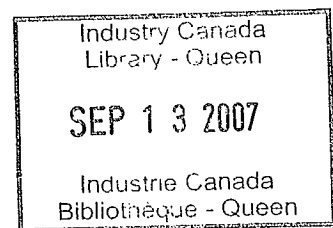


DATA NEEDS OF INSTITUTIONAL LENDERS

Decision Processes and Criteria Employed by Institutional Lenders

Allan L. Riding



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EXECUTIVE SUMMARY

The findings of this study confirm that lenders' primary lending criteria are those that reflect:

- the borrower's ability to collateralize the loan;
- the borrower's ability to adequately service the loan facility; and,
- the lender's assessment of the environment in which the borrower firm must compete.

Lenders are extremely conservative. Borrowers tend to be:

- large, established, profitable firms;
- firms that, given even their large size within the scope of SMEs, exhibit particularly high levels of sales;
- firms that have sufficient assets to collateralize borrowing;
- firms that have not undertaking excessive debt; and,
- firms that demonstrate cash flows more than adequate to service all fixed financial obligations.

Canadian bankers do not appear to price loans according to risk. Risk is dealt with in the approval and collateralization steps. Lenders' practices may reflect how banks view the independent banking market. Lenders understand that small businesses are of three types: personal businesses; small firms that will remain small firms; growth-oriented small firms. Borrowing needs of the first two categories tend to be very modest. By definition, capital is not generally needed to fuel expansion in such firms: credit card borrowing, leasing, personal lines of credit, and trade credit often suffice to meet their needs. These firms tend to be smaller un-incorporated firms and form most of the cases in the Small Business Profiles. This may account for the large disparities observed between active borrowers and the general population of SMEs.

These findings raise the question of what constitutes appropriate benchmark data for lenders. Part of the answer to this question may imply a focus on successful growing firms and possibly instituting an appropriate means of filtering from of the benchmarks the majority of very small firms least likely to require bank borrowing.

Lenders do not usually employ ratio analysis for the majority of their very small firm borrowers. Ratio data for smaller businesses are not usually reliable. For firms in the "mid-market", however, there is a clear need for lenders to be able to reference timely and appropriate benchmark data. For mid-market borrowers, ratio analyses are carried out as a matter of course. Loan account managers are usually supplied with

technological aids that provide them with a financial profile of borrowing firms based on three years of financial data and to years of pro-forma statements. The resulting profiles are compared with industry-specific ratio data.

Primary ratios are those that measure the borrower's ability to cover the debt servicing charges. These include:

- cash flow to debt;
- the equity base of the firm (debt to "effective" equity);
- liquidity measures (current ratio, quick ratio; sales to working capital).

Loan account managers are comfortable with non-standard ratios. They require, particularly for technology-based borrowers, flexibility in their ratio analyses and benchmarks. Measures of ratio volatility are regularly employed as well as the ratio data themselves.

It is advisable that at least two databases, or the flexibility to consider well-defined subsets of a master database, be considered. One subset comprises those very small firms that constitute the majority of borrowers in terms of the number of loans. For such firms, financial data are sensitive to the owner(s)' personal financial decisions. Nonetheless, profiles of very small firm may assist lenders.

It is most likely that the proposed database would be particularly effective for lending decisions regarding prospective borrowers the mid-market size range. As such, the profiles need to eliminate the contaminating effect of the many very small businesses. On means of diving between the two segments as according to incorporated and unincorporated businesses.

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DATA NEEDS OF INSTITUTIONAL LENDERS

Decision Processes and Criteria Employed by Institutional Lenders

FOREWORD

This report presents three sets of findings, each of which is related to institutional lenders' needs for benchmark data for loan appraisal. These findings result from:

1. a review of the academic and popular literature on loan assessment processes and criteria;
2. a series of interviews with bankers and experts in small business lending; and,
3. a statistical comparison of salient attributes of SME bank borrowers with the general population of SMEs.

OBJECTIVE:

This report describes the results of a review of primary and secondary sources regarding the process and criteria of bank lending to SMEs. The work described here is intended to complement the development of the small business database [SBDB] proposed by ESBO/Industry Canada. Institutional lenders represent an important target market for the SBDB. According to Conner (1995 , p. 27) domestic banks account for more than 50 percent of all debt financing to Canadian SMEs. A strategic need for the proposed SBDB is to support decision-making by chartered banks, merchant banks, and credit unions.

Institutional lenders have three objectives for their involvement in the SME credit market:

1. to make loans that result in minimum levels of losses (ideally, less than 1%);
2. to ensure that loan-related revenues (interest income and fees) cover associated costs and provide a return on capital; and,
3. to identify firms that have the potential to grow into larger businesses.

The proposed SBDB is intended as a resource that may be used by lenders and policy makers in evaluation of SME risk and in identifying market opportunities. Accordingly, data needs of financial institutions, potential adopters if the SBDB, should be identified early in the product development process. This report outlines the findings of three interrelated approaches towards identifying data needs of institutional lenders.

First, a review of the academic and popular literatures on lending to small businesses was undertaken, with particular reference to the criteria employed by lenders in loan and risk assessment. Among the topics examined were:

- the process of decision making employed by financial institutions that lend to SMEs;
- the identification of data variables used by lenders;
- to the extent possible, the weighting accorded the various decision variables;

Second, a series of interviews was conducted with representatives of institutional lenders and with other recognized experts in lending to SMEs. These interviews sought to identify the principal criteria that loan account managers employ in assessing a client for risk and for future potential.

Third, through the analysis of secondary data sources, the research attempted to identify what makes a firm "bankable".¹ Using existing data, salient characteristics of good credit risks were compared with the corresponding characteristics of the general population of firms. As appropriate, this analysis was carried out by major geographic regions (Atlantic Canada, Quebec, Ontario, Prairies, and British Columbia) and the special cases of technology-based firms were also addressed, to the extent feasible. The intent of the analysis was to identify ways in which bankable firms compare to the general population of SMEs. Differences between successful borrowers and other groups of firms were estimated.

OVERVIEW OF THE MARKET FOR DEBT CAPITAL

In Canada, the demand side of the marketplace comprises more than 900,000 small businesses. Six national multi-branch banks dominate the market for loans to SMEs. Bank loans to businesses generally take one or both of two forms: term loans and operating loans.² Small firms have more difficulty obtaining bank capital than large firms; when they do receive credit, small businesses face higher interest rates and more stringent terms (Thornton, 1981; Grant, 1986; Haines, Riding, Thomas, 1991; Wynant and Hatch, 1990; Orser, Riding, and Swift, 1994). Owners of smaller firms are also more frequently dissatisfied with their banking relationship (CLMPC, 1995; Wynant and Hatch, 1990; Orser, Riding, and Swift, 1994).

From the lenders' perspective, smaller firms are less cost-efficient and more risky. In large part, risk stems from the asymmetry of information that exists between lenders

¹ It is supposed here that to obtain credit an SME must present some minimum level of "bankability" to a lender. The dimensions (for example, size, sector, etc.) on which borrowers and the general population of firms differ indicate dimensions of "bankability".

