Guide to corporate loan evaluation for commercial banks

Jerry Grimlund Ferguson
The University of Montana

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A GUIDE TO CORPORATE LOAN EVALUATION
FOR COMMERCIAL BANKS

By

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the degree of

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UNIVERSITY OF MONTANA

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CHAPTER I

INTRODUCTION

The process through which commercial bankers reach their lending decisions have often been a mystery to outside observers and to those who have been rejected in their applications for credit:

"In the folklore of commercial banking, there exists a powerful personality known as a loan officer, who is gifted with certain supernatural and intuitive insights. This individual has been heralded in stories over the years as having a cold, penetrating eye which sees the innermost thoughts of the applicant for credit. By neatly balancing a wide range of factors, he arrives at somewhat mystical decisions that particular loans should or should not be made."

Perhaps the most difficult decision to understand of all in the commercial bank lending function is the corporate lending decision; that is, how the commercial bank decides whether or not to lend money to a corporation.

Much has been written concerning individual aspects of this process of making a corporate lending decision, but few substantial efforts have been made to develop a structured, systematic guide to corporate credit

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evaluation. Corporate lending officers of commercial banks have instead relied heavily on vast credit experience, accumulated analytical knowledge and long-time bank relationships with their corporate customers to evaluate the corporations' credit applications. In addition, they have been reluctant to discuss why they are willing to grant or reject loans. In rejecting a loan application, the lending officer often points to one particular aspect of the corporation which he feels precludes its eligibility for credit, but often his rejection is based on some vague collection of factors which he seems unable to quantify.

Individual banks often have written policies defining prerequisite corporations-banks relationships, but these policies have not provided step by step analytical guides to corporate credit evaluation. The banks have instead relied on the experience of their corporate lending officers to provide safe and profitable loan portfolios. Most banks have felt little need, therefore, to produce structured guides to corporate credit evaluation.

However, with our rapidly growing economy, younger, less-experienced corporate lending officers are being placed in positions to make substantial credit decisions. Moreover, lending officers have been faced with making credit decisions for many small, diverse, and yet, often very profitable corporations. Without a broad background
of credit experience on which to draw, and sometimes possessing limited analytical knowledge, these officers may reach decisions which do not take fully into consideration all aspects of overall financial strength and repayment ability. To insure consideration of all pertinent credit factors under these circumstances, a structured analytical lending guide would be a valuable tool.

Often a corporation requires that a decision be made on its application promptly, or that it at least be given an indication as to whether its application for credit might be approved. Again, some sort of guide which would lend itself to a few critical, yet quick, calculations would be helpful to the lending officer in making this preliminary determination.

The primary objectives of this study are to: 1) Identify those factors which commercial bankers consider most important in granting credit to corporations, 2) determine if bankers actually use these criteria in making the loan decisions; 3) evaluate the significance of these criteria, 4) discuss other criteria that might be useful to the corporate lending officer, and 5) develop from this evaluation a structured guide to corporate credit evaluation which, in turn, could be the starting point from which a major bank, with the aid of a computer and data collected over several years, could develop a workable guide.
Therefore, this study will seek to devise a set of criteria which will incorporate those factors deemed most relevant in making a sound corporate decision and place them in a logical, workable sequence.

For a number of years many banks have successfully used various methods of "credit scoring" to assist lending officers in making decisions regarding consumer credit applications. The Bank of America, for example, uses a scoring which takes into consideration factors such as the applicant's salary, monthly financial obligations, length of employment, and marital status; and assigns various numerical weights to these items. With the aid of a computer, the Bank of America arrived at a minimum score which provides a certain degree of confidence as to the probability of a loan being repaid as stipulated in a proposed loan agreement. An applicant who scores under this minimum is either rejected, or in special situations, will be granted a loan only with the concurrence of a second loan officer. This method of scoring was developed from the performance data of hundreds of thousands of loans over a period of years.

Because of the many variables, both quantitative and qualitative, in corporate credit evaluations, the corporate lending decision will probably never be reduced to a simple mathematical formula. A certain degree of human judgment
will no doubt always be necessary. This study will necessarily be limited, then, to an attempt at helping the corporate lending officer function more effectively rather than seeking to eliminate his function.

This is not to say that the corporate lending function does not lend itself to credit scoring. A recent article in Bankers Monthly Magazine suggests both the value of developing such a credit scoring system and a general approach that could be taken. 2 The author of this article, Robert P. Abate, in pointing out the value of using a scoring system, estimates that such a device would save the corporate lending officer from 25 to 50 per cent of the time spent in loan evaluation. 3 Although not claiming to have developed a "scientifically designed" corporate scoring guide, Abate has prepared an example of such a form (see Figure 1). The possibilities suggested in this article and personal working experience with Bank of America's consumer credit scoring sheet prompted the development and testing of the experimental corporate loan rating sheet to be discussed in Chapters III and IV.


3 Ibid., p. 50.
**FIGURE 1**

**SAMPLE CONVENIENT CREDIT SCORING GUIDE**

<table>
<thead>
<tr>
<th>Age of business</th>
<th>Under 1 year</th>
<th>1-3 years</th>
<th>4-7 years</th>
<th>8-12 years</th>
<th>13-21 years</th>
<th>22 years &amp; over</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7</td>
<td>19</td>
<td>36</td>
<td>49</td>
<td>59</td>
<td>67</td>
</tr>
<tr>
<td>Years of present management</td>
<td>Under 1 year</td>
<td>1-3 years</td>
<td>4-7 years</td>
<td>8-12 years</td>
<td>13-21 years</td>
<td>22 years &amp; over</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>17</td>
<td>32</td>
<td>45</td>
<td>59</td>
<td>67</td>
</tr>
<tr>
<td>Successive years of increased profit</td>
<td>Loss</td>
<td>2 years</td>
<td>3 years</td>
<td>4-5 years</td>
<td>6-8 years</td>
<td>9-12 years</td>
</tr>
<tr>
<td></td>
<td>13 &amp; over</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of days inventory</td>
<td>Over 210</td>
<td>180-209</td>
<td>150-179</td>
<td>120-149</td>
<td>90-110</td>
<td>60-89</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>30-59</td>
<td>Under 30</td>
<td>180-209</td>
<td>150-179</td>
<td>120-149</td>
<td>90-110</td>
</tr>
<tr>
<td></td>
<td>53</td>
<td>Under 72</td>
<td></td>
<td></td>
<td></td>
<td>60-89</td>
</tr>
<tr>
<td>Number of days receivables</td>
<td>Over 210</td>
<td>180-209</td>
<td>150-179</td>
<td>120-149</td>
<td>90-110</td>
<td>60-89</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>30-59</td>
<td>Under 30</td>
<td>180-209</td>
<td>150-179</td>
<td>120-149</td>
<td>90-110</td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>Under 70</td>
<td></td>
<td></td>
<td></td>
<td>60-89</td>
</tr>
<tr>
<td>Debt to net worth</td>
<td>Over 10-1</td>
<td>9-8 times</td>
<td>7-5 times</td>
<td>4-3 times</td>
<td>2 times</td>
<td>1-1 times</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>15</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>1-2 times</td>
<td>1-3 or better</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade reports</td>
<td>Suits &amp; judgements</td>
<td>All slow</td>
<td>Mixed slow &amp; satisfactory</td>
<td>All satisfactory</td>
<td>Pays prompt &amp; takes all discount</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry groups—Mfg.</td>
<td>(i.e., Group I, furniture mfr.; Group IX, lumber mfr.)</td>
<td>Group I</td>
<td>Group I</td>
<td>Group I</td>
<td>Group I</td>
<td>Group I</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>10</td>
<td>15</td>
<td>19</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Audit</td>
<td>Own audit</td>
<td>Qualified audit</td>
<td>Unqualified audit</td>
<td>Unqualified audit</td>
<td>Unqualified audit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Throughout the text of this paper there will be references to "senior corporate lending officer(s) of leading California banks" and "local (or Missoula, Montana area) bank corporate lending officers." Prior to the development of this text, several informal interviews were conducted with a number of the above described individuals in order to get a better feeling for corporate lending policies of commercial banks. These vague references reflect the desire of these individuals to not be quoted directly as they do not want their views to be interpreted as necessarily reflecting the official policy of their respective banks.
CHAPTER II

PROFIT CONSIDERATIONS OF COMMERCIAL BANKS

Before turning to bank lending policies, a look at profit considerations of commercial banks with respect to recent trends and future expectations will be useful in establishing what role profitability plays in determining the composition of the loan portfolio of a commercial bank. An examination of these factors will also point out why it is so important to commercial banks to grant only low-risk loans. Cohen points out that:

"There appear to be three different objectives which commercial banks try to attain in their business loan decisions: minimizing risk to the bank (both default risk and liquidity risk), maximizing the bank's profit, and maximizing the bank's service to the community."  

