The Institute of Financial Management

The Information Revolution in Small Business Finance – the Singapore Experience

by

Anjali Vasvani Gupta
Student Number: 99 502059 4

Supervisor: Prof. Charles Schell

Dissertation submitted in partial fulfilment
of the requirements for the degree of Master of Business Administration
2001

Abstract

The Information Revolution in Small Business Finance – the Singapore Experience

This paper evaluates the hypothesis that:

The information revolution will reduce the information opacity of small business borrowers and increase the competitiveness of small business finance.

The research proceeds by reviewing literature on the following:

- The transformation of banking
- The importance of banks in financing small businesses
- The information revolution in small business finance.

Primary data was gathered from a sample of small businesses, and financial service providers to show the current trends and practices in small business finance in Singapore. This was supplemented with information from various publications on banking and small business finance in Singapore. The developments in small business finance on account of the increased use of the Internet and new technologies were explored and compared with the literature.

It was concluded that the reduction in the information opacity of small business borrowers is dependent on the depth of the information available and on how banks incorporate credit scoring into their loan review. The paper was unable to arrive at a satisfactory conclusion on the effect of the information revolution on the level of competition in small business finance. This is because the increase in the competitiveness of small business finance is dependent on the adoption of credit scoring by new entrants, which, at present, lenders are unable to do on account of the lack of a credit bureau in Singapore.

The paper suggests further research in the adoption pattern of credit scoring by banks for small business finance in Singapore, and the effect of the same on bank-small firm relationships.

TABLE OF CONTENTS

INTRODUCTION 4

BACKGROUND 4
AIM/OBJECTIVES OF THE STUDY 4
HYPOTHESIS 4
METHODOLOGY 5
Literature Review 5
Fieldwork 5
DISSERTATION STRUCTURE 6

LITERATURE REVIEW 8

INTRODUCTION 8
THE TRANSFORMATION OF BANKING 11
THE IMPORTANCE OF BANKS IN SMALL BUSINESS FINANCE 12
THE INFORMATION REVOLUTION IN SMALL BUSINESS FINANCE 14
CONCLUSION 18

FIELDWORK 20

INTRODUCTION 20
DEFINITIONS 20
Small Business Finance 20
Small and Medium Enterprise 21
METHODOLOGY 21
DATA DESCRIPTION 22

DISCUSSION, FINDINGS 25

AN OVERVIEW OF SINGAPORE'S FINANCIAL SERVICES SECTOR 25
The Structure 25
Industry Performance 26
Efficiency and Returns of Singapore Listed Banks 26
THE LENDING ENVIRONMENT 27
The Domestic Credit Market 27
Small Business Finance 29
Changes in the Lending Environment 31
CHANGES IN THE SMALL BUSINESS LENDING MARKET 32
New Entrants 32
Distance From Lenders 33
Method of Communicating 33
The Growing Use of Information Technology 34
The Availability and Pricing of Credit 36
The Competitiveness of Small Business Finance 37

CONCLUSION 40

BIBLIOGRAPHY 43

ANNEXURES 45

SINGAPORE'S BANKING INDUSTRY - A BRIEF HISTORY 46
LOANS AND ADVANCES TO NON BANK CUSTOMERS 48
YEAR END BALANCES OF CORPORATE DEBT AND DOMESTIC CREDIT 48
MARKET SHARES – SMALL BUSINESS FINANCE 48
LISTED SMEs – STRUCTURE AND PRICING OF FACILITIES 49
LISTED SMEs – CONSOLIDATED FINANCING PATTERN : 1996 - 2000 50

Introduction

Background

The Internet and new technologies are transforming the banking industry in many ways: contributions to improvements in bank productivity and efficiency; levelling the playing field and providing customers with unprecedented access to detailed information. Amongst all the transformations, however, probably the most significant will be the commoditisation of information. Small and medium businesses have traditionally been informationally opaque, which has been a source of market power for their bankers. The greater availability of information, as well as the greater ease of processing it, is opening up the credit markets for small and medium enterprises.

Aim/Objectives of the Study

As a corporate banker, I have spent a considerable amount of time "fretting" about disintermediation amongst large corporates, on account of which banks view the small business segment as a sustainable business in the future. Given this background, I found the literature on the information revolution in small business lending very interesting and decided to investigate the developments in small business finance in Singapore.

The developments will have strategic implications for Singapore listed banks. These banks have built a profitable franchise lending to small and medium enterprises, and control approximately 75% of the market. The liberalisation of the domestic banking market together with the developments in information technology could threaten the core business of these banks.

Hypothesis

While analysing the effect of the information revolution on small business finance in Singapore, this paper examines the following hypotheses:

The information revolution will reduce the information opacity of small business borrowers and increase the competitiveness of small business finance.

Methodology

Literature Review

This paper analyses new trends in small business lending. The literature reviewed for the purpose of this paper covers:

- The transformation of banking;
- The importance of banks in financing small businesses; and
- The information revolution in small business finance.

It encompasses various research papers, books and articles written on the impact of the Internet on banking and business strategy, the future of banking and the role of banks in small business finance. A significant part of the research was undertaken online using sites such as the Social Science Research Network, the National Bureau of Economic Research, the Journal of Internet Banking and Commerce, the American Bankers' Association, the Asian Bankers Journal, AsiaOne, the McKinsey Quarterly, the Harvard Business Review, the Economist, the Business Week etc. Some reference work was also done at the IFM library in Singapore. For a complete listing of the literature, please refer the Bibliography.

Fieldwork

The fieldwork is based on seventeen interviews with key informants covering nine banks, one finance company, a financial advisory, a credit rating agency, an insurance company, and five SME owners/managers. The study was conducted as follows: semi-structured interviews were conducted to establish common practices in lending to small and medium businesses in Singapore. One insurance company and two credit rating agencies were contacted on the telephone for information on the products offered by them, in order to gauge the popularity/penetration of independent credit rating and credit enhancement. In addition, data on the financing pattern of 13 listed companies was collected from their Annual Reports to analyse the nature of banking relationships and the financing pattern of small businesses in Singapore.

