

BANKEXEC<sup>®</sup>  
PARTICIPANT DECISION MANUAL

2023

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# Your Bank and Its Environment

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## INTRODUCTION

The BankExec® simulation provides an understanding of financial management challenges in banks. Except for senior management, few individuals in a bank have the opportunity to be exposed to the range of operating decisions presented in this exercise. As a participant, you will be a member of a management team responsible for the operation of a medium-sized bank. You will be required to develop and implement policies in the areas of loans, securities investment, deposits, funding sources, and capital. You will face competition from other financial institutions operating in the same community and will be subject to a changing economic environment. A major objective of the simulation is to develop an understanding of the complexities of managing a bank in a dynamic economy and of the need for an integrated, consistent set of policies to maintain the growth, profitability, and safety of the organization.

Although the economic setting and competitive reactions are realistic representations of the actual banking scene, do not expect the situation here to correspond closely with any you might know. Just as bankers from Cleveland might find banking in Seattle to be different, you will find banking in this setting different from your own experience. Successful management in this environment requires an understanding of the business of banking and its fundamental economics.

The first few pages of the *Participant Decision Manual* provide a general description of the bank and the economic situation. This material is introductory in nature and is designed to help you get started. The remainder of the manual covers the technical material you need to participate in the simulation.

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# YOUR BANK

Your team will have the responsibility for managing one of as many as eight banks in a community. The number of active competitors, managed by teams similar to yours, will be told to you at the beginning of the exercise. These banks—all identical at the start—compete directly with each other. Other banks and financial institutions also operate in this environment and this additional competition is reflected in the information provided to you about general national and local economic conditions. There may be other communities operating as part of your program; however, the banks in these communities do not compete for your customers and their actions have no impact on your markets for banking services. In addition to the economic and competitive environment, your bank must operate within the guidelines determined by the Office of Bank Supervision, the bank’s regulatory authority.

The simulation operates on the basis of quarterly decisions and reports. You will receive reports at the end of each calendar quarter that describe the financial operations of your bank and conditions in the economy. Based on this information and any other provided by your instructor, you will make a set of decisions that will be in effect for one quarter of calendar time. Decisions are submitted online and take effect on the first day of the next quarter. For example, if your most recent quarter ended on March 31, 2029, you will make decisions that will go into effect on April 1, 2029. Quarter 1 of year 29 begins on January 1, 2029 and ends on March 31, 2029. Quarter 2 begins on April 1, 2029 and so on. Information in the reports is often identified by quarter and year; for example, 2/29 refers to quarter 2 of year 29. In most cases, if you do not change a policy or decision, it will remain in effect for the next quarter.

Inaction on your part is a no change decision. The exceptions are clearly indicated in the section of this manual describing the individual decisions available to you.

Figure 1 describes the BankExec Report Structure.

**Figure 1. BankExec Report Structure**

|              |   |
|--------------|---|
| B00 series   | General financial reports—for example, B01 is the bank's balance sheet.   |
| B10 series   | Investment securities reports—for example, B12 is the securities portfolio.   |
| B20 series   | Loan reports—for example, B24 shows loan decisions.   |
| B40 series   | Deposits reports—for example, B44 shows deposits decisions.   |
| B60 series   | Purchased funds and capital reports—for example, B64 shows the decisions in this area.  |
| C90 series   | Community activity reports, which are the same for all banks in the community—for example, C91 shows the balance sheets for all banks in the community at the end of the current quarter. |
| W / D series | Worksheets and Decision forms distributed for team use.   |



The reports are organized according to topic in a numerical series with the general topic being identified by the first digit as shown above. The letter B is used to identify internal reports available to the bank's management (and instructors) only. The letter C identifies publicly available reports that are distributed to everyone in the community. In addition, there are decision forms D and worksheets W described later. The information on the decision forms and worksheets is included in the bank reports. [Appendix A](#) provides a description of the data contained in each report.

---

# THE ECONOMY

The community and region that is the normal market area of the bank has a well-diversified economy. Major industries/employers include an automobile assembly plant (joint venture with a foreign manufacturer), agricultural products processors, technology companies, and a variety of commercial and professional service firms. The community is the headquarters of several national corporations; there is a substantial Treasury sector and a major national university with strong professional colleges (law, medicine, and business administration).

Recent trends in the local and national economy are summarized in the reports you will receive at the beginning of your program. You will receive additional information about economic conditions in the form of quarterly reports (C91-C96).

Several bank reports (B12, B24, B44, and B64) also contain information about the prevailing interest rates for securities, loans, deposits, and purchased funds in the economy. These rates will hold throughout the upcoming quarter. In other words, you have excellent information on where market interest rates will be until the next time a decision must be made.

You have less accurate information about where rates are heading for future quarters. You can also develop your own information by plotting rates and observing trends. See Report C95 for charts of economic trends.

## CURRENT ECONOMIC CONDITIONS

The national economy is rebounding strongly from a recession that began early last year. The strength of the recovery is raising concerns that a significant increase in prices might be in store. As a consequence, the central bank has tightened credit and pushed interest rates up sharply. The local economy was not as affected by the recession compared to other areas of the country but is also participating in the upswing.

Local unemployment has fallen to a three-year low (seasonally adjusted) and area retailers reported record sales during the December holidays. Loan demand has been very good, but deposits have not kept pace.

The outlook for the nation is for strong growth, at least for the first part of the year. There is the possibility of higher inflation rates in the opinion of several economic forecasters. This could produce a response by the central bank toward tighter money and higher interest rates. However, many members of the legislature and some economists view the current recovery as somewhat fragile and highly dependent on improving trade balances. The dollar has been appreciating for the past six months due to the real growth in the economy. This has created some concern about the potential for deterioration in the trade balance, particularly a drop-in export, which could snuff out the recovery.

Regardless of national trends, the local economy is doing very well, fueled by increasing construction activity, and should continue to do so for several months. Loan demand at local banks is expected to remain high and deposit growth is expected to pick up somewhat.

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# THE COMMUNITY

The general economic structure of the community is reflected in the loan and deposit structure of your bank, which is representative of the community. However, you should be alert for failures by the previous management in servicing the needs of the community. The decisions made by the previous management may not be desirable to maintain.

Many of your actions will be in response to the competitive decisions of the other banks in your community. Many of their actions will be in response to what you do. For example, you may try to capture a larger share of a particular loan market by lowering the interest rate and increasing business development. However, this strategy may not succeed if other banks drop their rates and ease up on credit policies. Information about community bank rates and other activities is provided on Report C93. When you compete directly with several banks that are financially your peers, analyzing competitive results and policies becomes very important to the success of your bank.

The actions of banks in the community may drive the community economy in directions that are not otherwise indicated by the general economic situation. For example, loan volume in the economy may generally be poor, but aggressive reductions in interest rates below the national market by the banks in the community will attract more loans. Similarly, if community banks try to price their loans well above the prevailing rates, the community could experience a decrease in loan volume even though the economy was very strong.

You will manage a full-service commercial bank; however, the bank does not serve all the markets nor provide all of the products and services you may be accustomed to seeing. Detailed descriptions of all the products and services offered are included in the sections dealing with the specific decision areas. Here we provide an overview.

There are four types of securities available for purchase by your bank—Treasury bills, Treasury bonds, Agency bonds, and Tax-exempt bonds. You must decide on the specific amounts of these securities to purchase or sell at the beginning of each quarter. The bank may engage in interest rate swaps, which are shown as part of the securities portfolio. Swaps do not involve any immediate cash outlay and are not shown on the balance sheet. They may be used to manage the interest rate risk exposure of the bank.

If the bank has excess funds available during the quarter, they will be sold as federal funds. The bank's cash and reserve position will be maintained at the legally required amount plus cash required for operations; no surplus or deficit in required reserves or non-interest-earning cash positions can occur. No action by management is needed for this to happen.

There are four primary loan markets that are served by your bank and a variety of products. For business customers, you provide credit lines and term loans. For individuals, you provide installment loans. In addition, you provide commercial real estate loans and fixed-rate, 1–4 family, residential mortgages. These five loan products are always available. Depending on the program, other loan products may be offered. The precise package of loan products available from your bank will be explained in separate materials provided to you. In this manual, we will describe all possible types of loans that the bank might make.

The bank provides deposits services to two markets—businesses and individuals. Checking accounts, savings accounts, and time deposits are offered to both markets. The bank may also acquire certificates of deposit (CDs) in the money market, but these do not involve a customer relationship.

The additional sources of funds available to the bank include borrowing through a repurchase agreements (repo), federal funds purchases, borrowing from the Federal Home Loan Bank, long-term debt issues (capital notes), and common stock issues. The bank will borrow federal funds only as needed to maintain its required cash positions. The other sources require explicit decisions by management.

Except for servicing of loans that have been sold, there are no non-balance-sheet-related fee services requiring management decisions.

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# THE BANK'S MANAGEMENT

Your team is a new management group brought in by the Board of Directors. Depending on the program, your Board may be very active or may give you free rein to run the bank for a period of time. The Board may provide their expectations regarding the performance of the bank and want to be involved in the development of a mission statement, goals, and strategies. Or, they may be non-participating, leaving both the development of general policies and the operating decisions to management. Your instructors may serve as the Board of Directors and initial policy statements are provided in this manual where appropriate. These may be modified, based on discussion with management, as needed.

The prior management has left the bank so there is no continuity within senior management. The Board has not assigned any specific responsibilities or functions to members of your group. One of your first tasks is to organize your team and develop an operating style for your bank. During this process of organization, you should consider a range of possible operating styles, which are discussed in [more detail here](#).

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# THE BANK'S REGULATORS

Your bank is expected to operate within a set of regulatory guidelines to ensure the safety and soundness of the banking system and your bank. The guidelines are established by the Office of Bank Supervision (OBS). The OBS has instituted an initial set of rules and regulations as shown in Figure 2. All banks in the community are expected to comply with these regulations.

**Figure 2. Rules and Regulations**

1. Each bank shall maintain in proper chronological order its records and reports so that it may conduct its business on an orderly basis and provide adequate information needed for bank examinations.
2. The Office of Bank Supervision may, at its discretion, forbid the payment of any dividend if its payment is likely to affect unfavorably the overall condition of the bank. The Office may also, at its discretion, require prior written approval of any cash dividend to be paid by the bank.
3. Federal funds purchase in excess of 100 percent of total capital shall be considered prima facie evidence of unsafe and unsound banking practices. A bank found in such condition shall be subject to special examination and/or supervision. Capital for the purpose of this regulation is defined as outstanding capital notes plus owners' equity.
4. No bank may issue capital notes in excess of 35 percent of total capital. The percentage shall be based on total capital after issue.
5. Each bank shall maintain at all times a ratio of total capital (consisting of owners' equity, capital notes and loan loss reserves) of at least 8.0 percent of risk assets. In addition, the ratio of owners' equity to total assets must be 4.0 percent or greater. In order for a bank to be considered well capitalized, the ratio of total capital to risk assets must exceed 10 percent and the ratio of owner's equity to total assets must exceed 6.0 percent. These capital ratios shall be calculated as reported on Report B05.
6. The Office of Bank Supervision may, after due warning and the issuance of an order to Cease and Desist, assess fines against the bank for failure to comply with regulations.
7. The Office of Bank Supervision is authorized to modify, suspend or change any of the above regulations as needed to meet changes in the financial markets and the economy and to maintain the health of the banking system. In addition, the Office is authorized to impose special rules or regulations on any bank that is found to be operating in a manner so as to constitute unsafe or unsound banking practices or to be in serious breach of its duty to provide banking services to the community.

Depending on the program, OBS examiners may be highly active and you may experience visits from them. Or, they may be relatively passive, and you will not hear from them unless you fail to comply with the regulations. The OBS has the power to modify existing regulations and add new ones at any time. Any changes in regulation will be announced in advance of their implementation. You may also have the opportunity to comment on proposed changes prior to their going into effect.

Regulations 3 and 5 are very important restraints on bank management. Regulation 3 limits the amount of federal funds purchases (a form of borrowing) which is a major source of liquidity for the bank. [See the section on Liquidity Management](#) for a discussion of liquidity management and how decisions affect the amount of borrowing.

Regulation 5 regarding bank capital says essentially that you cannot increase the assets of the bank without increasing bank capital as well. This regulation forces management to consider carefully the impact of its decisions on the growth of the bank and to plan ahead so there is adequate capital to support growth. [See the section on Capital Management](#) for a discussion of this issue.

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# BANK ORGANIZATION

Many teams begin operating as a management committee, jointly considering all decisions. This is very effective if there is sufficient time to meet and come to a consensus. However, often there will not be enough time available for you to operate in this fashion and to consider all the decisions that should be made. This style is inherently inefficient but promotes a high degree of job satisfaction among team members.

When time is an important constraint, there is a temptation to adopt a very structured and specialized method of operating. In this style, most of the members of the team have specific, non-overlapping assignments. The CEO and, perhaps, one other person, are responsible for overall management. The specialized individuals can become highly proficient in their narrow areas; however, they do not obtain the full benefits of the exercise and may become discontented after three or four decision periods. This management approach can be very efficient and effective in the short run but is not recommended unless the decision period is very short (less than 90 minutes, [see the discussion of Time Management](#)).

For all members of the team to benefit from the experience and for the team to operate effectively, some blended style of operation is usually preferable. The particular form it takes will depend on the strengths and tastes of the people involved, but usually you should adopt one or more of the following operating procedures:

1. Begin by having team members review their areas of responsibility, individually examining the relevant reports. Then ask for a summary of trends and conditions to be presented to the entire group so that everyone is generally aware of what is going on throughout the bank.
2. Have a group meeting to review overall problems and policies before submitting the final decisions.
3. Have a group meeting to summarize expectations of bank operations for the coming quarter after all decisions have been submitted.
4. Rotate job responsibilities after three or four quarters.
5. Set up subgroups or committees to review general policy areas.
6. Rotate membership on policy committees.

## THE CEO

The choice of the person to be the chief executive officer is very important to the type of organization and to the success of the team. The CEO serves as the overall leader of the group and the primary contact person for instructors and examiners. It is very rare for a group to change its CEO. If a poor choice is made, the group must usually live with it.

Surveys conducted among over 1000 participants in simulation exercises similar to this one provide some interesting insights into desirable leadership characteristics. Participants ranking 10 characteristics desired of the CEO rated being well-organized and getting results as the most important at the beginning of the exercise. At the end of the exercise, these two were still important, but possessing a good sense of humor, reliability, and being skilled at resolving conflict were considered highly important as well.



Choose your CEO carefully. Consider what the requirements for this position are and who in the group comes closest to meeting them. Keep in mind that there are two objectives for your team—to enable all members to have an interesting, enjoyable, and effective learning experience and to operate successfully as a bank. The choice of the CEO has a significant impact on the achievement of both objectives.

## THE MANAGEMENT TEAM

Getting organized is the first step in preparing to make your initial decisions. During the time allowed for decision making, you will have to use this time wisely to evaluate the situation and to decide specifically how to meet your goals. Many BankExec teams organize around the decision forms in the exercise—securities, loans, deposits, and treasury. Including the CEO, this structure might be suitable for a five-person team, although there are other possibilities. The organization problem can also be viewed in terms of functions or activities that must be performed. An illustration of the activities and associated decision forms, where appropriate, is shown in Figure 3.

**Figure 3. Functional Activities and Decision Forms**

| <b>Functions/Activities</b>     | <b>Decision Forms</b>    |
|---------------------------------|--------------------------|
| Securities portfolio management | Securities Purchase/Sale |
| Loan portfolio management       | Loan Decisions           |
| Deposit pricing                 | Deposit Decisions        |
| Marketing budgeting             | Deposit Decisions        |
| Discretionary funding           | Treasury Management      |
| Capital management              | Treasury Management      |
| Planning and analysis           | N/A                      |
| Risk management                 | N/A                      |
| Team coordination               | N/A                      |
| General policy determination    | N/A                      |

Someone must be responsible for each decision area and it is important that all major activities be assigned. The precise assignments can be based on the size of the team and the preferences of its members. As part of the job descriptions, we have shown the reports that are relevant to each assignment. A six-person team might organize with the following set of job descriptions:

- Chief Executive Officer: Sets policy, provides direction, coordinates the efforts of the team, and interacts with regulatory authorities.

Reports: B01-02, C91-92, C94-96

- Chief Financial Officer: Develops plans and forecasts of bank operations, determines the bank's liquidity and capital requirements. Works with other officers to control risk exposures.

Reports: B01-06, C91-96

- Investments Officer: Manages securities portfolio and prepares to meet the bank's liquidity requirements. Works closely with the Treasury Officer.

Reports: B01-06, B10-12, C94-96

- Lending Officer: Analyzes the previous quarter's lending activity, sets loan rates and other loan decisions, projects future loan volume, and performs any other assignments applicable to the lending function.

Reports: B01-02, B20-24, C91-96

- Deposit Officer: Analyzes the previous quarter's deposit reports, sets deposit rates and business development budgets, projects deposit flows, and prepares marketing studies and other projects pertaining to deposits.

Reports: B01-02, B40-44, C91-C96

- Treasury Officer: Arranges for discretionary funding sources and develops funding strategies. Manages the interest rate and foreign exchange risk positions of the bank in conjunction with the Investments Officer.

Reports: B01-02, B60-64, C91-92, C94-96

Your fundamental task is to manage your bank safely and profitably by serving the banking needs of your community. To perform this task, you must understand the decision choices available to you. The next sections of this manual describe those choices. You will then find a discussion of several issues you will face in managing the bank. This material is important because it shows how the decisions you make in one area may affect other aspects of the bank's performance.

## **BANK NAME**

Management may name their bank or change the name. The name is limited to 15 characters and spaces and is centered automatically. Once named, the bank's reports will be labeled with that name, which will remain in effect unless changed.

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# THE DECISION PROCESS

Competition in your community will increase substantially during the simulation. Inactivity or indecisiveness on the part of your management can result in the undesired gain or loss of deposits and loans. If lost, these can be difficult to regain. A set of decisions consistent in strategy from period to period can build momentum, which can increase the bank's ability to compete. Once this momentum is working in a bank's favor, the other banks must work significantly harder to catch up. Of course, the bank that achieves an initial advantage does not necessarily have an insurmountable lead, but there is a measurable benefit from logical, consistent action.