Nadler adds to this by pointing out that banks are clothed in the public interest:

"A commercial bank is a business, and like any other business enterprise, it is out to make a profit. Yet unlike most other businesses, a bank has a deeper obligation than most enterprises to maintain high standards of safety and soundness.

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in its operations, for a bank's operations involve the acceptance and safekeeping of other people's money. For this reason banks are subject to considerable regulation on top of the self-regulation they must exercise to maintain depositor confidence."

In addition to the close scrutiny and frequent inspection of commercial banks by the federal government, the Federal Reserve System also influences bank lending activity as its primary means of slowing or increasing economic activity. Thus, banks are not completely free to choose those policies which will best meet their profit needs.

Commercial banks have been able to operate on very narrow profit margins. As can be seen by Figure 2, return on total assets has been less than one per cent and has even been declining in recent years to just 0.73 per cent in 1968. The extreme use of leverage employed by commercial banks has enabled them to still yield generally increasing profits. Figure 3 shows that the average capitalization of commercial banks has consistently been less than ten per cent of total assets and has declined from 8.1 per cent in 1969 to 7.5 per cent in 1968. The advantages accrued to commercial banks by extensively using leverage is illustrated by Nadler in a recent article in Banking.

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FIGURE 2
SELECTED RATES OF RETURN FOR COMMERCIAL BANKS
(Percentages)

Return on Capital
Return on Loans
Return on U.S. Government Securities
Return on Total Assets

Figure 3

Composite Commercial Bank Liability and Capital Structure
(Percentages)

"If one bank has $10 of capital for each $100 of deposits, while another can operate with only $6 of capital to $100 of deposits, obviously it is far easier for the more highly leveraged bank to earn a better return on capital than the bank with the greater equity cushion to deposits can. Carried to an extreme, if two banks are identical in deposit size and earning capacity, but one has twice the capital of the other, the bank with the lower capital position should earn roughly twice as much on capital as the other institution."  

Leverage, in itself, implies the profitable use of the funds of others. For a number of years commercial banks received considerable deposits virtually free. That is, individuals and corporations deposited funds with the bank and the bank was able to invest these funds profitably and still cover the costs of maintaining these deposit accounts. As Faulstich suggests, these circumstances continued for several years following World War II:

"Acquiring low-cost funds--principally demand deposits--had not been a problem for banks, and it was logical for them to continue focusing attention on how best to invest funds."  

However, in recent years corporate treasurers have become increasingly aware of the earnings lost by keeping large cash balances idle. Consequently, they have sought to invest excess funds in either short-term securities or in time deposits with commercial banks. As can be seen by


7 George L. Faulstich, Jr., "How Reliable is the Loan/Deposit Ratio?", Banking, October 1969, p. 33.
Figure 3, in recent years the percentage of "free" demand deposits has dropped sharply and the percentage of deposits the bank must "purchase" has risen proportionately. And besides paying for more deposits, the interest paid on these deposits has risen substantially as indicated by Bunting: "Because of rising interest payments alone; the average break-even point of the banks in our survey tripled in less than eight years." As a result of these trends, banks have been "... forced ... to divert increasing attention to the liability side of the balance sheet."

In addition to the increased use of leverage, which has already been discussed, commercial banks have already made considerable efforts at counteracting this profit squeeze through changes in asset management. Figure 2 shows that banks earn a considerably higher rate of return on loans than they do on U.S. Government securities. As a result, banks have increased the size of their loan portfolios while at the same time reducing significantly their holdings of U.S. Government securities (see Figure 4); which are, of course, a bank's safest and most liquid investment. As a compromise, many banks have increased substantially their investments in municipal bonds (included

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9 Faulstich, p. 33.
FIGURE 4

COMPOSITE COMMERCIAL BANK ASSET STRUCTURE
(Percentage)

under "other securities" in Figure 4). Because of their tax-exempt status, the after-tax yield on municipal bonds can almost equal the return on a loan. Faulstich, in fact, suggests: "... that the most progressive and profit-oriented banks will increasingly take maximum advantage of this investment alternative." However, as banks have long catered to the needs of corporate interests and have realized increasing returns on consumer loans, it is doubtful that they will increase the size of their municipal bond portfolios to the exclusion of loans. Perhaps taking heed from corporate treasurers, bankers have also reduced their cash positions (see Figure 4).

As banks operate on very narrow profit margins and have limited capitalization, loan losses are extremely detrimental to both capital and income. For example, considering the return on total assets (0.73%) and return on loans (6.88%) as shown in Figure 3, approximately $137,000 in assets would have had to be profitably employed to make up a $1,000 loan loss in 1968. Similarly, gross revenues from a $14,550 loan would be necessary to make up this loss. With this in mind, banks are generally considered to be conservative in their loan policies.

\[^{10}\text{Faulstich, p. 33.}\]
Despite constricting profit margins and the continuous need for changing strategies, commercial banks have been able to maintain increasing profits, in fact:

"During the decade of the '60s, earnings per share for 25 leading bank stocks increased at an average rate of 7.1% per year, compared with 5.2% for all Dow Jones industrials and 6.0% for the Dow Jones utilities. During the last half of the decade, the banks showed an average increase of 9.3% per year which was more than double the rate of increase of either the industrials or the utilities."\(^{11}\)

As solutions to profit problems are being found, however, new demands are made which tax the ingenuity of bankers, and there is no conclusive evidence that the trend of increasing profits will continue uninterruptedly. However, Adams found in his survey that:

"In the opinion of the bankers, economists, and analysts who participated in our survey, banks will have good opportunities to develop new sources of income during the '70s. All three groups believe that earnings should benefit appreciably by the development of new services and entry into new markets."\(^{12}\)

In discussing the future of commercial banking, Adams goes on to say that the banks will have to develop new sources of funds to include nondeposit sources.\(^{13}\) and will probably be


\(^{12}\)Ibid., p. 55.

\(^{13}\)Ibid., p. 52.
forced to take into consideration the needs of society which might be at the sacrifice of profits.\textsuperscript{14} Nadler suggests that commercial banks might be in for additional problems with regard to earnings on capital "... if the high leverage position of commercial banks is only a temporary phenomenon, and the bank examiners ... force the bank[s] to raise new capital in the near future ...".\textsuperscript{15} Considering the potential profit problems of commercial banks and their additional responsibilities of protecting depositors, servicing the community and helping control the economy, the quality of the commercial bank's loan portfolio will be a continuing and increasing concern.

\textsuperscript{14}Ibid., p. 55.

\textsuperscript{15}Hadler, "Measuring Performance", p. 36.
CHAPTER III

AN EXPERIMENTAL CORPORATE LOAN RATING SHEET

There are a number of different approaches used by corporate lending officers in loan evaluation. As discussed in Chapter II, the commercial banker, from an investment standpoint, is primarily interested in generating a reasonable return to the bank from a loan to a corporation and in protecting the bank's principal.

Although there seems to be a reluctance on the part of corporate lending officers to discuss how accounting and the analytical process are applied to the lending decision, a number of recurring factors appear. Perhaps the most frequent response in questioning an officer with regard to the declination of a loan is simply "they didn't have enough equity capital". The importance of this item and many others will be discussed later in this chapter.

