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Financial Ratios: A Means of Analyzing Financial Statements for Banks

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FINANCIAL RATIOS: A MEANS OF ANALYZING FINANCIAL STATEMENTS FOR BANKS

by
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Professor Arthur A. Hiltner
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Dear Professor Hiltner:

Enclosed is an original (brown cover) and one copy of my final 997 paper entitled, "Financial Ratios: A Means of Analyzing Financial Statements for Banks."

I have made adjustments based on your comments. In response to your comment regarding too many one sentence paragraphs, these mainly occur in Chapters II and III because they are informational by content. They seem to flow better in this particular format.

I appreciate your help in seeing me through the completion of my paper. Thank you very much.

Sincerely,

Kirby K. Martz

Kirby K. Martz

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Encls.

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CHAPTER I

INTRODUCTION

Careful examination of the financial status of banks has become increasingly important for investors, depositors and directors in today's economy. One methodology for examining the financial status of banks is ratio analysis.

In recent years, bank deregulation has coincided with a large number of bank failures, a major concern among investors, depositors, and directors about the safety of their personal bank(s).

Federal banking regulations affect almost every aspect of a bank's operation. Regulatory agencies have varying degrees of authority over banks. National banks are chartered and examined by the Office of Comptroller of the Currency. State-chartered banks are examined by the chartering agency and, if insured, by the Federal Deposit Insurance Corporation (FDIC). State-chartered banks may also be subject to examination by the Federal Reserve if they have elected to become members of the Federal Reserve System.[1]

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1 James A. Koltveit, Accounting for Banks, (Matthew Bender & Company, Incorporated, 1983) p. 1.03[1] 1-11, 1-12.

The primary concern of bank regulators is to ensure the safety of depositors' money, but the apparent frequency of bank failures as highlighted below is cause for depositor caution and potential criticism of current regulatory practice:

> The David City Bank, Neb., became the 55th bank to fail this year when the Federal Deposit Insurance Corp. (FDIC) closed the institution's doors recently. The bank was closed because 'the owners were unable to come up with the additional capital needed as a result of extensive loan losses,' said Nebraska State Banking Commissioner, Roger M. Beverage. The bank had been struggling in a down agricultural economy and this factor was paramount in causing its insolvency.[2]
>
> St. Paul's Guaranty State Closes; Bad Real Estate Loans at Fault. An 'enduring faith in the ever-rising value of real estate' may have been a significant contributor to the closing of the Guaranty State Bank of St. Paul, Minn., last week, officials said. Fifty-three percent of the bank's $24 million loan portfolio was devoted to various types of real estate at the end of last year. At that time, it also had the eighth-highest percentage of nonperforming loans among all 14,000 commercial banks in the United States--33.4 percent...A large share of the bank's deposits was in large certificates of deposits and brokered funds. The FDIC said the bank began using high-interest-rate brokered deposits April 1981. A high percentage of those kinds of deposits--more than 100,000 placed by brokers in banks that offer high interest rates--is a sign of trouble at a bank, according to David Shern, Minnesota deputy commerce commissioner for financial institutions.[3]
>
> The record pace of banks failures isn't likely to slow this year, according to William F. Grant, director of banking relations for the Comptroller of the Currency...The total number of failures in 1983 was 48.[4]

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2 "Nebraska Bank 55th to Fail this Year," Commercial Bank 166 (September 1984):5.

3 Karen Knepper, "Minnesota's Third Failure: St. Paul's Guaranty State Closes; Bad Real Estate Loans at Fault," Commercial West 166 (July 1984):18.

4 "Comptroller Aide Hints at Increasing Bank Failures," Commercial West 165 (June 1984):5.

"Low performance banks that are highly vulnerable to events that threaten their solvency and overly aggressive banks that compromise their safety in the avid pursuit of profitability..." are the two main categories of banks that have failed recently, according to a new study prepared by Dunn and Bradstreet Credit Services, a unit of Dunn & Bradstreet, Inc. Not all failing banks conform to the profiles described in the study. Examinations of common failure scenarios "have displayed considerable usefulness in red-flagging bank failures," researchers stated. In the future bank solvency could be affected by further deregulation and increase in embezzlements.[5]

The information in succeeding chapters is intended for use by bank investors, depositors and directors who may want to learn if a specific bank is fulfilling their needs. Individual usage of a bank varies--as do individual needs relating to a bank. This paper will also present information to assist those individuals in making informed decisions about a bank's operations. By using ratio analysis methodologies, these analysts will be able to form factual appraisals of any bank in question.

Chapter topics in this paper will discuss:

II. How to compute difference financial ratios from financial statements of a bank.

III. How to interpret financial ratios and needs analysis.

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5 "Study Reveals Leading Causes of Bank Failures," Commercial West 165 (April 1984):8.

IV. How different users of financial statements can use computed ratios to analyze a bank's operations. This chapter also discusses how specific ratios provide warning signals for a problem bank.

V. Pros and cons in utilizing financial ratios to analyze financial statements.

CHAPTER II

COMPUTATION OF RATIOS

Many bank analysts often overlook the large quantity of information provided by most banks. The primary source of all basic information about a bank is the organization itself: bank analysts can obtain most information directly from the bank. The bank's annual report is probably the single most important source of information available to an analyst.

Other sources are the Consolidated Report of Income and the Consolidated Report of Condition which the banks file quarterly with the United States Administration of National Banks, a division of the Office of the Comptroller of Currency. Two exceptions are state-chartered banks that are members of the Federal Reserve System and file with them, and state-chartered banks that are not members of the Federal Reserve System and file with the FDIC.[6]

If a bank is registered with the Securities Exchange Commission (SEC), the bank files annual report Form 10-K and also quarterly report Forms 10-Q with the SEC. These forms are available to the public and provide financial and narrative information about a bank's operations.

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6 Tracy G. Herrick, Bank Analysts's Handbook, (New York: John Wiley & Sons, 1978), p. 36.