## TIME MANAGEMENT

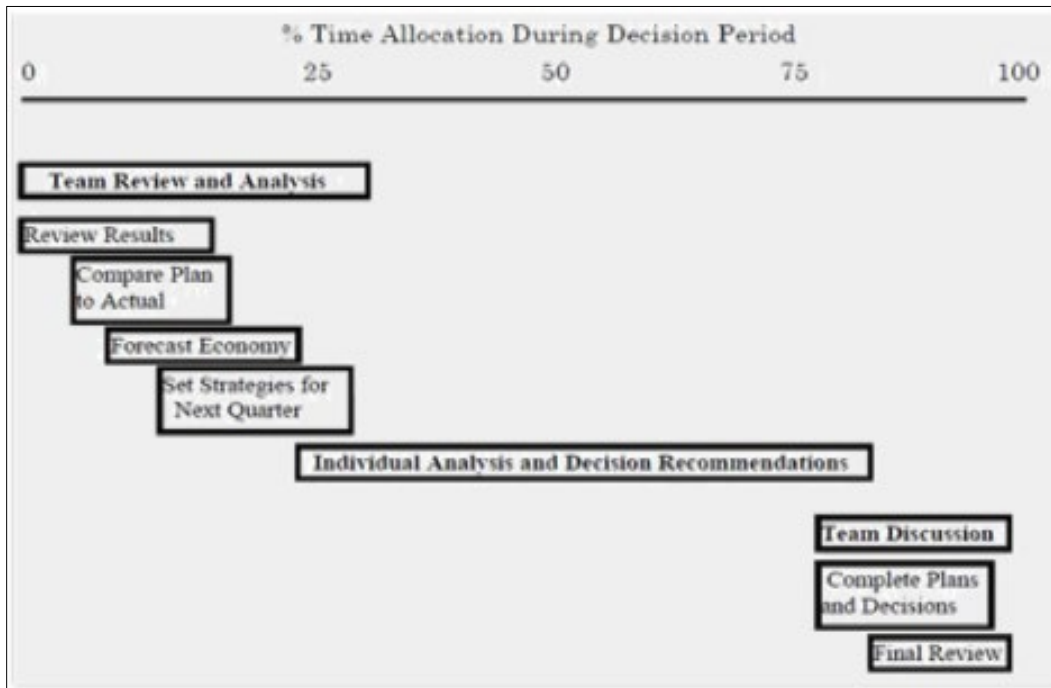
In many programs, teams are given a limited amount of time to complete their decisions. You may receive the results of the prior period at the beginning and have as little as 60 minutes to complete the next decision. You will have a substantial amount of work to complete within this period. Time management under these conditions becomes an important problem for the team.

It is especially important that each team take a careful and well-planned approach to this heavy workload. Often teams establish a time schedule for each activity, perhaps appointing a time keeper to keep the group on schedule. During each session, you will need to:

- Evaluate the results of the last period's decisions,
- Suggest improvements in strategies or operations,
- Consider decisions related to future operations,
- Prepare decision input forms for the next quarter, and
- Complete any problem assignments.

Figure 4 shows approximate time allocations for team activities. The allocations overlap to indicate a range of possible time spent. For example, if the total decision period is 120 minutes, a team might spend 25 to 35 minutes (20 percent to 30 percent of the total time) in the initial review and analysis and somewhat less time for the team discussion at the end.

**Figure 4. Team Decision Process**



These are only guidelines based on experience with the simulation in a variety of settings. You may choose to change them as you wish. Some teams allocate time initially for each person to review his or her own area first, then provide a summary report to the group. The team review proceeds from there with somewhat less time allocated later for individual analysis and decision recommendations. The time shown for individual analysis should be used for the activities shown and in the sample job descriptions.

If the decision period is less than 90 minutes, the team may have to forego some of the group discussion at the beginning and end of the period in order to have sufficient time for individual analysis and decisions. It is important that the decisions in each area be made with care. However, it is equally important that the bank be managed as an entity and decisions in each area are consistent with the overall goals and strategies of the management team.

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# USING BANKEXEC OVERVIEW

ABA's BankExec is a unique learning experience designed specifically to provide users real-world banking experience. The BankExec online simulation puts you in the middle of the action as a team of bank executives. You must compete for profitability in a simulated economy and simulated market.

The BankExec simulation allows for:

- Online, real-time access
- Instant reporting
- Multi-user departmental decision making
- Full graphics and reporting of bank's position and comparison to peers
- Simulation previews that allow participants to explore What-If scenarios before final decision submissions
- As needed reporting which gathers and presents information when required
- Access to Live Help

## ACCESSING THE BANKEXEC PORTAL

Navigate to the [BankExec](http://abaBankExec.aba.com/) website (<http://abaBankExec.aba.com/>) using any supported internet browser. To ensure your system (device and browser) is compatible, [click here to run a system check](#).

## RECOVERING YOUR PASSWORD

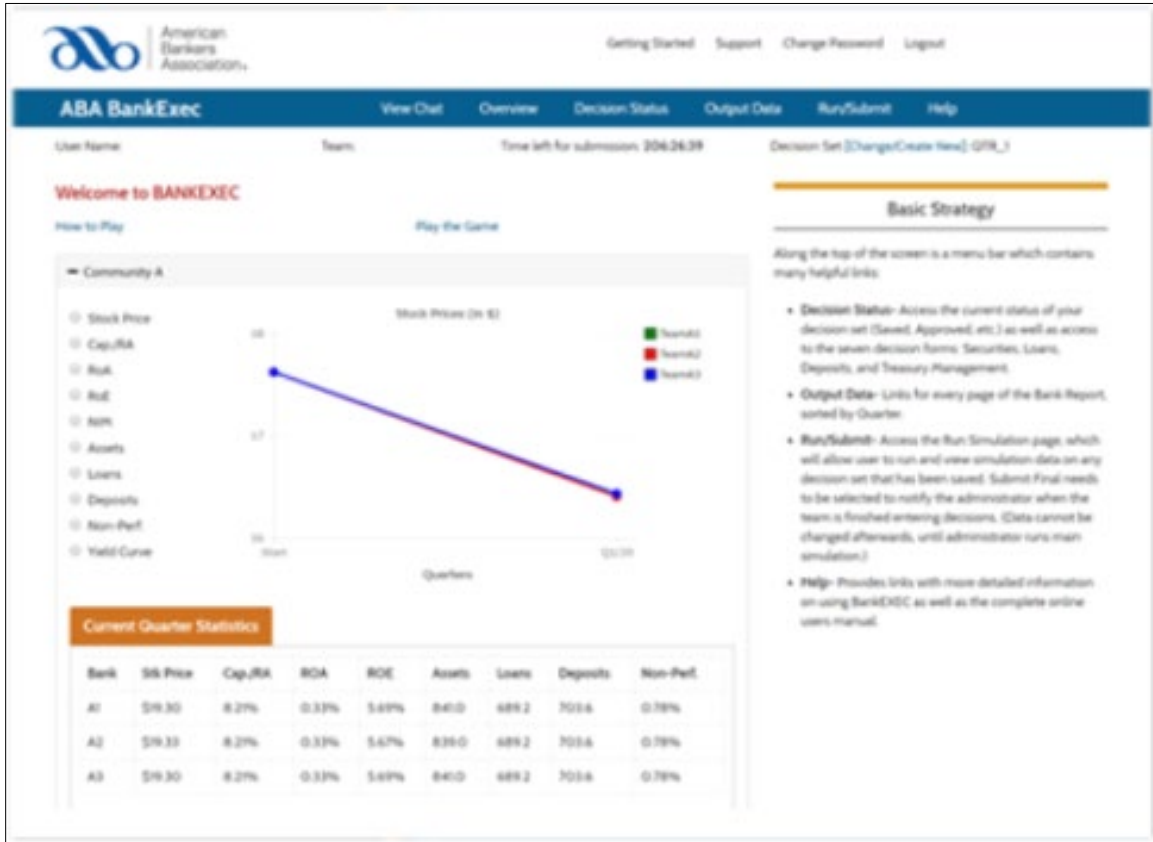
Click on Forgot Password and enter your email address associated with your BankExec program. A default password will be emailed to that address. Login using your email as your username and your new password. You will be required to change the password once you access BankExec. Your password must be a minimum of eight characters in length, with one capital letter, one number and one special character. It cannot contain your first or last name.

## BASIC NAVIGATION

Once you login, you will see the BankExec home page as pictured in Figure 5.

From the blue Menu bar near the top of the screen, you will see several options. These are described in the **Basic Strategy** panel located on the right side of the screen.

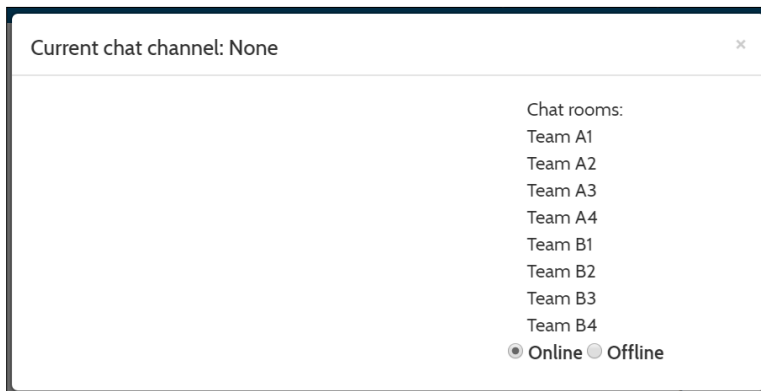
**Figure 5. BankExec Home Page**



**CONTACTING INSTRUCTOR THROUGH CHAT**

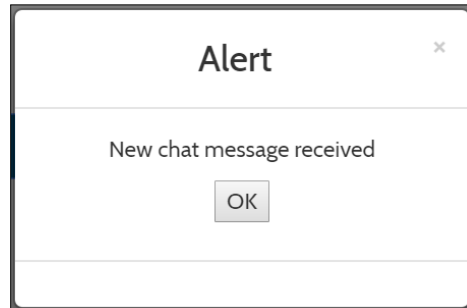
On the far left of the menu bar, there is an item labeled View Chat. If enabled by your instructor, clicking this link will open up a chat interface (Figure 6) allowing you to submit questions or ask for help. The instructor will be notified when a new message is sent and can respond accordingly.

**Figure 6. Chat Interface**



A notification message will appear when an instructor is contacting your team. It will appear near the View Chat link as shown in the Figure 7. Either the notification bubble or the View Chat link can be clicked to view the message.

**Figure 7. New Message Notification**



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# BANKEXEC INPUT DECISIONS

The BankExec simulation requires you to enter a set of decisions in four functional areas. These decision areas are described in the next sections. These decision forms and their associated functions are shown in the table below.

|                                 |  |
|---------------------------------|--|
| <b>Securities Decision Form</b> | Security markets: purchase and security sale decisions           |
| <b>Loans Decision Form</b>      | Loan decisions   |
| <b>Deposits Decision Form</b>   | Deposit and business development (marketing) decisions           |
| <b>Treasury Decision Form</b>   | Treasury decisions: Purchased funds, capital and other decisions |

## CREATING DECISION SETS

As you navigate the deadline driven, simulated economy in BankExec, your team will make decisions about how your bank will perform financially in the given economy and market conditions. A Decision Set allows you to change how your bank is working in each of the four functional areas listed above. The Decision Set you submit represents the quantitative input in these four functional areas.

As part of your learning experience, you can create multiple Decision Sets and compare the results using a simulated What-If analysis. After you create a Decision Set you are comfortable with, **you must submit that Decision Set for final competition.**

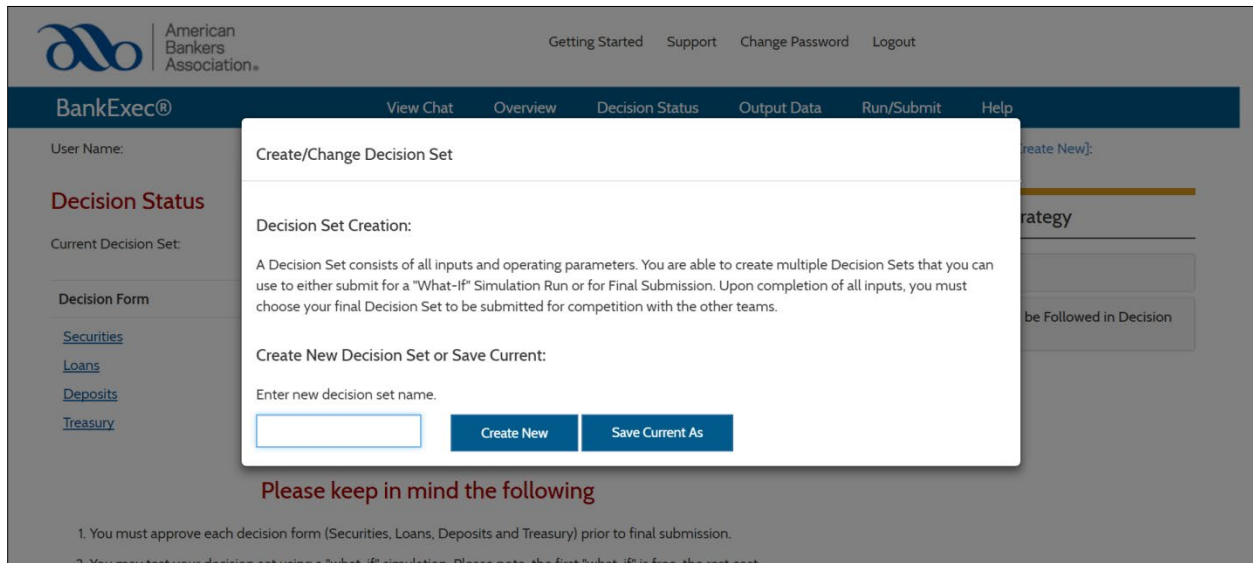
Note: Failure to Submit the Decision Set by the time deadline means that your Decision Set is NOT CHANGED from the prior period or quarter. Your submission is NOT the last Decision Set you were working on! See the section on [Submitting Your Decision Set](#) for more information.

## CREATING YOUR FIRST DECISION SET

The first time you access the Decision Status menu, you will be required to create a Decision Set as shown in Figure 8. Enter a name for your Decision Set and then click Create New.



**Figure 8. Create New Decision Set**



## DECISION STATUS PAGE

By selecting the menu option Decision Status, you will see the decision options listed. Select any of the forms from the Decision Status drop-down menu (Securities, Loans, Deposits or Treasury) to navigate directly to that decision form.

From this page, you can see how much time is remaining until the final submission of your Decision Set is due. You can also see the current status of the decision forms, change the name of your bank team or print your decision forms for reference.

More than one team member can edit a Decision Set at one time. BUT, there are several rules to follow, as discussed below.

## EDITING MULTIPLE DECISION SETS

It is critical that each team member edit the **same** Decision Set. If multiple team members edit multiple Decision Sets, you will need to manually consolidate your decision prior to final submission. It is recommended that only one team member edit one page of the decision set (Securities, Loans, etc.) at a time. If multiple team members edit the same decision set and same decision page, you will likely write over each other's entries.

## APPROVE DECISION SETS PRIOR TO FINAL SUBMISSION

Figure 9 shows the Decision Status screen. Once you have completed your decisions, mark the page as approved using the Approved check box. This allows all other team members to know the status of the page and is required prior to final submission.

**Figure 9. Decision Status Screen**

The screenshot shows a web interface titled "Decision Status". At the top left, it says "Current Decision Set: Decl" with a blue "Change/New" button next to it. Below this is a table with four columns: "Decision Form", "Viewed", "Modified", and "Approved". The rows are "Securities", "Loans", "Deposits", and "Treasury". The "Securities" row has a checked box in the "Viewed" column. To the right of the table is a large "Time remaining:" display showing "103:37:9" in red. Below the timer is a "Change Team Name:" label, a text input field containing "Test", and a blue "Update" button.

| Decision Form              | Viewed                              | Modified                 | Approved                 |
|----------------------------|-------------------------------------|--------------------------|--------------------------|
| <a href="#">Securities</a> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <a href="#">Loans</a>      | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| <a href="#">Deposits</a>   | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| <a href="#">Treasury</a>   | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |

## SUBMIT YOUR DECISION SET

You can submit your current Decision Set for a What-If test simulation or for competition. Prior to running a What-If simulation or for final competition, you should consider two important factors:

1. Just as in the real-world financial analysis requires staff time and resources. There is a charge for running What-If simulations. Your instructor will inform you of the amount of the charge. Your overhead charge for the simulation is listed to the right by Overhead Charge under Run/Submit and What-If simulation and is the running total of the charges for the current quarter.
2. YOU MUST SUBMIT YOUR DECISION SET FOR FINAL COMPETITION by clicking on the Submit for Competition button. Failure to submit your Decision Set by the deadline means that your prior Decision Set (from the previous quarter) will be used.

## IMPLEMENTING DECISIONS

Each team is able to make operating decisions in the following areas:

- Securities
- Loans
- Deposits
- Treasury Management

These areas are interdependent in many cases; for example, decisions regarding securities and loans need to be coordinated with decisions regarding deposits and treasury management. The general characteristics and the particular decisions associated with each area are discussed in separate sections in this manual.

Each quarter your team can review results from the previous quarter and decide whether to add new or change values in each of the four areas. You may submit only **one** Decision Set per period! Each decision form is a section of a bank report. For example, the Deposit Decision form

is taken from Report B44. The number of the decision form (44) matches the report number. You may use the reports freely to make notes, write down preliminary decisions and so forth. In the description of the decisions below, we will refer to the decision forms; however, keep in mind that the same information on a decision form is also found on the corresponding report, which includes other information that is useful in making your decisions.

There are some general rules to follow in the decision process. Specific instructions for each form are provided in each decision area. The general rules are:

- The majority of decisions represent policies that remain in effect until changed by submission of a new value. All prices, budgets, and policy conditions are of this sort.
- For a decision that will remain in effect, the current value is shown in the space on the form where a new value can be entered. If 0.0 is shown, it means that the current value is 0.0 and this value will remain in effect until changed.
- If you leave a decision area blank, no entry is made for that decision. Any policy decisions will remain in effect.
- Follow the format shown for the decision on the form. For example, suppose the current value of a loan interest rate is shown as 8.50. If you wish to change the rate to 8.0 percent, enter 8.0 not .08!
- If no value for a current decision is shown (a blank space in the decision entry area), then a new value must be entered each quarter that a decision is desired in this area.
- Review your decisions for reasonableness in a banking context. Be especially careful if you are making a large change from a current value for the decision. Ask your instructor if you have any doubts as to what you are doing.
- Save and approve all decision forms even if there are no entries on one or more of them.

# SECURITIES DECISIONS

## SECURITIES AVAILABLE FOR PURCHASE

There are five types of securities that may be purchased and sold—bills and bonds issued by the U.S. Treasury, bonds issued by government agencies, bonds issued by state and local governments which are tax-exempt, and interest rate swaps. Securities are purchased and sold in \$ millions of par (maturity) value. Fractional values such as \$2.5 million are not acceptable—your decision should be either \$2 million or \$3 million. All securities transactions—purchases, sales, calls, and receipts from maturing securities—occur on the first day of the quarter in which the transaction takes place. Purchases and sales of securities are entered on the Securities Decision form.

## TREASURY BILLS AND BONDS

Treasury bills (BL) have maturities of one, two, three, or four quarters only. Since bills do not pay coupon interest, they are acquired at a discount from their face value, and interest is accrued quarterly on a straight-line basis. They are carried on the bank's books at purchase cost plus accrued interest. The current interest rates on all securities are on Form B10. Figure 10 illustrates the purchase of \$10 million of one-quarter bills, \$8 million of 30-quarter bonds, and \$2 million of 5-quarter agencies.

Figure 10. Securities Purchase Decisions

The screenshot shows a web form titled "Security Decisions" with a sub-section "Purchase Securities". It contains a table with four rows of input fields. Each row has a dropdown menu for "Security Type", a text box for "Amount", a text box for "Maturity (Quarters)", and a minus sign button. The "Agency Bonds" row is highlighted with a blue border. A plus sign button is located at the bottom left of the form.

| Security Type  | Amount | Maturity (Quarters) |   |
|----------------|--------|---------------------|---|
| Treasury Bills | 10     | 1                   | - |
| Treasury Bonds | 8      | 30                  | - |
| Agency Bonds   | 2      | 5                   | - |
| Tax Exempt     |        |                     | - |

Use the + button to add a line to purchase additional securities. Use the - button to delete a line. You would use the delete a line button if you changed your decision to not purchase a security you previously put an entry in for.