Various research papers, books, newspapers, magazines and online sites were referred to for information on banking and small business finance in Singapore. Research was undertaken at the libraries of the Monetary Authority of Singapore (MAS), the Department of Statistics, the Hon Sui Sen Library, National University of Singapore (NUS), the Institute of Southeast Asian Studies, the Singapore National Library and the Singapore Exchange. After searching at all of the above locations for hard data on small business financing trends in Singapore, I finally concluded that such information is not available, or rather, not available for circulation to public[1]. Data on

[1] Data on small business finance is collected by the Centre for Financial Engineering, NUS, on behalf of the Productivity and Standards Board (refer footnote 4, page 21), which is not available for circulation to public.

domestic credit in Singapore was used to analyse domestic credit market shares, which was extrapolated to analyse financing trends in the small business segment. Qualitative information available on banking and small business finance in Singapore was used wherever applicable, to supplement the information collected as above.

Dissertation Structure

The rest of the paper proceeds as follows: Section II reviews the literature; Section III defines the area covered by the paper and describes the methodology followed for the fieldwork and the data; Section IV provides an introduction to the banking industry and small business finance in Singapore and discusses the changes in small business finance; Conclusions are provided in Section V.

Chapter 2

Literature Review

Literature Review

Introduction

Wriston pointed out, shortly after becoming CEO of Citicorp in 1967, that the commodity in banking was not money, but information. Even when computer screens were popping up in trading rooms throughout the 1980s, nobody really understood how technology would commoditise information so much that financial services itself would be transformed in the very next decade *(Daniel, 2000.)*

To quote *Claus Nehmzow*, Booz Allen and Hamilton, the Internet will create "a supply side revolution that will shake the relationships between the banks and their customers to its medieval foundations" *(Nehmzow 2000). Evans and Wurster (2000)* state that the extent of the transformation will largely depend on the size of the (client) organisation:

- Large corporations already have the degree of "richness and reach" they want. The impact of new technologies for them will be operational rather than strategic, allowing for greater functionality and lower operating costs.
- At a somewhat smaller size of corporation and transaction, the current infrastructure sacrifices reach. New technologies will allow the substitution of open for proprietary systems.
- For less sophisticated companies or small transactions, the possibility of a rich, cheap, data permits an explosion of reach and comparability, with negligible costs of searching and switching.

Hence, according to *Evans and Wurster*, the "revolution" will be experienced by the medium and small business sectors, which have not been directly influenced by the earlier disintermediations[2] or the growth in public markets. This segment has long held strong appeal for the banking industry because of its profitability and the idea that what may be small and medium enterprises (SMEs) today may well become tomorrow's major corporate institutions.

Berger, Bonime, Covitz and Hancock (1999) identify informational opacity and a high percentage of small business loans as a significant source of market power for banks in the U.S. They study the persistence of bank profits and conclude that informational opacity has a positive correlation to winning persistence for the top 10 percent of the performance distribution in the banking industry.

[2] According to Samuel Theodore of Moody's, the Internet is bringing about the "fourth disintermediation", when the distribution of banking products is being disintermediated. The first involved savings; the second saw the capital markets take on some of the banks' traditional role as providers of credit; the third, advances in technology helped to streamline back-office operations (The Economist, 2000)

In sum, the banks with high percentages of assets over which they have proprietary information (e.g. core deposits or small business loans) or that are organisationally complex (i.e. that are part of a multi-bank holding company) tend to remain the best performers within the distribution of returns.

They also conclude that market power derived from impediments to product market competition and informational opacity continues to strongly influence relative performance. This suggests that rents generated by the adoption of new technologies or the offering of new services in recent years may not have dissipated quickly. In the absence of market power, these gains would have been passed on to customers in the form of more favourable prices.

Small businesses, the world over, are dissatisfied with the banking services available to them. *The Economist (2001)*, in a recent article titled *"Banks Behaving Badly",* reports that Britain's banks are being accused of mistreating their small business customers. According to the article, the Competition Commission announced a preliminary conclusion that 12 banks were operating a complex monopoly in the supply of banking services to small and medium-sized businesses (SMEs) in Britain. The Competition authority also drew attention to the fact that few small businesses ever move from their existing banks. Recommendations to improve banking practices for the SMEs included encouraging more competition in the SME sector, new competitors and direct banking methods such as the Internet, and banks being required to improve the transparency of their pricing. At the moment, it is difficult for small businesses to know exactly what they are being charged, so new entrants find it difficult to compete on price.

Small businesses in Britain are sceptical of the effectiveness of the Competition Commission's Report. The *DTI Small Business Council*[3] states in its Annual Report: "their (the Competition Commission's) section on bank finance is a small part of a section on finance which is a small part of a report in very small print. Is it practically illegible on the computer screen, or are we just getting old?" *(Business Banking News 2001).*

Closer to home, in the emerging economies, SMEs still face considerable resource constraints, despite the widespread recognition of the important roles that they play for the growth of these economies.

The Internet and new technologies may change the dynamics of small business lending by:

- *lowering the entry barriers*: Internet banking is levelling the playing field by making it relatively cheap for newcomers to launch their own virtual banking service. This is increasing the level of competition for banks' traditional business.

[3] The Department of Trade & Industry, UK

- *improving bank productivity*: improvements in information technology, increased use of statistical techniques in applied finance and the Internet, are allowing large banks and non-bank competitors to gain access to small businesses, at a distance. This is opening up the credit markets for small businesses in the US.

The literature reviewed for the purpose of this paper covers:

1. The transformation of banking:
    - *Crane and Bodie (1996)*, who have, in their paper titled "Form Follows Function", provided a functional view of the financial system as a framework to understand the changes under way and for a way to think about how the future might evolve.
    - *Evans and Wurster (2000),* "Blown to Bits": where the authors explore the potential of the Internet to transform business strategy. According to them the Internet will radically change economic relationships and encourage new entrants with new business definitions.

2. The importance of banks in financing small businesses:
    - *Meyer (1997)* who writes about the importance of banks in financing small businesses
    - *Moudud (2000)* who documents the findings of the 1999 Levy Institute Survey of Small Business which investigated the extent to which gaining access to finance is a major difficulty for small businesses

3. The information revolution in small business finance:
    - *Feldman, Ronald (1997)* who explains the impact of the adoption of credit scoring on small business lending.
    - *Akhavein, Frame and White (2001)* who study the pattern of adoption of credit scoring amongst banks in the US, in the mid-1990s and
    - *Petersen and Rajan (2000)* who study recent trends in small business lending in the US

The Transformation of Banking

While bankers are aware that the Internet is going to be playing a crucial role in the future of banking, they are uncertain of how rapidly Internet proliferation will develop, or what business models will emerge.

