results in making financial decisions. For example, insurance companies often use an individual's credit score to help assess the likelihood that he or she will file a claim. This usage has created widespread debate as to whether a credit score should be used to set insurance premiums and/or to make accept/reject insurance decisions.
- 7. Indirect consumer lending involves a bank buying loans or dealer paper from a retailer.

Teaching Suggestions

1. Differentiate between consumer and commercial lending by comparing basic features of two general categories of loans. The average size of consumer loans is smaller, the maturity is longer, and the number of payments to be processed is larger. Thus, it costs a bank proportionately more to handle consumer loans. Have students compare the relative profitability of consumer and commercial loans by examining the spread between

different consumer loan rates and the national prime rate. Discuss why consumer loan rates do not change as quickly as commercial loan rates and money market rates.

2. Credit scoring is extremely popular with widespread use among lenders. Students need to know how lenders and insurance companies use credit scores, as well as what information is contained in a credit score. Spend time with students on this issue. Refer them to the many internet sources that provide credit scoring information. For example, refer them to www.fairisaac.com and www.myvesta.com, which contain current data and useful information regarding the construct of a credit score. Spend time going through the data in Exhibit 17.8. If feasible, have students request and analyze their personal credit score and the underlying diagnostics.

Chapter 12 Customer Profitability Analysis and Loan

Pricing

Chapter Objectives

- 1. Describe the elements in customer profitability analysis.
- 2. Examine the various sources of bank revenues and expenses associated with a customer account.
- 3. Provide an application of customer profitability analysis to a commercial account.
- 4. Demonstrate how to use the account analysis framework to help make loan pricing decisions.
- 5. Examine the importance of fixed-rate versus floating rat loans, and the choice of different base rates.
- 6. Apply customer profitability analysis to installment loans.

- 1. Customer profitability analysis compares revenues from a customer account relationship with expenses, including a target return to bank stockholders.
- 2. An account is profitable if revenues exceed expenses, but the difference must exceed the target profit before the account meets the bank's minimum acceptable return criteria.
- 3. When a customer has a loan, the primary sources of revenue are loan interest, fees, and investment income from balances. The primary expenses are load administration, risk (charge-offs), and the cost of funds.
- 4. A bank can transfer interest rate risk to borrowers by pricing loans on a floating rate basis. Profitability analysis is especially valuable for customers with multiple account relationships, including loans, deposits, and other services. Banks should attempt to assess the actual cost of providing services for all types of relationships and should view the revenues jointly so that the entire account relationship is profitable.

5. Consumer loan profitability analysis typically establishes break-even relationships so that expected revenues at least equal expected expenses. The output is the minimum size loan a bank should make, or the minimum rate that should be charged for each size and maturity loan.

Teaching Suggestions

- Chapter 12 directly compares account revenues with expenses plus the bank's target profit. The most difficult aspect of the chapter is the terminology. Work through the basic examples to demonstrate how banks measure the cost of funds, cost of deposit account, and target profit, how banks account for credit risk, and how banks measure the interest income from investing customer deposit balances. Note the connection and similarities between the analysis in this chapter and what students learn in traditional corporate finance classes regarding measuring the marginal (weighted average) cost of capital.
- 2. Spend some time discussing loan pricing. A bank must know its cost of funds. The same framework for an individual loan transaction is used for the revenue and expense estimation process for a customer account. Discuss also the propensity of some banks to price loans tied to their own bank's base rate. Have students assess the advantages and disadvantages of a such pricing strategy.
- 3. Use the account activity for Vardon Drugs and Michala's Marina at the end of the chapter as sample exercises. Note that there is a customer profitability model in the Excel template, which accompanies the text, that students might want to use. The key concept is that banks should measure the overall profitability of a customer's entire relationship and should price different components accordingly. A bank must know which customers are profitable and which ones are not profitable and change pricing for the latter.

Chapter 13 The Investment Portfolio and Policy Guidelines

Chapter Objectives

- 1. Describe the bank's role as a securities dealer and in managing a trading account.
- 2. Explain the objectives of the investment portfolio.
- 3. Describe the composition of the average bank's investment portfolio.
- 4. Examine the characteristics of securities comprising the investment portfolio.
- 5. Explain the nature and impact of prepayment risk in mortgage-backed securities.
- 6. Describe the nature of the market for asset-backed securities and provide an example of an asset-backed security.
- 7. Summarize basic investment policy guidelines.