Informal talks with several senior corporate lending officers employed by some of the nation's largest banks located in California resulted in a number of somewhat surprising revelations. Many of these officers professed to not having any superior analytical skills. Many, instead, relied heavily upon their intuition and the apparent honesty or integrity of the applying corporation's
principals, coupled with the managerial skills of these individuals. This is not to say that these lending officers do not analyze corporate financial statements. However, some loan officers claim to make only superficial evaluations of available statements and in many cases the evaluation of the individuals involved, rather than the absolute financial strength of the corporation, is the determining factor as to whether a loan will or will not be granted.

This same stress on the importance of personalities was revealed in talking with corporate lending officers in Missoula. Because of Missoula's relatively small and nontransient population, the banker is more familiar with the character and reputation of corporate principals, and can, therefore, more readily grant loans on this basis. Here again, financial statements are not ignored but may be subordinate to the officer's qualitative evaluation.

To suggest that the lending decisions of corporate lending officers are arbitrary would be fallacious. The banker looks primarily at the prospects for continued profitability of a firm to insure the payment of interest and the repayment of principal as stipulated in the proposed loan agreement. A detailed financial analysis is often required to make this determination.
A major goal of the present study is to determine those factors deemed most important from the standpoint of the banker in granting credit to a corporation. Hodgman (mentioned in Chapter I) attempted to provide an insight into the methods of commercial bankers through interviews and found:

"...[T]he criteria which bankers apply in judging the desirability of individual loan requests are the following: the deposit relationship of the borrower; the credit rating of the borrower and the type and marketability of the collateral if the loan is to be secured; the existence or prospect of a long-term customer relationship with the borrower; the contract rate of interest; the purpose for which the loan is requested; whether for seasonal needs, capital, or speculative purposes; and the liquidity of the loan, particularly as reflected in its pay-out schedule."\(^\text{16}\)

Although incomplete, this list does indicate a number of areas which are of interest to the corporate lending officer.

Abate's article in *Bankers Monthly Magazine*, discussed in Chapter I, suggests that a numerical scoring system for corporate loan evaluation is feasible. That is, a number of factors concerning a corporation are assigned numerical values and the total value (score) suggests the relative merits of the corporation's loan request. Corporations with higher scores would, therefore, have greater ability

and willingness to meet the repayment terms of their loan commitment.

In developing the experimental loan rating sheet used in this study (see Figure 5), Abate's article was used as a starting point. Items on the rating sheet were drawn from Hodgman's study (see Page 20), other sources cited, and personal experience. These items were felt to be most pertinent to corporate lending officers and should be readily discernable from information provided at the initial contact of a prospective borrower with a bank. Many factors, although important to the financial evaluation of firms in a particular industry, are not common to other industries. For example, inventory to sales ratios are not pertinent to a service industry. Therefore, items which are not generally applicable to all industries have been eliminated from the rating sheet. As no weighting system, or for that matter, no scoring system of this type apparently exists; the weighting of items on this rating sheet is somewhat experimental; but based, however, on overall impressions reached from studies of various sources.

Following is an item by item description of the various items on the rating sheet and justification for the inclusion and weighting of each of these items. There is no attempt to suggest that this particular corporate loan rating sheet is a final, tested evaluation tool. However,
FIGURE 5
CORPORATE LOAN RATING SHEET

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Deposit relationship</td>
<td>Not a depositor: 0, Depositor: 1, Usually compensating balances: 2</td>
</tr>
<tr>
<td>2.</td>
<td>Use of other bank services</td>
<td>None: 0, Uses one other service: 1, Uses more than one: 2</td>
</tr>
<tr>
<td>3.</td>
<td>Previous loans at this bank</td>
<td>None: 0, Did not pay as agreed: 0, Paid as agreed: 2</td>
</tr>
<tr>
<td>4.</td>
<td>Credit record</td>
<td>No credit experience: 0, Derogatory credit: 0, Nominal derogatory credit: 1, Favorable credit record: 2</td>
</tr>
<tr>
<td>5.</td>
<td>Age of firm</td>
<td>Less than one year: 0, 1 but less than 3 years: 1, 3 but less than 5 years: 2, 5 but less than 10 years: 3, 10 or more years: 4</td>
</tr>
<tr>
<td>6.</td>
<td>Collateral pledged</td>
<td>Unsecured: 0, Partially secured: 1, Fully secured: 2</td>
</tr>
<tr>
<td>7.</td>
<td>Bank's income from this loan</td>
<td>Less than $50: 0, $50 but less than $100: 1, $100 but less than $200: 2, $200 but less than $500: 3, $500 or more: 4</td>
</tr>
<tr>
<td>8.</td>
<td>Term of loan</td>
<td>5 years and over: 0, 1 year but less than 5 years: 1, Less than 1 year: 3</td>
</tr>
<tr>
<td>9.</td>
<td>Firm's profit record</td>
<td>Losses in last 5 years: 0, No profit history: 0, Fluctuating profits: 1, Constant profit level: 3, Generally increasing profits: 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less than 1.0/1.0</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>------------------</td>
</tr>
<tr>
<td>10. Current ratio</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>11. Acid test ratio</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>12. Percentage equity capital</td>
<td>Under 40%</td>
<td>0</td>
</tr>
<tr>
<td>13. Total bank debt as % of equity</td>
<td>50% or more</td>
<td>0</td>
</tr>
<tr>
<td>14. Bank loan as % of working cap.</td>
<td>100% or more</td>
<td>0</td>
</tr>
</tbody>
</table>

Total score

Loan granted by bank ______.
Loan declined by bank ______.
Loan loss or workout situation ______.
it is intended to point out that loan scoring is adaptable to corporate lending decisions. The apparent validity of this rating sheet will be discussed in Chapter IV and suggested improvements to and improvements of this rating sheet will be discussed in Chapters V and VI.

**Item 1. Deposit relationship.** Perhaps the most often mentioned and most widely discussed requirement of a commercial banker in granting credit to a corporation is that of the corporation having established a continuing deposit relationship with the bank, and often the granting of a loan is contingent upon the firm maintaining what are known as compensating balances. Banks tend to give preferential treatment to long-time customers. Thus, the first question often asked of any potential borrower is: "Are you a depositor of this bank?" Even large national corporations of unquestionable credit worth are invariably subject to this requirement because banks "... long-term deposit relationships which could be guaranteed effectively by concerns with long-term ... [local] ... interests."\(^\text{17}\)

Loans produce most of the profits of commercial banks and the greatest percentage of funds available for lending comes from the deposits of customers. Therefore, banks feel loyalty to first take care of the credit needs of its

\(^{17}\) Ibid., p. 25.
established deposit customers. Gee points out:

"The theory is that every business has a need of a bank account and that, if it also has the need of bank financing, the account should properly be carried with the bank from which the business obtains its financing."^{18}

Secondly, having had a deposit relationship with the bank, the firm's ability to meet its obligations, its cash flow, credit background and reputation in the community should be well-known to the bank.

In addition to a prerequisite deposit relationship, many commercial banks require that the firm maintain compensating balances as discussed by Gee:

"... [A]verage deposit balances should bear some reasonable relationship to average loans or the amount of a line of credit. Only in this way can the bank be assured of continued availability of loanable funds. Since legal and other reserve requirements may normally amount, roughly, to about 20 per cent of total deposits, each $1 of primary deposits with a bank should enable it, theoretically, to expand its loans through deposit-account credits by about $5. This gave rise to the old rule-of-thumb concept that, to be properly commensurate, account balances should roughly average 20 per cent of the average loans to that customer."^{19}

Different authors, in discussing the compensating balance requirement, take differing views as to the bank's real motives for enforcing this requirement. Hayes, as do

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^{19} Ibid., pp. 138-39.
most other authors, points out with justification that "... compensating balance policy is nothing more than an indirect means of increasing the interest rate on the effective usable amount of the loan." In other words, a firm that would normally carry a balance of $2,000 in its account and wished to borrow $35,000, would have to borrow another $5,000 to deposit in its account to meet the compensating balance requirement. Thereby, the firm would be paying interest on the additional $5,000, raising the effective rate on the borrowed capital actually needed by approximately one-fifth.