Crane and Bodie (1996) provide a functional view of the financial system as a framework to understand the changes under way and for a way to think about how the future might evolve. According to them, increased competition from non-traditional institutions; new information technologies and declining processing costs; the erosion of product and geographic boundaries; and less restrictive governments have all played a role in the transformation of the financial services industry.

Competition and technological improvements have resulted in improvements in the efficiency and productivity of the financial services industry. Innovative securities companies, mutual fund companies, and finance companies compete directly with banks, and the growth of these institutional forms threatens the traditional package of services offered by commercial banks. In response, some banks are spinning off product lines and services to focus on a smaller number of functions. There is a movement away from one-stop shopping for traditional bank products.

According to Crane and Bodie, however, this fragmentation is part of a transition to more efficient arrangements. Although some niche companies will continue to be successful, other companies will recombine functions to meet the needs of customers better and to take advantage of technology to produce and deliver products at a lower cost.

Evans and Wurster, in their book, "Blown to Bits" (2000), write about the potential of the Internet to change business strategy. They endorse the views expressed by Crane and Bodie (1996). According to them, digital networks will blow up the richness/reach trade-off, which is inherent in the traditional modes of delivery. As a result, economic relationships will change radically. New competitors will come from nowhere to steal customers. And what once served as barriers to entry – e.g. a sales force, a system of branches, will suddenly become expensive liabilities.

They envisage a business environment where everyone can exchange rich information without constraints on reach. In such an environment, the channel choices for marketers, the inefficiencies of consumer search, asymmetries of information will be thrown into question. The competitive advantages that depended on them will be challenged. Evans and Wurster call this process of transformation "*deconstruction*" and state that over the next five to ten years, many relationships

throughout the business world will deconstruct.

As a result of deconstruction, value chains will fragment into multiple businesses that have separate sources of competitive advantage. This will result in the *de-averaging* of competitive advantage. Companies will no longer be able to subsidise poor performance in one activity by combining it with others in which they are advantaged. In each separable activity, new competitors will emerge who focus on maximising performance in just that specific step. Banks will be attacked by financial specialists. To survive, a competitor will have to be advantaged in each and every activity in which he chooses to continue participation. As a result, many wholesalers, retailers and distributors will be disintermediated.

Evans and Wurster caution that for the custodian of any established business, this has disturbing implications. It suggests that a "business" may no longer exist: the component pieces may separate. The basic activities performed by a bank i.e. accepting deposits and making loans, have component parts. These component parts can be separated from each other and provided by competitors. For example, *banks in the US have begun to face disaggregation in the market for loans to small and midsize companies to finance companies that target asset financing.* Small business loans are also being securitized. Most of the deals involve packages of loans that have been guaranteed by the US Small Business Administration.

Crane and Bodie (1996) provide a longer term perspective and state that in the short run, banks will continue to compete by cutting costs and striving to be more efficient. In the long run, according to them, there are important reasons for functions to be combined into new packages. Cost sharing in the production and delivery process can make providing a package more efficient than providing individual services. Functions might also be combined to address unmet needs in innovative ways.

The Importance of Banks in Small Business Finance

Banks are important providers of credit to small businesses:

According to **Meyer (1997)**, commercial banks are the single most important source of external credit to small firms. The financial conditions of small firms are usually rather opaque to investors, and the costs of issuing securities directly to the public are prohibitive for most small firms. Thus, without financial intermediaries like banks it would simply be too costly for most investors to learn the information needed to provide the credit, and too costly for the small firm to issue the credit itself.

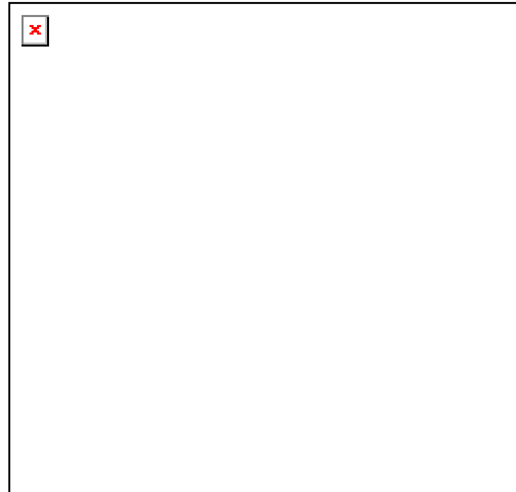
One implication of the importance of the bank-small business relationship is that it may impose limits on the migration of small business finance out of the banking sector. Over the last two decades, many large business loans left the banking sector as improvements in information technology, increased use of statistical techniques in applied finance, and the globalisation of financial markets have allowed non-bank and foreign bank competitors to gain market share over U.S. banks. For example, over the 1980s and first half of the 1990s, the share of total U.S. non-farm, non-financial corporate debt held by U.S. banks fell by about one-quarter from 19.6 percent to 14.5 percent.

The types of developments that might similarly reduce bank market share in small business lending are proceeding rather slowly at present, but may accelerate in the future. Those small businesses among current bank borrowers whose information problems are the least severe -- that is, those that are the least informationally opaque -- would presumably be the most likely to be funded outside of the banking system. Nevertheless, no matter how many advances there are in information processing and no matter how sophisticated financial markets may become, there will likely remain a significant role for bank-borrower relationship lending to solve the information and other financing problems of small businesses.

There will remain many small business borrowers with sufficient problems that only bank information gathering, monitoring, and financing can overcome, although this group of borrowers will almost surely differ somewhat from current relationship borrowers. As technology and markets improve to the point that some relatively transparent small business borrowers can be financed outside the bank, other, more opaque potential borrowers that previously had information and other problems too serious for even a bank loan will enter the bank intermediation process. Put another way, the relationship lending process will fund small business borrowers with increasingly difficult information problems as the technology for resolving these problems improves. In the author's view, this should only increase the efficiency and the competitiveness of small business finance.

but they are losing market share to non-banks:

Moudud (2000) The 1999 Levy Institute Survey of Small Business investigated the extent to which gaining access to finance is a major difficulty for small businesses. The survey was conducted in the winter of 1999 on a random sample of 536 small businesses, defined as firms employing between 5 and 500 employees. Of the total sample, 486 firms were asked questions directly pertaining to their finance requirements and their plans for expansion of both employment and productive capacity.