² Term loans are loans advanced to cover acquisition of specific plant and equipment or to support the permanent component of working capital. They are typically of fixed term and the principal is amortized over the term of the loan. Interest may be at a fixed rate or set at a premium over prime rate. Operating loans, or lines of credit, provide businesses with credit on an as-needed basis, usually up to a pre-defined limit. Rates are typically set at a premium over prime.

and borrowers. Lenders are unable to observe borrowers' time and effort. They cannot be fully conversant with the market environments of each of the many borrowers whose loans they administer. Nor are lenders able to assess the value of collateral as accurately as can firm insiders. This asymmetry of information leads to two problems for the financial marketplace: *adverse selection* and *moral hazard*.³ To protect themselves, banks face material costs of evaluation and monitoring.

Asymmetric information likely reflects the reality of the Canadian marketplace. The majority of SME clients require modest borrowing: the median loan size is less than \$50,000 (Haines and Riding, 1994). After allowing for the lenders' costs of funds, a provision for bad debts, and the direct costs and overheads, such lending is a low-margin, high volume business.⁴ The cost inefficiencies that arise from the small lending balances imply that loan account managers commonly administer between 80 and 120 accounts. This caseload exacerbates the related problem of risk and begs the provision of technological solutions that could improve efficiency with such large caseloads.

Loan account managers' high caseloads typically leave them with approximately less than two working days per year per client. This may not be sufficient time to perform either the necessary due diligence to distinguish good from poor risks or to carry out effective monitoring.⁵ Exacerbating this problem, the rate of account manager turnover is not trivial.

One means of addressing the pathology of the lender-SME interface is through the adoption of technological aids to evaluation and monitoring. A user-friendly, flexible, and timely set of benchmarks in the form of a revised Small Business Database could be of immense value. As such, it is essential to determine those attributes of SME loan applicants that are important determinants of loan worthiness: to assess how the characteristics of *borrowers* relates to the attributes of the general population of SMEs. The balance of this report provides two perspectives on this issue. First, the literature

³ *Adverse selection* can follow if *lenders* are unable to distinguish good credit risks from poor risks. As noted by Akerlof (1970), the lender will charge all borrowers fees and interest rates that reflect the *average* level of risk in the marketplace. As a result, good risk borrowers would be overcharged. Poor risk borrowers would be undercharged given their level of risk and would therefore be subsidized by the firms that are good credit risks. The argument maintains that good risk borrowers therefore exit the market.³ This worsens the mix and initiates a cycle that ultimately results in a marketplace in which only high risk firms remain, as they are the only ones willing to pay the higher rates. The market degenerates.

Once a loan is advanced, the lender must ensure that the borrower does not act contrary to the lender's interests, a problem known as *moral hazard*. Moral hazard can arise from self-serving behaviors such as diversion of perquisites, fraud, misrepresentation, etc. However, moral hazard can also arise from simple inconsistencies between the wealth-maximizing objectives of lenders and borrowers. If the investment financed by debt succeeds, the borrower reaps most of the benefits. If the investment fails however, the lender may lose the entire loan capital yet limited liability protects the borrower. Losses fall to the lender and gains (less fixed interest and principal repayment) fall to the borrower. This can lead borrowers to undertake high risk projects. Moreover, the potential for moral hazard is greatest when the owner has little to lose (e.g., low levels of equity on the balance sheet).

⁴ In large measure, lenders' profits from this segment of the business often stem from the ancillary services sold to the borrower, including the provision of such personal banking needs as mortgages, RRSP's, etc.

⁵ Logically, one would expect this situation to be more pronounced for managers that handle portfolios of smaller firms.

regarding the process and criteria of loan decision-making is reviewed. Second, the findings from a series of interviews with lenders and others who are knowledgeable about small business lending are reported. Third, existing databases are revisited to evaluate salient characteristics of SME borrowers and to compare these characteristics with those of the general population of SMEs.

THE RESEARCH LITERATURE ON LOAN DECISION-MAKING

Loan decision-making typically involves four distinct decisions:

1. the decision of whether or not to grant credit to a particular applicant;
2. the decision of how much credit to advance;
3. the decision of how to price the loan; and,
4. the decision of how much collateral security is to be taken.

Each of these four steps will be considered separately. These decisions, usually made by a commercial loans account manager, incorporate objective information and criteria as well as subjective and qualitative impressions. Traditionally, students are taught that institutional lenders make loan decisions on the basis of the so-called "5 C's" of commercial lending: Capital, Collateral, Conditions, Capacity, and Character. The relative importance of these categories of criteria, however, remain unspecified in textbooks and do not appear to have a basis in rigorous research.

Jankowicz and Hisrich (1987) attempted to specify those personal characteristics of the business owners which are deemed most important by bank lending officers. Among other findings, they conclude that officers apparently prefer "stability and conformist behaviour." Jankowicz and Hisrich also point out that the latter two of the "5 C's" (capacity and character) depend largely on intuitive judgment.

More recent work based on Canadian data has found that factors that affect the decision of whether or not to grant a loan differ from the factors that appear to be correlated with the other decisions, such as the level of interest rates to charge. Two recent Canadian studies have provided the majority of our knowledge regarding bank lending to SMEs. The first was conducted by Wynant and Hatch in 1990 and the second by Haines and Riding in 1994. The sections that follow will draw heavily from these two sources.

THE LOAN TURNDOWN DECISION

Decision Process

The loan evaluation is triggered when an SME applicant approaches an institutional lender for credit. The borrower is referred to a loans account manager (LAM, henceforth). The LAM typically has the liberty to approve loans up to his or her level of authority. This level varies, usually according to the experience and track record of the LAM. In the event that the amount sought exceeds the LAM's authorization limit, the LAM makes a

recommendation that is then considered at a higher level of authority. All Canadian banks have attempted to streamline the decision process by minimizing the number of levels. Most banks have limited to two the number of decision levels.

It is worth noting that the qualifications of LAMs also appears to have been one aspect of banks' recent efforts to upgrade service in this sector. LAMs have typically been assigned from one of three sources: within institution transfers; recruits from other financial institutions; and new recruits from universities. According to Wynant and Hatch (1990, p. 119) a majority of LAMs have either university or community college degrees and that the proportion of this group has increased substantially in recent years. With increasing frequency, LAMs are being recruited from MBA and commerce programs and arrive in their jobs with computing and other skills. Moreover, banks appear to be investing heavily in training, witnessed, for example, by the Bank of Montreal's new Toronto training centre.

Factors in Loan Turndowns

The frequency with which loans are turned down is uncertain. Reliable data are not available. On the one hand, banks do not track tumdowns. Wynant and Hatch (1990, p. 289) found that the rate of "formal" tumdowns (tumdowns associated with a fully documented loan application) averaged 6.5 percent. They cite the following as primary reasons for formal tumdowns:

- poor collateral support
- weak track record
- thin equity base
- insufficient information

Formal tumdowns, however, represent only a part of the situation. Indeed, Wynant and Hatch observed (p. 289) that "the vast majority of declines occur at the informal stage". The Canadian Federation of Independent Business [CFIB, henceforth], using data based on surveys of their membership, report much higher levels of loan declines. According to CFIB data (as reported by Haines and Riding, 1994), the rates of loan tumdowns during the 1991-1993 period were 13.2 percent for new term loans and 15.1 percent for new lines of credit. Declines were not distributed evenly geographically. The following table, based on data in Haines and Riding (1994, p. 10) illustrates the geographical distribution.

Loan Turndown Rates According to 1994 CFIB Data

Region	Tumdown Rate: New Term Loans	Tumdown Rate: New Operating Loans
Maritimes	10.3%	18.9%
Quebec	9.5%	11.4%
Ontario	18.1%	16.9%
Prairies	8.9%	10.9%
BC & North	10.7%	15.3%
Total	13.2%	15.1%

These data, too, are not entirely persuasive. First, they include a selection bias in that the responses represent firms that are CFIB members. Second, the response rate to the CFIB survey was less than 20 percent, implying a significant level of non-response bias. The figures must be interpreted in light of these statistical weaknesses.