Numerous secondary sources also compile and publish information about a bank's financial operations. The bank itself, the SEC reports, and selected secondary sources can all serve as resource information about a bank.

After all available sources of information about a bank's financials have been obtained, the information must be assembled and analyzed according to a methodology. One method is computation of financial ratios.

Financial ratios used for illustrating method(s) of ratio computation and bank analysis are discussed in the following section. The ratios are not all-inclusive of financial ratios that can be computed, nor are they offered as the only method suitable for computation. The ratios are first categorized by (i) an analyst computing ratios from the balance sheet in the order the assets and liabilities are presented, and (ii) from the income statement in the order the items are presented.

Balance Sheet Analysis

A bank's balance sheet reflects changes in the composition of assets and liabilities. A balance sheet stops transactions at a specified time to allow analysis of a bank's financial condition. A special report in Business Week discussed the importance of a balance sheet: the amount of money a bank

earns is obviously still important, but only a balance sheet offers important clues about the quality of those earnings and whether they can be maintained.[7]

Cash

Cash assets to total deposits:

Oliver G. Wood, Jr. and Robert J. Porter include the following in cash assets when comparing them to total deposits and in analyzing bank liquidity: cash includes currency and coin, monetary reserves with the Federal Reserve, balances with banks in the United States and foreign countries, and cash items in the process of collection.[8]

Investment Securities

Securities and net federal funds sold to total deposits:

Because banks consider securities a primary source of liquidity, Wood and Porter have also used this ratio to measure bank liquidity. In this ratio, securities include all obligations of the United States Treasury, agencies, municipalities, other securities, and trading account securities. Net federal

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7 "How 900 Companies Manicure their Balance Sheets," Business Week, October 1977, p. 72.

8 Robert J. Porter and Oliver G. Wood, Analysis of Bank Financial Statements, (New York: Van Nostrand Reinhold Company, 1979), p. 38.

funds sold equal federal funds sold and securities purchased under agreements to resell, minus federal funds purchased, plus securities sold under agreements to repurchase.[9]

Average maturity of investment securities:

Average maturities of securities can normally be found in the footnotes to the financial statements which contain a maturity table by securities category. From this information a comparison of the maturity of securities to total deposits can be done. The composition and maturities of the portfolio are important in determining the bank's investment philosophy and liquidity.[10]

Securities valuation:

The sample financial statements section of the accounting industry audit guide, Audits of Banks, includes a footnote comparing the cost of a bank's securities with the current appropriate market value.[11] In the Bank Analyst's Handbook Herrick emphasizes that securities are the second major part of the assets of a bank; loans are generally first. This valuation is a significant indication of a bank's securities credit risk policy.[12]

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9 Ibid., p. 39.

10 Koltveit, Accounting for Banks, p. 2.02[4] 2-8.

11 AICPA, "Audits of Banks," (New York: AICPA, 1983), p. 146.

12 Herrick, Bank Analyst's Handbook, p. 156.

Loans

Loans-to-deposit ratio:

This is one of the first key ratios that many bank analysts examine. It measures the amount of deposits that have been committed to loans which is one of the liquidity ratios of a bank.[13]

Nonperforming loans to total loans:

This ratio is computed by totaling nonperforming loans and comparing the total to the total loans outstanding. Analysts may use this ratio to review the credit risk policy of a bank.[14]

Nonperforming loans include loans where a borrower is not fulfilling the terms of an original agreement; nonaccrual loans (the bank stopped accruing interest on the loans); renegotiated loans (the terms of the loan were changed); and the category of other real estate (the collateral on a loan has become the property of the bank.)

In its sample disclosure footnote on loans, the accounting industry audit guide, Audits of Banks, states the dollar amount of loans on which interest accrual has been discontinued, but makes no reference to renegotiated loans or other real estate loans.[15]

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13 Koltveit, Accounting for Banks, p. 2.02[1] 2-5.

14 Herrick, Bank Analyst's Handbook, p. 155-156.

15 AICPA, "Audits of Banks," (New York: AICPA, 1983), p. 147.

In June, 1983 the SEC proposed changes to its industry guides concerning high-risk loans for bank holding companies. The proposal included providing information on nonperforming loans and at-risk loans because of loan concentration in one industry.[16] In September of 1983, Rule 9-03 of Regulation S-X, Item 404 of Regulation S-K, and Industry Disclosure Guide 3 were amended concerning disclosure by bank holding companies of information about nonperforming loans. The amendment revises the current guidelines dealing with nonperforming loans to focus more broadly on the various risk elements involved in lending activities. The revised categories of disclosures are:

1. Nonaccrual, past due, and restructured loans
2. Potential problem loans
3. Foreign outstandings
4. Loan concentrations[17]

Allowances for loan losses to total loans:

Analysts review this ratio to determine the adequacy of a bank's allowance for loan losses. It also gives an indication of the credit risk or lending policy of a bank.

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16 "Bank Loan Disclosure Data Increased by SEC Proposal," Journal of Accountancy 55 (June 1983):20.

17 Daniel Schechtman, Michael A. Walker, and Stanley Weinstein, "SEC Revises Bank Holding Company Disclosures on Problem Loans," SEC Compliance - Financial Reporting and Forms Bulletin 9 8 (September 1983):[9.5] 4-5.

Charge-offs to total loans:

Analysts also use this ratio to analyze a bank's credit risk policy.

Property and Equipment

Property and equipment to stockholders' equity:

This ratio compares investments in property and equipment with stockholders' equity. The general rule is that an investment of stockholders' equity in property and equipment exceeding 50 percent is excessive, and usually requires the specific approval of bank regulators.[18]

Deposits

Deposit mix:

It is necessary to analyze deposit mix since it directly affects a bank's earnings. In analyzing the deposit mix, the amount of deposits held in checking accounts, savings accounts and time deposits are compared.[19]

Deposit growth:

Because deposits are a bank's primary source of funds for making loans and investments, the year-to-year and long-term growth of a bank's deposits should be analyzed.[20]

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18 Koltveit, Accounting for Banks, p. 2.02[4] 2-8.