Compensating balances and the enforcement of these balances vary from bank to bank with "... the use of compensating-balance requirements... [being]... far more prevalent in urban areas where the competition for deposits is keener and where borrowers have access to a relatively large number of banks." These findings were


substantially reinforced in interviews with both California bankers and Missoula bankers; the former emphasizing the importance of compensating balances and the latter acknowledging their limited local use.

Reed relates that compensating balance requirements are most strictly enforced during times of tight credit. Conversely, "... during periods of easy money, when banks are seeking loan opportunities through which to put available funds to work, they may rarely stipulate any fixed requirements with respect to compensating balances." 23

Turning to the rating sheet, a firm that has not maintained an account with the bank is scored zero. As mentioned earlier, a bank may consider maintaining a deposit account as a prerequisite for a loan. Often, however, the banker will consider approving a loan if he feels a meaningful deposit relationship will develop. Firms that have maintained deposit accounts are scored one point and those that have normally carried compensating balances (account balances averaging from one-sixth to one-fifth of the total proposed outstanding debt) are scored two points. The two points are given because of the firm's demonstrated ability to maintain the required balances and ability to

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23 Gee, p. 139.
maintain working capital.

Item 2. Use of other bank services. In recent years commercial banks have tended to provide a greater number of services to their corporate customers. Furniss and Nadler point out that:

"... Banking was originally aimed at the well-to-do business organization or individual, offering few services in relation to the size of the checking account maintained. And because of the relatively modest number of services requested, and the high profitability of the balances, banks traditionally offered such 'incidental' services without extra charge."24

However, these services have been expanded to include: payroll services, trust services, maintenance of employee pension plans, plans for payment of freight bills, stock registry and transfer services, safety deposit, sales financing through credit cards, and computer time sharing. Banks now charge for these services and have found these services to be increasingly profitable over the years. As with compensating balances (discussed under Item 1), firms that take advantage of these additional services, which contribute to the bank's overall income, will usually receive preferential treatment.

Firms that take advantage of several services will be reluctant to switch their affiliation because of the difficulties involved. Therefore, the bank is more assured that the firm will continue to take advantage of and value this relationship and the bank can feel more confident that the loan will be repaid as agreed. In fact, one California banker stated that a major strategy of his bank (as with probably most others) was to try to get corporations to take advantage of all services possible, thereby increasing the difficulty of a particular firm to switch its allegiance to another bank. For example, it is relatively easy for a corporation to transfer its checking account, but if the firm has to reestablish payroll services, trust services, pension plans, etc., it will be reluctant to seek another bank and will most likely remain with the same bank.

Larger banks, of course, provide a greater number of these additional services. As will be discussed in Chapter IV, this particular item was found to have little importance to Missoula bankers because of the relatively few additional services provided by local banks. However, the preliminary intent of the scoring of this item was to give firms credit for the use of these services and the income they contribute to the commercial bank. In some cases, these services give the bank a wider margin of profit than either service charges on checking accounts or interest earned on loans.
For the reasons indicated above, firms that use no other bank services receive a score of zero. Firms using one other service are given one point and those that use more than one service are given two points.

**Item 3. Previous loans at this bank.** Obviously, if a bank has extended credit to a firm before, the bank has a reasonably good idea how the firm handles its financial affairs. In most cases, previous loans will have been paid as agreed, as most firms are aware of the advantages of maintaining good rapport with creditors.

Even though a firm is experiencing moderate financial difficulties at the time of its current application for credit, many bankers have a feeling of continual commitment to a firm. That is, many bankers feel that firms need credit during both and good times and the volume of good business brought to the bank during the good times will more than offset the additional risks incurred by the bank during difficult times.

In some cases, previous loans might not have been paid as agreed. If the bank's experience has been too unfavorable, it will be unwilling to extend the firm additional credit under any circumstances. However, if there is a reasonable doubt in the mind of the lending officer, he might want to continue his evaluation with the thought in mind that the firm's position had improved
sufficiently to preclude the recurrence of the problem which had existed during the term of the previous loan. Hodgman contributes to this overall view by adding that:

"... [B]ankers are not psychologists or psychiatrists. Therefore, they are accustomed to judging a particular borrower's willingness to fulfill his obligations primarily in terms of his past performance unless there are specific indications that this may be misleading."

Turning to the rating sheet, firms which have not had previous loans at the bank receive a score of zero in this section because the bank would not have had firsthand lending experience with the corporation. For obvious reasons, firms which have not paid as agreed are similarly given a score of zero. Firms that have had previous loans and have paid as agreed are given two points.

Item 4. Credit record. Banks can obtain credit information on a firm from any number of sources. Prochnow and Foulke suggest the following sources: 1) Other banks; 2) trade accounts; 3) public records such as court proceedings; 4) newspapers, periodicals, and directories; and 5) professional services such as Dun and Bradstreet which rates firms on their credit performance, management and financial structure. 26 Local credit bureaus provide another source


of information but are of varying reliability. The prospective borrower will undoubtedly also provide a number of leads with respect to sources of credit information.

Banks generally feel, with strong statistical support and for many of the same reasons discussed under Item 3, that firms that meet their financial obligations regularly will continue to do so because they have successfully been able to plan the repayment of obligations in the past.

In some cases an investigation will reveal nominal derogatory credit information. This is sometimes due to misunderstandings or simple oversights and the banker will usually not penalize a firm severely for this type of derogatory credit. However, if it can be shown in the credit investigation that these are more than incidental occurrences; the firm, more than likely, has been unable, unwilling or negligent in meeting its obligations. Such a record reflects unfavorably on the management of a corporation.

Firms which have either no credit experience or have derogatory credit records receive no points in this section. Those firms which have nominal derogatory credit receive one point and those firms with favorable credit records receive two points.
Item 5. Age of firm. A firm that has been in business for a long period of time will have incurred a proportionately greater number of problems on the average and will have had to find solutions to these problems. The fact that a firm has remained in business over a considerable number of years attests to its ability to overcome these problems and provides some assurance that it can continue to do so in the future.

During the initial stages of development, any particular firm will usually incur problems which call for the use of untested solutions. The inexperience of management and an untested organization add to these inherent risks of a new corporation. If nothing else, an older corporation should have also attained some degree of stability which will aid the lending officer in predicting the likelihood of the proposed loan being repaid as agreed.

For these reasons, older firms are given more points, with those over ten years old receiving four points and the scores descending to zero points for those firms that have been in existence for less than one year.

Item 6. Collateral pledged. Bankers have traditionally sought fully secured loans to assure themselves that their principal will be returned to them. Except for A-1 credit risks, older credit officers have felt that corporate profits could not be counted on for repayment of loans and
banks should, therefore, have some form of security which could readily be sold in case of default. Reed adds to this view by stating that:

"The main purpose of a bank requesting that a loan be secured is to reduce the bank's risk of loss in the event the borrower is unwilling or unable to repay the loan at maturity. Security does not assure that the loan will be repaid. It does, however, reduce the risk since the bank, in the event of liquidation, becomes a preferred rather than a common creditor and takes precedence over the common creditors in the liquidation of assets."

Often a loan officer has looked only toward holding readily marketable security to cover a loan and has not concerned himself particularly with the purpose of the loan; contenting himself with the fact that the loan is covered should the firm default. Experience has shown, however, that a firm that suffers losses and has surrendered collateral to a bank will likely be justifiably hostile to the bank. Had the lending officer concerned himself with the profitable investment of the loan proceeds, he might have saved the corporation from difficulty and saved an otherwise valuable customer for the bank.