Treasury bonds (BD) are available with maturities ranging from one quarter to a maximum of 120 quarters (30 years). Any maturity within the range, one-quarter to 120, may be purchased. Bonds pay quarterly interest equal to their annual coupon rate divided by four. All bonds are purchased at their face value and have a coupon rate equal to the market yield at the time of purchase. Note that the interest rate on a Treasury bond is the same as the interest rate on a Treasury bill with the same maturity. Report B10 show market yields only at selected maturities; therefore, you must estimate the yield for any maturity that is not shown. A graph of yields plotted against maturities may be used for this purpose. This sort of graph is called a yield curve and is provided for you on the Overview page of the Simulation Interface as well as Report C95. Treasury bills and bonds may be used to support borrowing through repurchase agreements.

## AGENCIES

The bonds issued by government agencies (AG) are similar to Treasury bonds; however, agencies are callable whereas Treasury bonds are not. Agency bond yields are higher than those on Treasury bonds of the same maturity. This is due, in part, to the call feature. The bank buys these securities at par from the issuer. All agencies with initial maturities of eight quarters or more are callable (redeemable) at par by the issuer four quarters after issue and only at this time. If an agency bond is not called on the call date, it will be redeemed at par at maturity. The decision to call an agency bond (made by the issuing agency) is based on a comparison of the current market yield for a comparable non-callable bond with the coupon rate on the existing bond. If the issuer could replace the bond with a comparable one at a lower interest rate, the issuer will call the bond. An agency bond that is being called will show a maturity of 0 in the portfolio report (B12) and the par value will be paid to the bank on the first day of the next quarter. In Figure 10, a decision to buy \$2 million of five-quarter maturity agencies is shown.

## STATE AND LOCAL GOVERNMENT BONDS

Bonds issued by state and local governments are referred to as municipal bonds, or tax-exempts (TE). The interest income from these securities is not taxed. They are available for purchase in limited amounts each quarter with a single maturity as shown on B10 and the Securities Decision form. Otherwise they are similar to Treasury bonds.

Yields for bonds may be stated in several ways—pre-tax, after-tax, and taxable-equivalent. In order to compare the interest rates from tax-exempt securities with others that are fully taxable, such as Treasury bonds, taxable-equivalent yields are calculated and shown on B10 and Securities Decision form (for purchases) and B12 (for securities owned by the bank). Although the interest income from these bonds is not taxed, the interest deduction associated with carrying them is limited. These tax-exempt bonds available for purchase by the bank are known as bank-qualified because they have a special tax treatment for banks that invest in them. Twenty percent of the interest expense attributed to carrying these securities is not allowed as a tax-deduction. (Regular tax-exempt bonds are not very interesting to banks because all of the

interest expense of carrying them is not deductible which substantially reduces their taxable-equivalent yield and, therefore, have not been included in BankExec.)

The formula for the taxable-equivalent yield on a bank-qualified bond is the pre-tax yield minus 0.2 times the bank's average interest cost of funds times the tax rate, all divided by (1.0 - tax rate). The interest cost of funds is simply the bank's total interest expense divided by its total liabilities plus equity. For example, suppose that the coupon rate on a bond to be purchased is 5.0 percent. The tax rate is 40 percent and the bank's interest cost of funds is 3.0 percent. The taxable-equivalent yield would be calculated as  $(5.0\% - 0.2 \times 0.4 \times 3.0\%) / (1 - .4) = 7.93\%$ . This 7.93 percent can then be compared with the rates on other, fully taxable securities available. Note that the taxable-equivalent yield for one bank may be different for another bank for the same security if the cost of funds is different for the two banks. A bank with a low cost of funds will find tax-exempts relatively more attractive than a bank with a high cost of funds. Each bank in the simulation has the same opportunity to invest in these securities.

## INTEREST RATE SWAPS

Interest rate swaps are included as part of the securities portfolio; however, they are significantly different from the other securities. There are two types of swaps available—fixed-rate swaps (SF) and variable-rate swaps (SV). In a fixed-rate swap, the bank will receive a fixed coupon amount each quarter and pay a variable amount based on the one-quarter maturity commercial paper rate and the notional amount of the swap. The level of the commercial paper rate for the coming quarter is shown on Report B10 and the Securities Decision form. The fixed rates that apply to new swap purchases are shown on B10 and Securities Decision form as well. The fixed rates applying to swaps in the bank's portfolio are shown as the Fixed Coupon in Report B12. The amount of interest paid and received is based on the applicable interest rates times the notional amount of the swap. Only the net interest is paid or received. For example, suppose that the notional amount of a fixed-rate swap is \$10 million, the fixed rate is 6.0 percent, and the current value for the commercial paper rate is 4.0 percent. For the quarter, the bank would receive \$50,000  $((0.06 - 0.04) / 4 \text{ times } \$10 \text{ million})$ . If commercial paper rate rose to 8.0 percent on the same swap, the bank would pay \$50,000 per quarter. A variable-rate swap works the same way except that the bank receives interest based on commercial paper rate and pays the fixed coupon. Therefore, with a \$10 million variable-rate swap, a fixed coupon of 6.0 percent and commercial paper rate at 4.0 percent, the bank would be paying \$50,000 in a quarter. If commercial paper rate went to 8.0 percent, it would receive \$50,000 net interest. The net interest for all swap positions is shown on Report B02.

Swaps are acquired by the bank by selecting the appropriate swap in the drop-down box and entering the desired notional amount and maturity on the Securities Purchase Decision form. No cash is involved in the purchase of a swap, only interest on the notional amount is swapped. Swaps are available for any maturity from two quarters to 80 quarters. Maturity refers to the term of the swap contract—no cash is received at maturity except any final interest due.

All or part of any swap in the bank's portfolio may be sold. The market value of each swap is shown as part of the portfolio data. The sale amount is the notional value. For example, if you wish to sell half of the \$20 million swap shown in Figure 11 (security 105), enter 10 as the sale amount. The market value of this swap is negative \$0.157 million. A loss of \$0.0785 results from the sale and is included as part of gains/losses on asset sales on Report B02. The market value of

a swap reflects any difference between the fixed coupon on the swap and the current (fixed) market rate for a swap of the same maturity as the remaining term of the swap.

**Figure 11. Swaps**

| <b>Sell Securities</b> |                  |                     |                   |                 |                    |
|------------------------|------------------|---------------------|-------------------|-----------------|--------------------|
|                        | <b>Par Value</b> | <b>Market Value</b> | <b>Book Value</b> | <b>Maturity</b> | <b>Sale Amount</b> |
| <b>Bill:</b>           |                  |                     |                   |                 |                    |
|                        | 0                | 0                   | 0                 | 0               | 0                  |
| <b>Bond:</b>           |                  |                     |                   |                 |                    |
| 129                    | 10               | 9.735               | 10.000            | 11              | 6                  |
| <b>Agency:</b>         |                  |                     |                   |                 |                    |
|                        | 0                | 0                   | 0                 | 0               | 0                  |
| <b>Tax Exempt:</b>     |                  |                     |                   |                 |                    |
| 128                    | 5                | 4.716               | 5.000             | 51              |                    |
| 130                    | 5                | 4.785               | 5.000             | 53              |                    |
| <b>Swaps Fixed:</b>    |                  |                     |                   |                 |                    |
|                        | 0                | 0                   | 0                 | 0               | 0                  |
| <b>Swaps Var:</b>      |                  |                     |                   |                 |                    |
|                        | 0                | 0                   | 0                 | 0               | 0                  |

A useful way to think of a swap is that it consists of two securities—a long position in one and a short position in the other. In a fixed rate swap, the long position is a fixed income security and the short position is a variable income security. In a variable rate swap, the long position is in a variable income security and the short position is in a fixed income security. If the market rate is lower than the fixed coupon on the swap, the fixed rate security has a higher value than when it was acquired. A long position in the fixed income security (fixed rate swap) will show a gain and a short position in the fixed income security (variable rate swap) will show a loss. The variable

income security is always at face value. Since swaps have zero book (and market) values when they are acquired, the gain or loss on the position equals the market value of the swap.

The primary use of swaps is to manage interest rate risk exposure. Suppose, for example, that the bank sees a market opportunity in five-year fixed rate loans; however, the available funding source for an increase in these loans of \$10 million is three-month CDs. This funding would expose the bank to a risk that interest rates rise. The bank might choose to make the loans, fund them with CDs, and enter into a long-term \$10 million variable-rate swap. If interest rates rise, the bank will pay higher interest on its CDs; but it should also receive higher interest payments from the swap thereby reducing the risk. Information about the overall interest-rate risk exposure of the bank, including its swap positions is provided on Report B05. On B05, the long swap positions show as positive amounts equal to the notional values of the swaps and short positions show as negative amounts equal to the notional values. The net value of swaps across all maturities is always zero as the long and short positions cancel out.

## **BOARD POLICY: SWAPS**

The Board of Directors has established a policy, after discussion with bank regulators, to restrict the use of swaps to the management of interest rate risk. No swap transaction is permitted for purposes of speculation. Swap transactions will be monitored and any transaction that might be considered speculative should be presented to the Board for prior approval. Failure to conform to this policy may be considered as a departure from safe and sound banking practices and could subject the bank to financial penalties imposed by bank regulators or restrictions on the authority of bank management to engage in any future swap transactions.

## **SECURITY SALES**

Securities purchased by the bank are assumed to be available for sale; therefore, they are carried on the balance sheet at their market value. When a security is sold, a gain or loss on the sale may be recorded at that time based on the difference between the book value and the market value. Gains are treated as ordinary income, and losses are treated as expenses in determining the bank's income taxes. Information on the current book and market values along with other data on the securities owned by the bank and a summary of transactions during the quarter just ended are shown in the portfolio report (B12). A section of this report is printed as the Security Sales Decision form. The amount to be sold is entered in millions of par value (no fractional values) in the column to the right of the security number. Sale amounts should not exceed par value. Maturing and called securities (maturity of 0), cannot be sold since the bank will be receiving the par value in cash on the first day of the coming quarter and are not shown on the Security Sales Decision form.

## **MARK-TO-MARKET ADJUSTMENT**

All securities other than tax-exempts are considered to be available for sale and are marked-to-market each quarter. This means that the unrealized gain/loss on the security portfolio excluding tax-exempt securities is directly reflected in the owners' equity. The unrealized gain/loss for tax-exempt securities is excluded since these securities are implicitly considered to be held-until-maturity. However, the tax-exempt securities may be sold at any time unless the simulation administrator places restrictions.



Each quarter the gain/loss for securities excluding tax-exempts is added to owner's equity. As an example, consider a bank that at the beginning of a quarter has a security portfolio with a book value of \$65 million consisting of \$45 million in Treasury and Agency securities and \$20 million in Tax Exempts. Initially, the portfolio market value is equal to its book value. Over the quarter, interest rates rise causing the value of the security portfolio to fall to \$64.565 million (\$44.891 million in Treasury and Agency securities and \$19.674 million in tax-exempt securities). The \$0.109 million loss in value of the security portfolio excluding tax-exempts reduces the banks owners' equity by the same amount.

Report B12 contains portfolio values and gains/losses. Near the bottom of the page, it indicates the total portfolio gain/loss and the gain/loss excluding tax exempts. Report B10 indicates the impact of the securities portfolio gain/loss on owners' equity. The report breaks down the owners' equity value from Report B01 for the past two quarters to show the value of owners' equity due to common stock and retained earnings and the gain/loss on the security portfolio excluding tax exempts.

Figure 12 illustrates the sale of \$6 million of number 129, bonds maturing in 11 quarters.

**Figure 12. Securities Sale Decisions**

| Sell Securities     |           |              |            |          |                      |
|---------------------|-----------|--------------|------------|----------|----------------------|
|                     | Par Value | Market Value | Book Value | Maturity | Sale Amount          |
| <b>Bill:</b>        |           |              |            |          |                      |
|                     | 0         | 0            | 0          | 0        | 0                    |
| <b>Bond:</b>        |           |              |            |          |                      |
| 129                 | 10        | 9.735        | 10.000     | 11       | 6                    |
| <b>Agency:</b>      |           |              |            |          |                      |
|                     | 0         | 0            | 0          | 0        | 0                    |
| <b>Tax Exempt:</b>  |           |              |            |          |                      |
| 128                 | 5         | 4.716        | 5.000      | 51       | <input type="text"/> |
| 130                 | 5         | 4.785        | 5.000      | 53       | <input type="text"/> |
| <b>Swaps Fixed:</b> |           |              |            |          |                      |
|                     | 0         | 0            | 0          | 0        | 0                    |
| <b>Swaps Var:</b>   |           |              |            |          |                      |
|                     | 0         | 0            | 0          | 0        | 0                    |

The securities portfolio represents investments that provide a source of income, liquidity, and safety for your bank. Since there are no customer relationships involved in the purchase and sale of securities, decisions in this area can be based only on financial considerations. There is one complication however, federal funds. The bank can choose to sell securities or not to buy securities with excess funds and let these funds be sold in the federal funds market. Therefore, management should consider federal funds as an alternative investment to securities. Depending on the organization of the bank, the securities officer may be given the responsibility to manage federal funds as part of the bank's investments. See the discussion on [Liquidity Management](#). Also see the discussion of the issues in [managing the securities portfolio and the relationships with other aspects of bank financial management](#).

**Figure 13: Securities Decision Summary**

| <b>Product</b> | <b>Market</b>  | <b>Comments</b>   |
|----------------|--|---|
| Federal Funds  | Maturities: One day unlimited amounts available at market rate   | Federal funds will only be sold if there is excess cash and are not under the direct control of the investments officer       |
| Treasury Bills | Maturities: on to four quarters unlimited amounts available at market rate<br>Maximum purchase is 99 million face value                  | Bills do not pay coupon interest; they are purchased at a discount<br>Book value includes accrued interest                    |
| Treasury Bonds | Maturities: 1-120 quarters unlimited amounts available at market rate<br>Maximum purchase is 99 million face value                       | Quarterly interest paid at coupon rate  |
| Agency Bonds   | Maturities: 1-120 quarters maximum (may be less) unlimited amounts available at market rate<br>Maximum purchase is 99 million face value | Quarterly interest paid at coupon rate<br>Callable four quarters after purchase if initial maturity is eight quarters or more |

| <b>Product</b>      | <b>Market</b>  | <b>Comments</b>   |
|---------------------|--|---|
| Tax-Exempt Bonds    | Maturity and Amount: limited as shown on B10 and Securities Decision form  | Quarterly interest paid at coupon rate. Interest is tax exempt, but interest expense deduction is reduced   |
| Variable Rate Swaps | Maturities: 2-80 Quarters maximum. Unlimited amounts available at market rate is 99<br>Maximum purchase million (notional) CPR Bank receives quarterly, pays fixed interest rate set at purchase | Only net interest is paid or received. All or part of a swap may be sold. Sale amount is notional value, but bank receives market value.<br>Fixed rates at purchase are shown on Report B10 |
| Fixed Rate Swaps    | Maturities: same as variable rate swap unlimited amounts available at market rate is 99<br>Maximum purchase million (notional) Bank receives fixed rate set at purchase, pays CPR quarterly      | Same as variable rate swaps   |

# LOAN DECISIONS

There are nine potential loan products that may be offered by the bank. A minimum of five standard products should be available with a maximum of seven. There are four basic decisions that apply to every loan product. We will look at these first, then describe the differences in the products and markets. The current values of the decisions are shown on B24 and the Loan Decision form. These values remain in effect unless changed by management. There are some additional decisions, unique to some products that will be discussed with the product. Loan decisions are entered on Loan Decision form as shown in Figure 14 for the five basic products.

**Figure 14. Basic Loan Decisions and Standard Products**

**Loan Policies**

|                          | Int.Rate                          | Mkt.Rate | Credit Policy                    | Bus. Dev.                        | Max. Outstand.                   | Max. Mat. (Quarters)            | Rate Adj. Period               |
|--------------------------|-----------------------------------|----------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|--------------------------------|
| Business Credit Lines    | <input type="text" value="6.5"/>  | 6.47675  | <input type="text" value="3"/> ▼ | <input type="text" value="M"/> ▼ | <input type="text" value="200"/> |                                 |                                |
| Business Term Loans      | <input type="text" value="7"/>    | 6.85681  | <input type="text" value="3"/> ▼ | <input type="text" value="M"/> ▼ | <input type="text" value="200"/> |                                 |                                |
| Commercial Real Estate   | <input type="text" value="6.5"/>  | 7.15563  | <input type="text" value="3"/> ▼ | <input type="text" value="M"/> ▼ | <input type="text" value="200"/> | <input type="text" value="40"/> | <input type="text" value="4"/> |
| Residential Mortgage(FR) | <input type="text" value="5.25"/> | 5.58245  | <input type="text" value="3"/> ▼ | <input type="text" value="M"/> ▼ | <input type="text" value="200"/> |                                 |                                |
| Installment Loans        | <input type="text" value="6.75"/> | 7.41871  | <input type="text" value="3"/> ▼ | <input type="text" value="M"/> ▼ | <input type="text" value="200"/> |                                 |                                |

**Loans Available for Sale**

|                                   | Book Value | Market Value | Gain-Loss  | Sell                     |
|-----------------------------------|------------|--------------|------------|--------------------------|
| <b>Commercial Real Estate:</b>    |            |              |            |                          |
| 201                               | 7.44167    | 7.42024      | -0.0214315 | <input type="checkbox"/> |
| 202                               | 9.96177    | 9.7064       | -0.255372  | <input type="checkbox"/> |
| 203                               | 9.67612    | 9.62023      | -0.0558949 | <input type="checkbox"/> |
| 204                               | 9.84808    | 9.78479      | -0.0632874 | <input type="checkbox"/> |
| <b>Residential Mortgage (FR):</b> |            |              |            |                          |
| 205                               | 9.00297    | 8.55421      | -0.448757  | <input type="checkbox"/> |
| 206                               | 9.30543    | 8.75314      | -0.552293  | <input type="checkbox"/> |
| 207                               | 8.37818    | 8.2666       | -0.111578  | <input type="checkbox"/> |
| 208                               | 9.97348    | 9.8589       | -0.114575  | <input type="checkbox"/> |

## BASIC LOAN DECISIONS

### Interest Rate

The interest rate is the annual percentage rate charged for loans made in the coming quarter. Follow the format shown on the Loan Decision form. For example, a rate of 7.5 percent is entered as 7.50.

The interest rate decision sets an average rate that applies to customers who are acceptable to the bank as indicated by the bank's credit policy. Individual loans may carry higher rates or lower rates than the average depending on the credit risk involved. There are differences in the credit risk of borrowers in the market and the bank charges them rates accordingly based on the average rate set by the interest rate decision. Interest income on all loans is received quarterly.

### Credit Policy

The credit policy of the bank is a number with values of 1, 2, 3, 4 or 5 that represents the credit policy of the bank regarding loan customers.

A credit policy of 1 represents a restrictive policy of lending only to customers who are of very high credit quality or loans that are extremely well secured (for example, secured by deposits in the bank). Such customers represent about 20 percent of the available market. There is no appreciable credit risk for loans made under a credit policy of 1. At the other extreme, a credit policy of 5 is a liberal policy that permits credit to be extended to all customers with reasonable prospects of repayment. The only customers excluded from consideration under this policy are ones who would find it difficult to borrow from a bank under any circumstances. Decisions regarding the interest rate and credit policy should be made together. The more liberal the bank's credit policy, the higher the average interest rate can be to attract a given volume of loans.