19 Ibid., p. 2.02[4] 2-8.

20 Ibid., 2.02[4] 2-9.

Liabilities

Federal funds, securities sold and liabilities to total assets:

The objective of this ratio is to measure the extent of a bank's assets financed with short-term funds. Wood and Porter use the ratio to analyze liquidity of banks.[21]

Capital-to-Asset Ratios

No area of banking has been investigated more carefully by regulators than capital ratios. Regulatory authorities are empowered to require banks to maintain adequate capital. Recently the Office of the Comptroller of Currency proposed a rule that would raise the capital requirements for national banks to a uniform six percent, while requiring five and one-half percent to be in primary capital. Primary capital includes common and preferred stock, capital surplus, undivided profits, capital reserves and the allowance for loan losses.[22] It is important that analysts be familiar with the capital ratios used by regulatory authorities.

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21 Porter and Wood, Analysis of Bank Financial Statements, p. 40.

22 Control of Banking, "Higher Capital Levels Proposed for National Banks," 23 (New Jersey: Prentice-Hall, Inc., 1984), par. 6.9.

Stockholders' equity, capital notes and valuation reserves to total assets:

The valuation reserve is the portion of the loan loss reserve that is subtracted from total loans. Regulators consider the valuation reserve a capital account and not a contra-asset when figuring the ratio. Herrick states that this ratio is used by both the Federal Reserve and the Comptroller of Currency.[23]

Stockholders' equity and valuation reserve to total assets:

The FDIC uses this ratio to analyze the capital adequacy of a bank.[24]

Income Statement Analysis

As bankers and regulators look to earnings as the primary source of new capital, increasing emphasis is being placed on the bank income statement. Banks are deeply involved in interest rates and the price for the use of money over time. Interest rates are both a cost and a price to banks.

Banks purchase funds at one interest rate, which represent their "cost of funds" and they lend funds at another interest rate, which represent their "price". The difference is the "interest rate spread". When an income statement of a bank is analyzed these rates are analyzed first.[25]

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23 Herrick, Bank Analyst's Handbook, p. 211-212.

24 Ibid., p. 213.

25 Ibid., p. 163.

Interest Rates

Yield on average earning assets:

The yield on average earning assets is computed by dividing the total interest income by the the sum of the average balance of loans, securities, and other interest-bearing assets. Koltveit suggests the yield may provide some insight into the relative risk involved in a loan and security portfolio.[26]

Rate paid on funds:

The rate paid on funds is the opposite of the yield on average earning assets. The ratio of interest expense to average interest-bearing liabilities computes the average cost of the interest-bearing funds employed by a bank.

Interest margin analysis:

Interest spread measures the difference between average rates earned and average rates paid.

Interest rate spread is managed by choosing among a variety of securities and loans and matching the interest rates of these assets with various deposits and debentures. The two key issues, which bear strongly on the management of the spread, are (i) whether the bank prices its loans on the basis of its

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26 Koltveit, Accounting for Banks, p. 2.03[2] 2-12.

incremental cost of funds, and (ii) how the bank matches the maturities of interest-earning assets and interest-bearing liabilities.[27]

Risk-adjusted margin:

Risk-adjusted margin is a measure of whether a bank has successfully practiced a risk-adjusted policy. Its calculation begins with a bank's net interest margin and subtracts the ratio of net loan losses to assets. The remainder is risk-adjusted margin representing the net interest margin on loans and securities after losses have been taken into account.[28]

Net Income Before Security Gains

Ratio of net income to average assets:

This ratio has traditionally been used as a measure of return on operating assets. It reflects management's ability to generate income and control expenses. However, the elimination of securities gains (losses) as a separate line item after income taxes may result in less usage of this ratio.[29]

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27 Herrick, Bank Analyst's Handbook, p. 164.

28 Ibid., p. 155.

29 Koltveit, Accounting for Banks, p. 2.03[5] 2-14.

Net Income

Ratios of net income to average assets:

The ratio of net income to average assets is a measure of management's ability to generate net income. The measure of net income to average assets is affected by management's philosophy relative to the selling of securities and the taking of gains or losses prior to maturity. This ratio is widely used in measuring bank performance.[30]

Ratio of net income to average equity:

The ratio of net income to average stockholders' equity is another measure of management's ability to generate net income. A high ratio indicates a more efficient operation or a base of capital relative to assets that are lower than other banks.[31]

Return on Specific Assets and Expenses

All the preceding profitability ratios have been aggregate measures. They do not permit ratio analysis of the influence a return on specific assets, or the influence of expenses on specific liabilities. The following ratios will examine the profitability of specific assets and the cost of specific liabilities.

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30 Ibid., p. 2.03[6] 2-15.

31 Ibid., p. 2.03[6] 2-15.

Rate of return on total loans:

Loans are the most important bank earning asset. An analysis of the ratio of interest and fees earned on loans is a significant measure of management's ability to price its loans and to achieve an optimum loan mix.[32]

Rate of return on treasury securities:

This ratio is computed by dividing the interest earned on United States Treasury securities by the average outstanding United States Treasury securities. A bank's yield on treasury securities depends on the general level of interest rates and the maturity distribution of the portfolio.

Rate of return on municipal securities:

Essentially, banks hold municipals because they are exempt from federal income tax and from state income tax for holders in the state of issue. The rate of return on the municipal portfolio depends on the general level of interest rates, the maturity structure, and the investments manager's ability to judge highs and lows in the interest rate cycle.[33]

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32 Porter and Wood, Analysis of Bank Financial Statements, p. 82.

33 Ibid., p. 84.

Cost of funds on time and savings deposits:

The sharp increase in time and savings deposits as a percentage of total deposits, and the rise in the interest rates on these deposits, are the the most important reason for the sharp increase in bank costs.

