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Christine Stewart

Olson Research Associates, Inc.

John A. Haslem

University of Maryland

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SIMULATION PROGRAMS IN FINANCIAL INSTITUTIONS

Christine Stewart and John A. Haslem

Financial Planning is undertaken in every business, either explicitly or implicitly. Commercial banks are no exception. Although there is no substitute for proven expertise, management skills can be enhanced by participation in simulation cases.

A computer-based simulation case provides the participant with an opportunity to understand quickly the operation of a financial institution. Moreover, the participant can identify and define the relationships which exist among the various types of intermediaries in the U.S. financial system.

This paper describes a commercial bank model simulation case which has been used successfully in conjunction with the financial education programs of commercial banks, universities, banking schools, public accounting firms, and financial planning workshops. The paper concludes with a description of the use of computer-based simulation cases in savings and loan association and credit union educational programs.¹

Objectives of the Bank Model Simulation Case

The primary objectives of the simulation case are to provide

- Experience in financial planning without real-world risks, costs, or time requirements;
- Understanding of and appreciation for the planning and control process;
- Experience in using a financial planning model to assist in making complex decisions; and
- Opportunity to perform analysis, make decisions, observe the impact of competition, and be evaluated for performance.

These objectives are attained by the participant either directly from the presentation or through individual and group experience in the simulation exercise. Generally, the instructor of the bank model simulation case concludes the exercise with an analysis of the overall results of each bank management team's performance, after all teams have presented an explanation of their performance.

Experience in Financial Planning

Using a simulation case facilitates the participants' understanding of the operation of a commercial bank. All bank management teams start with the same financial position, represented by the historical and forecast balance sheets, income statements, and other analytical reports.

Key asset/liability management issues, such as managing the bank's liquidity, building its capital adequacy, analyzing its sensitivity to interest rate fluctuations, and maintaining its interest margin (the primary source of income to the bank), are easily introduced to the participants of the simulation exer-

cise. Moreover, a financial modeling approach permits the participants to experience the realities of a commercial bank without "real-world" risks.

Understanding and Appreciation of the Planning and Control Process

Each team is required to perform the following tasks in the simulation exercise:

1. Analyze the historical and future data of the case bank,
2. Establish a set of goals and strategies,
3. Implement decisions to achieve goals, and
4. Report and evaluate the bank's financial condition and performance.

To accomplish these tasks, each team must organize itself as an executive management team, develop plans, and control the bank's performance throughout the exercise. The process of planning, organizing, and controlling the bank's future financial condition is an integral part of the overall exercise. For example, the dynamics of each team's approach to its own organization, planning, and decision-making can dramatically affect the outcome. Consequently, the interaction among the members of the team is valuable experience for each.

Experience Using a Financial Planning Model

The technical structure of the simulation case is a financial model. The financial model, as a result, becomes the focal point of the team's attention when asset/liability management decisions are formulated, quantified, and submitted for analysis by the computer-based simulation case.

The key financial factors to be examined and analyzed by each team are presented on both traditional and analytical financial reports. Consequently, the participants gain experience in interpreting the bank's financial condition and performance from various types of financial reports. From these reports, the team will diagnose the competitive elements in the case, draw conclusions about the competition (i.e., the other teams in the simulation exercise), and formulate an appropriate set of financial decisions to reach its goals and objectives.

Analyze, Decide, Observe, and Evaluate

Detailed banking situations, with all the attendant risks and consequences, are encountered. As a result, each team member must isolate and manipulate the following key financial factors which affect the team's ability to achieve the stated goals and objectives of its bank:

1. Profitability measures;
2. Market share and growth in loans, deposits, and earnings;
3. Liquidity measures; and
4. Adequacy of capital position to cover short-run risks and meet long-range growth goals.

Although some of the participants may be unfamiliar with the use of these key financial factors, all team members will develop a better understanding

and knowledge of these ratios as they progress through the simulation exercise. Generally, a consultant to the simulation case is available to answer questions and guide the participants in the proper interpretation and use of these factors.

The overall operating performance of each bank management team is evaluated in four different categories and reflected in a composite score. A ranking is then developed for each of the competing teams. The scoring and ranking are both relative (each bank team compared to the three other bank teams in the city) and absolute (each bank team against established standards). The four performance categories, their proportionate weights, and their evaluation methods follow:

Category	EVALUATION METHOD		
	Relative	Absolute	Total
Management Goals	30	0	30
Peer Judgment	5	10	15
Regulatory Assessment	5	25	30
Investor Relations	10	15	25
Total	50	50	100

The "best" bank management team is determined by the computer using the scoring system covering these areas. As in real life, success is governed by the circumstances, opportunities, and competitive situations prevailing at any given time.