Almost 44 percent of the firms said their expansion plans would be financed internally, that is, financed by business retained earnings or personal resources, such as equity and loans from principal owners and other members of firms or from family and friends. About 21 percent said that expansion would be financed externally by bank credit. Another 20 percent of survey respondents said they would rely on a variety of non-bank forms of financing, such as venture capital and loans and grants from development agencies. The relatively small share of bank finance is consistent with the recent trend. Cole, Wolken, and Woodburn (1996) found the percentage of firms obtaining credit from banks fell from 44 percent in 1987 to 36.8 percent in 1993. However, commercial banks remain the largest single source of credit for small firms.

The Information Revolution in Small Business Finance

Feldman (1997) Lending to small firms appears on the verge of transformation on account of a recent important innovation of the 1990s: banks' use of credit scoring for small business lending.

Credit scoring is the process of assigning a single quantitative measure, or score, to a potential borrower representing an estimate of the borrower's future loan performance. Credit scores have been used for some time in the underwriting of consumer loans and have only recently (beginning in 1990s) been applied to commercial credits. This is because commercial loans were thought to be too heterogeneous and documentation was not sufficiently standardised either within or across institutions. However, credit analysts ultimately determined that the personal credit history of small business owners is highly predictive of the loan repayment prospects of their businesses. Thus, personal information is obtained from a credit bureau and then augmented with basic business-specific data, so as to predict repayment. Credit scoring does not independently approve or reject a loan. The lender has to decide how he will incorporate the credit score into the loan review.

Small banks have been considered better positioned to make loans to the local small businesses. Their advantage over large banks is, in a word, information. Credit scoring for small business loans turns this dynamic on its head. Proponents of quantitative scoring argue that it provides information on the future performance of the small business borrower such that they can profitably

extend credit to a firm even if the bank employees have never met the firm's principals.

According to *Feldman* credit scoring will alter small business lending in three areas:

1. *The interaction between borrowers and lenders:* lenders can underwrite and monitor loans without actually meeting the borrower. This is in stark contrast to the importance of a bank-borrower relationship *(Petersen and Rajan 1994).*
2. *Loan pricing*: risk-based loan pricing will better reflect the risk of the loan. For example, Wells Fargo charges small firms rates ranging from the prime rate plus one percentage point to the prime rate plus eight percentage points. High credit quality borrowers will no longer have to bear the cost of extensive underwriting. Also, increased competition - resulting from small businesses having access to more lenders - should lower borrowing costs. While some credit scored loans may have very high rates of interest, the borrowers who receive them may not have qualified for financing under traditional underwriting. Hence, credit scoring could make risk-based pricing a viable alternative to the rationing of credit.
3. *Credit availability*: credit scoring should increase credit availability for small businesses. Better information about the repayment prospects of a small business applicant makes it more likely that a lender will price the loan based on expected risk, rather than denying the loan out of fear of charging too little. Moreover, the widespread use of credit scoring should increase future prospects for asset securitisation by encouraging consistent underwriting standards.
4. Apart from the availability and pricing of credit, credit scoring will enable its users to underwrite a small business loan in minutes and close it within hours instead of days.

Feldman states that there will be increased competition for small business loans under the new technology. Banks have been concerned about the rise of alternatives to their mainstay products. The small business loan market offers large banks the opportunity to increase market penetration because of their relatively low existing share. Lenders using the automated credit scoring approach could bring lower costs, a new ability to target and assess small business borrowers outside their areas of current operation, and an increased ability to make a large volume of small business loans in a short period of time. The entry of low-cost lenders into markets where small banks hold significant share should increase competition.

The credit scoring approach could also increase the number of competitors for small business borrowers by making it more feasible to sell groups of small business loans to investors. Small banks would then have to compete with international capital markets for small business lending.

Large banks are increasingly adopting credit scoring to automate their small business lending. Feldman warns that the shift could have particularly important implications for small banks that traditionally rely on small business lending. He foresees the credit scored small business loans taking on the general characteristics of credit card loans with their high volume, convenient

distribution channels and high-tech assessment of risk. According to him, the smaller banks could meet the competition by differentiating themselves from larger banks that try to make small business loans a commodity.

Akhavein, Frame and White (2001) examine the adoption of credit scoring for small business lending by banking organisations during the middle 1990s. 56 of the 95 large banking organisations surveyed by them had adopted credit scoring for small business lending as of June 1997. They estimate hazard and tobit models to explain the diffusion pattern of small business scoring models. The hazard model indicated that larger banking organisations introduced innovation earlier. The tobit model confirmed this.

Frame et al., as cited in Akhavein, Frame and White, estimate that the use of credit scoring increases the portfolio share of small business loans by 8.4 percent for their sample of large banking organisations.

Petersen and Rajan (2000) go beyond credit scoring and study the changes in small business lending in the US. They start with the fact that small firms in the US are choosing more distant lenders and are communicating with them in more impersonal ways. They attribute these changes to improvements in bank productivity, more timely availability of credit records, and the greater ease of processing these. They demonstrate that the changes do not stem from small firms locating differently or from consolidation in the banking industry. According to them, their findings indicate that there has been substantial development in the financial services sector, even in areas such as small business lending.

The increase in bank employee productivity is attributed to the use of tools such as computers and communication equipment, which enable the collection of information from a variety of sources, even at a distance. While these tools do not make soft information about the borrower easier to collect at a distance, lenders now have more timely hard information about the creditworthiness of their borrowers. According to the authors, this is changing the nature of lending from an emphasis on strict ex ante screening and costly ex post monitoring, to frequent ex post monitoring and quick intervention. Thus, technology is slowly breaking the tyranny of distance, at least in small business lending. This suggests that the natural credit market faced by small firms may be growing steadily in size.

Three aspects of the increased use of information technology are particularly significant in the transformation of the financial sector: (1) the ability to collect, store, process, and communicate large amounts of information has expanded tremendously. (2) This has resulted in the expansion

of the activities of infomediaries (3) The availability of hard, processed information lends itself to cost effective credit appraisal and monitoring techniques which do not require close and personal contact.

The expansion in the activities of infomediaries such as rating agencies and credit bureaux: Specialised infomediaries such as Dun and Bradstreet can save on duplication, and amortise the costs of information collection over a larger number of customers than could lenders in the past. As a result, they can distribute more information to lenders, and in a timely manner that does not depend upon geographic proximity.

More efficient appraisal and monitoring: The increased availability of systematic reliable information has allowed loan officers to cut down on their own monitoring. By using financial histories, credit reports, and scoring methods, banks can dramatically lower the time their loan officers spend on a given application and thus the cost.