If the information is obtainable, analysts should examine the interest paid on certificates of deposits (CD's) with a face value above $100,000 to the average outstanding CD's above $100,000. Typically, a high rate is paid on the funds and they are referred to as "hot money deposits" because they tend to move to banks offering the higher interest rates which also cause liquidity concerns.[34]

Operating Costs

Personnel costs:

Salaries, wages, bonuses, and related payroll benefits are usually a bank's second largest expense, after interest expense. A comparison of the dollar amount of salaries and other wages per million dollars of deposits with those of similar banks can provide an indication of a bank's relative operating efficiency. If a bank has a branch then the method of comparing this ratio to other banks is distorted and cannot legitimately be compared with a bank without branches because of the number of employees necessary at branch banks.[35]

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34 Ibid., p. 2.03[6] 2-9.

35 Ibid., p. 2.03[7] 2-16.

Provision for loan losses to total loans:

Because of the significant impact the loan losses provision is having on bank profits, it is important to read the notes and supporting schedules of a bank's annual report to determine the types of loans written off, the trend in losses, and the amount of recoveries. Review of this ratio will indicate the credit risk policy of the bank.[36]

The logical outcome of the preceding review of ratios is to ask the questions, "Now that (we) have figured out the ratios, what do the ratios provide us and what do they mean?"

In order to analyze financial statements by ratio computations, one must understand what the different ratios measure. Chapter III will discuss how these ratios can be used and what implications the ratios can have on the operation(s) of a bank.

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36 Porter and Wood, Analysis of Bank Financial Statements, p. 87.

CHAPTER III

INTERPRETATION OF RATIOS

As discussed in Chapter II, the ability to interpret financial ratios will enable an analyst to perceive some or all of a bank's policies. In this chapter financial ratio analysis will be used to determine the policies of a bank.

Herrick discusses five basic operating bank policies (liquidity, credit risk, interest rate, profitability and capital policy) that can be examined by looking at the different financial ratios.[37]

Liquidity Policy

Maintaining adequate liquidity is the most important constraint on a bank's primary objective--maximizing shareholder wealth.

Liquidity represents the closeness of assets to cash. Banks with liquidity have numerous strengths. Nearness to cash is an assurance to depositors that they would be able to obtain funds from their deposits under almost all circumstances. It also provides assurance to other bank analysts, including investors, borrowers, and directors.

Banks can manage their liquidity in five ways:

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37 Herrick, Bank Analyst's Handbook, pp. 125, 145, 163, 177 and 197.

1. Self-liquidating assets--looking to the repayment of funds as a source of funds to the bank. The bank doesn't need to take action to obtain funds.

2. Asset saleability--the ability of a bank to sell its assets, and its loans or securities to other banks and to the open market. As long as the book value of the bank assets is reasonably close to the immediate market value of these assets, the bank is regarded as having liquidity.

3. New funds--the ability of a bank to attract new funds.

4. Borrowers' earnings flow--to look to the financial health of a bank's customer. This method suggests that loans are not inherently self-liquidating, but rather that they are paid off from the earnings of the borrower.

5. Federal reserve discount window--a bank's reliance on its ability to borrow money from the Federal Reserve.[38]

Ratios introduced in the preceding chapter provide additional information regarding the liquidity of a bank.

Cash assets to total deposits measures the ratio of a bank's most liquid asset--cash. It is important to emphasize that cash is not usually available to meet liquidity needs because normally banks only carry enough cash to meet daily cash needs of customers. Wood and Porter discuss how the ratio of cash to deposits increases with the size of a bank for three reasons:

1. To meet reserve ratios which increase with deposit size;

2. Cash items in the process of collection increase with size because of the check volume among large account holders; and

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38 Ibid., p. 127-128.

3. Larger banks hold higher balances in foreign banks.[39]

Securities and net federal funds sold to total deposits measure the percentage of securities available to meet liquidity needs. The larger the bank the lower this ratio is because large banks rely more heavily on liability management.[40]

Average maturity of securities also identifies the percentage of securities maturing in one year to meet liquidity needs. This method of liquidity is the self-liquidating approach. Bonds due within one year or less from the date of the statement are obviously liquid; those due ten years or more are highly illiquid, or at least more subject to rate fluctuations.[41]

The loan-deposit ratio measures the asset saleability approach to liquidity. A high loan-deposit ratio indicates that a bank has a large proportion of its interest-earning assets in loans and a small proportion in securities. Loans are not so easily sold as securities, so a high loan-deposit ratio would indicate that a bank has comparatively low liquidity. A low loan-deposit ratio would indicate high liquidity.[42]

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39 Porter and Wood Jr., Analysis of Bank Financial Statements, p. 38-39.

40 Ibid., p. 40.

41 Koltveit, Accounting For Banks, p. 2.02[4] 2-8.

42 Herrick, Bank Analyst's Handbook, p. 138.

Federal funds purchased and securities sold under agreements to repurchase to total assets measures the extent that bank assets are financed with short-term funds. When money and credit conditions are easy, this is usually a profitable position, but risk comes when conditions tighten. An above-average level of this ratio should be a caution signal for anyone attempting to evaluate a bank's liquidity.[43]

Liquidity by obtaining new funds, evaluating a borrower's earnings flow, and the ability to obtain funds from the Federal Reserve discount window, cannot be measured using historical information nor measured without considerable difficulty, if at all.[44]

Credit Risk Policy

The taking of credit risks is a principal function of banks. Throughout banking history the willingness of banks to take credit risks has provided a major service to market economics. The heart of the banking business is assessing credit risks--not necessarily taking risks, but assessing them. If a bank does not assess risks, virtually every other aspect of its operations is likely to show difficulties.

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43 Porter and Wood, Analysis of Bank Financial Statements, p. 141-142.

44 Herrick, Bank Analyst's Handbook, p. 143.

The ratio of net loan losses to average loans serves as the most basic measure of a bank's credit risk policy. This ratio shows an indication of the quality of a bank's loan portfolio. A ratio which is low or declining over a period of years would indicate a minimal risk strategy. A high or rising ratio could indicate a low quality loan portfolio, or it could reflect a risk pricing policy.[47]

Another approach in viewing credit risk policy is through nonperforming loans. A low ratio indicates that a bank is following a minimal risk policy. A high ratio indicates that a bank is possibly using the risk pricing policy.