### Business Development

The Business Development drop down establishes business development priorities as High (H), Medium (M), Low (L), and None (N).

Business development priorities are relative and the decisions in the loan area are affected by business development decisions in the deposit area. For example, setting all business development priorities in the loans and the deposits area to High has exactly the same impact as setting all decisions in both areas to Low. The decisions allocate business developments budgets set on the Deposits Decision form and are discussed in the [Deposit Decisions](#) section. If all the decisions are the same, then the budgets are allocated equally to each product; however, none means zero regardless of the budget levels set.

The budgets are allocated to products as follows:

- None has a value of 0
- Low has a value of 1
- Medium has a value of 2
- High has a value of 4

Therefore, if you decide to have a high business development value on a product, that product will have a budget that is four times that of a product where you decide on a low business development value. The actual amounts involved depend on the level of the budget decisions. Choosing None means that no money will be spent on this product. There will be no advertising or promotion of the product and loan officers will devote all their time to servicing existing customers. No time will be spent on developing new accounts.

### **Maximum Outstanding**

This represents the maximum amount of total loans of this type that management wishes to have outstanding, expressed in millions. The limit does not apply to credit line draws under existing commitments and it does not affect the pattern of repayments of outstanding loans. The limit can affect the amount of new loans booked.

For example, a value of 120 for commercial RE loans sets an intended ceiling of \$120 million outstanding for this loan type. If the current balance is below 120, new loans will be limited if they would cause the total balance to exceed 120. If the current balance exceeds 120, new loans are limited (possibly forced to zero), but it may take several quarters to achieve the lower maximum total loan balance as outstanding loans are repaid (or sold).

## **STANDARD LOAN PRODUCTS**

### **Business Loans**

The bank offers two loan products to businesses—credit lines and term loans. The major difference between a credit line and a term loan is that the term loan requires regular principal payments equal to the initial amount of the loan divided by the initial maturity. A credit line does not require any principal payments prior to the expiration of the line—its maturity. Usage (loans outstanding) under credit lines averages about 50 percent of the total commitments outstanding and is somewhat seasonal with the first quarter of the year having the lowest usage and the fourth quarter having the highest. Credit lines have a maximum maturity of 12 quarters and term loans have a maximum maturity of 20 quarters when they are originated. Customers may choose shorter maturities if they prefer. There is some demand for four-quarter credit lines and eight-quarter term loans.

The bank earns a 1.0 percent annual maintenance fee on credit lines. The bank's interest rate and credit-quality decisions apply only to the loans made in the quarter for which the decisions are in effect. The bank earns a 1.5 percent origination fee on all new business loans. For credit lines, this fee is based on the amount of the commitment made, not the amount of the loan initially drawn down by the customer. Information on the amount of commitments extended is provided on Report B20.

The interest rate charged on both business loans is tied to the prime rate as reported on Report C96. The interest rates specified as the bank's current decisions set spreads relative to the current prime rate. For example, if the bank's decision rate is 7.0 percent and the prime rate is 6.25 percent, the spread is +0.75 percent. As the prime rate changes each quarter, business loans in the bank's portfolio are charged an annual interest rate equal to the original spread on the loan plus the current prime rate. So, if the prime rate at the beginning of the next quarter is 6.50 percent, loans made with a spread of 0.75 percent would have a new annual rate of 7.25 percent. Therefore, business

loans are inherently one-quarter variable rate loans. The interest paid each quarter is one fourth of this annual interest rate times the average balance outstanding on the loan.

Credit lines and term loans are relatively close substitutes from the perspective of the bank's business customers although there are preferences for one over the other for many customers. There is more demand for credit lines than for term loans; but the bank's policies can influence the choice made by customers for these two products. For example, if the bank offers unusually attractive terms on its term loans relative to its credit lines, many customers will choose term loans. Therefore, management should consider both products together in its approach to this market.

## **Commercial Real Estate Loans**

Commercial real estate loans are secured by real property used by a business or for other income-producing purposes; for example, office buildings, gas stations, warehouses, rental apartments, and hotels. New loans have a 2.0 percent origination fee and these loans may be sold. There are two decisions that apply only to these customers in addition to the four standard ones—maximum maturity and rate adjustment period.

### **Maximum Maturity**

Management can specify the maximum maturity of the loans made in each quarter. The maturity decision is in quarters and can be any value from 01 to 99 quarters. The maturity decision applies only to loans made in that quarter. No adjustment can be made to the terms of loans made in prior quarters.

The maturity decision affects the type of loan made. Loans of eight quarters or less, are used for purposes such as construction of new buildings or the purchase of land to be used in development. The entire balance of these loans is due at maturity and the customers will normally seek to re-finance the loan on a longer-term basis. Loans with maturities between eight quarters and 21 quarters will be amortized (quarterly payments of principal and interest) over a period of 40 quarters with the balance due at maturity. There is some demand for these loans from borrowers with special needs. If the maximum maturity is 21 quarters or more, loans made with the maximum maturity will be amortized over 80 quarters with the remaining balance due at maturity. Such loans can be considered normal commercial real estate loans. Since all three types of loan may be demanded in the market, if the maximum maturity decision is 20 quarters or less, the bank is limiting the type of borrower to which it is willing to lend. If the bank sets the maximum maturity decision greater than 20 quarters, all types of customers can be accommodated; however, some customers would prefer a longer maturity than 21 quarters if it is offered in the market. A maximum maturity decision of 40 quarters will meet the needs of all customers, and very few customers are willing to borrow at a maturity of less than four quarters.

### **Rate Adjustment Period**

Management can specify how long it will be before the interest rate on a real estate loan may be adjusted. The decision is in quarters and can be any value from 01 to 99 quarters.

When a real estate loan is made, a spread is calculated against the rate on a Treasury bond with the same maturity as the rate adjustment period for the loan—the index rate. The borrower is

then charged the bank's decision rate until the rate adjustment period expires. At this time, the original spread is added to the value of the index rate.

For example, suppose that the rate adjustment period is four quarters. If you make a loan today at an interest rate of 9.0 percent and the current four-quarter Treasury bond rate is 7.0 percent, the spread on the loan will be 2.0 percent. The annual interest rate on the loan will be fixed at 9.0 percent for the next four quarters. Four quarters from now, a new rate will be established for the loan. If the four-quarter Treasury bond rate at that time is 7.50 percent, the loan will have a new interest rate of 9.50 percent that will remain fixed for the following four quarters. If the rate adjustment period is one quarter, real estate loans will change with the same frequency as those for business loans. All these loans will have variable earning rates. If the rate adjustment period is equal to the maximum maturity decision, the bank is making fixed rate commercial real estate loans. A one-quarter rate adjustment period produces loans that have stable market values. A rate adjustment period greater than 20 quarters produces loans whose market values will vary significantly with changing interest rates.

### **Fixed-rate Residential Mortgages**

Fixed-rate residential mortgages are made at the current interest rate decision of the bank and have maturities of 60 quarters (15 years) and 120 quarters (30 years). They are repaid in equal quarterly installments of principal plus interest. These loans are all secured by 1–4 family homes and tend to be the safest loan made by the bank. Borrowers may repay ahead of schedule, especially if interest rates decrease significantly. The bank earns origination fees of 2.0 percent (two points) on all new residential mortgages and these loans may be sold.

### **Installment Loans**

Consumer installment loans are fixed rate, level payment, and amortized loans. They are predominately secured by consumer durable goods such as cars, boats, and appliances. They carry initial maturities of eight quarters to 20 quarters. The demand for these loans is rather seasonal in that new loan demand is about 20 percent lower during the first quarter of the year compared to other quarters.

### **Additional Loan Types**

There are four other types of loans that could be available to the bank depending on the particular program focus—agricultural loans, variable-rate residential mortgages, home equity credit lines, and credit cards. Your program administrator decides which loans your bank may offer.

### **Agricultural Loans**

Agricultural loans are credit lines to the agricultural industry—loans to farmers and farming companies. The distinguishing feature of these loans is their dependency on the time of year. These loans are credit lines with a commitment of one year on origination. They are similar to credit lines for business firms with some differences.

Initial commitments and credit line draw on agricultural loans follow a seasonal pattern. Most of the initial commitments are made in the winter and spring quarters; that is, from January through June. Draws (actual loans made) take place most heavily in spring and summer quarters, March through September. Therefore, these loans usually reach their maximum level at the end of



September, then decrease to relatively low levels at the end of December and the end of March. The activity in these loans and the current level of commitments are shown on Report B20.

Agricultural credit lines carry an interest rate that varies with the prime rate, the base rate for business loans. Also, they are not extended for more than four quarters. They all have an initial maturity of four quarters. The bank earns a 1.50 percent origination fee on new credit lines extended. The fee is based on the size of the commitment, not the amount initially loaned. The fees earned in the current quarter are therefore one and 0.50 percent of the amount of new commitments shown on Report B20.

### **Variable-rate Residential Mortgages**

Variable-rate mortgages appeal to a somewhat different customer than fixed-rate mortgages although these two products are substitutes; that is, both products serve the needs of the 1-4 family financing market. The interest rate posted by the bank sets a spread against the four-quarter (one-year) U.S. Treasury rate. Each year, on the anniversary date of the mortgage, the interest rate is reset to be the current rate on four-quarter U.S. Treasuries plus the spread. These mortgages are re-amortized when the rate changes to avoid negative amortization from an increase in interest rates. Variable-rate mortgages have original maturities of 60 and 120 quarters.

### **Home Equity Credit Lines**

From a marketing perspective, home equity credit lines should be considered a form of consumer lending, even though they are secured by real estate and classified as such on the balance sheet. Those borrowers who can qualify for these loans can use them as a substitute for other types of consumer credit, primarily installment loans. Home equity loans carry a variable interest rate based on the one-quarter Treasury rate—the bank's decision sets the spread on new loans. Home equity lines have a minimum principal payment equal to the current balance divided by the quarters to maturity based on an original maturity of 20 quarters. Usage rates on home equity credit lines depend on the current level of interest rates on other types of consumer debt in comparison with the rates currently being charged on the credit lines. Typical usage rates are 25–35 percent. These loans pay a 2.0 percent origination fee on new credit line commitments and a \$25 annual fee.

### **Credit Cards**

Credit cards do not mature in any meaningful sense. Customers in good standing have their cards renewed at the expiration dates that range from four to eight quarters. Therefore, the balances and outstanding credit card lines (commitments) tend to be ongoing. Each customer has a credit limit similar to those established for business credit lines. The total amount of these limits for existing customers is shown as Credit Card Commitments on Report B20. Credit cards have an additional decision—an annual fee may be charged.

An annual fee is a fee charged to credit card customers entered in \$ per year; for example, a decision of 15 is a fee of \$15 per year per account. Credit card fees are assessed annually on each account at the current annual fee charged. Roughly 25 percent of continuing old customers will pay the fee each quarter. New customers pay the fee in the quarter their account is opened.

The bank earns interest only on those credit card accounts that are not paid in full each month. The total balance outstanding reflects both current balances and balances earning interest. In

addition, the bank receives income from merchant discounts at a rate of 1.50 percent of credit card billings (new loans) for the quarter. The interest rate applicable each quarter to those accounts paying interest is the current decision rate. A change in the rate charged applies to all accounts except those of customers who pay their entire balance monthly. A summary of the income received from all sources is shown on Report B22.

Credit cards tend to have the highest charge-off rate of any loan that is made by the bank.

Some customers may pay off the bank entirely during the quarter. The decision by customers to substantially reduce or eliminate their credit card balances is sensitive to the interest rate charged by the bank relative to alternatives available in the market. Remember, most credit card customers carry more than one credit card and many have alternative loan sources such as home equity credit lines.

### Loan Sale Decisions

Individual residential mortgages and commercial real estate loans currently in the bank’s portfolio may be sold in pre-set packages that are shown on B24 Loan Decision form and illustrated in Figure 15. The bank will receive the market value of the package on the first day of the quarter in which it is sold.

To sell a package, click the check box for Sell next to the package. Package 204 is being sold below. Sale of part of a package is not permitted.

**Figure 15. Loan Sale Decision Form (lower part)**

| Loans Available for Sale          |            |              |           |                          |
|-----------------------------------|------------|--------------|-----------|--------------------------|
|                                   | Book Value | Market Value | Gain-Loss | Sell                     |
| <b>Commercial Real Estate:</b>    |            |              |           |                          |
| 201                               | 8.571      | 8.490        | -0.081    | <input type="checkbox"/> |
| 202                               | 9.983      | 9.915        | -0.068    | <input type="checkbox"/> |
| 203                               | 9.978      | 9.791        | -0.187    | <input type="checkbox"/> |
| 204                               | 9.973      | 9.804        | -0.169    | <input type="checkbox"/> |
| <b>Residential Mortgage (FR):</b> |            |              |           |                          |
| 205                               | 9.914      | 9.200        | -0.714    | <input type="checkbox"/> |
| 206                               | 9.698      | 9.314        | -0.384    | <input type="checkbox"/> |
| 207                               | 9.282      | 9.014        | -0.268    | <input type="checkbox"/> |
| 208                               | 9.983      | 9.521        | -0.462    | <input type="checkbox"/> |

Save Changes

There are never more than eight loan sale packages and the packages available change each quarter. For example, some of the loans that are in Package 201 this quarter might be in Package 202 next quarter. Sales are made without recourse to the bank, but only performing loans may be sold. Loans that are non-performing at the time of sale are not included in the sale packages. The market demand for the packages is sensitive to the maturity and the price offered depends on the credit quality of the loans. Customers for these packages do a due diligence examination of the loan documents and assesses the credit risk of the borrowers. Longer maturities are usually more acceptable. The bank retains the servicing on all loans sold and earns an annual fee of 0.8 percent of the outstanding balance for this service. The income and expenses associated with servicing loans that have been sold are shown on Report B20.

### Provision for Loan Losses

The provision for loan losses on the bank's income statement is determined by a regulatory requirement that the bank maintain a loan loss reserve (on the balance sheet) of at least 1.0 percent of total loans. Since sale of loans is without recourse, the bank is not required to include these loans in the calculation of the required reserve. When loans are increasing, the loan loss reserve will be exactly 1.0 percent of total loans. If loans increase by \$50 million, the loan loss reserve must increase by \$0.5 million. Loan charge-offs (actual loan losses) are deducted from the reserve each quarter. Therefore, the provision for loan losses will equal any required additions to the reserve plus charge-offs. In a quarter when loans increase by \$50 million and charge-offs are \$0.3 million, the provision for loan losses is \$0.8 million ( $0.8 = 0.5 + 0.3$ ).

The accounting rules for the bank do not permit negative provisions for loan losses. If loans are decreasing and charge-offs are small, the provision for loan losses may be zero, and the reserve for loan losses may be greater than 1.0 percent of total loans. No additional provisions will be required in this situation until the loan loss reserve is reduced to 1.0 percent.

**Figure 16. Loan Decision Summary**

| <b>Product</b>              | <b>Market</b>  | <b>Comments</b>   |
|-----------------------------|--|---|
| Business Credit Lines       | Maturities: 4–12 Quarters<br>Rate: Spread against prime rate<br>Rate may vary each quarter | Standard bank product, large volume<br>Bank receives 1.5 percent fee on new loans plus 1.0 percent per year for lines |
| Business Term Loans         | Maturities: 8–20 Quarters<br>Rate: Spread against prime rate<br>Rate may vary each quarter | Bank receives 1.5 percent fee on new loans<br>Customers may substitute for credit lines if rate is attractive         |
| Agricultural Loans (Option) | Maturity: 4 Quarters<br>Rate: Spread against prime rate<br>Rate may vary each quarter      | Bank receives 1.5 percent fee on new loans<br>Highly seasonal   |

| <b>Product</b>                               | <b>Market</b>   | <b>Comments</b>   |
|--|---|---|
| Commercial Real Estate Loans                 | Maturities: Maximum set by bank.<br>Rate: Spread against Treasury bonds set by bank<br>Rate adjustment period set by bank                           | A maximum maturity of 40 quarters will meet the needs of all potential customers<br>Bank receives 2.0% fee on new loans<br>These loans may be sold without recourse |
| Fixed-rate Residential Mortgages             | Maturities: 60 & 120 Quarters<br>Rate: Fixed  | Bank receives 2.0 percent fee on new loans<br>These loans may be sold without recourse  |
| Variable-rate Residential Mortgages (Option) | Maturities: 60 & 120 Quarters<br>Rate: Spread against Treasury set by bank  | Bank receives 2.0 percent fee on new loans<br>These loans may be sold without recourse  |
| Home Equity Credit Lines (Option)            | Maturity: 20 Quarters<br>Rate: Spread against one-quarter Treasury bill rate set by bank  | Bank receives 2.0 percent fee on new loans and \$25 annual fee  |
| Installment Loans                            | Maturities: 10–20 Quarters<br>Rate: Fixed for life of loan  | No fees involved<br>Secured by consumer durable goods   |
| Credit Cards (Option)                        | Maturity: Indefinite, normally renewed every four or eight quarters<br>Rate: Current decision rate set by bank applies to new and outstanding loans | Customers pay an annual fee set by the bank<br>Bank receives merchant discounts of 1.5 percent  |

# DEPOSIT DECISIONS

The bank acquires deposits from two types of customers—businesses and individuals. There are a wide variety of customers with differing account characteristics. For example, some customers keep relatively large deposit balances with the bank, others keep relatively small balances. There are four different deposit products that are available to bank customers—checking accounts, savings accounts, and fixed maturity savings certificates (time deposit accounts) with both fixed and variable interest rates. These deposit sources are considered core deposits in that a customer relationship based on factors other than price is involved and these customers often use more than one product or service offered by the bank. For example, roughly 75 percent of business checking deposits will come from customers who also borrow from the bank. Business customers also keep time and savings deposit accounts with the bank. Individuals may also be borrowers and are likely to keep more than one type of deposit account at the bank.

The bank may also issue large, negotiable certificates of deposits (CDs); but these are more properly considered purchased funds and are described in the section on Treasury Management.

Decisions for the core deposit products are entered on the Deposit Decision form as shown in Figure 17.

**Figure 17. Deposit Decisions**

**Deposit Decisions**

**Deposit Pricing**

|                     | Monthly Fee                        | Item Charge                       | Interest Rate                     | Business Dev.                  | Minimum Balance                   |
|---------------------|------------------------------------|-----------------------------------|-----------------------------------|--------------------------------|-----------------------------------|
| Business Checking   | <input type="text" value="10.00"/> | <input type="text" value="0.08"/> | <input type="text" value="1.50"/> | <input type="text" value="M"/> |                                   |
| Individual Checking | <input type="text" value="10.00"/> | <input type="text" value="0.10"/> | <input type="text" value="1.00"/> | <input type="text" value="M"/> | <input type="text" value="1000"/> |
| Individual Savings  | <input type="text" value="00"/>    |                                   | <input type="text" value="2.00"/> | <input type="text" value="M"/> |                                   |
| Premium Rate        |                                    |                                   | <input type="text" value="3.50"/> |                                | <input type="text" value="100"/>  |

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**Time Accounts**

|                | Maturity                        | Interest Rate                     | Business Dev.                  | Max Issue   |
|----------------|---------------------------------|-----------------------------------|--------------------------------|---|
| Variable Rate: | <input type="text" value="4"/>  | <input type="text" value="3.00"/> | <input type="text" value="M"/> | <input type="text" value="20"/> <a href="#">Clear Row</a> |
| Fixed Rate:    | <input type="text" value="2"/>  | <input type="text" value="4.00"/> |                                | <input type="text" value="20"/> <a href="#">Clear Row</a> |
|                | <input type="text" value="8"/>  | <input type="text" value="4.50"/> |                                | <input type="text" value="20"/> <a href="#">Clear Row</a> |
|                | <input type="text" value="12"/> | <input type="text" value="5.00"/> |                                | <input type="text" value="20"/> <a href="#">Clear Row</a> |
|                |                                 |                                   |                                | <input type="text" value="20"/> <a href="#">Clear Row</a> |

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**Marketing**

Business Development Budgets Salaries:  Advertising and Promotion:

If no new decisions are entered, current decisions will be carried forward to the next quarter. The interest paid on deposit accounts is credited to the account and accrued each quarter. Direct cash payments to customers are treated as withdrawals. The amounts of interest accrued, and cash withdrawals are shown on the deposit activity report B40.