In recent years, bankers have become more concerned with providing financial advice to their corporate customers and are more concerned with the profitable employment of funds rather than seeking protection of principal, per se.

\[27\] Reed, p. 168.
Further, "... [c]ontrary to popular belief, the largest loans that a bank may make and the greatest dollar volume of loans made by some banks are made on an unsecured basis. The largest commercial borrowers borrow on an unsecured basis." 28

Because of the potential advantages that accrue to the bank by having a loan fully secured, a firm that seeks a fully secured loan is given two points, one that offers some security is given one point, and one that seeks an unsecured loan is given no points.

**Item 7.** Banks income from this loan. A prime consideration of a bank in granting credit to a customer, other than hoping to retain the applicant as a depositor, is the bank's income from the proposed loan. "Marginal costs ... increase as the size of loans decrease ... [with] ... these higher costs of smaller loans accounting for approximately 76 per cent of the differential in marginal earnings between larger and smaller loans." 29 In other words, a bank will make a greater margin of profit on a larger loan simply because "... [w]hile a $5,000 loan ... does not require as much time as a $500,000 loan, it

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28 Reed, p. 171.
[does] require more than 1/100 as much time." For this reason, a straight interest rate is not used as a scoring criteria in this study.

As in most other lines of business, the banker is usually willing to incur a little greater risk in order to receive a larger income; income being a function of the amount of the loan, the rate charged, and the maturity. A firm requesting credit is scored higher for contributing greater income to the bank, with a maximum score of four points available.

Item 8. Term of loan. Bankers have traditionally preferred loans with short maturities for three main reasons. First, risks increase proportionately with the length of time that a loan is outstanding. A number of unforeseen situations can arise which could alter the firm's ability to repay the loan. For example, the bank might make a loan to a corporation which is currently in what is considered a favorable industry because of the particular demands of the economy at a given time. However, as the demands of the economy change, this industry might lose its preferred status and face reduced profits or even losses. By making a long term loan to a firm in this category, the bank would be locked in for a period of time that would exceed the

\[\text{Abate, p. 39.}\]
company's duration of strength. To avoid this type of risk, banks prefer to grant loans of short maturities. A recent study by Edward I. Altman has produced results which would be very useful to bankers and supports the banker's contention that short term loans are safer. His study reveals that corporate bankruptcies can be predicted up to two years in advance and states, further, that "... the accuracy [of prediction] diminishes substantially as the lead time increases." 31

Secondly, the going interest rate can change over a period of time. If a banker lends money for an extended period at a low rate of interest, the banker might find at a later date that he might be paying more for his money than the borrower is paying. Or, more likely, the banker will find that his profit margin becomes insufficient to meet the expenses of carrying the loan. To avoid this difficulty, bankers will often required that the effective rate of interest charged on a loan will change with fluctuations in the prime rate. For example, a particular loan agreement may provide that the effective rate of interest on the loan will be maintained at one per cent above prime. This device is useful in maintaining profit margins when interest rates are moving upwards.

Finally, banks do not provide equity or permanent working capital, and for that reason favor:

"... the time honored practice of the 'annual clean-up' which requires business borrowers to pay off their loans once each year. It is thought that this assurance that such loans are not for capital or fixed asset purposes but are, instead, for the financing of current assets and that, therefore, they possess greater liquidity as well as less risk."[^32]

Because of the banker's strong preference for short term loans, firms desiring loans with maturities of less than one year are given three points. Those firms desiring loans with maturities of one year but less than five years are given only one point and those firms desiring loans with maturities of five years or more receive no points.

**Item 9. Firm's profit record.** As corporate profits are the intended source of repayment of a loan, this section of the rating sheet has been weighted quite heavily. As discussed under Item 6, the trend of bank lending decisions has tended away from dependence upon collateral and more toward projected profits of the firm.

Because of the difficulties involved in making accurate projections of a firm's earnings, past earnings are often considered the best indicator of future profits. Historical profits are, therefore, used as the basis for scoring on the rating sheet. Even though a firm may suffer losses for a

[^32]: Reed, p. 303.
period of time and then finally attains record earnings, bankers have a higher regard for firms that have either stable or increasing profits. Bankers feel that these firms will be likely to carry this trend into the future and feel that this trend is also an indication of good management.

Turning to the scoring of this section, those firms which show profit growth are given the maximum of five points, those maintaining a reasonably constant profit level are given three points, and those firms with profits that fluctuate rather widely from year to year are given only one point. Firms without a profit history (new firms) and firms that have experienced any losses in the last five years receive no points.

Item 10. Current ratio. Ratios have long been an important tool of accountants, investors, and bankers. Barry E. Miller suggests that:

"Ratio analysis is . . . particularly valuable in preliminary studies or in other situations where detailed figures are not readily available. The ratio technique provides the analyst with a quick picture of a company's fundamental financial condition, so that he can determine what additional information he may need and what further analysis should be undertaken." 33

Although bankers usually analyze many ratios, the one ratio often accorded the most importance is the current ratio and it will, therefore, be one of the few ratios used on this rating sheet.

The "optimal" current ratio varies from industry to industry. However, firms in general must be able to meet current obligations as they become due plus hold some reserve funds to meet unexpected contingencies as they arise. Robert Morris Associates publishes an annual study which lists, for firms of a particular size range in any given industry, average current ratios and ten other financial ratios. This study provides useful guidelines for detailed financial analysis and is used by some local bankers.

As a minimum, a firm is expected to have a current ratio of at least 1.0/1.0. Therefore, firms with less than 1.0/1.0 ratio are given a score of zero. Firms with ratios of 1.0/1.0 but less than 1.0/1.5 are given one point and those with ratios of 1.5/1.0 but less than 2.0/1.0 are given two points. Firms with ratios of 2.0/1.0 and over are given only one point. Although experimental, the theory here is that firms exceeding this ratio may be unprofitably holding excess cash or have too large inventories, or may not be aggressively collecting accounts receivable.

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Item 11. Acid-test ratio. Another useful ratio is the acid-test, or quick, ratio which is a test of a firm's immediate solvency. Although similar to the current ratio, only those current assets that can readily be converted into cash are included. Inventories are not included because of the time lapse which may occur in converting these assets to cash. The minimum acceptable acid-test ratio is considered to be 1.0/1.0. 35

As an acid-test ratio of 1.0/1.0 and over attests to the apparent solvency of a corporation, those firms that have such a ratio are given one point. Those firms with a lower ratio are given a score of zero.

Item 12. Percentage equity capital. Firms can generate a greater return on invested capital by increasing their use of leverage. Lindsay and Sametz point out:

"The actual location of the optimal leverage point or range for any given firm will vary with the amount of business uncertainty involved in its operations . . . . This optimal range occurs at higher levels of leverage for stable industries than for unstable industries." 36

However, as a firm's use of leverage increases, the risk of loss during financial reversals will also increase. In the event of a forced liquidation, assets are sold at only a fraction of their book value. Therefore, if there are fewer debtors competing with the bank for the residual, the bank is reasonably assured of its loan being repaid from the proceeds.

As equity capital provides an excellent cushion of protection to the bank in the event of a firm's bankruptcy, this section is given the heaviest weighting, with those firms having equity capital equal to 80 per cent or more of total assets given seven points, declining to zero points for those firms with less than 40 per cent equity capital.

Item 13. Total bank debt as a percentage of equity.
For many of the same reasons discussed under Item 12, a bank is concerned with how much of a firm's capital it is supplying. Owners of a corporation should normally accrue the greatest income from the firm and, therefore, should be assuming the greatest share of the risk. Consequently, the owners should have considerably more invested in the firm than the bank. Similarly, most banks feel that other creditors should provide part of a firm's financing needs. Adding to this, most bankers like to feel that a firm is of such substantial strength that it can acquire funds from any number of sources. The fact that a firm is
borrowing from other creditors gives the banker confidence (though perhaps illusory) in the firm's strength.

For these reasons, firms that request an amount in excess of 50 per cent of invested capital (equity) are scored zero, those that wish to borrow 25 per cent but less than 50 per cent of invested capital are given two points and those that wish to borrow less than 25 per cent of invested capital are given four points.