The link between credit risk and liquidity is a major reason for the requirement that banks show their investment securities at a book value or carrying value basis. Comparing the market value of securities with their book value allows further analysis of a credit risk policy's relationship to the purchase of securities.[48]

Risk Pricing Policy

Risk pricing policy is used when the ratio of loan losses to average loans is high, nonperforming loans to total loans is high, but the risk-adjusted margin remains constant. This constant risk-adjusted margin indicates that the interest rates charged on those loans have also been increased to offset

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47 Ibid., p. 154-155.

48 Ibid., p. 156.

the higher credit risk of the loans. If a bank successfully practices credit risk pricing, risk adjusted margin should remain fairly steady because an increase in the net loan loss ratio would be accompanied or soon followed by an increase in net interest margin.[49]

Interest Rate Policy

Making interest rate spread a major consideration in daily banking activity is difficult. Competitive pressures and banking service orientation tend to minimize the importance of spread in a bank's daily decisions.

The yield on average earning assets tell something about the relative risk involved in the loan and security portfolio. As the yield rises in relation to the market and to yields of comparable banks, it increases the possibility that a bank holds higher-than-average-risk loans and securities. Yield analysis also provides an indication of how responsive a bank's loans and securities portfolios are to changes in market rates of interest. Analysis is done by comparing the changes in effective yields with changes in market rates of interest.[50]

The amount of gross interest income can provide information about liquidity, credit risk, and loan maturity. George G.C. Parker states that high interest income indicates a large amount of assets in loans which means less liquidity.

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49 Ibid., p. 155.

50 Koltveit, Accounting for Banks, p. 2.03[2] 2-12.

Credit risk, normally the higher interest income, means higher risk loans. When analyzing the maturity of loans and securities, analysts should remember that the longer the maturity--the better the interest rate received.[51]

Investors and depositors can determine the type of deposits held by a bank by examining the interest rate the bank must pay. Normally, higher interest costs indicate deposits held in longer term deposits, larger dollar amount of deposits, or reliance on short-term borrowings.[52]

Profitability Policy

Profitability and capital are two closely interrelated operational bank policies. They represent different answers to the same question: how does a bank prepare for its future development?

Return on assets is the most basic measure of profitability because it most broadly states the employment of a bank's funds. A ratio high in relation to other banks and relatively consistent or rising over time indicates that a bank is capable of adding to its capital base through retained earnings. A rapidly falling or rising ratio, by itself or in relation to comparably-sized banks, should be cause for concern. Such a

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51 George G.C. Parker, "The Levers of Bank Performance," The Bankers Magazine 166 (November-December 1983):26.

52 Ibid., p. 26.

rapid shift may indicate that a bank is paring its margins dangerously thin in order to obtain new business or is engaging in increasingly risky lending at high interest rates.[53]

A ratio that is low but relatively consistent may indicate that a bank is making loans at less than market rate, is paying more than the market rate on deposits, is overstaffed, or is suffering unusually high bad debt losses.[54]

A consistently high ratio may indicate that the bank is charging more than the market rate of interest on loans, is paying less than the market rate on deposits, is understaffed, is efficiently operated or is overcapitalized.[55]

Examining the composition of the investment security portfolio is important in determining a bank's investment philosophy and liquidity. A portfolio comprised largely of tax-exempt securities indicates high earnings from sources other than investment securities, and a bank's attempt to maximize income and minimize income tax liabilities. Comparing the proportion of United States government securities to other types of securities may reveal the conservatism of a bank's investment policies.[56]

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53 Koltveit, Accounting for Banks, p. 2.03[6] 2-15.

54 Ibid., p. 2.03[6] 2-15.

55 Ibid., p. 2.03[5] 2-14, 2.03[6] 2-15.

56 Ibid., p. 2.02[4] 2-8.

Capital Policy

Capital represents funds that have been committed to a bank with hopes for success and without any guarantee against risk. A bank uses capital for three principal functions: (i) return on bank capital serves as an indication of how well a bank's programs can be sustained, (ii) the capital sum serves as a cushion against temporary losses, and (iii) capital services as a protection to uninsured depositors and other holders of liabilities in the event of liquidation.[57]

When evaluating bank holding company applications, the Federal Reserve Board currently considers a capital to assets ratio equal to seven percent as the minimum acceptable.[58]

If a bank's capital ratio is low or continues to drop, analysts may question whether other policies of the bank can be sustained.

Reducing the required return on assets for an expected return on equity is an effect of leverage in bank management. The effect of lowered return-on-assets requirements for banks with high leverage can be dramatic in loan pricing and market share: a large difference in required returns on assets translates into much lower loan prices, and lower loan prices mean higher market share.[59]

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57 Herrick, Bank Analyst's Handbook, p. 197-198.

58 Koltveit, Accounting For Banks, p. 2.02[3] 2-7.

59 Parker, "The Levers of Bank Performance," p. 29.

The preceding chapter has been a review of several ratios that analysts can use to determine bank policies. Chapter IV will be a discussion of the use of financial ratios to analyze a bank's financial statements.

CHAPTER IV

THE USE OF FINANCIAL RATIOS IN ANALYZING FINANCIAL STATEMENTS

Financial statements can be analyzed by users with different perspectives. This chapter will discuss the effect and implication(s) of financial ratios computed in the areas of liquidity, credit risk, profitability, and capital policy on various uses of the ratios.

Implication of Liquidity

There is no precise way to measure a bank's liquidity needs. The basic function of most of the ratios is to measure the amount of a bank's liquid assets in relation to total deposits or total assets. Outsiders who examine liquidity ratios for any bank should look for deviations from industry averages. These deviations are cautionary signals that a bank's ability to survive in adverse conditions may have been affected.