## CHECKING ACCOUNTS

The bank offers checking accounts separately to businesses and individuals with separate pricing policies. The level of business checking accounts depends in part on the business loan policies of the bank and the specific deposit decisions. The level of individual checking accounts depends primarily on the deposits decisions—there is little impact from individual loan policies. The five decisions for checking accounts are discussed below.

### Monthly Fee

The monthly fee is in dollars per month and is assessed against each account during the quarter. For example, a decision of 10.00 is a fee of \$10 per month per account. When a new fee is charged, it applies immediately to all accounts.

### Item Charge

The item charge is in dollars per item and applies immediately to all accounts. Each check processed through the account is an item; therefore, an item charge of .08 is a charge of \$0.08 per check processed. The maximum item charge is \$0.99.

### Interest Rate

The interest rate is stated as an annual percentage rate. For example, a decision of 2.50 provides customers with annual interest of 2.5 percent of the average balances in their accounts. Interest is computed quarterly at the annual rate in effect for the quarter divided by four.

Business checking accounts are not paid explicit interest; the interest rate for them is a credit against service charges. Therefore, the service charges shown for business accounts on report B40 are net of the credits. Individual checking accounts that exceed the minimum balance (see this decision below) are paid interest, which is shown separately on report B40.

### Business Development

The business-development decision for deposit accounts is the same as that for loans. It sets a priority for the business development budget. The choices available are High (H), Medium (M), Low (L), and None (N). This decision is described in detail for loans. Loan and deposit business development decisions should be coordinated.

### Minimum Balance

The minimum balance decision for individual checking accounts determines whether an account will earn interest or not. Accounts that do not meet minimum balance requirements during the quarter do not earn interest. The minimum balance decision is in dollars. A decision of 500 is a minimum balance requirement of \$500 in a customer's account in order for that account to earn interest.

Increasing the minimum balance restricts the pool of customers who might qualify to receive interest. Customers have some normal level of balances that they are willing and able to maintain in checking accounts. Although customers may increase their balances somewhat to earn interest, a customer who, for example, normally keeps a minimum balance of \$200 in checking is unlikely to increase the amount to \$500 to receive interest on it.

## SAVINGS ACCOUNTS

Savings accounts have limited withdrawal, so they are not a good substitute for checking accounts for most individuals. Some businesses will use these accounts for a liquid, interest-bearing investment. The bank may charge a monthly fee for this service and there is a business-development decision with the same characteristics as the comparable decisions for checking deposits. The interest rate paid on this account, however, may depend on the minimum balance in the account. Therefore, there are two interest rate decisions as shown on the Deposits Decision form in Figure 17.

### **Interest Rate**

The minimum interest rate is the amount of interest paid on all accounts for the quarter. The decision is entered as an annual percentage rate. A decision of 2.50 indicates that interest will be paid during the quarter at an annual rate of 2.5 percent, or 0.825 percent per quarter. Interest is paid quarterly on all accounts at the current rate in effect for the quarter that is applicable to each account.

### **Premium Rate**

The premium rate is the interest rate that applies to the entire balance for accounts that maintain the specified minimum balance, entered as the annual percentage rate. If this rate is less than the interest rate on the account, the decision has no effect.

### **Minimum Balance**

The minimum balance is the amount required to qualify the account for the premium interest rate. The decision is in dollars. For example, a decision of 1000 means that the minimum balance required is \$1000. A minimum balance of 0 means that all accounts receive the premium rate.

See the comments under the checking minimum balance regarding the impact of this decision on customers. A breakout of the accounts receiving the standard interest rate and the premium rate is shown on report B40, lower right.

## TIME DEPOSITS

The bank can offer two types of time deposit accounts—variable-rate and fixed-rate. There are four decisions that apply to these deposits: business-development priority (a single decision applying to all time deposits), interest rate, maturity, and maximum issue. The business development decisions and interest rate decisions are entered like those for the other deposit accounts.

### **Maturity**

Maturity is the original maturity of the deposit in quarters, which may be any value from 1 to 99. For example, a decision of 20 provides a certificate with a 20-quarter maturity. There is currently a regulatory maximum maturity of 40 quarters for bank time deposits. Use Clear Row to no longer offer that type of product.

Time deposits are paid out at maturity—there is no automatic renewal or rollover of these accounts. Time deposit customers tend to shop around for the best rates available in the market somewhat more than for the other deposit products. Therefore, management must be careful

about the pricing of these accounts when there are large amounts of them maturing in the coming quarter. Report B40 shows scheduled maturities for future quarters and the overall liquidity position of the bank is shown on Report B05.

### **Maximum Issue**

The maximum issue is the amount of new deposits in a certificate that the bank wishes to accept in the quarter in millions of dollars, for example, a decision of 10 is \$10 million. The amount entered may be any number from 1 to 99 million. Use Clear Row to indicate the bank is not willing to accept any certificates of this type during the quarter. A decision of 99 means that the bank will accept all that are offered. It is highly unlikely that the possible deposits in a single certificate will ever exceed \$99 million.

The maximum issue decision limits the amount of new deposits issued in a single certificate. Management may choose to limit the amount when they are offering an unusually attractive interest rate to new depositors. Any time the bank offers depositors interest rates on new certificates that are above the same maturity Treasury bond or bill and are significantly higher than competing banks, relatively large amounts of deposits from individuals and firms who are not normally customers may be attracted to the bank. Once the deposits are received, the bank cannot pay them off before maturity. Consequently, management should consider carefully the amount of such high interest rate deposits the bank can afford to obtain. The market for high interest rate deposits is for maturities of one to four quarters. The preferred maturity is four quarters.

The maximum issue decision can be set to 0 as a convenient way to temporarily suspend the offer of a certificate rather than eliminating it more permanently. If 0 is entered for the interest rate or maturity decision, it means that the certificate will not be offered—does not exist. However, a decision of 0 for maximum issue retains the existing values for maturity and rate, but the bank will not accept deposits of this type during the quarter. Customers know that the bank is not accepting deposits in the certificate; therefore, the decision has the same impact on customer behavior as eliminating the certificate.

### **Variable-rate Time Deposits**

Variable-rate time deposits pay a rate of interest that is indexed to the interest rate on one-quarter Treasury bills (T-bills). The spread on new deposits, which can be positive or negative, is set by the bank's interest rate decision for these accounts. Thereafter, until maturity, the interest paid quarterly is one fourth of the current annual rate on the T-bill plus the spread that was set at the time the deposits were made.

For example, suppose that the bank's interest rate is set to 4.25 percent and that the T-bill rate is 5.0 percent. The spread set on new deposits during this quarter will be -0.75 percent, a negative number. These deposits will carry an annual interest rate that is always 75 basis points—0.75 percent—less than the T-bill rate each quarter. However, note that if the T-bill rate in the next quarter falls to 4.0 percent and the bank makes the decision to keep their interest rate at 4.25 percent, all new deposits made in that quarter will carry a spread of +0.25 percent. The bank will pay interest of these deposits at an annual rate that is 25 basis points greater than the T-bill rate in future quarters. Therefore, the interest rate must be changed whenever the T-bill rate changes if the bank wishes to keep a constant spread on these accounts. Use Clear Row to indicate the bank is not willing to offer variable-rate time deposits. Variable-rate time deposits remain with the bank until their maturity as established by the maturity value at the time they



were received. Once issued, the maturity of a deposit cannot be changed by the bank or by the customer. There are no early withdrawals from these accounts.

### Fixed-rate Time Deposits

The bank can offer up to three different fixed-rate time deposit certificates each quarter. Since management has a great deal of flexibility with this product, the rules for entering decisions must be followed carefully. If no entry for maturity or interest rate, is made, whatever decisions were in effect for the prior quarter are carried over. However, any change in the certificates offered must be made according to these rules:

1. If there is a zero value for last quarter's decision on a line, both maturity and interest rate decisions must be entered to have a valid certificate.
2. If a zero is entered for maturity or rate, no certificates of this type will be offered in the quarter.
3. If one or more of the decisions for a certificate is left blank, the values for the last quarter will remain in effect.

Although the bank cannot change the maturity date of a fixed-rate certificate once it is issued, the customer may choose to withdraw the money prior to maturity. Such an early withdrawal carries a penalty in the form of a reduction in the interest rate on the certificate. Therefore, the customer will not receive all of the interest accrued in the account. Any penalties of this sort are accounted for as an offset to interest expense in the quarter a withdrawal is made. The amount of early withdrawals for time deposits is shown in the Withdrawals column on Report B40.

Early withdrawals may occur for several reasons—the customer may have an unexpected need for money—but large withdrawals are most likely when there has been a large increase in market interest rates. For example, suppose the bank has been able to attract fixed-rate time deposits by paying 4.5 percent per year on 20-quarter maturity certificates while Treasury bonds of the same maturity had an interest rate of 5.0 percent. If the interest rate on 20 quarter Treasury bonds increases to 8.0 percent, the owners of 4.5 percent certificates with 12 or more quarters remaining to maturity might find it worthwhile to pay the penalty and withdraw to invest in Treasury bonds or bank time deposits paying a comparable rate.

**Figure 18. Deposit Decision Summary**

| <b>Product</b>               | <b>Set by Bank</b>  | <b>Comments</b>  |
|------------------------------|---|--|
| Business Checking Accounts   | Monthly fee<br>Item charge<br>Interest (credit) rate                        | Business deposit customers are usually borrowers as well<br>Net interest is not paid                   |
| Individual Checking Accounts | Monthly fee<br>Item charge<br>Interest rate<br>Minimum balance for interest | There is limited substitution between checking accounts and the other deposit products for individuals |

| Product                     | Set by Bank   | Comments   |
|-----------------------------|---|--|
| Savings Accounts            | Monthly fee<br>Interest rate<br>Premium rate<br>Minimum balance   | Interest rate is the minimum rate paid<br>Premium rate is only paid on accounts with balances greater than the minimum balance   |
| Variable-Rate Time Deposits | Maturity—regulatory maximum of 40 quarters<br>Interest rate: Spread against one-quarter Treasury bills set by bank when deposit is made | All interest is accrued and there are no early withdrawals<br>Product can be eliminated by entering 0  |
| Fixed-Rate Time Deposits    | Maturity—regulatory maximum of 40 quarters<br>Interest rate—fixed until maturity of deposit   | Three different certificates may be offered<br>All interest is accrued<br>Early withdrawals may occur with penalty assessed on customer<br>A certificate can be eliminated by entering 0 |

**OTHER DECISIONS**

Three other decisions are entered on the Deposit Decision form, the same decision form as the deposit decisions—business development salaries, advertising budget, and the bank's name. These decisions have a variety of impacts some of which are more appropriately discussed elsewhere in the manual. Here we will provide the basic information about the decisions and references to the relevant sections of the manual. Figure 19 shows this part of the form.

**Figure 19. Deposit Decision Form: Marketing**

The screenshot shows a form titled "Marketing" with two input fields. The first field is labeled "Business Development Budgets Salaries:" and contains the number "300". The second field is labeled "Advertising and Promotion:" and contains the number "100".

**BUSINESS DEVELOPMENT BUDGETS**

The two business development budgets provide the resources that are allocated by the business development priorities in the loans and the deposits areas. The basic allocation rule was explained when the priority decision was introduced in the [Loans Decisions](#) area. Both decisions set quarterly budgets and are entered in thousands of dollars. For example, a salaries decision of 300 represents a business development salaries budget of \$300,000 per quarter. An

advertising and promotion budget of 100 represents a budget of \$100,000 per quarter. The maximum possible expenditure for the budgets is \$9,999,000—a decision entry of 9999. Both budgets are allocated by the same decision rules. All products with a High business development priority will be allocated the same amount of salaries and the same amount of advertising and promotion. These allocations are included as product costs on the relevant reports, B22 for loans and B40 for deposits.

The advertising and promotion budget sets the total amount spent on these services and therefore shows up as a line item on the income statement of the bank, B02. This budget contains all expenditures made to non-employee individuals and firms for services such as media advertising (newspapers, TV, etc.), signs and billboards, memberships in organizations involving customer contacts, travel by employees, advertising agency fees, coffee in the bank's lobby, gifts to customers, or whatever. The value of such activities depends a lot on the kind of product being promoted. For example, time deposit customers are relatively price-sensitive and are unlikely to be affected a great deal by advertising. You may wish to place a relatively low priority/budget for this product. Checking account customers are less price-sensitive and more service conscious. They are more likely to respond to business development activities.

The salaries budget provides additional staff to support business development activities. This budget is included as part of the salaries and benefits line item on the income statement, B02, and is an addition to the basic staffing required to run the bank's business. A general discussion of bank staffing and cost control is provided in the section [Controlling Operating Expenses](#). The business development salaries budget provides both direct and indirect support for the business development efforts of the bank. Direct support is provided by marketing staff. A zero budget would imply no marketing personnel employed by the bank—all such services would have come from outside vendors paid from the advertising and promotion budget. Indirect support takes the form of having enough employees in an area to free time for some or all of them to engage in business development activity. For example, if no business development is allocated to business credit lines, the loan officers in this area will be forced to spend all of their time on existing customers and accounts. They will never have any time available to solicit new business.

A zero value for the business development salaries budget will shut down the solicitation of new accounts and customers for the bank's services by the bank's employees. This is unlikely to be a good decision unless the bank wishes to shrink its size significantly and as quickly as possible.

# TREASURY MANAGEMENT

The primary function of treasury management is to obtain cost-effective funding for the bank’s assets in a form to control interest rate and liquidity risks. The bank has five discretionary sources of funds available to it—repurchase agreements, certificates of deposit, Federal Home Loan Bank borrowing, capital notes, and common stock. Capital notes and common stock are sources of capital for the bank. These sources are used infrequently. See the discussion of [Capital Management](#). The other sources are regarded as purchased funds or discretionary liabilities and require quarterly management. The decisions regarding these sources are entered on Treasury Decision form each quarter as shown in Figure 20. The same information is provided on Report B64.

**Figure 20. Purchased Funds Decisions**

| Decision Amounts               |                                 |                  |                                       |                  |                 |
|--------------------------------|---------------------------------|------------------|---------------------------------------|------------------|-----------------|
| Source                         | Desired Amount (\$Millions)     | Available Amount | Available Rate                        | Current Maturing | Current Balance |
| Fed Funds Borrowed             | Auto                            | N/A              | 4.45                                  | 117.1            |                 |
| Repos                          | <input type="text" value="10"/> | 10               | 4.32                                  | 0                |                 |
| CDs                            |                                 |                  |                                       | 0                |                 |
| 1 Quarter                      | <input type="text"/>            | 25               | 5.64                                  |                  | 0               |
| 2 Quarter                      | <input type="text"/>            | 18               | 5.94                                  |                  | 0               |
| 3 Quarter                      | <input type="text"/>            | 6                | 6.14                                  |                  | 0               |
| 4 Quarter                      | <input type="text"/>            | 12               | 6.28                                  |                  |                 |
| FHLB Debt                      | <input type="text"/>            | 0                | <input type="text" value="Maturity"/> | 0                | 0               |
| Capital Notes and Common Stock |                                 |                  |                                       |                  |                 |
| Decision Amount                | Issue                           |                  | 3 - 5 Million                         | 6 - 10 Million   | 12 - 16 Million |
| <input type="text"/>           | Capital Notes: Interest Rate    |                  | 5.59                                  | 5.59             | 5.60            |
| <input type="text"/>           | Common Stock: Price per Share   |                  | 21.77                                 | 21.90            | 21.95           |

The purchased funds decisions made in the last quarter do not carry forward. New decisions must be made each quarter. There is an additional source of funding, federal funds, which will be purchased as needed to balance the bank. Federal funds purchases are not under the direct control of management as discussed in the section on [Liquidity Management](#).

## REPURCHASE AGREEMENTS

Management may acquire funds by entering into repurchase agreements or repos. The desired amount is entered in millions of dollars, and the amount borrowed from this source will be continuously out-standing during the quarter. In Figure 20, \$10 million in repos is being requested. All repurchase agreements are based on Treasury securities as collateral. The maximum amount that can be obtained is the market value of the Treasury portfolio at the beginning of the quarter after all securities transactions have been completed.

If the decision entry is greater than the maximum available, the actual amount will be this maximum. In the example of Report B64 in Figure 20, the amount shown as available is the current market value of the Treasury securities in the bank's portfolio that are not maturing this quarter. The actual amount that will be available is the value shown *plus* any purchases *less* any sales.

## CERTIFICATES OF DEPOSIT (CDS)

CDs may be issued in maturities of one, two, three, and four quarters. The amounts and rates available are shown on Report B64. The amounts shown are absolute upper limits. Requests for CDs in excess of those amounts will not be honored, and the maximum available is issued. The amount desired for each maturity is entered in millions of the currency desired and may be any amount in even millions up to the maximum shown. For example, if \$43 million of one-quarter CDs are available, the bank could request \$8 million and receive that amount. Fractional amounts (for example, 8.5) are NOT acceptable decisions. If a space is left blank, no CDs of that maturity will be issued. Each bank will have a unique schedule of CDs available. The rates and amounts will depend on the size of the bank (large banks will have more available than small banks), past issues (the potential total amount outstanding is limited), and the market's assessment of the risk of the bank as indicated by its credit rating shown on Report C94, which will affect both rates and volume available to the bank.

Once issued, CDs will remain until maturity. Interest is accrued quarterly with the entire principal and interest payment made at maturity.

## FHLB DEBT

The bank is initially a member of the Federal Home Loan Bank (FHLB). To remain an FHLB member the bank must maintain at least 10 percent of total assets in residential mortgages. Failure to maintain this ratio can result in withdrawal of membership, which would eliminate future advances. The bank regulatory agency is responsible for overseeing compliance with FHLB rules.

Membership entitles the bank to have available fixed rate financing in any maturity from one to 40-quarters at relatively attractive rates that are not dependent on the credit rating of the bank. The rate on a borrowing contract is priced as a spread added to the current rate on US Treasury bonds for the contract maturity. The spread equals 25 basis points plus two basis points per year to maturity. For example, the spread on a 20 quarter (five year) contract would be 35 basis points. If the current rate on 20 quarter US Treasury bonds is 5.5 percent, the bank could obtain 20 quarter fixed rate financing from the FHLB for 5.85 percent.

The FHLB limits the amount of borrowings that can be outstanding based on the credit rating of the bank and the number of residential mortgages held by the bank in its portfolio at the end of each quarter. Residential mortgages are used to secure the debt. Therefore, the amount of new borrowing available depends on the current amount outstanding, the credit rating, and the size of the mortgage portfolio. A bank with a credit rating of C or below cannot borrow new funds from the FHLB although existing debt does not have to be repaid prior to its maturity. The maximum number of new advances under the program is shown on Report B64.

