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BANKPRO COMMERCIAL BANK SIMULATION

Paul D. Cretien, Baylor University

ABSTRACT

The commercial bank simulation described here was programmed with the objective of creating a game which would create a realistic banking environment while minimizing the number of periodic decisions made by the student teams. The simulation consists of: (1) student decisions, (2) allocation of loans and deposits based on determinants such as competitive pricing, (3) calculation of quarterly financial statements resulting from team decisions and pre-determined economic variables, and (4) a ranking of bank performance. One major objective is to permit students to adjust investments, loans, and deposits to meet prospective changes in interest rates. This allows the game to function as a teaching tool for instruction in asset and liability management.

INTRODUCTION

The BANKPRO commercial bank simulation is a game in which participants make quarterly decisions to operate a bank over the course of one year. Decisions include setting interest rates on loans and deposits, determining marketing expenses, issuing and redeeming common stock and subordinated debt, and paying dividends on common stock. Printed reports are generated for participating banks at the end of each quarter. The reports contain summaries of important financial ratios, balance sheets and income statements, footnotes showing the composition of loan and securities portfolios, a bank capitalization table, funding gap analysis, and other information needed to make decisions for the next quarter. BANKPRO is programmed in Lotus 1-2-3 for ease of use and understanding by students and their instructors.

HOW DECISIONS ARE MADE IN THE SIMULATION

Decisions are made on a one-page form. Bank management teams enter information that is used by the two computation programs to allocate loans and deposits, and to calculate new quarterly results. Competitive decisions may be made for up to 10 banks. The simulation is also programmed so that an individual may play the game in a non-competitive mode. Interest rates are entered for six different maturities of loans and four maturities of deposits. The total flows of deposits and loans for all banks are shown on the bank team's decision form at the end of each quarter. The percentage market shares are shown for the various loans and deposits. The instructor controls loan and deposit demand for the entire community, adjusting these flows to correspond with other economic factors. The bank may purchase up to five different securities in each quarter, and sell as many as five different securities that it currently owns. Treasury securities may be purchased in several maturities: 1, 2, 3, 4 and 80 quarters. Tax-exempts may be purchased as 80-quarter new

issues. All investment purchases are made at par value and at the market yield at time of purchase. The bank managers decide the total marketing expense for loans and deposits. Increasing marketing expense results in a positive effect on loans or deposits; however, the impact is smaller as the dollar amount of marketing expense increases. The bank may issue new subordinated debt, preferred stock, or common stock in order to increase its financial resources. Common stock may also be issued and repurchased. The bank managers must balance the stock price effect of dividends against the cash flow and impact on banks liquidity. The bank may take long or short positions in financial futures to assist in managing interest rate risk. The futures contracts are on \$1,000,000 90-day US. Treasury bills.

OPERATION OF THE BANKPRO SIMULATION

Bank decisions are made on separate computer disks by the various student teams. On the main simulation spreadsheet model, the instructor enters the individual bank decisions and has the results of the quarterly decisions computed by the BANKPRO model. Financial reports are saved on the individual team disks and returned to the bank management teams. When the quarterly financial results are saved in the competitive mode, a summary of key ratios is saved as a separate file. The management summaries for all five banks are used as data for the spreadsheet program that ranks competing banks according to six performance measures: ROA, ROE, stock price, net interest margin, earnings per share, and capital ratio.

The BANKPRO quarterly report combines the usual financial statements generated for a commercial bank with other information not published in public reports. The report attempts to provide the banks managers with all the information needed to make good decisions for the next quarter. Quarterly statements are balanced by using federal funds bought or sold. The last page of the financial report contains a funds flow statement, and a table showing time to repricing for various categories of assets and liabilities.

CONCLUSION

The BANKPRO simulation has proven to be an excellent addition to the basic course in commercial banking. The game allows students to make decisions in most important areas of bank management and to see the results in a realistically complex set of financial statements. Competitive elements and relationships among many of economic and decision variables give bank teams a feel for real bank operations.