Herrick discusses ways an analyst might evaluate a bank's liquidity from the viewpoint of concern for present and future financial developments. If an analyst felt no major concerns existed, and the bank in which the analyst had placed a deposit or had an investment possessed extraordinary powers of money management, he or she might measure bank liquidity by using the new funds approach. If an emergency occurs, the analyst is

insured that the Federal Reserve Bank would provide whatever liquidity is necessary to sustain the bank during difficult times.[60]

Bank directors, convinced that the future for credit markets looks promising, should still view liquidity with concern. This concern reflects bank directors' special responsibilities: their commitment is more durable, and the requirements for liquidity are more stringent.

A bank director might require: (i) more specific information regarding management's assurance that liquidity could be purchased through the use of new funds; (ii) information regarding the details and specifics of the operation and the experience of the bank during past credit crunches; and (iii) background information concerning the bank's relationship with the discount window of the Federal Reserve Bank.[61]

Depositors who believe that future credit conditions are likely to be difficult might review banks from the viewpoint of liquidity, based on the self-liquidating assets or saleable assets approach. Having performed the preceding analysis, a depositor would realize that no benefit could be gained from making a deposit in banks with less liquid conditions. If a temporary interruption in the access of funds occurred for any reason, the loss could be considerable.

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60 Herrick, Bank Analyst's Handbook, p. 135.

61 Ibid., p. 135

A depositor might wish to avoid liquidity risks as a simple matter of policy. Depositors should critically examine liquidity policies requiring optimistic assumptions about markets and the behavior of individuals holding discretionary power.

In recent years many investors have not viewed liquidity as an important issue and have not given much attention to the liquidity policies that banks use. For investors to become concerned over the liquidity policies of banks, major financial difficulties in credit markets would have to occur.[62]

Banks following a minimum risk strategy can be expected to have less difficulty in managing their liquidity.

Implication of Credit Risk

Shareholders may be attracted to one of two credit risk approaches:

1. Shareholders with a long-term outlook should look for banks which regularly provide earnings to support dividends, and are not likely to show increases in loan losses.[63]

2. Shareholders with a short-term outlook should find a bank that uses a risk pricing policy suitable to their needs. These shareholders should view securities with the prospect of major earnings gains within one to several years, and seek banks that have announced plans to adopt the risk pricing strategy.[64]

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62 Ibid., p. 136.

63 Ibid., p. 52.

64 Ibid., p. 154.

Depositors are most concerned that a bank's credit risk strategy maintains the confidence of all suppliers of funds to a bank. Many depositors want to hold funds only in banks holding assets with unquestionable quality standards. If a significantly higher interest rate exists, other depositors may consider holding funds in banks that have adopted questionable risk pricing policies.[65]

Implication of the Profitability Policy

A bank's ability to sustain or develop itself over the long-term is based on profitability, a basic measurement important to all shareholders, debtors, and loan customers.

Shareholders have the most interest in profitability. A bank showing indications of rising profitability may pursue strategies that could provide a continual basis for expansion in retained earnings. A declining rate of profitability would prompt questions concerning a bank's capability to provide adequate increments of retained earnings to shareholders' equity without reducing the capital ratios of the organization or eventually reducing the dividend.[66]

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65 Ibid., p. 154.

66 Ibid., p. 183.

Implication of Capital Policy

With the increase in bank failures in recent years, analysis of bank capital has received more attention from banking regulatory authorities, depositors, shareholders, and other bank creditors. This has occurred because capital is a primary indication of a bank's financial strength and its ability to remain a solvent and viable institution.

Bank capital serves four functions: it (i) demonstrates a bank's ability to absorb unanticipated losses; (ii) provides operating funds; (iii) measures ownership; and (iv) facilitates shareholder pressure toward managerial efficiency.[67]

In determining capital adequacy, the Office of the Comptroller of the Currency instructs its examiners to consider the following factors:

1. Quality of management
2. Liquidity
3. Asset quality
4. History of earnings and their retention
5. Quality and character of ownership
6. Deposit structure
7. Quality of operating procedures
8. Capacity to meet present and future financial needs[68]

Since depositors are concerned about the safety of their deposits, a bank's capital policy may be used to indicate the degree of security surrounding deposits. Other depositors

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67 Porter and Wood, Analysis of Bank Financial Statements, p. 49.

68 Ibid., p. 208.

might patronize a bank with low capital ratios and an interest rate premium for deposits that has been adjusted for the possibility of unexpected occurences.[69]

Shareholders want banks with an adequate capital ratio because those banks are more likely to sustain their past growth rate in earnings per share than other banks. A strong capital position reflects a capital policy that emphasizes operating policies promoting high profitability. Adequate capital ratio(s) provide the basis for advancing shareholders' equity in line with assets and providing dividends for shareholders.[70]

Other Implications

Financial ratio analysis provides useful information to all regulators and auditors of banks.

Leopold A. Bernstein discusses the usefulness of financial statement analysis:

> 1. Planning audits and identifying, after analysis of preliminary statements, areas of greatest vulnerability. That approach can lead to the best decision placement of emphasis and concentration of time and effort.
>
> 2. Testing adjusted financial statements for feasibility and reasonableness.
>
> 3. ...gaining an understanding of the enterprise under audit, and of the factors affecting its financial condition and operating results.[71]

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69 Herrick, Bank Analyst's Handbook, p. 206.