Small firms gain substantially from reduction in the fixed costs of loan origination and information collection. This has the possibility of not only expanding the supply of finance to small firms, but also, to the extent that geographically larger markets are more competitive, reducing the cost of financing.

Petersen and Rajan conclude that a more distant and less creditworthy set of borrowers have become viable to lenders because improvements in technology allow cheaper screening, monitoring and control, at a distance. The important implication is that credit availability for small firms, and competition in the credit markets they face, has increased.

Is institutional lending, especially bank lending, in secular decline because of the greater availability of information to arm’s length financial markets today? The evidence suggests that institutional lending also seems to have benefited from the greater availability of information. This has enabled institutions to lend to more distant clients whom they would have shunned in the past. Thus, instead of driving financial institutions such as banks out of business, technological change may also create new sources of comparative advantage for them.

Conclusion

"In my end is my beginning" – this quote by T. S. Elliot in his 1943 Four Quartets, can also be applied to the global banking industry.

The world of banking continues to change – this time on account of the Internet and new technologies. New institutional forms are threatening the traditional package of services offered by commercial banks. The information asymmetries that are a source of market power to banks are being thrown into question.

The development of the capital markets resulted in the disintermediation of banks amongst the large corporate segment. The current information revolution is threatening to transform small business finance – an area that was not influenced by the earlier disintermediation. This is expected to improve the efficiency and competitiveness of small business finance.

The developments in small business finance in Singapore will have strategic implications for Singapore listed banks. These banks have built a profitable franchise lending to small and medium enterprises in Singapore, and control approximately 75% of the market. The liberalisation of the domestic banking market together with the developments in information technology could threaten the core business of these banks.

While analysing the effect of the information revolution on small business finance in Singapore, this paper examines the following hypotheses:

The information revolution will reduce the information opacity of small business borrowers and increase the competitiveness of small business finance.

Chapter 3

Fieldwork

Fieldwork

Introduction

SMEs in Singapore comprise 90% of total establishments, employ 52% of the workforce and generate 31% of the total value added. The growth and development of this sector is recognised as being a critical part of the national plan to sustain Singapore's economic growth (SME 21)

Singapore has a large and diversified group of local and foreign financial institutions, numbering about 700, which offer a wide range of financial products and services. Today, financial services account for 11% of Singapore's GDP. In August 1999, the World Economic Forum Global Competitiveness Report ranked Singapore among the top most sophisticated financial markets in the world (MAS 2001).

In the words of one of the SME respondents, "Singapore operates one of the most open systems for business in the world. Every new trick, every new source is quickly disseminated and learned". The objective of this paper is to examine the evolution of small business finance in Singapore, in the light of the "information revolution" and the developments in the US small business finance market.

From a strategic perspective, if the developments in Singapore's small business finance market follow the emerging trends in the US, local banks run a high risk of failing to respond to emerging demand, thus losing share to new entrants and overseas players, a large number of whom already operate in the region.

Definitions

Small Business Finance

This paper focuses on external finance and analyses the development of small firms' relationships with private, for-profit lenders. Since venture capital comprises internal finance, it is not included in the analysis. Government funding is also excluded on account of being non-profit.

Small and Medium Enterprise

There is no widely accepted definition of small and medium enterprises (SMEs) in Singapore. The Productivity and Standards Board[4] (PSB) defines an SME as a business with an investment in fixed assets not exceeding S$15 million and no more than 200 workers. While no upper limit on turnover is specified, S$50 million seems to be the rule of thumb[5].

For this paper, companies with a turnover of S$10 million to S$26 million[6] for the year 2000 are considered small businesses, while companies with a turnover of 0 to S$10 million are considered micro businesses. The investment in fixed assets of both small as well as micro businesses should not exceed S$15 million as of December 2000. The terms 'SME' and 'SMEs' are used in this paper as generic terms, and refer to small and micro businesses, defined above.

Methodology

The fieldwork is based on interviews with key informants. All four major local banking groups were interviewed. Three multinational banks were identified based on their perceived presence in the small business finance segment. The largest finance company in Singapore was interviewed. A financial adviser in the process of setting up an SME finance portal was interviewed. Five SME owners/managers were identified based on personal contacts, availability and willingness to participate in the study. In addition, a credit rating agency and an insurance company were interviewed on the telephone. Seventeen interviews were conducted in all, covering eighteen interviewees.

The study was conducted as follows: semi-structured interviews were held with:

- banks and a finance company - to establish common trends/practices in lending to small and medium businesses in Singapore, the banks' perception of the risks of such lending portfolios, their acceptance and use of new technology and financial innovations, and
- SME owners/managers to find out how they finance their operations, changes in financing patterns over the last five years, change in the level of competition, improvements in pricing and availability of credit etc.

---

[4] The Productivity and Standards Board is a government body set up to support the growth and development of SMEs in Singapore. The specific areas of focus are: small and medium-sized enterprises (SMEs), productivity and innovation, and standardisation and metrology.

[5] The SME 500, which is a ranking directory of Singapore's most successful small and medium enterprises, considers companies with sales of up to S$50 million.

[6] The reason for assuming S$26 million rather than a more rounded S$25 million is to fit the data sample available.

One insurance company and one credit rating agency were contacted on the telephone for information on the products offered by them, in order to gauge the popularity/penetration of independent credit rating and credit enhancement.

Considerable difficulty was encountered in obtaining secondary data on small business finance in Singapore. Trends in small business finance are not specifically tracked by the Monetary Authority of Singapore (MAS) or the Association of Small and Medium Enterprises (ASME). While such data is gathered by the Centre for Financial Engineering, National University of Singapore (NUS), they do so on behalf of the PSB and do not allow public access to the data.

A number of papers have been written on small business finance by members of the NUS faculty and the faculty of the Nanyang Technological University (NTU), but none of them contain hard data on small business finance. Apparently, the DataStream International database may allow the extraction of data on small sized loans for the Asia Pacific Region, however, access to the database is restricted and I was unable to get access to it.

In order to supplement the primary data collected by way of interviews with banks, SMEs, etc., small businesses were identified from the Handbook of Companies published by the Singapore Exchange, based on their investment in fixed assets (not to exceed S$15 million) and their turnover for the year 2000 (the largest company in the sample had a turnover of S$26.1 million during 2000). 13 companies satisfied the criteria[7]. Information on the financing pattern of these listed SMEs was collected from their published Annual Reports, available at the library of the Singapore Exchange. The data also includes information on the structure of the firms' bank facilities.