Notwithstanding these weaknesses, Haines and Riding (1994) used multivariate analysis of CFIB data and found that turndowns were statistically associated with:

- the size of the firm (Chart 1);
- the age of the firm (Chart 2);
- existence of personal banking;
- a record of declining sales;
- a history of bankruptcy or financial distress; and,
- the number of account manager changes .

These factors, while more specific than those identified by Wynant and Hatch (1990) are consistent. Track record is evidenced by a record of declining sales, the age of the firm, and any history of financial distress. Firm size and the existence of personal banking arrangements may proxy collateral support. Thus among the important variables that are desirable in a revised SBDB are sizes and ages of firms and sales trends.

Chart 1

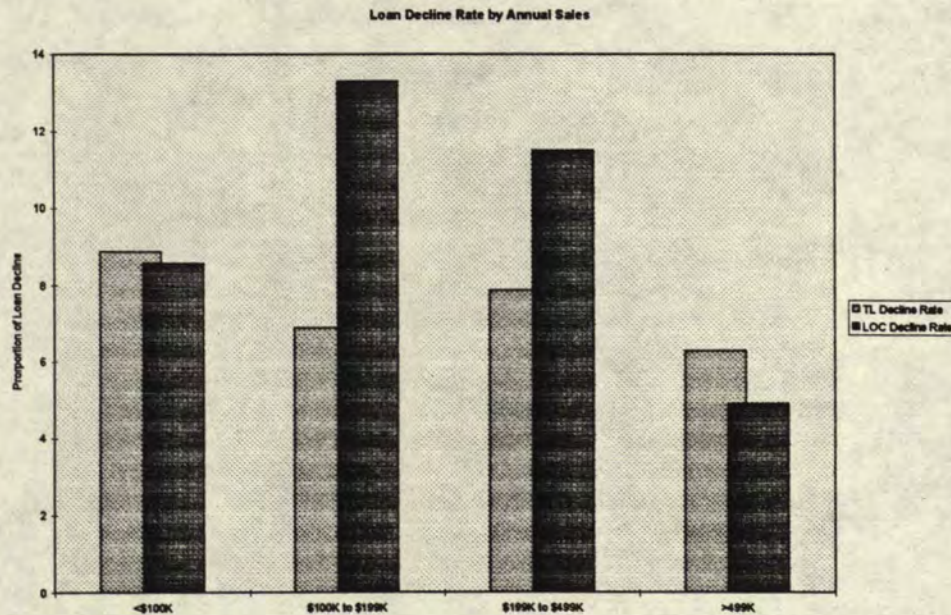
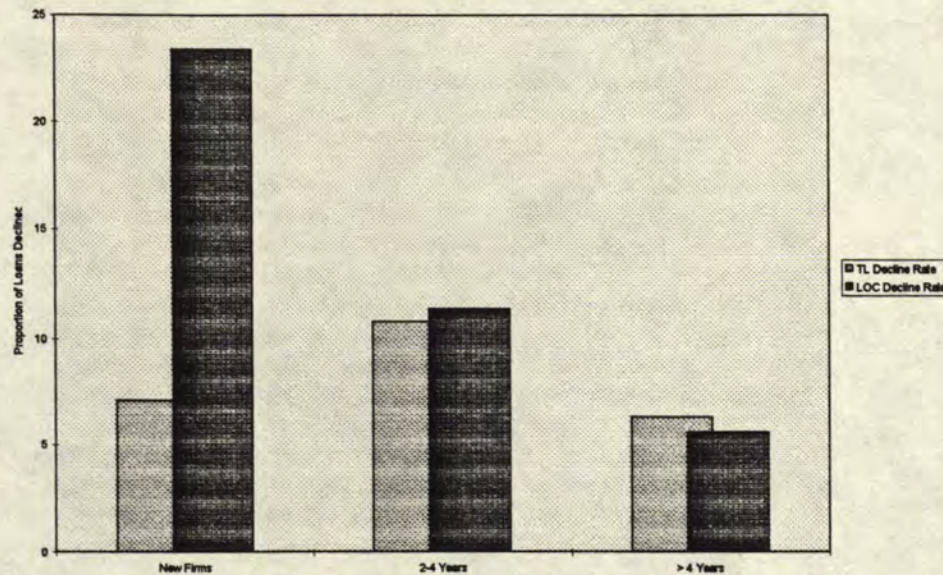


Chart 2

Loan Declines by Age of Firm



Wynant and Hatch (1994, pp. 132-135) identify two primary considerations in assessment of credit risk by lenders:

- the presence of collateral security adequate to ensure that the lender can recover loan capital; and,
- the firm's ability to generate cash flows sufficient to service incremental debt obligations.

The literature suggests strongly that the presence of adequate collateral is the primary determinant of access to credit. That "collateral is insufficient or unacceptable" is the reason most frequently cited by LAMs for declining loans (Wynant and Hatch, 1990, p.290). Lack of requisite collateral was cited almost twice as often as, for example, reasons related to company risk or poor repayment prospects. In addition, Wynant and Hatch (1994, p.291) using multiple univariate tests found that firms that had loans approved differed from firms that had experienced loan declines in other respects, including age of business, burden coverage ratios, and size of loan. Counter to intuition, however, they found that firms that had provided planning information were declined *more* often than firms that did not provide planning information even though they also reported that firms with owners who had little management experience were declined more often. These unexpected findings may be a statistical anomaly reflecting the high Type II error (propensity to conclude a factor is significant when in fact it is not) associated with multiple univariate tests.

Geographical Issues

Turndown rates appear to reflect regional economic disparities. Over the test period employed by Riding and Haines (1994) relatively high levels of turndowns were recorded in

the Maritimes and in Ontario.⁶ They found that tumdown rates in Ontario differed statistically from those in other provinces, with Ontario firms experiencing higher rates of declines on term loans and on requests to increase operating loan limits. Firms in the NWT and New Brunswick seemed to have been turned down more frequently on operating loans.

A Note on Technology-Based Firms

The table that follows, and Chart 3, compares tumdown rates by firm size and across technology sectors [Source: Haines and Riding, 1994, p.8].