FHLB Borrowings are now noted on Reports B01, B05, B06 and B64.

## CAPITAL NOTES

The bank may raise capital by issuing long-term debt in the form of subordinated capital notes or common stock. These decisions are also entered on the Treasury Decision form as shown in Figure 21 below.

**Figure 21. Capital Issue and Other Decisions**

| Capital Notes and Common Stock |                               |                  |                   |                    |
|--------------------------------|-------------------------------|------------------|-------------------|--------------------|
| Decision Amount                | Issue                         | 3 - 5<br>Million | 6 - 10<br>Million | 12 - 16<br>Million |
| <input type="text"/>           | Capital Notes: Interest Rate  | 5.27             | 5.27              | 5.29               |
| <input type="text"/>           | Common Stock: Price Per Share | 15.62            | 15.71             | 15.75              |

Capital notes pay a fixed rate of interest quarterly and have a single principal payment due 60 quarters from the date of issue. If management wishes to issue capital notes, it may choose from a range of amounts as shown on Report B64 and the Treasury Decision form. Only one issue of capital notes may be made in any quarter. The interest rate the bank will pay for any amount within the range are shown on the reports. The amount desired is entered in the space provided in millions of dollars. Do **not** enter fractional amounts. The amount entered must be within the ranges of amounts shown. Any decision that does not match is not allowed, and no issue will be made. For example, in Figure 21, the choices are 3-5 million, 6-10 million, and 12-16 million, decisions of 1, 2, 11, or greater than 16 not be accepted and will result in no issue.

Interest rates on capital note issues are the effective rates after issue costs and reflect both the financial soundness of the bank and capital market conditions. Therefore, the rates available depend on the credit quality of the bank. The market for note issues may be limited in amount. If N/A is showing for the interest rate, it means that amounts in this range are not available.

## COMMON STOCK

The bank may also issue common stock for amounts within the ranges shown on B64 and the Treasury Decision form. The rules regarding the amount of common stock to be issued are the same as those for capital notes described above. Only one amount can be entered, and it must match one of the amounts shown. The issue price per share reflects the net proceeds to the bank

after all expenses and can be used to determine the number of shares that must be issued to raise a given amount. For example, suppose that you wish to raise \$5 million in common stock and that the issue price for an issue of \$5 million is \$25.00 per share. The number of shares that will be issued is \$5 million divided by \$25, which equals 200,000 shares. The variation in the issue price per share for different issue amounts is due to two, partially offsetting factors. First, the market absorbs small issues more easily than it does large issues and, second, the costs of issuing stock decline as a percentage of the amount issued as the amount issued increases.

## CAPITAL ISSUE DECISIONS

Capital notes and common stock are external sources of bank capital. The other source of capital is retained earnings generated by the bank's operations, an internal source. A decision to raise new capital from external sources should not be taken casually and should be made in light of the bank's strategic plan as will be discussed in later sections, see the [Strategic Planning](#) discussion and the [Capital Management](#) discussion.

It is possible to issue both capital notes and common stock in the same quarter; however, if you wish to issue both types, it may be advantageous to do them in sequence. For example, a stock issue should reduce the leverage of the bank, which could reduce the interest rate on a capital note issue in the next quarter.

## OTHER DECISIONS

Two other decisions are included in the treasury management area—dividends per share and management's forecast of earnings per share for the coming quarter.

### Dividends per Share

The prior value of dividends per share will remain in effect unless changed by management decision. The dividend is entered in dollars per share; for example, a decision of 0.25 is a dividend per share for the coming quarter of \$0.25. The cash dividend payment will be made at the end of the quarter for which it was declared. Generally, the bank should try to maintain the dividend per share. Reductions in dividends tend to cause an adverse reaction by the stock market and may cause a decline in the price of the bank's stock.

### EPS Forecast

A forecast of the earnings per share of common stock (EPS) for the next quarter is required. Unless changed, the forecast for the current quarter (quarter just ended), which is shown below the decision entry area, will be used. The amount is to be entered in dollars. For example, a forecast of 0.60 is \$0.60. To show that a loss of that amount is expected, place a minus sign in front of the figure. The forecast is communicated to security analysts and used by investors in the bank's stock to evaluate the ability of management. Poor forecasts will adversely affect the price of the bank's common stock, especially if the forecast is much higher than actual EPS. Note that the What-If income statement shows the forecasted EPS given the decision inputs. The EPS forecast entered should be relatively close to the What-if forecast. Actual earnings per share for the current quarter are shown next to the decision entry area. The bank earned \$0.64 in the Figure 22 example.

**Figure 22. Treasury Decisions: Earnings Per Share**

**Capital Notes and Common Stock**

| Decision Amount      | Issue                         | 3 - 5 Million | 6 - 10 Million | 12 - 16 Million |
|----------------------|-------------------------------|---------------|----------------|-----------------|
| <input type="text"/> | Capital Notes: Interest Rate  | 5.59          | 5.59           | 5.60            |
| <input type="text"/> | Common Stock: Price per Share | 21.77         | 21.90          | 21.95           |

**Dividends and Forecast Earnings**

Dividends per Share:       Earnings per Share Forecast:

## STRATEGIC PLANNING

In BankExec your management team will have the ability to determine the goals and strategies for the bank. In some situations, you will receive guidance from your instructors acting as the bank’s Board of Directors; however, it will be your job to determine the direction you wish to take the bank. You will need to consider the size of the bank, what markets you want to focus on, and what levels of profitability and performance your team aspires to reach. In other words, you need a strategic plan for the bank.

### Situation Analysis

The planning process usually begins with an analysis of the current situation. You may have completed an exercise in advance of the program that provided you the opportunity to look at the financial situation of the bank you are taking over. You should also consider the strengths and weaknesses of your management team to complete the process. Your team may be given a formal assignment to complete which asks for a consensus analysis and evaluation of the situation of the bank. A standard approach is called SWOT analysis as you are asked to identify Strengths, Weaknesses, Opportunities, and Threats.

In SWOT analysis, you first look inside your bank and identify its strengths and weaknesses. This includes financial condition, market position, and organizational aspects of the bank. Next, you look outside the bank and assess opportunities and threats. This includes the competitive, regulatory, and economic environment. The section on Financial Management that follows this one presents most of the elements of a situation analysis.

### Mission Statement

The next step in the planning process is usually the development of a mission statement for the bank. The mission statement should set out the bank’s purpose and values. It is a management tool to provide a strong sense of direction for the development of the strategic plan in a form that can be clearly communicated to all members of the organization. It is not enough to say that the bank’s mission is “to be profitable and grow by providing a high level of customer service in the community” or “to enhance stockholder value.” These could be statements for any bank.



The mission statement should clearly and succinctly state the business your bank is in. It needs to say what makes your bank different from competitors. Banks can differentiate themselves on a number of factors including products, customers served, pricing, technology, and image. The mission statement should indicate the values expressed by the bank's corporate culture and the philosophy of senior management. While this is difficult for your team to formulate at first, you will see how these elements influence your decision-making throughout the exercise. The values of your management team are expressed in part by your choice of organizational structure and management style. The mission statement should also be a guide to operating decisions.

## Goals

The situation analysis identifies where the bank is now. The mission statement indicates the overall direction of the bank for the future. The next step is to translate the general mission statement into specific targets or goals for where you want to be in a particular area at a specified future time. For example, suppose that you say in your mission statement that you wish to enhance stockholder value. As a way to do this, you might set a goal of achieving a rate of return on equity of 20 percent in your first year of operations.

The goals that you set must be realistic, capable of being achieved. Any goals that you set should be based in part on your analysis of the bank's situation. It is unlikely that a goal of doubling the size of the bank in one year is achievable if the economy appears to be headed down or only growing at a rate of 2.0 percent per year.

Since it is common to have more than one goal, you should also check them for consistency with each other. For example, a goal to achieve a significant increase in profitability may not be consistent with another goal to substantially increase the bank's size at the same time. It is preferable that goals have a hierarchy or ranking indicating which are more important. Finally, they must be measurable—everyone should be able to tell whether the goal was reached or not. A goal to be a profitable bank is ambiguous; a goal to achieve 1.50 percent return on assets can be clearly assessed and progress toward the goal can be evaluated on a quarterly basis. You may find the [financial ratios](#) discussed to be a useful source of goals that can be easily measured. Goals should be realistic, measurable, consistent with each other, and ranked in importance.

## Strategies

The final stage of the planning process is to determine the strategies that you will use to reach your goals—how you plan to get from where your bank is now to where you wish it to be in the future. Strategies are concerned with the acquisition and allocation of resources. They are expressed as policies and actions.

This is the step where rates are set and business development budgets are determined. Strategies should be linked specifically to goals and should be consistent with each other—both financially and operationally. Strategies may change from quarter to quarter as you are forced to react to changes in the economic environment and the actions of your competitors. Most of your decision-making involves strategies and the section of this manual dealing with the decisions provides examples of strategic choices. You will need to understand how to implement your strategies through your decisions which requires an understanding of the impact of the decisions.

## Financial Management

Your management team's ability to formulate a plan and stick to that plan is often a key to the successful performance of the bank. In the spirit of competition, it is easy to get caught up in price wars and other highly competitive responses to what other banks are doing. It is harder, but often more profitable in the long run, to set your bank on a steady course toward sound financial management.

Financial management begins with financial analysis. Bank financial analysis focuses on the performance of the bank and its exposure to risks. It gauges the degree of success managers have in running the bank and can answer a number of different questions including:

1. How do we compare with our competitors?
2. Are we keeping pace with community growth?
3. Is stockholder value increasing?
4. How would bank regulators evaluate our performance?
5. How do we compare with our competitors?
6. Are we keeping pace with community growth?
7. Is stockholder value increasing?
8. How would bank regulators evaluate our performance?

Measures of earning power form the framework of financial analysis. A key performance measure is return on equity or ROE. This is the net income of the bank divided by owners' equity expressed as an annual percentage rate. It reflects the amount of earnings per dollar of stockholder investment. High and increasing ROE's are normally interpreted as positive performance. Another measure of bank profitability is return on assets or ROA. This is net income divided by total assets expressed as an annual percentage rate and reflect the amount of earnings per dollar of assets. ROE and ROA are the most important simple measures of bank earning power or profitability.

These ratios are based on accounting data presented in the bank's balance sheet and income statement. Shareholders, managers, creditors, and regulators are all interested in measuring and analyzing bank performance; but their interests are different. Shareholders are very interested in the bank's stock price, dividends, and earnings; whereas regulators and creditors are very interested in the bank's safety. Managers have to worry about everything. This topic is developed in more depth in the section on [Performance Measurement](#).

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# BANK MANAGEMENT TOPICS

In this section, we look at a variety of issues involving management of the bank, especially its profitability. We begin with managing the bank's assets and liabilities, then look at managing the bank's income statement.

## MANAGING INTEREST RATE RISK

The difference between the interest income of the bank and its interest expense is called net interest income. The level of net interest income earned by the bank is a major determinant of its profitability. Changes in interest rates can affect net interest income if the interest earned on the bank's assets does not move in tandem with the interest paid on the bank's liabilities. Changing interest rates also affect asset values. The value of securities held by the bank decreases when interest rates rise and increases when they fall. This is also true of loans available for sale. Management should consider strategies to protect the bank from undue exposure to interest rate risk. Here, the discussion will focus on the net interest income of the bank, but you should not forget about the effects on asset values.

In order to manage interest rate risk, you must have a system to measure the bank's exposure to it. Report B05, part of which is shown in Figure 20, shows the interest rate sensitivity of the bank's assets and liabilities. The critical concept here is repricing. An asset is said to reprice if the interest rate earned on the funds invested in the asset changes within a stated time period. This is easy to see in a variable-rate loan for which a new rate is set each quarter depending on the one-quarter bill rate in the economy. Such an asset is repriced quarterly and therefore is rate-sensitive for one-quarter. Then, consider what happens when the bank receives a payment of the principal amount owing on a fixed-rate loan. The money received will normally be reinvested immediately to earn the current interest rate. A principal payment to be received three quarters from now is considered to be repriced in three quarters. The same concept applies to liabilities.

So, what if the bank has lots of liabilities being repriced next quarter but not very many assets. This is the situation shown for the bank in Figure 22. If interest rates go higher, the bank will pay a lot more interest on those repriced liabilities than the added interest income it will earn on the repriced assets. If interest rates drop, net interest income will increase because more liabilities will pay the lower rates than assets for which lower rates will be earned. The application of this concept results in the measurement system called interest rate-sensitivity gap or just gap for short (Figure 23). The gap is the difference between the amount of assets repricing over a given period and the amount of liabilities repricing over that period.

**Figure 23. Interest-Rate Sensitivity Gap**

|  |      |       |      |       |      |       |                           |      |        |
|--|------|-------|------|-------|------|-------|---------------------------|------|--------|
| ==== Summary Positions =====   |      |       |      |       |      |       |                           |      |        |
| Net Balance Sheet Position (A - L)   | 6.4  | -63.7 | 61.9 | 21.5  | 19.6 | -19.6 | -94.8                     | 10.3 |        |
| Fixed Rate Swaps   | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   |                           |      |        |
| Variable Rate Swaps  | -0.0 | 10.0  | 0.0  | -10.0 | 0.0  | 0.0   |                           |      |        |
| -----  |      |       |      |       |      |       |                           |      |        |
| Interest Rate Gap  | 6.4  | -53.7 | 61.9 | 11.5  | 19.6 | -19.6 |                           |      |        |
| -----  |      |       |      |       |      |       |                           |      |        |
| Interest Rate Gap / Assets (%)   | 0.8  | -6.4  | 7.4  | 1.4   | 2.3  | -2.3  |                           |      |        |
|  |      |       |      |       |      |       | Equity / Risk Assets      |      | 7.06 % |
|  |      |       |      |       |      |       | Total Capital*/Risk Asset |      | 8.06 % |
| * Interest rate sensitivities for checking, and savings are estimates.                           |      |       |      |       |      |       |                           |      |        |
| † Total Capital consists of equity ( 48.4) plus loan loss reserve ( 6.9) plus capital notes (0). |      |       |      |       |      |       |                           |      |        |

On B05, the gap is measured for one, two, three, and four quarters, for one year (one to four quarters), and for over one year. Most of the focus is on the one-quarter gap as changes in the composition of bank assets and liabilities over time can significantly change the gaps that are more distant into the future. A bank that has a positive value for the one-quarter gap is asset sensitive; more assets are repricing than liabilities. A bank that has a negative value for the gap is liability sensitive; more liabilities are repricing than assets. An asset-sensitive bank will have higher net interest income if interest rates rise and lower income if rates fall. A liability sensitive bank will have lower net interest income if interest rates rise and higher income if rates fall. The smaller is the absolute size of the gap (positive or negative), the less is the influence of changing interest rates on the bank's net interest income.

As a rough guideline, a gap of less than 10 percent (absolute value) of assets can be considered small—changing interest rates will not affect bank profits very much. A gap of more than 25 percent (absolute value) of assets can be considered large—changing interest rates will have an appreciable impact on bank profits. Banks often manage their gap based on management's forecasts for interest rates. If the bank has a positive gap and rates are expected to rise, no action may be taken. However, if rates are expected to fall, management would try to reduce the bank's exposure by using interest rate swaps or making other adjustments to the bank's assets or liabilities. For example, a positive gap can be reduced by investing in long-term securities while raising money from one-quarter time deposits. The negative balance sheet (cash) gap in Figure 22 has been reduced to less than 10 percent by a \$20 million variable rate swap. The gap would have been 11.3 percent without the swap.

Most financial managers consider liability sensitivity to be more dangerous than asset sensitivity of the same magnitude. A liability sensitive bank experiences profit pressures when interest rates rise. Rising interest rates also reduce the values of any fixed-rate assets of the bank, which can result in losses if the assets are sold. This is a bad combination. However, the basic rule still applies: Small gaps are safe; large ones are risky.

## LIQUIDITY MANAGEMENT

Compared with actual banking situations, there is no real liquidity problem in this exercise. Banks have liquidity problems when their depositors and money market creditors lose confidence in them. Funds are withdrawn, and sources of new funds dry up. Without support from the Federal Reserve, a bank in this situation will fail. In BankExec, funds are always available at a price. The prices (interest rates) may be high, but the money will be there. BankExec banks do not fail; however, they can get into enough financial trouble such that, if they were a real bank, they would either be closed or require a government bailout.

In order to control the liquidity position of the bank, management must understand the timing of cash flows. On the first day of the quarter the following cash transactions occur:

Cash inflows: Maturing securities

- Proceeds from sale of loans and securities
- Funds purchased (repos, CDs, and FHLB debt)
- Federal funds sold
- Capital issues

Cash outflows: Purchases of securities

- Maturing CDs and FHLB debt
- Federal funds borrowed
- Repos outstanding
- Maturing capital notes

If cash inflows on the first day are greater than cash outflows, the net inflow will be invested through sales of federal funds. If cash outflows are greater than cash inflows, the net outflow will be financed through purchases of federal funds. Since all cash inflows and outflows on the first day are either given from the end-of-quarter position of the bank or the result of management decision, management should know whether the bank will be selling funds or buying funds on the first day. Figure 24 on the following page shows the current liquidity position of the bank taking into account the known flows as of the end of the quarter such as maturing securities or CDs.

Report B05 shows the first day situation if management does not take any actions that would change it. In Figure 23, the first day position is \$1.5 million. In other words, if management does not take any action, the bank will be selling \$1.5 million in federal funds. In this example, the bank is in almost perfect balance. The actions or decisions that affect first day cash flows are the purchase or sale of securities, FHLB borrowing, and issuing CDs or capital. In order to predict the actual first day position, management decisions must be included. [The Funds Management Planning Worksheet](#), Form W06, provides a format for determining the bank's funds position based on these decisions.

During the quarter, deposits will turn over, loans will mature, and new loans will be made. The funds position at the end of the quarter will depend on the net flows from loans and deposits plus the position on the first day. Management should forecast the funds movements for the coming quarter to ensure that excessive borrowing will not be needed or that excessive amounts will not be invested in federal funds. When interest rates are relatively high, borrowing in the federal funds market is usually the most expensive source of funds. In addition, borrowing rates also depend on the bank's credit rating, which is shown on Report C94. High rated banks (A or better) can borrow at significantly lower rates than low rated banks (B or worse). When interest rates are relatively low, federal funds are usually the least profitable investment. Management must monitor funds movements and adjust to changing economic conditions to maintain the profitability and liquidity of the bank. Form W06 can also be used to forecast the balance sheet of the bank at the end of the quarter.

**Figure 24. Liquidity Positions**

| Tue Jan 29 18 |            |
|---------------|------------|
| Liquidity     |            |
| First Day     | 2 - 9 Days |
| 0.0           |            |
| 10.0          |            |
|               | 27.7       |
|               | 8.4        |
|               | 16.9       |
|               | 0.0        |
| 10.0          | 53.0       |
| 36.1          |            |
| 30.0          |            |
| 0.0           |            |
| 16.7          |            |
|               | 23.0       |
|               | 20.1       |
| 82.8          | 43.1       |

## SECURITIES PORTFOLIO MANAGEMENT

The securities portfolio plays an important role in managing liquidity and interest rate risk because securities can be purchased or sold to quickly change the bank's positions. The management of the investment portfolio requires addressing three interrelated issues.