Information on the banking industry in Singapore was obtained from the MAS annual reports and database, and various academic and business papers and journals including the Asia Pacific Journal of Finance, a Survey of Financial Institutions published by KPMG, NUS' Working Paper Series and a book on the financial services industry in Singapore, written by a member of the NUS faculty, Prof. Tan Chwee Huat. A detailed listing is provided in the bibliography.

Data Description

The sample of listed companies spans various industries including manufacturing, financial services, publishing etc. In addition to financial information about the firm (balance sheet and income statement information), the data also contains details of the firm's relationship with

[7] The original sample comprised 25 companies based on turnover. 12 of them were eliminated on account of investments in fixed assets of more than S$15 million.

financial institutions. The information, however, is restricted to that provided in the firms' annual reports. In order to establish a trend, data was collected for a period of five years from 1996 to 2000. Data on the financing pattern of these firms was combined to arrive at a consolidated financing pattern as a substitute to information on the financing pattern of SMEs as a whole. The list of companies included in the sample is provided in an Annexure to this paper, together with their turnover and investment in fixed assets as of December 2000. The smallest company in the sample had a turnover of S$540,000 for the year 2000, while the largest company in the sample had a turnover of S$26.1 million. The investment in fixed assets ranges from S$16,000 to S$10.4 million. The evidence from this sample, if considered on a standalone basis, would be biased on account of it comprising only listed companies. Companies tend to reduce their dependence on external finance once they go public.

The SMEs interviewed in person were all unlisted companies, with sales ranging from S$1.6 million to S$12 million and the investment in assets ranging from nil to S$800,000. One of the SME owners interviewed did not provide any information on his company, but provided information on trends and practices in SME finance. These firms were asked to provide details of the financial institutions with whom they have a business relationship, the length of each relationship, details of their financing pattern for the last five years, the types of facilities availed of, the method of communicating with their lenders, and their level of satisfaction with the structure of facilities available and the quality of service. The information provided was used to build a picture of the lending relationship and environment for small firms in Singapore and to examine the changes in the same, over time. To examine the change in the small business lending market, the firms were asked whether they were aware of any new entrants in the small business finance market, whether they used an internet only bank or any other online financial services, whether they thought there has been an increase in the level of competitiveness in the SME lending market in recent years, and whether their dependence on their banks has reduced in the last 1 to 3 years.

In addition to the primary data described above, information on trends and practices in small business finance, new online offerings, new services etc was gathered from various journals and publications which are listed in the Bibliography.

All the interviewees have requested anonymity. Accordingly, the interviews are provided as a separate Annexure to this paper, which is confidential and which is available only to staff and examiners who need to see it as part of the assessment process.

Chapter 4

Discussion, Findings

Discussion, Findings

This chapter is structured as follows:

- An Overview of Singapore's Financial Services Sector
- The Lending Environment:
  - Domestic Credit
  - Small Business Finance
  - Changes in the Lending Environment
- Changes in the Small Business Lending Market
  - New Entrants
  - Distance from lenders
  - Method of Communicating with Lenders
  - Growing Use of Information Technology
  - The Availability and Pricing of Credit
  - The Competitiveness of Small Business Finance
- What SMEs Want: An Excerpt From the Straits Times, Singapore

An Overview of Singapore's Financial Services Sector

The Structure

As of August 2001, there were 130 commercial banks and 10 finance companies in Singapore. Most of the banks hold either restricted or offshore licenses, and deal primarily in the wholesale and offshore markets respectively. Only 31 full license banks (of which 8 are locally-incorporated and owned) offer the entire range of commercial banking services and cater to the domestic banking market. They practice universal banking. Their products and services include traditional bank products, capital market advisory services, insurance and even venture capital financing. (MAS 2001)

Industry Performance

The economy and financial services sector in Singapore registered a strong cyclical rebound in 2000. Real Gross Domestic Product (GDP) grew by 9.9%. Real value-added of the banking sector grew by 4.9%. This reflected stronger performance of domestic banking and modest growth in offshore banking. Loans & advances to non-bank customers grew by 5% to S$170.6 billion by end 2000.

Domestic interest rates were relatively low and stable in 2000, although at year-end there was a slight pick up in the three-month inter-bank rate to 2.81%. Banks were flushed with liquidity.

Source: MAS Annual Report 2001

Commercial Banks' total assets and liabilities grew by 5.4% to reach S$344 billion at end 2000 (refer chart above). The total assets of finance companies and merchant banks contracted, reflecting the ongoing rationalization and consolidation in these sectors. (MAS 2001)

Efficiency and Returns of Singapore Listed Banks

Lim and Chu (1998) study the efficiency of six Singapore-listed banks between 1992 and 1996. Some of their observations are: bigger banks are more profit-efficient than the smaller banks; and the larger banks also exhibit slightly higher cost-efficiencies than the smaller banks. According to them, this is similar to empirical findings from other markets – that bank size and bank efficiency are significantly positively correlated.

Banks invest heavily to get an extensive network of branches deemed essential not only in collecting cheap retail deposits but also in creating market presence and in reaching out to potential borrowers. It appears that a bank that is cost efficient and has a high market share does have a competitive advantage in the marketplace. The evidence suggests that a higher market share in the deposits market is better than a higher market share in the loans market in terms of achieving greater profit-efficiency. The evidence also suggests that cost-efficiency is not significantly correlated to any one of the four measures of profitability.

Currently, relationships, branch network and cost of funds propositions are powerful competitive advantages for domestic banks *(Daniel, June 2001)*.

The Lending Environment

The Domestic Credit Market

Approximately 75% of the domestic credit market is controlled by the local banks, which comprise 4 major banking groups: the Development Bank of Singapore (DBS), the Overseas-Chinese Banking Corporation (OCBC), the United Overseas Bank (UOB), and the Overseas Union Bank (OUB). The balance 25% of the domestic credit market is shared between the foreign banks, finance companies and merchant banks. The local banks also dominate the capital markets advisory services for issues on the Singapore Stock Exchange, and the domestic venture capital market.

The year-end values of total loans and advances to non bank customers for Commercial Banks, Finance Companies and Merchant Banks, for a ten year period from 1991 to 2000, are plotted in the chart below. Percentage values of the market shares of each segment are also shown by way of a line graph in the same chart. Over the ten year period, Commercial Banks have increased their market share from 86% in 1991 to 90% in 2000 – at the cost of both Finance Companies and Merchant Banks.