Loan Tumdown Rates by Size of Firm and Technology Orientation

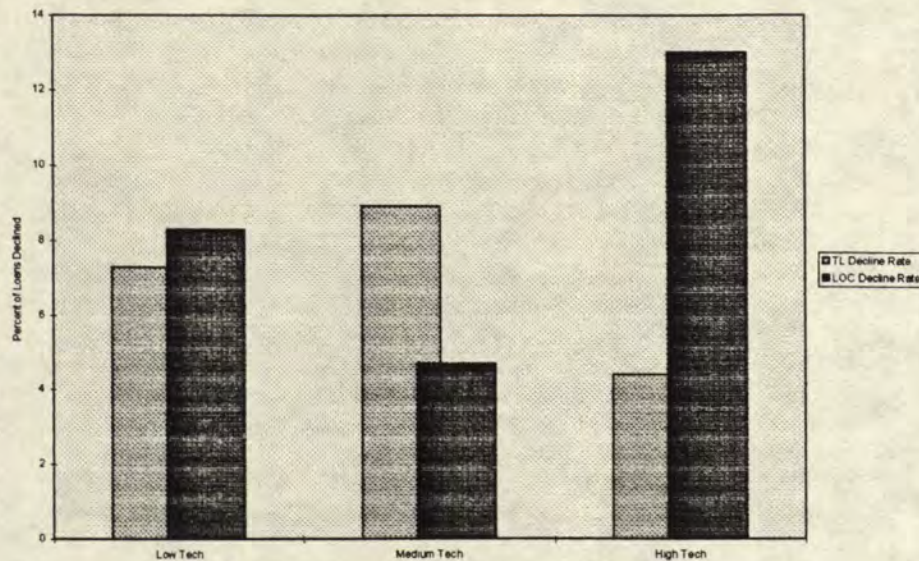
Type of Loan	Technology Level	Less Than 5 employees	6 to 19 employees	20 to 49 employees
Term Loans	Low	17.2%	12.6%	6.5%
	Medium	18.2%	11.2%	0.0%
	High	11.4%	6.7%	12.5%
	Overall	17.1%	11.6%	4.35
Operating Loans	Low	17.9%	15.9%	2.6%
	Medium	20.1%	8.8%	9.4%
	High	25.9%	21.2%	11.1%
	Overall	19.5%	13.2%	6.3%

According to these data, high technology firms may show a greater propensity to experience loan declines. However, according to multivariate analysis, the effect of technology-orientation seems to have been subsumed by other factors including size and industry sector.

⁶ The bankruptcy rate in Ontario increased at a rate that was twice the national average through 1991 and 1992.

Chart 3

Loan Turndowns by Technology Orientation



THE CREDIT LIMIT DECISION

Decision Process

Once a decision to grant a loan has been made, the maximum size of a loan facility is usually guided by rules of thumb. One common guideline is that total debt should not exceed 75 percent of total assets (i.e., a debt equity ratio of a maximum of 3.0). In addition, operating loans are often linked to particular levels of specified current assets. Borrowing limits on operating loans are often linked through a formula to a fixed proportion of the borrower's current accounts receivable and, in some instances, inventory. This practice implies the need for frequent monitoring by the LAM. Moreover, when the borrowing firm encounters poor demand conditions, receivables decrease. With the contraction, the firm's ability to borrow is reduced, but often at the very time when credit is most needed! This is a situation that can lead to considerable bitterness between borrowers and lending institutions.

Factors in the Limit Decision

According to CFIB data (various surveys, 1987-1994), most SMEs obtain the full amount of the financing they request. Others are turned down outright. A small proportion, however, obtain a loan approval, but for less than had been requested. Wynant and Hatch (pp. 153-154) essentially contend that such decisions are based on judgments by the LAM as to what the SME actually needs: that, in the LAM's judgment, the amount requested was excessive. Such decisions would need support from cash flow forecasts unique to the applicant firm.

THE LOAN PRICING DECISION

The Pricing Process

Lender revenues arise from two sources: interest rates and fees. Lenders expectation is that these revenues provide for recapture of costs of funds, direct costs of evaluation and monitoring, overheads, and a contribution to return on capital. The high caseloads faced by LAMs and the low lending balances make it difficult to price loans by risk. It has been argued that lenders use collateral requirements to cope with risk and charge interest rates and fees according to loan size (Besanko and Thakor, 1987).

Fees can take three forms, those associated with the loan application; those related to account transactions; and, those assessed for loan management. Application fees are typically of the order of 0.5 to 1 percent of the loan but are often waived or refunded in whole or in part. Significant variety in assessment of application fees has been observed across the system (Wynant and Hatch, 1990; Haines and Riding, 1994). Transactions fees are assessed according to the level of services provided. These also vary widely and are paid either as a fee package or can be unbundled. Management fees reflect specific management tasks that include monitoring the borrower or special tasks carried out by the LAM. Overall, the impact of fee incomes on bank revenues is small and, combined, seldom amounts to more than 1 percent of the loan facility.

Interest rates, too, vary over a narrow range in Canada. Few loans are approved at rates in excess of three percentage points above prime.⁷ Given LAMs' caseloads, riskier firms tend to be turned down in attempts to arrange bank financing rather than obtain a loan at a risk-related interest rate. This is a finding consistent with credit rationing based on quality.⁸ Yet, overall, interest rates assessed by Canadian banks appear to be lower than those assessed by lenders in the US.⁹

Factors in the Loan Pricing Decision

According to Wynant and Hatch, the level of fees are statistically correlated with each of the following factors: urban vs. remote locations; age of business; size of firm; length of current

⁷ According to Wynant and Hatch (1990, p. 158) 2.6 percent of operating loans and 4.0 percent of term loans are priced at more than prime plus three. In the U.S., by comparison, 14 percent of all loans are priced at more than prime rate plus four (Small Business and Banks: The United States, 1988, The NFIB Foundation, p. 19).

⁸ Credit rationing carries with it implications for credit markets. Foremost is that under credit rationing, there remains an excess of demand for credit over supply. With credit rationing, lenders are unwilling to provide, at current market rates, the loans that SMEs seek. Lenders ration credit to control the quality of their loan portfolios. It follows that the so-called laws of supply and demand and of single price do not hold. This restricts the application of conventional methods of economic theory development. Moreover, according to Stiglitz and Weiss (1981), deMeza and Webb (1987), and others, credit rationing that stems from adverse selection may lead to levels of investment that are at variance with that which is socially optimal.

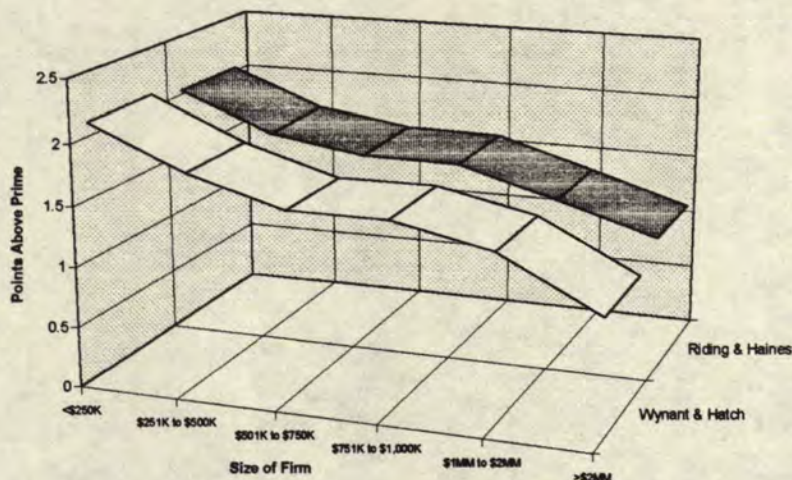
⁹ Riding and Haines (1994, pp. 28-29) report mean premiums of approximately prime plus 1.65 percent overall. Wynant and Hatch report a higher amount, 1.7 to 1.8 percent, but they failed to weight their sample to reflect the population of SMEs. Nonetheless, both estimates are significantly lower than the premium of 2.1 percent reported by the NFIB (*ibid.*) for the U.S.

ownership; length of management experience; length of bank relationship; industry sector; and size of loan. For two reasons, however, these conclusions are not reliable. First, it is clear that some factors are correlated with other factors (e.g., lengths of ownership, management experience, bank relationship are mutually related). Second, the statistical techniques employed by Wynant and Hatch were based on serial application of univariate methods, methods that admit high levels of Type II error. Moreover, data on fee levels are "dirty" in the sense that they are not recorded consistently in the banking system.