In addition to the computer scoring of the teams, the president of each bank team must present an Annual Report to a shareholders' meeting. The report generally includes

1. The bank's general organizational approach,
2. The objectives and strategies selected,
3. The decisions that were made and why, and
4. How the bank's results compare to the selected goals.

When the report is delivered, the instructor and shareholders (i.e., the other participants) ask each president to identify the frustrations and surprises that were encountered during the simulation exercise. Finally, the instructor summarizes the overall performance of the bank teams in each city with an analysis of the decisions made by the individual teams.

Description of the Case Bank

Participants are provided with a copy of the new simulation case textbook.² It explains the concepts of financial planning, presents a case study, and provides two simulation exercises. These concepts provide the background necessary for participation in the simulation exercises.

The bank model simulation case places four bank teams in asset/liability management competition. A computer-based financial model simulates the

rules of regulatory agencies, dramatizes the impact of long-term considerations on short-term strategy, and demonstrates the results of individual team policies in an economy which experiences change in trends, as well as seasonal shifts.

The bank case is based upon in-depth research of an actual bank in its market and competitive environment. The precise rules of bank regulation, statistics, and accounting have been incorporated to portray real-world circumstances and conditions.

All bank teams start with the same financial position. Decisions focus on the acquisition and employment of funds. Goals are selected and strategies are determined regarding pricing, promotion, asset and liability mix, and credit standards. The ultimate objective is to be the best managed bank.

The profit planning exercise can be used in conjunction with the competitive case or it can be completely independent. It focuses attention on internal analysis. Participants are given identical management goals and are evaluated on how well they, individually, meet these goals. In contrast, the competitive case introduces strategic decisions and competitive reactions in bank team goal selections.

Goal Setting and Decision Making

In the competitive case, the bank teams select one goal from each of the following categories and establish a priority ranking of 1, 2, 3, or 4 in terms of its importance to their bank:

1. Profitability,
2. Size/Growth,
3. Liquidity, and
4. Capital Adequacy.

When making financial decisions, the management team uses these goals as a guideline.

Other Computer-Based Simulation Cases

The success of the bank simulation case as an effective tool for educating people quickly about commercial bank operations has led to the development and use of several other computer-based simulation cases for savings and loan associations and credit unions. Essentially, the same basic structure and approach has been employed in these simulation cases as the one presented here. Each case is equally effective as a classroom exercise when properly administered in the appropriate educational programs.

To date, a savings and loan model simulation case has been used successfully in conjunction with the United States League of Savings Associations' educational arm, the Institute of Financial Education. The goals, decisions, and competitive elements of the case are designed to address the key issues affecting the savings and loan industry. Moreover, the case covers each of the specialized business activities available to a savings and loan association.

Similarly, a credit union model simulation case has been used successfully in an educational program provided by the National Credit Union Financial Management School, an educational arm of Credit Union National Association, Inc. (CUNA). In this program, four credit unions engage in asset/liability management competition with other financial intermediaries in the marketplace, rather than among themselves. Their mission is to service the credit unions' memberships while competing in the marketplace — an overriding goal which sets them distinctively apart from the other financial institutions in the market.

Each case has its own unique approach for evaluating the individual team's management performance. This is due to the unique nature of each business and the differing regulatory and legal constraints under which it must operate.

Future Computer-Based Simulation Cases

Ultimately, the most dramatic and interesting educational experience will be the direct interaction of all of the financial intermediaries vis-a-vis a computer-based simulation exercise in the classroom. The challenge for the instructor will be to control the teaching process by providing each participant in the simulation exercise with the experience of learning the basic elements of all financial institutions' roles in the intermediation process. The goal of such a simulation exercise is not unreachable.

FOOTNOTES

¹ See also John G. Rice and John A. Haslem, "Use of Computer-Based Simulation Cases for Educational Programs in Financial Institutions," *Journal of Financial Education* 10 (Fall 1981): 91-108.

² Olson, Ronald L., Harold M. Sollenberger, and William E. O'Connell, Jr. *Advanced Financial Planning for Commercial Banks*, Greenbelt, Md.: Ivy Press, Inc., 1984.

Christine Stewart is Manager of Educational Services for Olson Research Associates, Inc., Greenbelt, Maryland. John A. Haslem is Professor and Chairman of Finance at the University of Maryland.