- 1. Banks perform three functions within trading activities. They offer investment advice, maintain an inventory of securities to sell and stand willing to buy securities, and they speculatively trade securities for the banks own account.
- 2. The fundamental objectives of the investment portfolio are:
 - a. safety or preservation of capital
 - b. liquidity
 - c. yield
 - d. diversification of credit risk
 - e. to help manage interest rate risk exposure
 - f. to meet pledging requirements
- 3. Banks earn profits from trading activities by charging higher prices for securities sold than what they pay for the securities, and charging fees (requiring compensating balances) for investment advice, and guessing correctly when speculating on interest rates. Banks earn a return on investment securities in the form of coupon interest and capital gains (losses).
- 4. Banks must classify securities that they buy at the time of purchase into one of three categories based on the objective underlying the purchase. Trading account securities are those held briefly with the intent to sell. Held to maturity securities are those the bank expects to own until they mature. Available for sale securities are those the bank may choose to sell prior to maturity. Each category has a different accounting treatment regarding what is reported on the balance sheet (cost or market) and income statement.
- 5. Over time, banks have decreased their holdings of U.S. Treasury and municipal securities substituting agency and corporate/foreign securities. The most popular agency securities are different forms of mortgage-backed securities. The larger the bank, the smaller is the size of the investment portfolio relative to total assets. The largest banks, in turn, own more agency and corporate securities and other securities. Small banks own proportionately more U.S. Treasury and municipal securities.
- 6. Many banks buy taxable agency and mortgage-backed securities with embedded options. The most common agency security with options is a callable bond. The call feature allows the issuer the call the bond (pay the principal) prior to maturity at its discretion. This is risky to an investor because the bond's price will not rise much above the call price when rates fall and the issuer will prepay the bond when rates fall to refinance at lower rates. Thus, the investor loses the above market coupon interest that might have been earned on a bond without the call feature. Mortgage-backed securities are subject to prepayment risk. As market rates on mortgages fall, these securities prepay at higher rates. Investors thus see a return of principal faster than originally expected (if the prepayments are not anticipated) such that they invest their cash flows earlier at lower rates. They again lose when prepayments rise sharply.
- 7. One of the dominant trends in banking is the securitization of loans. Firms originate loans, package them into pools, and issue securities collateralized by the loans. Banks act as buyers of some of these securities for their investment portfolios. The most common of

these loans are called asset-backed securities and include securities collateralized by credit card loans, autormobile receivables, home equity loans, and student loans.

- 8. Municipal bonds are attractive because they pay rates that are tax-sheltered. Municipals include both short-term money market instruments and long-term general obligation and revenue bonds. Some municipal do not effectively pay interest that is tax-exempt, so banks must be careful as to which securities they buy.
- 9. A bank's ALCO is responsible for establishing investment policy guidelines. The guidelines specify return objectives and constraints regarding the composition of securities, target maturities, etc.

- 1. The material in Chapter 13 provides an overview of the types of securities that banks buy as part of their investment portfolios, why they buy securities, and the basic risk and return features of the most popular taxable and tax-sheltered securities. It represents an extension of information that students have generally been introduced to in other finance and economics classes. Have students examine the annual report of a large superregional bank and a community bank to compare the size of the investment portfolio and the types of securities owned.
- 2. In recent years, banks have been forced to classify their securities holdings as held to maturity, available for sale, and trading account securities. Select different bank balance sheets, particularly from 1996 forward to compare the reporting. These balance sheets should reveal different magnitudes of securities in trading accounts and classified as held to maturity or available for sale. This should serve as a good discussion point in comparing the impact of accounting treatment on financial decisions.
- 3. A hot trend in bank investments has been the increasing emphasis on buying securities with embedded options. Discuss the types of securities with the most common options in bank portfolios, callable agency, callable municipal, and mortgage-backed securities. Differentiate between as many types of mortgage-backed securities as possible. If your institution has access to a Bloomberg terminal, show students the type of information that is available and the complexity of the marketplace for fixed-income securities. Describe the nature of the options embedded in some bonds, the fact that the bank as buyer of securities is actually selling the option to the issuer, how the bank is compensated for selling the option (presumably in a higher yield), and when the option will likely be exercised. Have students discuss whether they would like callable bonds to be called and mortgage-backed securities to be prepaid if they represent the investor. With the Bloomberg, demonstrate what option-adjusted spread analysis is via different Bloomberg examples.
- 4. Have students read carefully the investment policy section. Discuss why banks buy bonds, what the role of bonds is in the bank's portfolio, how bonds are priced relative to loans (banks are price takers), and the corresponding implications for asset and liability management.