Data published by the National Federation of Independent Business in the US (Dennis, Dunkelberg, and Van Halle, 1988) appear to support the hypothesis that interest rate premia in the US reflect bank assessments of firm risk. In the US, premia vary by industry, firm size, age of firm, urban/rural geography, loan size, and level of collateral - all arguably measures of risk. For Canadian loans, however, virtually the only factors that correlate with the level of interest rates are the size of the borrower and the size of the borrower's loan facility; larger firms or facilities getting better rates. Chart 4 illustrates this relationship based on studies conducted by Haines and Riding (1994) and by Wynant and Hatch (1990).

Chart 4

Interest Rate Premia on Operating Loans



It is worth noting that the effect of firm size subsumes other factors, factors often understood to be important. As examples:

- it can appear that the age of the firm might affect the interest rate decision with new firms being assessed higher rates (Wynant and Hatch, 1994, p. 266). However, new firms also tend to be small firms.

- it can seem that women-owned firms are turned down more frequently than those owned by men and that women-owned business pay higher interest rates (e.g., CFIB, 1994). However, when factors such as firm size and industry are properly taken into account, the impact of gender seems to vanish (Statistics Canada, 1994).
- it can appear that technology-based firms suffer disproportionate access to, and terms of, credit. However, technology-based firms are, in general, relatively young and small: lacking in both track record and size. Once such confounding factors are accounted for, terms of credit to technology-based firms do not appear to differ significantly from terms of credit to comparable non-technology-based firms (Riding and Swift, 1992).

Hence, from reliance on one-way comparisons, it may not be clear which factors may be operative. Thus, univariate statistical approaches, such as those employed by Wynant and Hatch cannot disentangle nor weight the impact of potentially important factors. Haines and Riding (1994), using multivariate statistical methods applied to CFIB data found firm size to be the dominant factor, although age of firm had a discernible, though secondary, effect.

Geographical Issues

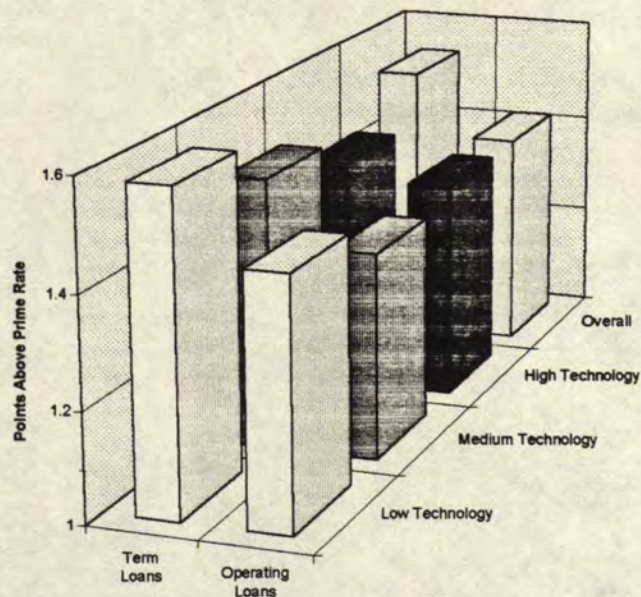
Geographic variation in interest rates were identified by Haines and Riding (1994, p. 32). Rates on term loans tended to be lower than average in Ontario, Alberta, and Saskatchewan, and higher in PEI and the NWT.

A Note on Technology-Based Firms

After accounting for such factors as firm size, age of firm, industry sector, and geographic locale, no statistically significant effect of technology orientation on interest rates has been identified. Even in raw terms, interest rates on technology-based firms do not seem to be very different from overall norms (Chart 5): if anything, interest rates paid by high technology firms appear to be slightly less than traditional borrowers.

Chart 5

Interest Premia by Technology Orientation



THE COLLATERAL DECISION

One of the primary concerns of small firms is that lenders require excessive collateral.¹⁰ Indeed, there is evidence to the effect that the primary factor in lending decisions is the level of collateral. For example, in Wynant and Hatch's (1990, pp. 291-292) comparison of firms that had approved loans with firms that had loans declined, the collateral provided by firms with approved loans was almost 50 percent greater than for the sample of firms with loan turn-downs. In their assessment of determinants of the ratio of collateral to loan, Wynant and Hatch (1990, p. 253) found that firm size and LAMs' subjective assessments of the firm risk and the business owners' management skills were the primary determining factors.

IMPLICATIONS FOR SBDB DEVELOPMENT

As a point of departure, it is worth noting that public pressure is obliging lenders to accord greater importance to small business lending in general and to technology-based firms in particular. These two trends have in themselves implications for development of the proposed SBDB.

The first trend, that towards greater account manager sophistication, implies that LAMs will, more frequently than in the past, have the ability to manipulate data and carry out

¹⁰ See, for example, Canadian Labour Market and Productivity Centre, Canadian Business Speaks Out on Access to Capital, Ottawa, 1995.

their own potentially idiosyncratic, types of analysis. The proposal for a revised SBDB ought, ideally, have provision for such flexibility. This need is emphasized by the second trend: the need to evaluate non-traditional businesses. This implies the frequent use of non-traditional ratios. Less importance is likely to be accorded the role of collateral for technology-based firms. This implies greater importance for ratios that express coverage capability of the prospective borrowers.

Traditional asset-backed lending will, of course, continue. Moreover, the initiative judgments of the LAM will also continue to be important. However, the need persists to measure borrowers ability to:

- secure the loan; and,
- cover the periodic obligations.

Important ratio measures that reflect these capabilities include those that involve:

- Debt capacity measures;
 - debt/assets;
 - debt/equity;
 - the borrower's net fixed assets (expressed relative to sales, debt, equity);
 - net working capital; and,
 - levels of accounts receivable and inventories.
- Coverage ratios:
 - interest coverage;
 - burden coverage;
 - degree of financial leverage measures.
- Industry rankings on:
 - sales;
 - assets;
 - competition (gross margins; number of competitors);
 - efficiency (operating margins);
 - profitability (ROA, ROE); and,
 - trends in sales revenues.

Coverage ratios must be comprehensive. It is not sufficient to measure the borrowers' abilities to cover incremental bank borrowing or interest coverage. Rather, coverage ratios that reflect total debt servicing needs as well as fixed financial charges related to leases etc. need to be provided. Current data collection do not appear to reflect leasing obligations.

PRINCIPAL CRITERIA USED BY LENDERS: FINDINGS FROM INTERVIEW DATA

The findings described in this section represent the views of a variety of informed sources. Not all sources agree on all issues and some findings reported here are idiosyncratic, but nonetheless important. The table that follows lists the individuals with whom interviews were conducted. Their corporate affiliations and areas of expertise are also identified.