**Item 14. Total bank debt as a percentage of working capital.** Bankers are primarily interested in loaning capital for short periods of time. And, as pointed out earlier, are not interested in meeting the total capital needs of a particular firm because of the risks involved. Bankers, in general, are willing to lend an amount not to exceed 50 per cent of the firm's working capital. The primary reason for this is that the bank feels that if the firm needs amounts in excess of this percentage, it is in a weak current position and perhaps should take action on its own to correct the difficulties.

Firms requesting loans in excess of their working capital are given zero points, those requesting a loan equal to 50 per cent but less than 100 per cent are given.

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one point and those firms requesting an amount less than 50 percent of working capital are given three points.

Chapter IV will describe how this rating sheet was tested for validity in the Missoula area and provide the results of that study.
CHAPTER IV

CORPORATE LENDING POLICIES OF LOCAL COMMERCIAL BANKS

Three leading Missoula area commercial banks were approached to: 1) Solicit opinions and suggestions from their corporate lending officers as to the merits of the "Corporate Loan Rating Sheet" described in Chapter III, and 2) to test the continuity of this rating sheet with actual lending officer/committee decisions by gaining access to a sampling of the corporate loan files of these banks. As explained to these bankers, the purpose of the study was not to evaluate the credit judgment of any bank nor its lending officers and because of the confidential nature of the information desired, complete anonymity would be maintained.

A number of corporate lending officers were interviewed at the three Missoula banks. All were apparently favorably impressed with the purpose and scope of the study and felt that the items included in the rating sheet were probably those factors most pertinent to the lending decision. Two or three officers, however, suggested that the industry of a firm should be taken into consideration. As pointed out in Chapter III under Item 8, certain industries, because of their stability and the needs of the economy, are
considered to be better financial risks. However, to preserve anonymity in Missoula's small area, where there would perhaps be just one or just a few firms in an industry; industry considerations were excluded for purposes of this particular study.

In carrying out the intent of this portion of the study--evaluating the validity of the rating sheet--several problems were anticipated. Although generating enthusiasm for the study and attesting to its merits, one bank felt that it could not make its files available for the study. The second bank cooperated fully in the study, making the requested files available and providing access to their corporate lending officers who aided in interpreting information within the various files and providing information missing from the files. The third bank, as did the first bank, felt that it could not make its files available, but a senior lending officer volunteered to examine a sampling of corporate loan application files for the necessary date and score those applications. Because of limitations on this officer's time, the sample from this bank was small but did contribute significantly to the study.

Loan files in three categories were surveyed: 1) Loans to corporations which had been approved by the banks, 2) loans that had been declined by the banks, and 3) loans
which had either been losses or workout situations for the banks. Although corporate loan losses are minimal for most banks, they do occur. Perhaps more frequently encountered, however, is the workout situation. In a workout situation a corporation is unable to repay a given loan as agreed and the bank must work out terms which will enable the corporation to eventually repay the loan, without forcing the firm into bankruptcy or foreclosing on or selling any security pledged. While the bank, in undertaking a workout situation, is reasonably assured of protecting its principal, enough concessions are usually made to the firm that no earnings are realized from the loan. In fact, because of the time required of the lending officer—in some cases, such as a loan secured by accounts receivable, daily followup is often required—unquantifiable losses do accrue to the bank. For these reasons it is important that commercial banks avoid both losses and workout situations.

As the corporate loan rating sheet was experimental and previously untried, difficulties in scoring available loan files were anticipated. Two items on the list presented some difficulty. In scoring "Use of other bank services" (Item 2), it was found that local banks do not offer a myriad of other services to corporations and, therefore, their income from this source is negligible.
Further, information concerning the use of these services by the corporations being studied was not available in the files and it was felt that the time required of bank officers to ascertain this information would not be justified. Therefore, Item 2 was deleted from the scoring. However, for the reasons pointed out in Chapter III, this item is felt to be valid and its use would perhaps find greater justification in scoring the loans of larger banks.

"Bank's income from this loan" (Item 7) presented a second problem as the scale of dollar amounts should have been revised upwards. In other words, a great many of the loans surveyed would realize earnings of at least $500 and very few were at the lower levels. However, there were a number of loans with earnings below $500, so the item remained included.

Results of the scoring in the sample are shown in Figures 6 and 7. Although this sample was relatively small, Figure 6 shows that all but one of the loans in the category "granted" scored at least twenty-one points. Conversely, all but one of the loans the banks declined and all but one of the loans in the "loss or workout situation" category scored less than twenty-one points. Thus, it can be said that had the banks been using this rating sheet and had they arbitrarily approved all loans that scored twenty-one points or over and had declined all those that fell below this score;
FIGURE 6
SURVEY SCORE DISTRIBUTION
Corporate Loan Rating Sheet
(Number of Loans)

LEGEND:

- [] Granted
- [ ] Declined
- [ ] Loss or workout situation
FIGURE 7
SELECTED SURVEY SCORES
Corporate Loan Rating Sheet (Points)

- Granted: High 38, Average 27.1, Low 18
- Declined: High 25, Average 17.5, Low 8
- Loss or workout situation: High 23, Average 14.8, Low 9
they would have approved, with one exception, all the loans
that were actually granted which have not become loss or
workout situations. Similarly, all but one of the loans
denied by the banks would have also been denied. Most
importantly, five of the six loans made by the banks in the
"loss or workout situation" category would not have been
granted under the scoring system—saving the bank from
substantial losses.

In each of the three categories—granted, declined, and
loss or workout situation—one loan fell outside the general
scoring range for the category. In each case special
circumstances existed. For example, the officer who
denied the loan that scored twenty-five points explained
the circumstances. The firm had been regarded as an
excellent credit risk and the bank was willing to lend it
money, but the money was intended for use outside the
Missoula area. The bank in reinforcing its policy (as is
the policy of almost all banks, as mentioned earlier) of
serving the needs of the community, declined the loan only
on this basis.

Conversely, the loan which was granted that scored only
eighteen points was probably recognized by the lending
officer(s) involved as not being a strong credit risk but
was for purposes of substantial interest to the community
of Missoula and was probably granted partially on this
basis.
In the "Loss or workout situation" category, scoring for the loan that scored twenty-three points was based upon what could be considered insufficient and unverified information. In other words, there is some question as to the validity of the information supplied by the corporation and more substantial information might have provided the loan with a lower score.

Looking at the results of this study from another perspective, Figure 7 shows that loans granted by the bank scored, on the average, almost ten points higher than those declined by the bank (27.1 vs. 17.5). Even more striking, loans granted by the bank, which have not become a problem, scored on the average almost thirteen points higher than those in the "loss or workout situation" category (27.1 vs. 14.8).

While not providing conclusive evidence as to the validity of the experimental score sheet developed in this study, the results serve two useful purposes. First, this study shows that credit scoring is readily adaptable to the corporate lending decision. Secondly, the study shows that even this experimental rating sheet can provide the corporate lending officer with a picture of the overall strength of a given corporation.

It might be noted at this time that commercial bankers refer to loans in the category covered in this study generally as "commercial loans" rather than as "corporate
loans." For purposes of this study, banks were asked to provide files on loans to corporations, or at least proprietorships and partnerships that had substantially the same general characteristics as corporations, the reason being that loans to firms in the latter categories are often based on the personal wealth of individuals or families, rather than on the strength of the firms. Loan files of firms with "corporate characteristics" were, therefore, felt to better meet the purposes of this study in testing the experimental rating sheet.

As a rating sheet of this type is designed only as a screening device, not all areas of financial importance are taken into consideration. A rating sheet does, however, focus the attention of the lending officer on a number of areas, any one of which may either preclude a firm from being eligible for credit or point out the need for attention by officers of the firm.

Chapter V will attempt to provide some insight into the in-depth evaluation that should be done by corporate lending officers before granting a loan to those firms that have passed the initial screening process described in this chapter.
CHAPTER V

OTHER CONSIDERATIONS IN CORPORATE LOAN ANALYSIS

The preceding chapter shows that a credit scoring sheet can give a commercial bank some assurance, if only statistical, that a corporation will be able to repay a proposed loan. However, any number of factors, which might not be revealed on a score sheet, can effect a corporation's repayment ability; and it is these factors which the corporate loan officer will seek to identify and analyze after the application has passed this initial screening phase.