1. Size: How much money should be invested in the portfolio?
2. Composition: What assets should be held in the portfolio?
3. Maturity structure: What should be the maturities of the assets in the portfolio?

The answers to these questions result in policies to guide the securities manager in making operating (quarterly) decisions and need to be considered by the management team. Let's look at each of the three issues in order.

### Size of the Portfolio

The amount of money invested in the securities portfolio is closely related to the amount of loans the bank has. For many banks, the amount of money invested in securities is a residual. The answer to the size question is: *Given the funds available, invest the money that is not loaned.* If the bank has lots of deposits and not much loan demand, the investment portfolio increases in size. If the bank doesn't have many deposits and makes a lot of loans, the securities portfolio decreases in size. Under a pure residual policy, the portfolio may even be zero—no federal funds

are sold or securities held. This policy, then, suggests that liquidity is not an important concern of management. There may be some difficulty with regulators if the bank follows a pure residual policy. A less risky or more regulator-responsive approach is to follow a residual policy in general but set some minimum size for the investment portfolio to satisfy liquidity requirements. The minimum size may be based on expected future loan demand relative to deposit flows or to provide flexibility in funding.

Another answer to the size question is: *Invest in securities (or federal funds) when it is more profitable to do so than to loan the money.* This approach focuses attention on earnings rather than liquidity. It requires a careful analysis of loan profitability, especially the profitability of new loans and the costs of increasing the size of the loan portfolio. The profitability of an investment of \$10 million in securities is much easier to assess than the profitability of increasing business credit lines by \$10 million. A residual policy contains the implicit assumption that loans are more profitable than securities in the long run. This may be true, but at times management may find it more profitable to invest in securities. Also, recall that the capital requirements for the bank depend on the relative amounts of loans as compared to securities. If the choice is between increasing capital and investing in securities rather than loans, investing in securities may be the best answer.

The above policies consider securities to compete with loans for a given volume of funds available; however, the bank also has some control over the amount of funds to be invested or loaned. If the returns available on securities are high relative to the cost of obtaining additional deposits or other funds, the bank may wish to take advantage of the opportunity to acquire additional funds and invest them. Securities can be purchased quickly in whatever amounts management wishes; loans are not so easily increased.

For most banks, the final answer is that the size of the portfolio should be based on liquidity, profitability, and market conditions. It cannot be determined without considering the other decision areas of the bank.

## **Composition**

The composition question asks about the mix of assets in the portfolio—the relative amounts of federal funds sold, Treasury securities, agencies, and tax-exempts. If liquidity is a primary consideration, federal funds should be a component. Federal funds sold at the beginning of the quarter are available to fund any net fund's needs (new loans minus new deposits) during the quarter. If the bank ties up all extra money in securities, any net funding needs will be financed with federal funds purchases. For longer-term liquidity needs, all securities held in the portfolio are available for sale each quarter and therefore are potential sources of liquidity. The maturity structure discussed in the next section becomes a consideration here. In addition, Treasury securities provide a means of securing repurchase agreements; therefore, holding these securities increases the amount of funds available to the bank each quarter.

The mix of Treasury securities and agencies involves a trade-off between the higher yields available on the agencies versus the liquidity from secured borrowing and the uncertainty of the call on the agencies. The problem with agencies is that, if interest rates drop, an agency will be called whereas a Treasury will have a gain that may be taken on sale. Imagine buying both a 20-quarter Treasury bond and a 20-quarter agency. The initial yields are 5.20 percent for the Treasury and 5.60 percent for the agency. Four quarters later, the yields have dropped to

4.0 percent for the (now) 16-quarter maturity Treasury and 4.40 percent for the (now) 16-quarter maturity agency. The agency will be called, and the bank will get the par value in cash. The Treasury can be sold, and the bank will get the par value in cash plus a nice gain on the sale since the market value of the Treasury will be well above par! Another option is for the bank to keep the Treasury and continue to earn 5.20 percent whereas the cash from the called agency can only be reinvested at a lower rate.

The choice between the taxable bonds (Treasury and agency) and tax-exempt has several dimensions. The basic trade-off is the relative taxable-equivalent yields—the higher, the better. However, a bank could have so much tax-exempt income from its bonds that its taxable income goes to zero, especially if its earnings are poor. At this point, tax-exempt bonds with their lower pre-tax yields become less profitable than taxable bonds. Another aspect is community service. Bank-qualified munis are most often issued by small communities, school districts, and the like. The banks are the main purchasers. Therefore, the bank may consider that it has some obligation to support their local community through purchases of these securities. A final aspect is the limited supply. The bank may wish to take as much advantage of the issues available as it can since these securities can only be purchased in limited amounts each quarter. On the other hand, the maturities available tend to be rather long for a bank and the interest rates are fixed. Investing heavily in long-term, fixed rate bonds has caused problems for banks when interest rates rise sharply. This takes us to the problem of maturity structure.

## **Maturity Structure**

The maturity structure of the portfolio is the amount of securities scheduled for maturity in future time periods. There are four general structures—short, long, balanced, and barbell. A pure short portfolio contains only securities that will mature relatively soon. For example, all securities mature within the next four quarters. Management must decide what they mean by soon—two quarters, four quarters, or what? A pure long portfolio contains only securities that will mature a long time from now. For example, all securities will mature more than 40 quarters from now. Here again, management must decide what is a long time for them. A pure balanced (often called laddered) portfolio has equal amounts maturing every quarter for several quarters into the future. Thus, it is possible to have a relatively long balanced portfolio or a relatively short balanced portfolio. The idea of a balanced portfolio is that maturities are spread out more or less evenly. Finally, a pure barbell portfolio is half short and half long with no maturities in between. Each type has features that may make it preferred over the others.

## **Short Portfolio**

The advantages of short portfolios are liquidity and safety. Since the securities in a short portfolio will be maturing soon, they will provide cash that can be used for other purposes. The prices of short-term securities do not fluctuate very much with the level of interest rates. This means that you are not likely to have losses if interest rates rise and you sell the securities before maturity. The extreme versions of a short portfolio are keeping all funds in the federal funds market or owning only one-quarter maturity securities. The disadvantage of a short portfolio is earning power. Usually the shorter the maturity of an investment, the lower its interest rate. Furthermore, if interest rates fall, you will be reinvesting the receipts from maturing securities at lower interest rates. Also, you will not obtain significant price appreciation from lower interest rates.



## **Long Portfolio**

A long portfolio is a mirror image of a short portfolio; its advantages are the disadvantages of the short one. Its earning power will usually be greater as long-term interest rates are usually greater than short-term interest rates. Long portfolios will experience significant price appreciation when interest rates fall. Also, when interest rates fall, you retain the higher current income from the portfolio because the securities are not maturing. Of course, the disadvantages are liquidity and safety. Rising interest rates can create large losses in a long portfolio—losses that will impact the bank's profits if the securities need to be sold for liquidity reasons. A long portfolio does not generate much cash for use elsewhere in the bank. Note that over time, the maturities in a long portfolio shorten. To keep a long position, you must sell securities from time to time. For example, suppose the only security owned is a 10-year bond. After one year, that bond will have a nine-year maturity. To keep a 10-year long position, you would have to sell the bond and reinvest in a new one with a 10-year maturity. Long portfolios, left unmanaged, turn into short ones eventually.

## **Balanced Portfolio**

A balanced portfolio provides a compromise between the extremes of the short and the long portfolios. By having some securities maturing regularly, the portfolio provides liquidity. The cash from maturing securities, if not needed in the rest of the bank, is reinvested at the long end of the portfolio. This portfolio provides earning power from the longer maturity securities in it and, because there are always short maturity securities available, safety and liquidity. Balanced portfolios are easy to manage and are frequently recommended by regulators.

## **Barbell Portfolio**

An example of a barbell would be to have 50 percent of the funds invested in one-quarter maturity securities and the other 50 percent in 10-year maturity securities. Obviously, a barbell is a simple combination of a short and a long portfolio and would appear to offer the same advantages as the balanced portfolio. The difference is in the management of the portfolio. Barbells are often the choice of an active manager. With the short portion maturing regularly, the portfolio manager is constantly reinvesting and not necessarily completely back into the short position. The barbell manager has the opportunity to increase the percentage in the long position if the manager believes that this is desirable. Also, to maintain the long portion of the portfolio, the manager must, from time to time, sell the long securities. At this time a portion can be reinvested short, if the manager believes this is desirable. Barbell portfolios are usually chosen by active, experienced managers.

## **CAPITAL MANAGEMENT**

The primary problem in managing the bank's capital is the maintenance of sufficient capital relative to regulatory requirements. A conservative management may wish to keep substantially more capital than required; an aggressive management may try to maintain the minimum. However, you should be aware that the level of capital is an element in credit market risk ratings. A thinly capitalized bank will pay more for money than a well-capitalized bank, all other factors being the same. Regulation 5 sets the basic rules and the current values of the capital ratios referred to in the regulation are shown on Reports B05 and C94.

## Board Policy: Capital Adequacy

The Board of Directors has established a policy to maintain the capital of the bank at a level such that the bank will be considered well capitalized under bank regulatory guidelines. This policy is intended to promote the safety and liquidity of the bank and to assure that funding sources will be available under adverse economic conditions. However, this policy does not restrict management from deviating temporarily from a well-capitalized position to take advantage of growth opportunities that may arise.

The most likely reason the bank's capital condition might go out of compliance with the regulations or bank policy are inadequate earnings or excessive dividends relative to the growth of the bank's assets. Therefore, if management has aggressive growth goals, they should be aware of the need to monitor capital positions and take appropriate action to stay in compliance. These actions can be as simple as issuing new capital or more difficult and complex, such as increasing profitability.

## Capital Ratios

The action taken should reflect the problem. Under the Board policy shown above, the requirement for equity capital is that it be greater than 6.0 percent of total assets. This capital requirement is usually referred to as the leverage ratio. The requirement for total capital (equity, capital notes, and loan loss reserve) is that it be greater than 10 percent of risk assets. If you are about to go out of compliance with respect to the leverage ratio, you have several actions you can take. In the short-run, you can issue common stock or, if the bank is liquid enough to do it, reduce assets by paying off borrowings or maturing CDs. In the long run you can slow asset growth, improve profitability, pay lower dividends, or some combination of these. If your problem is the capital to risk asset ratio, there are more options including the ones just mentioned. You can issue capital notes to increase total capital or you may try to restructure the bank's assets to reduce risk assets.

## Risk Assets

Risk assets for a bank are a weighted sum of the assets of the bank where the weights are supposed to reflect the risk potential of the assets. For example, cash is considered riskless; therefore, it has a weight of zero and is not included in risk assets. The asset categories and weights are shown in the following table:

|                                  |  |
|----------------------------------|--|
| Category 1 (0 percent weight):   | <ul style="list-style-type: none"><li>• Cash and cash items</li><li>• Treasury bills</li><li>• Treasury bonds</li></ul>                |
| Category 2 (20 percent weight):  | <ul style="list-style-type: none"><li>• Federal funds sold</li><li>• Agency bonds</li><li>• State and local government bonds</li></ul> |
| Category 3 (50 percent weight):  | Residential mortgages  |
| Category 4 (100 percent weight): | All other assets   |
| <b>Total Risk Assets:</b>        | Sum of Categories 1-4  |

Report B05 shows the risk assets for the bank by balance sheet category. If you examine the table shown above, you will see that all assets on the balance sheet are included, but cash and Treasury bills are given a zero weight. In managing the capital position of the bank, it is possible to change capital to risk asset ratios by changing the asset mix of the bank. For example, selling \$10 million of commercial real estate loans and investing the proceeds in \$10 million Treasury bills, will reduce risk assets by \$10 million since the weight on the loans is 100 percent whereas the weight on the bills is 0 percent. A reduction in risk assets with no change in capital will increase the capital/risk assets ratio. If the bank has \$510 in risk assets and total capital of \$50, its capital/risk asset ratio is 9.80 percent (50/510). A reduction of \$10 million in risk assets would increase the ratio to 10 percent (50/500).

## **Tax Management**

The tax management problem in BankExec is simpler than that for the typical bank. Taxes are calculated quarterly on the year-to-date taxable income of the bank at the rate shown on Report C95. The taxes owed (or credit to be received) for the quarter are determined as the difference between year-to-date taxes owed and taxes paid in prior quarters. For example, suppose that year-to-date taxes owed are \$400,000 at the end of the third quarter. Taxes paid during the first two quarters were \$250,000. The taxes owed for the third quarter will be \$400,000 less \$250,000, or \$150,000. Alternatively, suppose that the bank paid \$250,000 in the first two quarters, but had a loss in the third quarter. If taxes owed are \$200,000 through the third quarter, the bank will have a tax credit of \$50,000 for the third quarter. Losses for an entire year cannot be carried back to prior years or forward to future years, however.

Taxable income for the bank equals taxable revenues (including gains on asset sales) less taxable expenses (including losses on asset sales). (For more complete discussion, consult the discussion on tax exempt [Securities Available for Purchase](#).) Although minimizing taxes may not result in maximum profits for the bank, management should be aware of the tax consequences of asset sales. Tax planning is an important part of managing the bank. The [Profit Planning Worksheet W02](#) can be used to address this problem.

## **Controlling Operating Expenses**

In BankExec management has only limited direct control over operating expenses. Salaries and other operating expenses are primarily determined by the overall amount and composition of the bank's business and the amount and type of new loans and deposits being generated. If there is rapid growth in loans and deposits, the bank will require more personnel than if there is slow or no growth. Personnel requirements are more strongly impacted by accounts with large numbers of transactions such as credit cards and checking accounts than other types. To get an understanding of operating expenses associated with a particular type of loan or deposit account, look at the expenses for the accounts shown on Reports B22 and B40. Salaries are also affected by the bank's business development budget (for more details see the [Business-Development Budget](#) discussion) and the rate of inflation. If the rate of inflation is high in the economy, the bank must pay higher salaries to retain employees. Other things being equal, salaries will increase at a rate that is somewhat less than the overall rate of inflation in the economy as shown on Report C96.

Occupancy expenses are based on the premises of the bank, which increase slowly and are not under the control of management at this time. Advertising and promotion expenses are set by

management decisions regarding business development. Other operating expenses depend on the activity of the bank and, as was true of salaries, vary with the size and growth of the bank.

## **The Bank's Stock Price**

Investors in the bank's stock are concerned primarily with the future earnings and dividends (per share) of the bank. In assessing the prospects for the future, investors and stock analysts evaluate the current condition of the bank and its history. They look at many of the same aspects of the bank that a bank regulator or a creditor will examine but assess the importance of these aspects differently. For example, regulators and creditors find high levels of bank capital to be appealing—the more capital, the better. Investors prefer capital to be adequate, but not excessive—more capital is not necessarily better from the perspective of investors in the bank's stock. Some ratios that can be used to assess the bank's financial condition are shown in the section on Performance Measurement that follows.

In addition, conditions in the economy and the financial markets will affect the stock price in ways that are not a result of management's actions. As a consequence, the bank's stock price provides an overall assessment of the bank's performance but is not a perfect guide to management's ability or the success of its strategies.

A more sensitive measure of the bank's performance as perceived by investors than the level of the stock price is the market-to-book ratio, which is shown on Report C94. If the market value of the bank's equity is greater than its book value (market-to-book greater than 1.0), investors are saying that management has created value for the bank's stockholders by retaining earnings. If the market value is less than the book value (market-to-book less than 1.0), investors are saying that management has destroyed value by retaining earnings. Trends in stock price and market-to-book ratios provide management with an ongoing external assessment of its policies and actions.

## **Performance Measurement**

There are many ratios and other measures that management can use to compare their performance with other banks and which are used by financial market analysts and regulators in assessing the bank's financial condition and performance. Factors used in evaluating the bank's condition may be summarized by the acronym CAMEL, which stands for Capital, Asset quality, Management, Earnings, and Liquidity. Although CAMEL was developed as a regulatory rating system, it is used here to remind us of the things that should be considered. We will add an O for Other factors that are important to investors, such as dividends and growth, but are not so important to regulators.

Some useful measures are shown below organized in the CAMELO scheme. These are intended to be representative of the measures that can be used to evaluate bank performance and are not all-inclusive. There are several ratios shown on Reports C91 and C92 that are not included here, but also provide insight into the comparative performance of banks in the community. Note that, except for the interest rate sensitivity gap, the measures shown below are all reported as public information for the banks in the community and can be found on three reports—C91, C92, and C94.

1. Capital
2. Equity / Total Assets—C94
3. Total Capital / Risk Assets—C94 Asset Quality

4. Loan Charge-Offs / Total Loans—C91
5. Non-Performing Loans / Total Loans—C91 Management
6. Accuracy of EPS Forecast—C94
7. Interest Rate Sensitivity Gap / Total Assets—B05
8. Loan Charge-Offs / Loan Loss Provision—C92 Earnings
9. Operating Earnings / Total Assets—C92
10. Return on Assets (Net Income / Total Assets) —C92
11. Return on Equity (Net Income / Equity) —C92 Liquidity
12. Net Liquid Assets / Total Assets—C91
13. Federal Funds Purchased / Equity—C91
14. Other
15. Dividend Yield = Dividends Per Share / Stock Price—C94

Stockholders like growth in earnings and dividends per share and dislike volatility in them—C94 and B02. This completes the description of the decision points available and some concepts of how your bank can be managed. The Appendices that follow provide supplementary information including a description of the reports provided to management and worksheets to aid in management decision-making.

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# APPENDIX A:

## GUIDE TO MANAGEMENT REPORTS

This appendix contains explanations of the data shown in the management reports that you receive each quarter. Note, that NMF means *not meaningful figure*. You may see this when a ratio would contain a zero or negative number in the denominator.

### B01 BALANCE SHEET

This report shows the bank's balance sheet in general categories. Detailed breakdowns of the major items—securities, loans, deposits, funds borrowed, long-term debt and owner's equity—are shown on other reports. The data to the left of the headings are the averages for the previous four quarters and for the current calendar year to date. The data to the right is the end-of-quarter figures for the past four quarters.

Cash Items include currency, required reserves, and items in the process of collection. The bank operates with the minimum amount possible in this account. Any excess cash is invested as federal funds sold.

Federal Funds Sold are short-term loans to banks outside the community. There is no credit risk on these assets and there is no limitation on the volume sold. See Report B06 more detail on this account.

Securities are shown in more detail on the 10 series reports. Securities are carried at market value.

Loans are shown in more detail in the 20 series reports. Agricultural loans will be shown as Other.

Loan Loss Reserve is maintained at a minimum of one percent of total loans. See the discussion on [loan loss reserve in the Provision for Loan Losses section](#).

Premises are shown net of accumulated depreciation. The bank will invest in premises as needed given its volume of business.

Other Assets arise from the operations (activity) of the bank and are not under direct management control. The larger the bank is in terms of loans, deposits, and personnel; the larger will be the other asset account.

Deposits of bank customers are shown in detail in the 40 series reports. Certificates of Deposit (CD's) are considered purchased funds and are shown in detail on B64.

Borrowed Funds include Repurchase Agreements and federal funds purchased. See Reports B06 and B64 for details.

Other Liabilities include such accounts as taxes payable and accrued expenses. This account arises from the activity of the bank and is not under direct management control.

Long-term Debt includes borrowing from the FHLB and capital notes. FHLB debt is not considered capital for regulatory purposes whereas capital notes are part of Tier 2 capital. See [Regulation 5](#) and B05.