Individual	Affiliation	Areas of expertise
Bruce Phillips	Office of Advocacy Small Business Administration, USA	Small business financing; US government policy.
Katerina Svensson	University of Lund, Sweden	SME-bank relationships
William Dennis	NFIB Foundation, USA	SME financing; entrepreneurship
John Leckie	TD Bank, Toronto, Canada	Commercial Lending to SMEs
Kevin Yousie	TD Bank, Toronto, Canada	Commercial Lending to SMEs
Al Denmark	TD Bank, Toronto, Canada	Commercial Lending to SMEs
Louise Mitchell	Royal Bank, Toronto, Canada	Commercial Lending to SMEs
Robert Morrice	Royal Bank, Toronto, Canada	Commercial Lending to SMEs (particularly technology-based firms)
Robert Penteliuk	CIBC, Ottawa, Canada	Commercial Lending to SMEs (particularly technology-based firms)
Alexandre Franchi	Institute of Canadian Bankers	Banker education

It is worth noting that the problems of lending to SMEs are not unique to Canada. International observers and researchers seem to be agreed that systemic difficulties persist with respect to capital formation for small firms. In addition, international trends are towards consolidation in national banking systems. In the US the historical "state"-based banking systems are being rapidly replaced by a banking system more similar to that of Canada with a system of national (international) multi-branch banks. Lenders within the new system will make increasing use of standardization and loan decisions will be made on more of a "cookie cutter" basis.

Given this trend, foreign bank lenders in Canada are also expected to be relying more than ever on technological aids to decision-making and will need relevant benchmark data. This suggests further potential users of benchmark small firm data.

A NOTE ABOUT NEW AND SMALL FIRMS

As a point of departure, terms of evaluation of new and small firms differ from the conditions for evaluation of established firms. New and small firms very frequently lack correct, current and relevant financial information. For sole proprietorships, the owner's personal financial situation and that of the firm are inextricably interwoven. As a result, severe and basic definitional problems are encountered.¹¹ Moreover, the size of the owner's draw from the business is often the single largest expense and dominates

¹¹ For example, if a sole proprietor borrows from a lender by means of a mortgage on a paid-for personal dwelling, the owner has technically taken on a debt obligation. To the owner, however, the transaction is often regarded as use of the equity that had been established in the asset. Is the capital, then, best regarded as debt or equity?

financial ratio calculation. In such cases the LAM must be able to use two categories of information to arrive at a decision:

- information about managers and key persons;
- information about the firm's business conditions.

Accordingly, lending decisions are often guided primarily by an assessment of the clients' character as exhibited by reference to the owners' previous track record with the bank, their history of personal successes (and failures), and from third party references (customers, previous business associates).

This does not imply that a small business database would not be helpful. Rather, this result possibly suggests the need for either several databases (e.g., one for proprietorships, one for new firms, one for established firms) or for flexibility in applying the data from a single database. Benchmark information that a revised SBDB might include are norms (or means) for owner's draw by sales level and sector.

ASSESSMENT OF ESTABLISHED FIRMS

Firms with annual gross sales in excess of \$3-4 million constitute the "mid-market", the segment of the commercial lending market for which traditional and expanded financial ratio data might be most useful. Indeed, institutional lenders currently do employ benchmark data for loan decision-making, benchmarks to which some lenders seem very closely anchored.

Interviews with lenders indicate that four attributes comprise the primary lending criteria:

1. Character and track records of owner(s);
2. Financial attributes of the firm;
3. Availability of collateral security; and,
4. the borrower's industry sector.

Character is taken as a "given". Beyond this element of decision-making, the firm's ability to repay the loan is weighted the most heavily; lower weights are typically assigned the remaining two factors, collateral and sector.

Character and Track Record.

For most lenders, character of the borrowers was a non-compensatory decision variable: access to credit was not available unless the borrower's character was affirmed. According to one lender, "... if character was in doubt, we would look no further". The usual process of due diligence reveals elements of the client's character and bankers also employ a direct means of establishing clients' character:

- credit bureau checks;
- references from suppliers and (as available) customers;

- information gleaned from informal networks and third-party references (including previous business associates);
- length of time the firm has been in business; and,
- the firm's record of growth.

Included in the "character" attributes are assessments of the owner(s)' management abilities and evaluation of historical successes and failures.

Financial Attributes of the Firm

Primary among financial attributes is the borrower's ability to repay the loan. This is the most-heavily weighted decision factor. Important measures include:

- cash flow forecasts;
- debt coverage ratios;
- the equity base of the firm (debt/equity ratio); and,
- liquidity measures (especially accounts receivable ageings and payables).

Complete ratio analyses are carried out as a matter of course. Loan account managers typically have ready access to software that provides them with a complete financial profile of the prospective borrower.¹² The most important ratio data were:

- cash flow to debt
- liquidity ratios (current and quick ratios; sales to working capital); and,
- "normalized" leverage ratios

Weightings of the various ratios differed across lenders.¹³ In general, however, the firm's ability to service the debt and the equity base of the firm, on an industry-specific basis, were the two chief determinants of risk.¹⁴ In addition, the **variability** of ratios (seasonality and cyclical) over time were occasionally computed and employed as additional indicators of firm risk.

Ratio data were usually compared with benchmark data. Industry benchmark data were usually used according to 4-digit SIC codes and adjusted for geographic region. For the lenders interviewed here, RMA data and in-house data were used. Informal comments were that Dun & Bradstreet data were not satisfactory.

¹² The profiles are frequently based on three years of historical financial statement information and two years of pro-forma statements.

¹³ It is worth noting that the Institute of Canadian Bankers does not, as a matter of policy, elaborate on the interpretation of financial ratio analysis in their loan account manager curricula. Interpretations of ratio data have been deliberately left to member banks.

¹⁴ Lenders distinguished between book value of equity and "effective equity". The latter excludes deferred income sources, intangibles, and shareholder loans.

Collateral Security

All lenders interviewed here clearly expressed that they viewed their bank as "cash flow" lenders: that collateral was secondary in terms of loan decision-making. Nonetheless, availability of collateral continues to rate as one factor in the decision, albeit with a weight that averaged about 20 percent of cash flow. For operating loans, lenders commonly use accounts receivable, inventories, and personal guarantees of owners (of incorporated firms).¹⁵ Shareholders loans are usually subordinated to bank debt.

It was noted that collateral was seen as a subordinate (to cash flow) assurance of repayment: that collateral such as inventories have little value unless the client continues in business.

Industry Sector

Loan account managers also weight the prospective borrower's industry sector in the lending decision. The weight accorded this factor is similar to that accorded the availability of collateral: about 20 percent of the weight of financial factors.

The loan account manager typically has access to the bank's internal analyses of various industries. Lenders sought assurance that the principal(s) of the borrower had their own sense of the borrowing firm's location within the industry. Lenders were interested in the profiles of both the top and bottom quartiles of an industry sector.

A NOTE ON TECHNOLOGY-BASED BORROWERS

Lenders all expressed that evaluation of technology-based borrowers would not entail different data requirements. Differences may occur in terms of how the data are interpreted or weighted. For example, some lenders placed greatest reliance on the client's level and quality of booked sales orders (that is, sales volume). Other lenders were interested in how the borrowed funds were to be employed: financing of R&D was not viewed as an appropriate use of borrowed funds. Rather, debt used to bridge timing differences between sales and income realization was seen as appropriate. In addition, lenders would typically weight cash flows more highly than for non-technology based firms. This entails greater individual assessments of technology-based businesses to ascertain the quality of the cash flow forecasts.

ON "BANKABILITY": BANK BORROWERS COMPARED WITH SMES

In this section, it is postulated that firms able to borrow successfully from an institutional lender need to meet a minimum standard across a set of criteria that jointly determine the "bankability" of the deal. These criteria might well include such variables as size,

¹⁵ A typical "formula" for the limit on an operating loan might be:

$$\text{Limit} = (x\% \text{ of Receivables of less than } n \text{ days}) + (y\% \text{ of inventory}) \text{ to a maximum of } \$z.$$

The formula varies by lender, industry sector, and according to whether or not assets are held onshore or not. Personal guarantees need to be supported by personal financial data on the principals.

historical relationship with the bank, financial health of the firm, collateral availability, market projections, age of firm, sector, etc.¹⁶ Firms above a threshold level of bankability get loans; others do not. Under this premise, firms furthest above the threshold get the best terms of credit.