Gee asserts that there are only three sources of repayment for a corporate loan: 1) Turning an asset into cash, 2) acquiring additional capital, and 3) borrowing elsewhere. In most cases the first source would be the most desirable, with the asset being purchased with the loan proceeds generating the funds to repay the loan. By looking at the purpose of a loan, a lending officer can gain some insight as to the intended source or repayment and the feasibility of the loan being repaid from this intended source.

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38 Gee, p. 115.
Figure 8 shows the functional types of capital and uses of capital with respect to any given firm over a given period of time. If funds are intended for seasonal or cyclical needs (fluctuating capital), then repayment would be expected at the time of the firm's greatest period of liquidity—as assets are converted into cash. A short term loan would then be appropriate to the needs of the firm. For purposes of expanding a firm's operation, funds are required which will be amortized (repaid) by profits generated from the assets acquired. Either intermediate or long term funds would be appropriate but the term of the loan should not exceed the useful life of the asset nor should the balance outstanding on the loan at any given time exceed the value of the asset. Permanent capital is needed for both plant and equipment and for normal operations. A substantial portion of this capital should be provided by equity with the balance being provided by long term debt. Here again, the term of the loan should not exceed the useful life of the asset nor exceed the value of the asset at any given time.

Most corporations are aware of the advantages accrued to the stockholders by maximizing the firm's leverage position. To facilitate maximizing leverage, many firms try to lengthen the average maturity of their debt. In other cases, a firm will unknowingly or unwittingly not
FUNCTIONAL TYPES AND USES OF CAPITAL

Types of Capital Uses:
- Seasonal or cyclical
- Expansion
- Normal operations
- Plant and equipment

Cross section of a typical corporation's capital needs over a short period of time.
match its repayment schedule to its anticipated cash inflows. An experienced loan officer will usually recognize attempts by a firm to lengthen the average maturity of its debt and will make those changes necessary to align repayment schedules with cash inflow. Similar action will be taken for those firms that are unaware of the potential difficulties involved. In other cases, some firms will be unable to obtain long term funds for expansion and will seek to finance long term needs with short term funds. As the assets acquired do not generate enough profits over the short term of the loan repayment, the firm is forced into refinancing with the lender, seeking another source of funds, or selling the assets involved. Any one of these solutions will probably not be desired by any or all of the parties involved. By realistically financing from the outset, the firm could avoid these difficulties.

As mentioned in earlier chapters, ratio analysis has long been used by the lending officer in evaluating the credit worthiness of a firm. Through ratio analysis the lending officer can: 1) Determine the overall strength of a given firm, 2) compare the ratio structure of the firm with other firms in the industry, and 3) compare present ratios of the firm with past ratios to establish growth patterns. To facilitate ratio analysis, most bankers use
a "spread sheet" similar to that shown in Figure 9. As different firms use different methods of accounting, the spread sheet is also useful in providing uniformity of classification and comparability of the different firm's statements. Growth of the firm and the growth and stability of the firm's earnings can also be determined from the spread sheet. It probably goes without saying that audited statements for the firm are at least desirable, if not an absolute must. Davis and Gee refer to the importance of five-basic ratios for corporate loan analysis, which are substantially the same as those shown on the second page of the illustrated spread sheet.\textsuperscript{39}

In addition to ratio analysis, Murray suggests that there are a number of symptoms that indicate impending trouble for a firm and should be recognized as such by the lending officer:

1) Slowing down of the collection of receivables and a rise in actual charge-offs of uncollectible accounts,

2) Accumulation of slowly moving or overpriced inventory,

3) Heavy investment in fixed assets,

4) Excessive withdrawals from the business,

5) Rapid expansion of volume without adequate permanent capital,

## FIGURE 9

### SPREAD SHEET OF BORROWER'S FINANCIAL STATEMENT

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATE</th>
<th>BUSINESS</th>
</tr>
</thead>
</table>

### ASSETS

1. **Cash**
2. **Notes Receivable**
3. **Accounts Receivable**
4. **Less: Allowance for Bad Debts**
5. **Inventory**
6. **Deferred — Other Prepaid**
7. **Other Assets**
8. **Total Non-Current Assets**
9. **Total Assets**

### LIABILITIES

10. **Notes Payable — Banks**
11. **Notes Payable — Others**
12. **Accounts Payable**
13. **Current Port.-Long Term Debt**
14. **Income Taxes Payable**
15. **Current Liabilities**

### TOTAL NON-CURRENT LIABILITIES

16. **Total Liabilities**
17. **Total Debt**

### NET WORTH

18. **Common Stock**
19. **Surplus**
20. **Total**
21. **Contingent Liability**
22. **Lease Liability**

---

*See Reverse*
### FIGURE 9—Continued

#### RATIOS AND COMPARISONS

<table>
<thead>
<tr>
<th>DATE</th>
<th>Work Cap. (Line 12 less 36)</th>
<th>Current Ratio</th>
<th>Worth to Debt Ratio</th>
<th>Acid Test Ratio</th>
<th>Sales to Receivable (Days)</th>
<th>Cost of Sales to Inc. (Days)</th>
<th>Profit to Worth (Percentage)</th>
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<tr>
<td></td>
<td>to 1</td>
<td>to 1</td>
<td>to 1</td>
<td>to 1</td>
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#### OPERATING DATA (Period Ending)

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<th>100%</th>
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<tr>
<td>Net Sales</td>
<td>%</td>
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<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
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<tr>
<td>Cost of Goods Sold</td>
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<td>%</td>
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<td>%</td>
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<td>%</td>
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<tr>
<td>GROSS PROFIT</td>
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<td>%</td>
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<tr>
<td>Executive Salaries</td>
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<td>%</td>
<td>%</td>
<td>%</td>
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<td>%</td>
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<tr>
<td>Other Operating Expenses</td>
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<tr>
<td>Net—Other Income/Charges</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
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#### CHANGES IN WORKING CAPITAL

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<td>Net Profit (Loss)</td>
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<tr>
<td>Dividends/Withdrawals</td>
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<tr>
<td>24 (Inc.) Dec. Net Non-Current Assets</td>
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<td>42 Inc. (Dec.) Deferred Debt</td>
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#### RECONCILIATION OF NET WORTH

<table>
<thead>
<tr>
<th></th>
<th>Beginning Net Worth</th>
<th>Revaluation of Assets</th>
<th>Net Profits</th>
<th>Less: Dividends or Withdrawals</th>
<th>Other</th>
<th></th>
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<tbody>
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<td></td>
<td></td>
<td></td>
<td>ENDING NET WORTH</td>
</tr>
</tbody>
</table>

#### REMARKS:
6) Failure to control expenses in various categories in line with volume of sales,

7) Unwarranted rise in accounts payable or other forms of debt, and

8) Finally, a gradual exhaustion of the ability to borrow which signals the arrival of a truly critical situation in the affairs of the enterprise.\textsuperscript{40}

This last item reflects the security bank officers feel when a firm is able to borrow from a number of sources as discussed under Item 13 of Chapter III. In general, favorable trends indicate good management and poor trends indicate the opposite. The lending officer then is much interested in establishing the existence of these trends for his analysis.

Because debt is repaid from cash, cash flow analysis is necessary to determine if cash flow will be sufficient to cover repayment of the proposed debt as scheduled. The cash flow cycle is defined by Heyer as follows: "Cash is expended for inventory which, when turned into finished goods and sold, becomes receivables which when liquidated, become cash."\textsuperscript{41} Heyer's article deals with changes in credit analysis and he goes on to point out the need for lending officers to become more familiar with this type of analysis because cash flow analysis differs from other

\textsuperscript{40} Murray, pp. 85-86.

types of analysis by not being:

"... a stationary concept based upon one historical set of data related to another historical set of data, but is rather a flow concept—that is, an analysis of how much cash will come in and when."42

Cash flow analysis, therefore, requires more skill and effort on the part of both the banker and the firm. Because of this, some firms will be reluctant to provide the necessary information and will have to be educated to willingly provide this information to the banker.