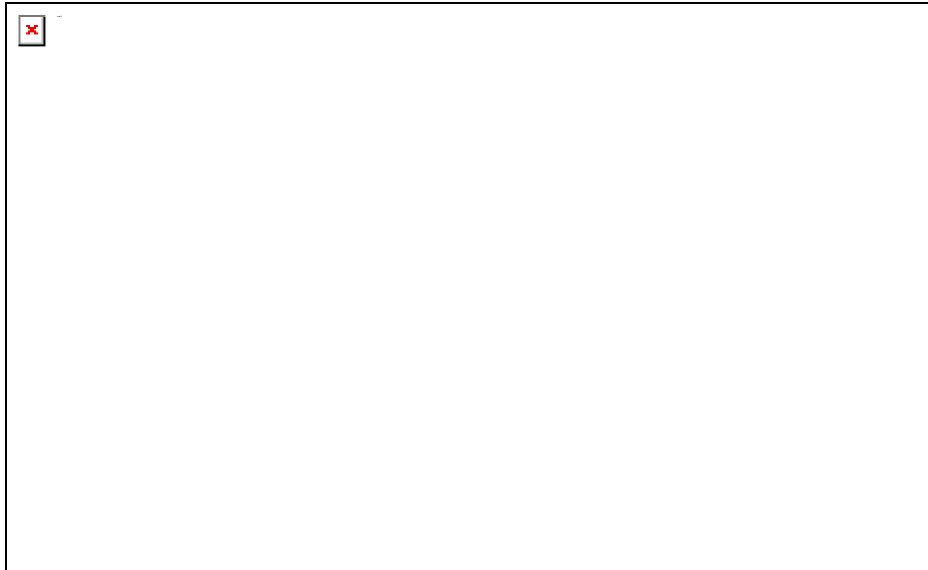
Source: MAS Monthly Statistical Bulletin

While commercial banks have been consolidating their position in the domestic credit market, there is evidence of banks losing their importance as primary providers of credit to Singapore based corporates. According to a survey conducted by MAS[8], the total amount of corporate debt issued in 2000 increased from S$19.5 billion in 1999 to S$50.5 billion in 2000. The amount of new S$ denominated issuance increased 57% from S$9.2 billion in 1999 to S$14.4 billion in 2000. Approximately S$10 billion, or 69% of the S$ denominated debt issued in 2000 was on behalf of Singapore based corporates, including property companies (refer chart below).

Source: MAS – 2000 Survey of the Singapore Corporate Debt Market

The total amount of corporate debt securities outstanding as at end December 2000 was S$49.5 billion, of which S$35 billion was denominated in S$. The annual growth rate of S$ corporate debt securities during 1995 and 2000 ranges between 25-35% (except for the year 1998, when the economy was suffering from the effects of the Asian crisis). The following chart shows the outstanding corporate debt securities from 1995 to 2000.

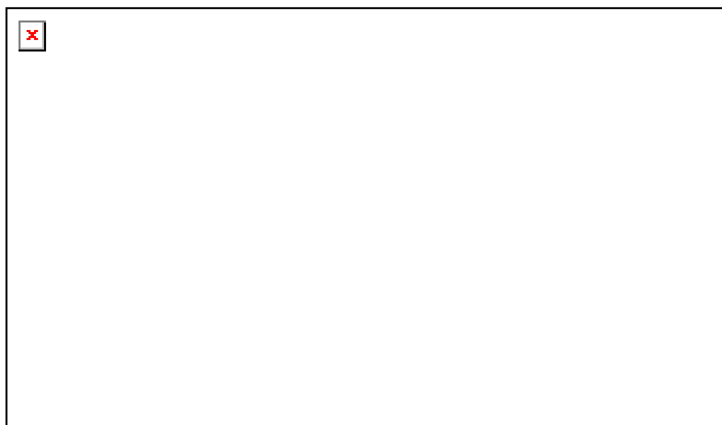
[8] 2000 Survey of the Singapore Corporate Debt Market



Source: MAS– 2000 Survey of the Singapore Corporate Debt Market

The corporate debt market in Singapore has experienced exponential rates of growth in the last five years, whereas the domestic credit of banks, merchant banks and finance companies has grown at a much slower rate (refer chart below). The issuers of the debt, however, are large corporates, where there is a clear indication of banks losing their importance as primary providers of credit.

Year-end Balances of Corporate Debt and Domestic Credit[9]



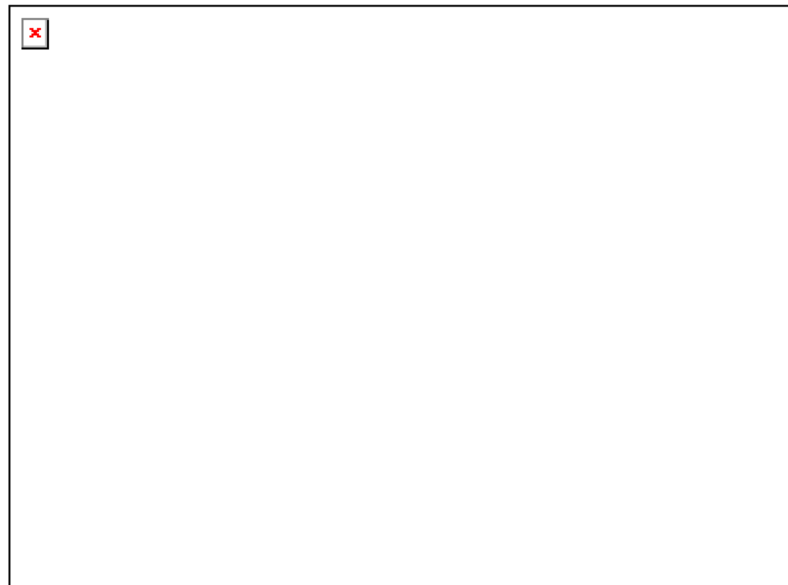
Small Business Finance

Local banks dominate the SME finance market in Singapore. They form relationships with their customers and provide finance on a fully secured basis. Relationships, branch network and their competitive cost of funds are powerful competitive advantages for domestic banks *(Daniel, June 2001).*

[9] Refer Annexure for data

These banks are operationally similar, employ similar technologies and offer similar products and rates of interest on loans and deposits. A study of the efficiency of six Singapore listed banks between 1992 and 1996 found that while average profit and cost efficiency scores were different for the six banks, they were not much different across the five years *(Lim and Chu 1998).* Hence the market for small business finance can be classified as an oligopoly.