To investigate what criteria might form the basis of judgments about bankability, this section revisits data collected by Haines and Riding (1994). Comparisons are drawn between salient characteristics of SME bank borrowers and corresponding attributes of the general population of SMEs as reflected in Statscan's Small Business Profiles data. The results provide insights about specific data needs that lenders are likely to find useful.¹⁷

The Haines-Riding database is research-quality data comprising 1,393 cases of bank lending obtained under the terms of a confidentiality agreement from the loan files of the six largest domestic banks. Each case consists of comprehensive data on a borrowing firm and includes information on the loan facility (size of loan, terms of lending, etc.), the firm (sector, size, financial statement data), and qualitative observations of the account manager(s).

The Small Business Profiles include balance sheet data, selected expense data, employment, and several financial ratios across firms by sales quartiles, five major geographic regions, and 4-digit SIC codes. Income statement data are based on approximately 180,000 cases and balance sheet data representing approximately 46,000 T2 forms.

A PROFILE OF SME BANK CLIENTS

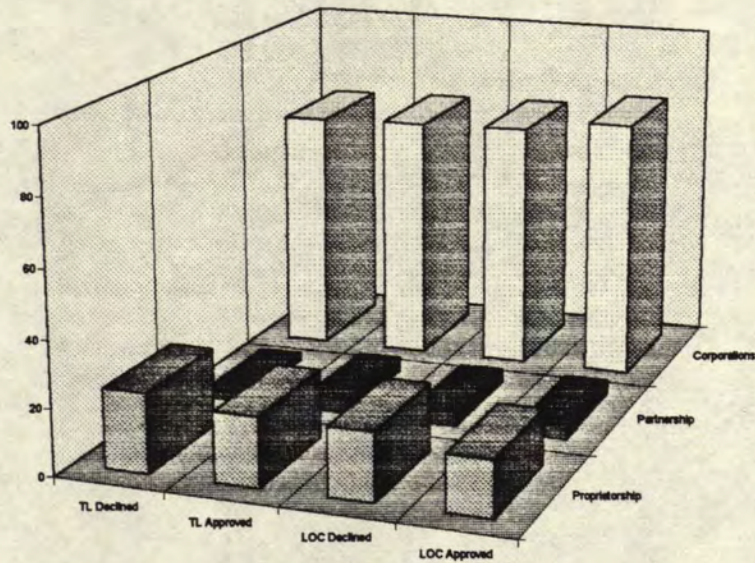
Chart 6 presents the distribution of legal form of SME business borrowers according to various loan decisions. The chart shows an immediate and important difference between borrowers and the general population of SMEs. SME borrowers exhibit a much higher frequency of being incorporated businesses. Approximately 80 percent of borrowers are incorporated businesses, unlike the general population in which unincorporated SMEs represent the majority of small firms.

¹⁶ Several Canadian banks employ formal "scoring systems" that use such variables as formal criteria.

¹⁷ Unfortunately, the Small Business Profiles do include a dimension that allows separation of firms according to technology orientation. Accordingly, this section will be unable to address this aspect of bankability, except by inference.

Chart 6

Distribution of Business Form by Loan Decision



Charts 7 and 8 present the distribution of firm size as measured, respectively, by annual sales and number of employees according to various loan decisions.

Chart 7

Distribution of Annual Sales by Decision Category

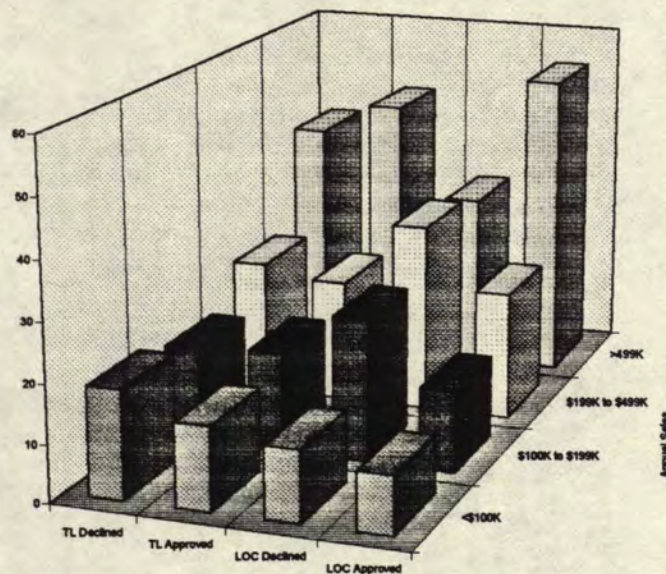
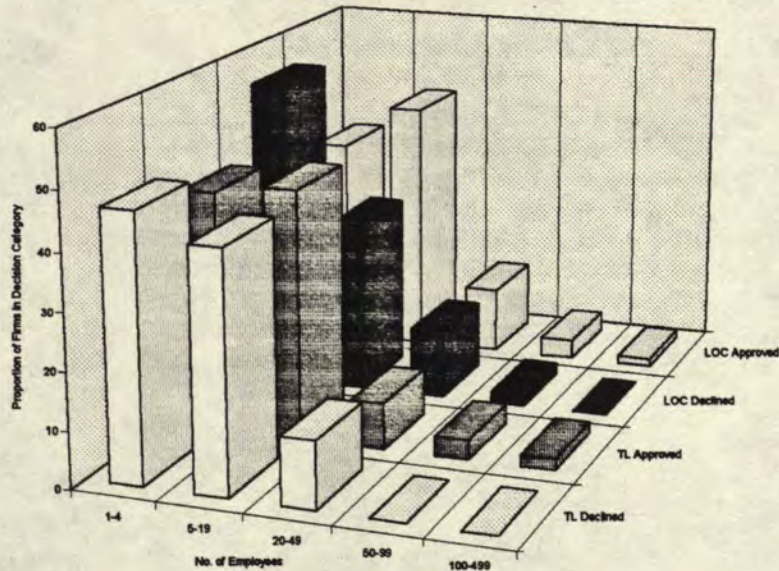


Chart 8

Distribution of Firm Size for Loan Decisions



Again, these charts suggest that regardless of loan decision, bank clients tend to be among the larger categories of SMEs. Borrowers with operating loans employed, on average, 7.2 full time-equivalent persons and term loan borrowers tended to be somewhat smaller, with an average of 4.8 full time employees.

BANK BORROWERS VS. THE SMALL BUSINESS PROFILES DATA

Size Measures

Overall, SME bank borrowers seem to rank at the large end of the size distribution of SMEs. To appreciate better this size distinction, borrowers are compared with the general population of SMEs according to five size measures (assets, equity, current assets, current liabilities, and sales). These are compared with corresponding dimensions for the four quartiles of SMEs reported on the Statscan Small Business Profiles database. The shading in the table provides a crude graphical depiction where the means for each of the borrower groups fall within the quartiles of firms comprising the Small Business Profiles.¹⁸

¹⁸ Canadian banks measure size according to the size of the loan facility. Therefore, large firms that make small loans are included in the loan file data. To compensate for such outliers, the mean values for bank borrowers are computed using a five percent trim. This is a standard statistical procedure employed when outliers in the data may skew results.