In some cases ratio analysis might indicate that a firm may not be a good credit risk, particularly in the case of a new firm. Miller suggests that in such cases, ratio analysis may not be providing the banker with a clear picture and the bank might be doing the firm a disservice by refusing it a loan. Miller supports Heyer's view, then, suggesting that cash flow analysis could bring a firm's financial position more clearly into perspective:

"In many cases involving rapidly growing companies, a lender has the choice of encouraging a reduction of expansion on one hand, or on the other, recognizing the need to extend or increase outstanding loans for a prolonged period, perhaps on an inventory or accounts receivable basis. Credit analysts and loan officers...must fully understand projections of sources and applications of funds—and the underlying ratio analysis of financial statements—in order to anticipate such situations well in advance."43

42 Ibid., p. 40.
43 Miller, p. 36.
Interviews with corporate lending officers indicated that cash flow analysis has not been used extensively by commercial bankers up to this time. However, as time passes, more lending officers will probably seek to perfect their skill and utilize more fully this tool of analysis.

Less quantitative is the lending officer's evaluation of a firm's management and the outlook for a firm and its industry. Besides evaluating current management, the lending officer has to consider what effect possible changes in management will have on the profitability and cooperativeness of a firm. The outlook of a given firm is dependent upon a number of factors not the least of which is changes in the economy. Chapters III and IV briefly described industry characteristics and how they can affect the ability of a firm to repay a given loan. As an example, the highly competitive electronics industry is largely dependent upon the often irregular awarding of government contracts which, in turn, are awarded on the basis of competitive bids. It is difficult enough to predict the demands of the industry, let alone having to predict the probability of any particular firm being awarded a contract.

In order to perfect their position, banks often make loans contingent upon the firm's willingness to accept certain restrictive covenants imposed upon the firm's freedom to manage its affairs. Such covenants usually restrict: 1) The use of loan proceeds, 2) acquisition and
disposition of assets, 3) creation of other indebtedness, 4) officers' salaries, and 5) dividends or the distribution of earnings. The reasons behind such restrictions are purportedly:

"... 1) the general economic risks bearing on the companies during the life of the loan are [un]acceptable to the bank, 2) companies that need substantial amounts of ... money are often under some financial strain, 3) such companies may inadvertently or voluntarily engage in practices or execute transactions which may jeopardize their ability to repay the loan, and 4) as the bank must live with these borrowers for a period of [time], provisions designed to restrain such practices or transactions are desirable."^45

However, Hayes goes on to point out that "... a weak credit cannot be converted into a strong one by specific promises to do certain things or refrain from doing things."^46

Once a loan application has undergone the process described herein, the corporation and the bank come to an agreement which Hester refers to as a "loan offer function" and describes as:

"... a relation which specifies the terms at which a bank with particular characteristics is willing to lend to a borrower with a known profit, balance sheet, and credit history and

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^44 Prochnow and Foulke, p. 479.
^45 Hayes, p. 110.
^46 Ibid.
with particular prospects for the future." 47

Although not all-inclusive, this chapter provides an insight into the methods used by corporate loan officers and suggests some areas that should be emphasized to enhance the analytical ability of these officers. Chapter VI will provide a structured guide to corporate loan analysis, tying the various steps of the process together in a workable sequence.

CHAPTER VI

A STRUCTURED GUIDE TO CORPORATE
LOAN ANALYSIS AND CONCLUSIONS

To facilitate corporate loan evaluation, the questions contained in Figure 10 are recommended for incorporation into a lending guide for commercial banks. Although most banks will have used many, if not all of these criteria at one time or another; other banks have probably omitted many of these items from their evaluations, or at least have not used them consistently. Use of such a guide should reduce a bank's exposure to loan loss and, if nothing else, should provide continuity to the bank's lending policies.

Because of the time saved in screening applicants for corporate loans, the adoption of a rating sheet similar to that shown in Figure 5 is recommended. As pointed out in Chapter IV, even this experimental rating sheet could be used to establish the overall credit strength of a firm as it had considerable validity in predicting loan losses for the banks sampled. Modifications such as those suggested in Chapter IV and the addition of items which would reflect the individual preferences and local conditions of the commercial bank involved would provide an excellent starting point for the corporate lending guide adopted by an individual commercial bank.
FIGURE 10

CORPORATE LENDING GUIDE

1. Areas requiring special attention on the rating sheet.
   List and explain why.

2. Areas requiring special attention on the spread sheet:
   List and explain why.

3. Purpose of the loan:
   a. Seasonal ______
   b. Expansion ______
   c. Normal operations ______
   d. Plant and equipment ______.

4. Term of the loan:
   a. Short term (less than one year) ______
   b. Intermediate term (one to five years) ______
   c. Long term (five years and over) ______.

5. Do items 3 and 4 correlate?

6. Will anticipated revenues provide sufficient coverage to repay the loan as scheduled?

7. Will the useful life of the equipment being purchased exceed the term of the loan?

8. Will the value of the equipment being purchased exceed the amount outstanding on the loan at any given time?

9. Would loans for this purpose normally be financed by equity capital?
FIGURE 10—Continued

10. Is the firm experiencing steady growth?

11. Does equity increase proportionately with the growth of the firm?

13. Industry classification of the firm:
   a. Manufacturing _____
   b. Sales _____
   c. Service _____

14. Sources of income to the firm:
   a. Dependent upon bidding _____
   b. Dependent upon other firms (job shop) _____

15. Is the corporation dependent upon a few key customers for business?

16. Sales force:
   a. Direct sales _____
   b. Wholesale _____
   c. Independent agents used _____

17. Are profits growing steadily?

18. Profit margin:
   a. Low volume/high markup _____
   b. High volume/low markup _____

19. Are profit margins narrowing?

20. Can supplies be readily obtained from a number of sources, or will loss of the prime source of supply effect the corporation's production?
21. Fixed costs:
   a. High ______
   b. Moderate ______
   c. Low ______.

22. Are receivables kept current?

23. Do withdrawals of funds by officers appear excessive?

24. Do accounting methods used by the firm appear to be sound and provide for a maximum tax advantage to the firm?

25. Does management appear to have a successful record?

26. Is management transient?

27. What effect would loss of key management personnel have on the firm?

28. Are losses of key management personnel expected in the near future such as through retirement?

29. Is the corporation sufficiently diversified to meet the needs of a changing economy?

30. Are labor relations problems anticipated and what effect would these have on the firm?
As words sometimes have more meaning than figures, a list of questions such as those shown in Figure 10 would help assure that the meaning of financial statements are understood and would assure that items of importance would not be overlooked. Spread sheets would continue to be an important tool of the banker as they do provide a common arrangement for the financial statements of many diverse firms, making comparisons and analysis much easier. As the spread sheet illustrated in Figure 9 is perhaps one of the more complete ones, it is assumed that banks would use one of a similar structure.

Although not all-inclusive, the questions suggested on the "Corporate Lending Guide" are recommended for inclusion in analyzing those firms which have passed the initial screening process as provided for on the "Corporate Loan Rating Sheet" (Figure 5). Here again, individual banks would be expected to make changes, additions, and exclusions which would reflect the individual preferences and local conditions of the bank involved.

As asserted at the outset of this study, the corporate loan rating sheet and lending guide contained herein are not intended as finalized products. However, the purpose of this study is to point out the potential of such devices in terms of: 1) Protecting a commercial bank from potential losses on corporate loans, 2) providing continuity
to the loan policies of a commercial bank, 3) saving valuable time for corporate lending officers, and 4) serving as a training device for inexperienced lending officers. This study should have pointed out the potential value of such guides in each of these areas and it is recommended that commercial banks pursue the development of guides similar to those illustrated.
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Books


Articles


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