70 Ibid., p. 208.

71 Leopold A. Bernstein, "The CPA's Stake In Financial Statement Analysis," The CPA Journal 45 (February 1975):26.

Richard F. Wentzell suggests that a certified public accountant (CPA) can better understand client operations by using ratio analysis. Ratio analysis assists a CPA in providing useful information for clients in making management decisions. An accountant can also use ratio analysis for the following objectives:

1. Assist a CPA and client to better understand the financial operations.
2. Enable a CPA to serve a client more effectively.
3. Indicate whether an accounting firm's resources are being used profitably and efficiently.
4. Denote return on investment.
5. Indicate financial strength(s) and weakness(es).[72]

A comparison of a bank's policies with other banks provides financial ratio users with a basis for determining the rank among other banks. By making comparisons, bank analysts are able to judge a bank by peer standards and gain a realistic perspective of the bank's performance.[73]

Comparisons may be used to indicate relative differences and similarities between a bank and a group of other banks. The appropriateness of the comparison depends on the bank group used to contrast the bank. The selection of this reference group

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72 Richard J. Wentzell, "A Statement of Ratio Analyis," The Michigan CPA 27 (May-June 1976):8.

73 Herrick, Bank Analyst's Handbook, p. 219.

becomes a matter of considerable importance. Two widely-used bases for comparisons are size of operations and geographic area.[74]

Numerous information sources are used to make bank policy comparisons. Primary sources are the Federal Reserve Board, the Comptroller of the Currency, and the FDIC. Many secondary sources also provide this information.

Financial ratios are also used to identify a bank in a deteriorating financial condition. A bank's financial statements warn Federal regulatory agencies that a bank is approaching financial difficulty. Federal regulators have devised "early warning systems" based primarily on key financial ratios derived from a bank's quarterly, semi-annual, and annual financial statements. The Federal Financial Institutions Examination Council recently established a new uniform warning system. A by-product of this system is the "Uniform Bank Performance Report" which is issued quarterly and is available to the public.[75]

Messrs. Sinkley and Walker define a problem bank as "...one that has violated a banking law or regulation or engaged in an unsafe and unsound banking practice to an extent that the present or future solvency of the bank is in question."[76]

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74 Ibid., p. 219.

75 Koltveit, Accounting for Banks, p. 2.01 2-3.

76 Joseph F. Sinkley Jr. and David A. Walker, "Problem Banks: Identification and Characteristics," Journal of Bank Research 5 (Winter 1975):209.

From a study conducted by Sinkley and Walker when comparing financial ratios between problem banks and non-problem banks, the following ratios indicated significant differences:

1. Capital adequacy

   a. Capital/total assets
   b. Capital/risk assets
   c. Excess capital funds/risk assets
   d. Loans/capital

2. Liquidity

   United States Treasury securities/assets

3. Loan characteristics

   a. Loans/total assets
   b. Commercial and industrial loans/loans
   c. Interest and fees on loans/operating income

4. Efficiency

   Operating expenses/operating income

5. Rates of return

   a. Net income/total assets
   b. Net income/capital[77]

Porter and Wood reviewed the study by Sinkley and Walker. After analyzing the preceding ratio categories, Porter and Wood compared the ratios between a problem bank and a non-problem bank. A synopsis of their analysis follows.

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77 Ibid., pp. 214 and 216.

Capital adequacy:

Problem banks had lower average ratios of capital to total assets and capital to risk assets. The ratio of loans to capital plus reserves was significantly higher for problem banks. This was judged to be the most important capital ratio indicator of deterioration in financial condition.[78]

Liquidity:

One would expect problem banks to have liquidity pressures. Of all the liquidity ratios tested, the only significant difference was between the two types of banks in the ratio of United States Treasury securities to total assets. This ratio was lower in problem banks.[79]

Loan characteristics:

In the study Porter and Wood found that the average problem bank held between five and nine percent more of its assets in loans than did the non-problem banks. Problem banks also held between five and seven percent more in commercial and industrial loans (as a percentage of loans) than did non-problem banks.

The ratio of interest and fees on loans to operating income was significantly higher for problem banks. During a three-year period the average problem bank derived between

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78 Porter and Wood, Analysis of Bank Financial Statements, p. 113.

79 Ibid., p. 113-114.

65 and 69 percent of its total operating income from loans, while the ratio for the average non-problem bank was between 58 and 59 percent.[80]

Efficiency:

The ratio of operating expenses to operating income was used as a measure of efficiency and found to be significantly higher for problem banks. A higher ratio reflects adversely upon a bank's managerial ability to control costs and generate income.

Rates of return:

The ratios of net income to assets and net income to capital were found to be significantly lower for problem banks than for non-problem banks.[81]

The chief value of a ratios list is it provides investors, corporate cash managers, bank management, and bank regulatory authorities with a convenient list of "caution signals" for determining possible future deterioration of a bank's financial condition.

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80 Ibid., p. 113-114.

81 Ibid., p. 113-114.

CHAPTER V

PROS AND CONS OF THE USE OF FINANCIAL RATIOS

Financial ratio analysis provides analysts with more diverse and comparative financial data than routine examinations of bank financial statements can reveal. Ratio analysis of the interaction of assets, liabilities, and equity, cash flow balances, and the proportion of accounts one-to-another is more revealing to an analyst than individual items on a financial statement. James E. Kristy states that ratio analysis is the cornerstone of financial statement analysis.[82]

Wentzell suggests that ratio analysis is a fundamental indicator of the internal operations of a client, regardless of comparability, i.e., comparing a client's business to similar businesses would be coincidental to the analysis.[83]

Ratio analysis can assist analysts in determining and evaluating a bank or banks' operational policies, and help people make qualitative judgments about their own bank's policies relative to individual needs. Bank regulators and auditors use

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82 James E. Kristy, "New Techniques in Financial Statement Analysis," Credit and Financial Management 79 (August 1977):17.

83 Wentzell, "A Statement of Ratio Analysis," p. 8.

ratios as an audit planning tool in performing bank audits, and as "early warning signals" of changes in a bank's financial condition.

Analysts using financial ratio analysis to determine bank stability encounter several problems: (i) difficulties in accessing source references, (ii) inadequate ratios currently in use, (iii) lack of an industry-wide set of uniform ratios, (iv) diverse methods of computing a single ratio, (v) ratios viewed individually instead of as a whole, (vi) disparate approaches to aggregate statistics, industry norms, and deviations from banking peer groups, and (vii) "window dressing" by banks. One critic of financial ratios states that all the "good ratios" in current use can be counted on the fingers of both hands.[84]

The Securities and Exchange Commission does have rules for bank holding companies registered with the SEC. Although the SEC requires that banks supply "useful" financial disclosures for analysis, a large number of banks are not registered with the SEC. The disclosures from these banks do not have to meet the SEC's definition of "useful." Other regulatory agencies have their own reporting and disclosure requirements.