**SME Borrowers and the Small Business Profile:
Selected Financial Statement Data**

Borrower Group	Measure	Means (\$000)	Revenue Quartile Means per <u>Small Business Profiles</u>			
			1	2	3	4
Borrowers with Operating Loans	Total Assets	591	262	340	482	1,489
	Total Equity	181	118	128	185	486
	Total Current Assets	314	101	104	173	617
	Total Current Liabilities	236	53	97	114	472
	Annual Revenues	992	25 ~ 85	85 ~ 193	193 ~ 476	>476
Borrowers with non-SBLA Term Loans	Total Assets	568	262	340	482	1489
	Total Equity	141	118	128	185	486
	Total Current Assets	262	101	104	173	617
	Total Current Liabilities	219	53	97	114	472
	Annual Revenues	861	25 ~ 85	85 ~ 193	193 ~ 476	>476
Borrowers with SBLA Term Loan	Total Assets	360	262	340	482	1489
	Total Equity	94	118	128	185	486
	Total Current Assets	166	101	104	173	617
	Total Current Liabilities	144	53	97	114	472
	Annual Revenues	673	25 ~ 85	85 ~ 193	193 ~ 476	>476

Consistent with the findings regarding business form, sales, and employee data, SME borrowers of all types tend to be among the larger small firms. Even SBLA guaranteed loans appear to be made to large SMEs. Moreover, even given their size as measured by assets or employees, borrowers exhibit extraordinarily high levels of sales. SME borrowers are within the third quartile in terms of equity and the fourth quartile in terms of assets, both measures of size. However, the annual levels of sales are considerably greater than the mean values for the firms in the highest quartile.¹⁹

Ratio Measures

To explore further the attributes of bank borrowers, ratio analysis of balance sheet and income statement data were conducted according to the standard ratios available on the Small Business Profiles. The next table presents the comparison of SME borrowers with the population of SMEs as represented by the Small Business Profiles according to these available financial ratios.

¹⁹ It is noted that this finding understates the case. Small Business Profile balance sheet data primarily reflect T2 forms from incorporated businesses. Balance sheet values for typically smaller un-incorporated firms are not included in the benchmark.

**SME Borrowers and the Small Business Profile:
Financial Ratio Data**

Ratio	Statscan Small Business Profiles	Borrowers with Operating Loans	Borrowers with non-SBLA Term Loans	Borrowers with SBLA Term Loans
Current Ratio	1.3	1.5	1.25	1.3
Debt/Equity	1.8	1.7	1.7	2.6
Interest Coverage	2.0	9.2	6.9	8.6
Debt/Assets	0.6	0.8	0.9	0.8
Current Debt/Equity	80.4	200.0	220.0	240.0
Revenue/Equity	1.8	9.7	9.9	12.5
Gross Margin	39.9%	36.1%	34.0%	29.1%
Return on Equity	7.4%	35.0%	35.0%	55.0%
Return on Assets	5.1%	10.3%	10.0%	14.0%
Fixed Assets/Equity	88.6	127.8	170.6	224.0

From this comparison, it is seen that the total debt position of bank borrowers is quite favourable relative to that of the general small business profile. *Current* debt tends to be high, yet *total* debt tends to be in line with the overall profiles. The borrowers' ability to service the debt (interest coverage ratio) is particularly strong as compared with the benchmark profiles.

Small business borrowers are again observed to have very high levels of revenues (relative to equity) and particularly high levels of profitability. They also present high values of fixed assets that could conceivably be available for collateral.

Overall, the profile of borrowers that emerges is that of firms with extraordinarily high levels of annual sales and profitability. Borrowers present strong abilities to cover interest expenses and high levels of fixed assets, assets that can act as security to back bank borrowing.

Comments on the Current Small Business Profiles Database

The Small Business Profiles Database as currently implemented by Statscan has several attractive features. It reports aggregated income statement data in useful formats (percentage of sales and dollar amounts) and covers the financial ratios and financial statement measures most commonly used. The distinction between profitable and non-profitable businesses is useful. The primary shortcomings of the system relate to the lack of timeliness and a limited amount of flexibility. In addition, some potentially important data elements do not appear to be identified on the system. Useful modifications could include:

- identification of all fixed financial charges (e.g., leasing obligations). In order to compute burden coverage, all fixed financial charges need to be incorporated.
- Incorporation of a separate measure of technology orientation.
- enhance the available ranges of flexibility:

- by allowing for quartiles to be computed by a variety of data elements (currently, quartiles appear to be based only on gross operating revenues);
- by providing a means for customers to design multi-way cross-tabulations beyond those ordinarily provided by the program;
- by providing trend data on sales revenues; and,
- by adding a facility that would allow potential users to compute idiosyncratic ratios particular to a given situation.

SUMMARY AND NEXT STEPS

The findings of this study have confirmed that banks primary lending criteria are those that reflect:

- the borrower's ability to adequately service the loan facility;
- the borrower's ability to collateralize the loan; and,
- the lenders assessment of the environment in which the borrower firm must compete.

The first of these factors was found to be most-heavily weighted during the lending decision. Ratio analysis data is normally employed for firms in the mid-market to evaluate the borrowing firm's ability to repay the debt.

Primary ratios include debt coverage measures, liquidity measures, and measures of the firm's equity base. Benchmark data are typically employed dis-aggregated regionally and by 4-digit SIC codes. Lenders require flexibility of ratio and benchmark data. They need to be able to adjust data for loans to shareholders, intangibles, certain deferred items etc. Measures of volatility (seasonality and cyclicity) of ratios are also employed by some lenders. Secondary decision factors are those that involve collateral security and industry conditions. In-house information is commonly used to guide lenders with respect to industry forces.

Lenders are seen to be extremely conservative such that firms that have been able to obtain bank credit tend to have been:

- large firms;
- firms that, given even their large size within the scope of SMEs, exhibit particularly high levels of sales;
- established firms;
- firms that have sufficient assets to collateralize borrowing;
- firms that have not undertaking excessive debt;
- highly profitable firms; and,
- firms that demonstrate cash flows more than adequate to service all fixed financial obligations.

That Canadian institutional lenders are conservative comes as no surprise. What is surprising is how very conservative they are! Firms that have obtained bank credit are typically in the upper echelons of the population of SMEs.

Lenders' practices may reflect how banks view the independent banking market. Lenders understand that small businesses are of three types:

- personal businesses;
- small firms that will remain small firms; and,
- growth-oriented small firms.

Borrowing needs of the first two categories tend to be very modest. By definition, capital is not generally needed to fuel expansion in such firms and credit card borrowing, leasing, personal lines of credit, and trade credit often suffice to meet their needs. It is these firms that tend to be un-incorporated, smaller firms that form the majority of observations in the Small Business Profiles data and which lead to the large disparities observed here between active borrowers and the SME population at large.

This finding begs the question of how appropriate benchmark data can be provided to lenders. It seems clear that the answer to this question requires a focus on the successful growing firms in the economy. Flexibility with respect to firm size seems crucial. Lenders do not usually accord ratios for very small firms with much credibility. For larger firms, however, ratio data are important. Therefore, the SBDB should allow lenders the flexibility to address particular size cuts of firms or segments of the market based on other firm attributes (e.g., incorporation). The ability to obtain profile breakdowns by region and industry sector will be important.

Currently, some lenders are closely wed to their sources of benchmark data. It seems important that next steps ought to involve lenders so that the database might best reflect their needs.

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