Owner's Equity reflects the capital contributed by stockholders. It is increased by net income and stock issues and reduced by dividends. It also reflects any gains or losses in the securities portfolio since the securities are carried on the balance sheet at their market value. The value of owner's equity shown consists of common stock, retained earnings, and the net gain (loss) in the securities portfolio as reported on B12.

The ratios at the bottom of the report provide bank performance data that is also provided for other banks in the community on C91. All ratios are shown in percentages. Some titles are abbreviated on the report; they are spelled out below. Note that some ratios use numbers that have been obtained from other reports.

**Net Liquid Assets/Total Assets:** This ratio is a liquidity measure that is used by regulators and financial market analysts. Net liquid assets = federal funds sold plus securities with maturities of one year or less minus borrowed funds.

**Loans/Deposits:** A ratio that may be used as a measure of liquidity or risk and as a bank policy variable. Banks of this size usually have loan/deposit ratios between 60 and 80 percent.

**Non-performing Loans/Loans:** Non-performing loans are the sum of non-accrual and past-due loans. This ratio is calculated using end-of-quarter figures and is a measure of the quality of the loan portfolio. See B22.

**Charge-offs/Average Loans:** The historical loan losses of the bank. See B22.

**Earning Assets/Total Assets:** The interest earning assets of the bank are federal funds sold, securities, and loans.

**Core Deposits/Total Assets:** Core deposits are defined here as total deposits less certificates of deposit. Note that a bank could have non-customer accounts included in its time deposits that should not be considered core deposits; however, the level of such deposits is not known.

**Interest Bearing Liabilities / Total Assets:** The interest-bearing liabilities of the bank are all deposits except demand deposits, borrowed funds, long-term debt and subordinated debt.

**Borrowed Funds/Total Assets:** A measure of liquidity and interest rate risk. High ratios are considered unsafe.

**Federal Funds Purchased/Total Capital:** A liquidity measure, see [Regulation 3](#).

**Owners' Equity/Total Assets:** A measure of capital adequacy—the leverage ratio. See [Regulation 5](#).

## B02 INCOME STATEMENT

This report summarizes the major income and expense categories for the bank. Detailed reports on income and expenses for securities, loans, deposits, and purchased funds are provided later.

- **Interest on Loans:** includes all interest and fee income associated with the loan portfolio except servicing fees for loans that have been sold, which are included in other income.

- **Income from Securities:** consists of the coupon interest from Treasury bonds and Agencies plus the accretion of discounts on Treasury bills.
- **Service Charges and Other Income:** contains the revenues from service charges on deposit accounts and servicing fees from loans that have been sold.
- **Provision for Loan Losses:** determined as the amount needed to be added to the loan loss reserve to maintain it at a minimum of one percent of total loans.
- **Salaries and Benefits:** based on the level of activity of the bank and the decisions made around business development budgets.
- **Occupancy Expense:** includes the cash expenses associated with bank premises plus depreciation.
- **Advertising and Promotion expenses:** results from decisions made to increase or decrease business development.
- **Other Operating Expenses:** includes all expenses that are not contained in one of the categories above. Any fines levied against the bank by regulatory authorities will be charged to this account.
- **Gains/Losses on Asset Sales:** results when securities or loans are sold. The figure is the net result of sales. B10 and B20 show the details of any sale decisions.
- **Income Taxes:** determined at the tax rate shown on Report C96 applied against operating earnings plus gains/losses from asset sales. See the discussion regarding [Income Taxes](#).

The ratios shown on this report are also shown for other banks in the community on C92. All values are expressed as annual percentage rates. Several headings on the report are abbreviated. They are presented in full here.

- **Interest Income/Average Earning Assets:** This ratio is the average interest rate earned on those assets that earn interest—sometimes referred to as the *yield on earning assets*.
- **Interest Expense/Average Interest-bearing Liabilities:** A measure of the average interest cost for those funding sources that have an explicit interest payment.
- **Spread:** The difference between the two ratios above—the yield on earning assets minus the cost of interest-bearing liabilities. The spread is an important measure of the profitability of the banking business.
- **Net Interest Income/Average Earning Assets:** Another important measure of the profitability of the banking business—usually referred to as *net interest margin*. The net interest margin depends on the spread and the extent to which the bank’s assets are financed with non-interest-bearing liabilities.
- **Net Interest Income/Average Total Assets:** Another way to calculate net interest margin. This ratio can be more directly compared with the expense ratios calculated relative to total assets.
- **Operating Expenses/Average Total Assets:** This ratio indicates how successfully the bank is managing its expenses.
- **Operating Expenses/Average Total Assets:** This ratio indicates how successfully the bank is managing its expenses.



- Net Non-Interest Expenses/Average Total Assets: Net non-interest expenses equals operating expenses minus service charges and other income. This shows the extent to which operating expenses are off-set by fee income.
- Operating Earnings/Average Total Assets: A measure of the profitability of the bank from normal operations.
- Net Income/Average Total Assets: [Return on Assets \(ROA\)](#).
- Net Income/Average Equity: [Return on Equity \(ROE\)](#).

## B05 RISK MANAGEMENT SUMMARY

The risk management summary report contains three types of risk management information—interest rate sensitivity, liquidity position, and the basis for capital/risk assets ratios.

The interest rate sensitivity section breaks out the assets and liabilities of the bank according to their interest rate sensitivity as of the end of the quarter. All maturing securities and CDs are shown as rate-sensitive in the first quarter; non-maturing items will be shown as rate sensitive according to maturity. For example, a CD maturing one quarter from now will be shown as rate-sensitive in Quarter 2 when it matures. For real estate loans, the first quarter figure includes variable rate loans whose rate will be reset in that quarter plus any other loans that are maturing in the next quarter.

The interest rate gaps are summarized at the bottom of the report. Note that the bank's position can be modified significantly by its decisions. (See the discussion of [Interest Rate Risk Management](#).)

The right-hand side of the report shows the bank's liquidity position and the risk assets used to determine capital ratios. (See the discussion of [Liquidity Management](#) and the discussion of [Capital Management](#).)

## B06 FUNDS MANAGEMENT

The funds management report shows the sources and uses of funds for the bank for the current quarter and provides a work area for forecast funds sources and uses for the coming quarter. This report is intended for use with the Funds Planning Worksheet, W06. Note the First Day Activity column and the items showing a number. These transactions occur on the first day of the quarter.

At the bottom of the report, you will find a summary of the federal funds sold and borrowed during the quarter. In addition, the income and expenses of funds bought and sold are reported.

## B10 SECURITY MATURITIES AND PORTFOLIO ACTIVITY

The left-hand side of this report is a work area for you to make entries regarding securities purchase decisions on the Securities Decision form. The upper right side shows a breakdown of the maturity distribution of the bank's security portfolio in total and by type. See the discussion of [Portfolio Management](#) for the relevance of this information.

The lower right section shows the changes that have occurred in the portfolio during the past quarter.

Activities that affect the portfolio are maturities, sales, purchases, and accrual of interest on Treasury bills.

The gains or losses shown on the last line are the result of sales—realized gains and losses.

## B12 SECURITY PORTFOLIO

The security portfolio report lists all securities currently owned by the bank including those maturing on the first day of the coming quarter.

Par Value is the face or maturity value of a block of securities purchased by a single decision.

Market Value is the current amount the block could be sold for.

Book Value is the amount being carried on the bank's books for the block.

Gain/Loss is the market value of the block minus the book value.

Maturity is the number of remaining quarters until maturity.

Call Quarters is the number of remaining quarters until an agency security may be called.

Coupon is the annual rate of interest being received by the bank. One fourth of the coupon is received each quarter.

Yield to Maturity is the market yield to maturity at the end of the quarter associated with the market value shown.

Call/TE Yield: For agencies, this column shows yield to call. This is based on the quarters to call (Call Qtrs.), assuming the bond will be called, and the current market price. A high yield to call relative to the yield to maturity is an indication that the bond is unlikely to be called. A low yield to call relative to the yield to maturity indicates that the bond is likely to be called. For tax-exempt bonds, this column shows the taxable-equivalent yield.

Duration is a measure of the average maturity of the cash receipts (coupon interest and principal payments) from the security based on the market values of those receipts. The change in market value of a security for a given change in interest rates (yield to maturity) is proportional to its duration.

## B20 LOAN ACTIVITY

The top half of the report shows the activities causing changes in balances for all loan categories.

New Loans shows the extensions of credit under new loan contracts. Note that this figure represents cash received by loan customers—not the total commitment to lend.

Net Principal Payments is the difference between repayments of existing loans and draws on existing commitments.

Market Shares of new loans made by the bank are provided on the right. If the bank's pricing and other loan policies are competitive in a given loan market, its share of that market will be 10 percent.

The bottom half of the report provides data on loan commitments and the servicing portfolio. Typical average usage rates for business credit lines are around 50 percent and usually vary

during the year by plus or minus 5.0 percentage points. For other loan types, see the description for the particular type.

## B22 LOAN PROFITABILITY AND PERFORMANCE

This report shows the income and expense associated with each loan type and a variety of profitability and performance measures. It includes detail on the current quality of the portfolio as represented by charge-offs, past-due, and non-accrual loans.

Salary & Benefits includes salaries devoted to business development, loan originations, and needed to service existing loans in the bank's portfolio. Expenses associated with loans that have been sold are shown separately on Report B20.

Net Earnings is the difference between total income and total expenses.

In calculating income, charge offs, expenses, and earnings as a percentage of average balances, the results are expressed as annual percentage rates. Past-due loans are accruing interest whereas non-accrual loans do not accrue interest but are included in reported loan balances. The change in balance as a percentage of beginning balances after (post) sales provides an indication of growth (or decline) in the portfolio resulting from the bank's marketing and credit decisions.

## B24 LOAN DECISIONS

Report B24 shows current values for all loan decisions and provides a work area for planning new entries for the Loan Decision form. In the absence of any change, the decisions shown will remain in effect. Any changes should be entered on the Loan Decision form. For a detailed discussion see the [Loan Decisions](#) section

The right-hand side of the report shows some useful information regarding the current loan portfolio and the current rates in the market. Note that these rates do not reflect decisions made by other, directly competing, banks in the community; however, they do show prevailing rates in the market for high quality loans (credit rating of 2) that will be in effect for the coming quarter.

- At the bottom of the report, you will find information regarding loan packages that are available for sale. Each package is priced separately, and any sales involve the entire package. Loan sales decisions are entered on the Loan Decision form. Information regarding the servicing of past sales is shown on Report B20.
- Book Value is the value carried on the bank's balance sheet.
- Market Value is the cash value if sold.
- Gain/Loss is the difference between market and book values.

The market value is determined as the discounted present value of the contractual cash payments from the package taking into account any scheduled rate adjustments but with no changes in current market interest rates. The discount rates used are the current rates in the secondary market for loans of the credit quality in the package. Secondary market rates for high-quality loans (a credit policy of 1 or 2) are lower than the current rate on new loans shown above.

- Market Yield is the average market rate that applies to each package.
- Book Yield is the average current contractual rate on the package.

- Maturity is measured in quarters and is an average for the package. Maturity is the time to final payment on the loans.
- Average Rate Adjustment Period is measured in quarters and is an average for the package. It is the time until the next rate change on the loans.

## B40 DEPOSIT ACTIVITY AND PERFORMANCE

The top half of the report shows the activities causing changes in balances for all customer (core) deposit categories.

Withdrawals show the deposits withdrawn from the bank during the quarter. These figures represent accounts closed. For time deposits, the values shown are the amount of maturing time deposits.

Market Shares of new deposits received by the bank are provided at the right. If the bank's pricing and other policies are competitive in a given market, its share of that market will be 10 percent.

The lower section of the report provides a cost analysis of the deposit accounts. It shows a breakdown of income and expenses associated with these accounts for which the bank has discretionary pricing. At the very bottom is a projection of maturing time deposits and a breakout of savings accounts receiving the standard and premium interest rates.

The level of Salaries and Benefits depends on the activity in the accounts and business development budgets. Advertising and Promotion is the portion of the business development budget allocated to these accounts from the business development priority decision shown on the next report, B44.

Other Fees is fee income from services provided to customers other than the service charges set by management decision. The amount of other fees is not under the direct control of management and is based on the characteristics of the bank's customers.

Net Cost is the difference between Total Expenses and Service Charges + Other Fees and is shown in \$ millions for the quarter and as an annualized percentage of the average total balance in the account.

## B44 DEPOSIT MARKETING, AND OTHER DECISIONS

Report B44 shows the values for the deposit decisions that were in effect for the last quarter and provides a work area for new determining if changes are desired. Actual new values should be entered on the Deposit Decision form. The format for decision entry is shown under the headings of each item. For a full discussion, see the [Deposit Decisions](#) section.

All the decisions shown on this report and entered on Deposit Decision form remain in effect unless changed.

On the right-hand side of the report, information regarding the current interest rates in the general market for the bank's deposit products is shown. These rates do not reflect decisions made by directly competing banks but are in effect for the coming quarter.

The bottom part of the report is a work area for other decisions that are entered on the Deposit Decision form.

## **B64 PURCHASED FUNDS AND CAPITAL ISSUES**

Report B64 shows the amounts and rates available for purchased funds and capital. Decisions on these funding sources must be entered each quarter on the Treasury Decision form. See the text discussion of the [Treasury Decision form in the Treasury Management section](#) for more details.

The amount shown as available for borrowing through repos reflects the book value of Treasury bills and bonds in the bank's portfolio that will remain after securities mature on the first day of the coming quarter. The actual amount available may differ from the amount shown if the bank buys or sells any Treasury securities. Therefore, the limit shown is only a guideline since it cannot reflect bank decisions that take effect on the first day of the quarter.

For CDs, the amount available and the interest rate depends on the credit rating of the bank as shown on C94. A low credit rating will severely limit the bank's access to these funds.

The report provides information on the end-of-quarter balances and maturing amounts of repo's and certificates of deposit plus the maturity distribution of CDs. The balances shown include accrued interest. The interest rate on certificates of deposits is fixed at their original issue rate.

## **C91 BANK BALANCE SHEETS**

The ends of quarter balance sheets for all banks directly competing in the community are provided on C91. This information is identical to that provided to each bank on Report B01 and should be valuable to management in assessing the impact of competition and the strategies followed by the other banks in the community.

## **C92 BANK INCOME STATEMENTS**

Income statements for each bank over the last quarter are provided. The individual bank data were taken from Report B02. An analysis of competing banks' income and expenses can reveal information about the success or failure of their policies and can provide clues as to improvements that can be made in your bank's operations.

## **C93 COMMUNITY LOAN AND DEPOSIT MARKETS**

This report shows the decisions that were in effect for each bank in the community for the past quarter. It is useful both in evaluating why your bank had the results it did and as an aid to decisions for the coming quarter. Careful analysis of this information coupled with market share data found on Reports B20 and B40, comparative data on other community banks in Reports C91 and C92, and the general economic data in Reports C95 and C96 can be very useful in evaluating the success of pricing strategies.

## **C94 COMMUNITY BANK CAPITAL ACTIVITY**

The Bank Capital Markets report provides capital market data for all banks in the community. In the upper left corner, the report shows the current stock price, the value at the end of the prior

quarter and the percentage change in price. The PE ratio is the ratio of the current stock price to the past four-quarter's earnings per share (four-quarters net income divided by the current number of shares outstanding). The market/book ratio is the ratio of the current stock price to the current book value of common stock per share. A market/book ratio of greater than 1.0 is considered an indication of good performance by the bank from a stockholder's perspective. Note that each bank's earnings forecasts are public information. The dividend yield is calculated as the current quarter's dividend per share divided by the current stock price expressed as an annual percentage rate. A bank's credit rating can vary from AA to D with AA being the highest and is a measure of the financial market's evaluation of the safety of the uninsured short-term debt instruments issued by the bank such as CD's and federal funds purchases.

## C95 ECONOMIC CHARTS

These economic charts are provided to show trends in key economic variables and as an aid to decision-making. The yield curves plotted in the upper left corner indicates the rates that are currently available on securities of different maturities and provide a sense of the relative spreads between them.

## C96 ECONOMIC REPORTER

C96 provides general information on the economy—national, and local. Note that forecasts of new loans and deposits are provided. These forecasts reflect up-to-date information on conditions in the economy and are at least as reliable as those provided in practice. As a rough rule, a bank that is competitive in its pricing and policies should expect to have about 10 percent of the total market demand shown.

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# NOTES

## APPENDIX B: SUPPLEMENTS

This appendix describes two worksheets that may be useful in evaluating decisions and analyzing bank operations. Copies of these worksheets may be provided to the banks along with the decision forms. In addition, a BankExec Report Review and Evaluation form is included that provides an organized tour through the bank reports and may be a required assignment prior to the first decision. This evaluation form provides a way to gain a quick overview of the bank and the information in the reports.

## MANAGEMENT WORKSHEETS

### **W02 Profit Plan**

The profit plan worksheet provides a format for forecasting the bank's income statement for the next quarter. In particular, it may be used to forecast the bank's earnings per share that is entered on the Treasury Decision form.

### **W06 Funds Management Plan**

This worksheet is used to project the end-of-quarter values for the assets and liabilities of the bank by forecasting the sources and uses of funds during the quarter. Some account balances, such as securities, are determined directly by management decisions so that changes in these accounts should be known precisely. Other account balances, such as checking deposits, require a true forecast, and their changes cannot be predicted exactly. The changes in these balances are the result of management decisions, competitive actions, and economic activity during the quarter. Regardless of the degree of precision in the forecasts, management must try to anticipate the direction and magnitude of changes in the bank's assets and liabilities in order to manage the bank effectively.

To use this worksheet effectively, you must understand the liquidity management of the bank as is explained in the [Liquidity Management](#) section.

Name: \_\_\_\_\_

### **BankExec Starting Point Reports Review and Bank Evaluation**

The purpose of this evaluation is to introduce you to the bank you will be managing. You should have a separate set of financial statements that represent the beginning condition of your bank. In the space provided below, answer each question to the best of your ability. If you have questions about the data in these reports, see [Appendix A](#) of the *Participant Decision Manual*.

1. Looking at the bank's balance sheet (Report B01), what is your assessment of its overall situation? Do you observe any trends that appear especially favorable or unfavorable?

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2. Examine the bank's income statement (Report B02). What are the trends in operating earnings and net income? What are the return on assets and return on equity of the bank for the year to date? What is your evaluation of these facts?

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3. Reports B05 and B06 contain a lot of information. What seems to be the purpose of this information? (You will need some practice to use these reports.)

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4. Reports B10 and B12 provide information on the securities portfolio of the bank. What is your assessment of the condition of the portfolio? What does Gain/Loss mean?

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5. Reports B20 and B22 provide information on the loan portfolio of the bank. What is your assessment of the bank's loan portfolio?

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6. Examine the current loan decisions of the bank as shown on Report B24. Compare the interest rates being charged with those prevailing in the economy that are also shown here. Do you have any recommendations for changes in loan decisions?

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7. Report B40 provides information on deposits of the bank. What is your assessment of this area?

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8. Examine the current deposit decisions on Report B44. How do the bank's interest rates compare with current market rates? Are there any changes you would recommend?

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9. Report B64 provides information on purchased funds and capital. Does the bank seem to have sufficient funds available from these sources? How do the interest rates compare with the rates on customer time deposits?

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10. Examine Reports C91, C92, C93 and C94. Given the number of banks that you will compete with, what will these reports tell you next quarter, after your first decision?

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11. Examine Reports C95 and C96. What type of information is provided here?

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