Of utmost importance to bank analysts is the loan disclosure requirement. It is the asset category that contributes most to bank failures. When analyzing loan ratios, it is important to know that the SEC requires bank holding companies to

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84 Kristy, "New Techniques in Financial Statement Analysis," p. 17.

disclose nonperforming loans, problem loans, foreign outstanding, and loan concentrations. If a bank is not registered with the SEC, this information is not as readily available. This problem affects a large number of other useful financial ratios. Edward A. Weinstein, while not speaking specifically of ratios, stresses "The most important aspect of disclosure is the protection of the average investor against fraud and against better informed investors."[85]

Patricia Boyer and Charles E. Gibson suggest that authoritative bodies of the accounting profession and Federal regulators develop a set of uniform financial ratios for analyzing financial stability and to provide guidelines for disclosing information necessary to compute the ratios.[86]

Analysts may also choose to compute a ratio in many different ways using a single set of financial statements, i.e., the final output can be predetermined depending on the computation(s) used. In their article, "The Need for Uniform Financial Ratios," Boyer and Gibson also suggest that each ratio computation be given a standard meaning and authoritative guidelines be established for ratio composition.[87]

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85 Edward A. Weinstein, "Disclosures: Too Much Or Too Little?" The CPA Journal 47 (April 1977):27.

86 Patricia Boyer and Charles H. Gibson, "The Need for Disclosure of Uniform Financial Ratios," The Journal of Accountancy (May 1980):82.

87 Boyer and Gibson, "The Need for Disclosure of Uniform Financial Ratios," p. 80.

Some secondary sources do provide information regarding the financial ratios of banks and how the ratios are computed. It is also true, however, that some Federal regulators are not uniform in their computation of capital ratios. Banks then experience the difficulty in meeting capital ratios computed in different ways by different Federal regulators.

A common problem in working with financial ratios is that the ratios are usually viewed individually and not considered as a whole. Examining a single ratio apart from other financial circumstances can lead to erroneous conclusions and a meaningless ratio.

Sydney Smith Hicks provides an illustration of how aggregate statistics can give analysts inaccurate information about a banking system by focusing on the ratios of loans, securities and federal funds sold to total loans and securities. Hicks also discusses how Federal Reserve audits highlight bank deviations from a bank's peer group requiring bank management to explain deviations as though the peer group was the desired standard.[88]

The Office of the Comptroller of the Currency recently issued a policy statement emphasizing that it will not condone temporary transactions. These "temporary" transactions cause a distortion or realignment of a national bank's total balance

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88 Sydney Smith Hicks, "Aggregate Bank Portfolio Statistics: Do They Tell Us Anything?" Journal of Bank Research 14 (Autumn 1983):221-222.

sheet and any of its undivided components. This activity is commonly referred to as "window dressing." An example of bank window dressing discovered by the Comptroller follows:

1. Deposit swaps with correspondent banks;
2. Shifting material funds purchased into demand deposit accounts; and
3. Material increases in discretionary source funds, particularly Eurodollar deposits.

Increased deposits were employed in short-term assets and the entire transaction was reversed shortly after the call report date. In other transactions, loan participations were sold shortly before a quarter-end and repurchased shortly thereafter so that the allowance for possible loan losses (as a percentage of loans) increased on reporting dates.[89]

Nadler discusses a basic change presently occurring in the banking industry: many bankers are realizing that the real test of a bank's ability to survive is not its capital adequacy, but whether it can maintain public confidence.

> ...It is confidence in the bank, then, that maintains a bank's strength. As long as the public does not want its money, a bank can continue to operate no matter how much lower its capital position is than the real depreciation on the assets in its portfolio.[90]

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89 Daniel Schechtman, Michael A. Walker, and Stanley Weinstein, "Banks Warned Against Window-Dressing Techniques," SEC Compliance Financial Reporting and Forms Report Bulletin 9 9 (September 1984):[9.7] 5.

90 Paul S. Nadler, "How to Measure Bank Strength," Bankers Monthly 101 (March 1984):7.

To illustrate this observation, Nadler describes a real-life example: local newspapers in Hartford, Connecticut announced that Hartford Federal had been placed on the Federal Savings and Loan Insurance Corporation watch list. The same day this story appeared, a television station showed a movie about a run on a bank, "The Night the Money Stopped." Even though Hartford Federal was as strong as many other banks, the next day a run on the bank began and by the end of the week Hartford Federal had to be sold.[91]

Two indications of the strength of a bank or any other deposit-taking institution are (i) its ability to maintain public confidence, and (ii) its stability as determined by prudent financial ratio analysis. Analysts who perform financial statement analyses and perceive a bank as stable and operating efficiently should realize that when public confidence in a bank is gone, the bank becomes a problem bank. No amount of ratio analysis can help the situation.

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91 Ibid., p. 22.

CHAPTER VI

CONCLUSION

In order to be able to use financial ratios to analyze a financial statement, one must first develop sound and acceptable ratios. There is a demonstratable need for uniform ratios and standard disclosure so that ratios can be computed fairly.

Once an analyst computes the ratios, he or she needs to learn everything about them: who prepares them, what the formulas are, and how they are used. It is important to remember that financial ratio analysis is only a tool to assist in analyzing banks and advising management decision-makers about the financial statements.

Financial ratios can also be used to examine the policies of a bank, to compare the bank's ranking with its peer group, and to provide early warning signals for problem banks. However, it is only an aid in analyzing the financial stability of banks.

Financial ratio analysis increases overall understanding of the financial statements and provides insight into factors that may or may not be readily apparent to a financial analyst.

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