For the purpose of analysing banks' share of small business finance[10], data available on Loans and Advances to Non Bank Customers is extrapolated to arrive at approximate market shares of banks and finance companies, which are plotted in the chart below. Calculations are based on the following assumptions: (1) merchant banks finance only large corporates,[11] (2) finance companies, on account of their high rates of interest, finance only the small and medium business sector, and (3) the percentage of small business loans to total loans is assumed at 40%.



The results of the extrapolation show that local banks continue to be the primary providers of credit to SMEs and have increased their market share since 1997. This fact is corroborated by the primary evidence collected from the SMEs interviewed and the financing pattern of the sample of 13 listed SMEs. Also, according to the finance company respondent, "banks have (in the last four to five years) encroached upon finance companies' share of the small business lending market. They have targeted the larger companies who are more price sensitive".

[10] Information on trends in small business finance is not publicly available. Banks in Singapore, unlike those in markets elsewhere, do not provide very detailed income and expenses information in their financial reports and statements.

[11] This assumption was corroborated with information obtained from the IPO prospectuses of 13 listed SMEs, all of which were managed by local banks.

Of the 5 SMEs interviewed, four use only commercial banks and one uses a finance company as well as commercial banks for its financing needs. Of the 13 listed SMEs, all use local banks, 7 use foreign banks in addition to the local banks (though the foreign banks tend to be regional rather than multinational banks) and 5 use hire purchase facilities from finance companies as well. The combined financing pattern of the sample of listed companies is given below:

The Combined Financing Pattern of 13 Listed SMEs

	1996	1997	1998	1999	2000
Internal financing	83.4%	82.7%	82.7%	89.7%	90.1%
External financing[12]	16.6%	17.3%	17.3%	10.3%	9.9%
Bank financing	7.4%	7.4%	7.7%	3.1%	2.3%
Hire Purchase	0.4%	0.4%	0.2%	0.1%	0.2%
Trade Credit	2.9%	3.1%	2.5%	2.1%	2.3%
Other Creditors[13]	5.8%	6.5%	6.9%	5.0%	5.0%

Source: Annual Reports of SMEs[14]

Changes in the Lending Environment

Liberalisation

Over the years, the Government of Singapore adopted policies to protect local banks, so that they could grow and assume a larger share of the domestic market. In May 1999, however, the Government announced plans to gradually liberalise the banking industry, allowing more banks to obtain licenses to operate in Singapore and broadening the scope of banking activities in which banks may participate. The Government now welcomes new, rivalrous entrants to the domestic market because MAS is encouraging domestic banks to merge, and it would like to prevent the emergence of a domestic duopoly.

Bank Consolidation

Local banks are being encouraged to merge, in a bid to create strong regional banks. As a result, the last two years has seen considerable consolidation amongst the local banks with POSBank merging into DBS, the merger of Keppel TatLee Bank into OCBC in 2000, and the merger of UOB and OUB, expected to be completed by the end of 2001. This will result in the creation of 3 large local banking groups in Singapore.

A fallout of the bank mergers is expected to be a reduction in overall bank exposure to small

[12] Once initial public offerings are made, the preferred way to raise funds is through rights issues. (Menkhoff and Kay, 2000). This explains the declining trend of external finance.

[13] Comprise items such as Provision for Dividend, Unpaid Expenses, Deferred Taxation etc.

[14] For details refer Annexure

businesses. Some have argued that the consolidation of the banking industry may reduce the supply of credit to small businesses, since larger banking institutions tend to devote smaller proportions of their assets to small business lending. In April 2000, a Small Business Administration study blamed mergers for a decline in small-business loans of less than $100,000 *(Rosenberg, 2000)*.

Finance companies in Singapore are readying themselves to step in and provide financing to the SMEs that fall prey to the reduction in limits on account of bank consolidations. They are rationalising and consolidating. MAS has broadened the scope of activities that may be undertaken by some of the stronger finance companies – including issuing corporate purchasing cards, granting of IPO financing and secured syndicated loans. These will enable finance companies to take on a bigger role in lending to SMEs.

Changes in the Small Business Lending Market

New Entrants

There are high barriers to entry in the domestic banking market in Singapore. Internet only banks are subjected to the same minimum capital requirements as traditional banks wishing to provide banking services in the Singapore market. The minimum capital required for new license applicants is S$1.5 billion. Subsidiaries of Singapore-incorporated banks have a reduced minimum paid up capital requirement of S$100 Million. As a result, the 2 Internet-only banks in Singapore, namely Finixis.com and Finatiq, are both subsidiaries of a Singapore-incorporated bank. Finixis.com caters to the small business segment, and Finatiq, caters to the consumer banking segment.

The last ten years has seen a boom in the Venture Capital industry, on account of the Internet. A large number of venture capital funds invested in start-up companies in Singapore. However, most of their investments were restricted to high technology ventures. The Asian crisis and the dot-com bust have considerably slowed down this sector.

Finance companies have been in existence since the 1950s. They focus on providing micro-credit. Their niche is asset financing and factoring of receivables. They have a high cost of funds, and are unable to compete with the banks on price.

The liberalisation of the domestic banking industry and the profitability of small business lending, have prompted the entry of a few multinational banks into the Singapore small business lending market. These banks are increasingly looking at small business lending as a sustainable business

in the future. The manager of a multinational bank that has been very successful in the launch of its small business division in Singapore had this to say about their experience here: “Our small business division has been very successful in Singapore because of our strong brand in that market. Small businesses in Singapore differentiate on service and have switched on account of our superior technology and service. They are very open, unlike in other parts of Southeast Asia”.

Distance From Lenders

The local banks have a large number of branches and ATMs across the island (refer table below), and most SMEs tend to bank with the institution closest to their premises. This was confirmed by the 5 SMEs interviewed.

SINGAPORE BANKS - BRANCH AND ATM NETWORK

	Number of Branches	**Number of ATMs**
DBS Group	107	880
OCBC	40	283
UOB	51	282
OUB	33	144
Keppel Capital Holdings (now part of OCBC)	34	98
Total	**265**	**1687**

Source: Market Capitalisation Data – Business Times Monthly Rankings

The branch network is deemed essential not only in collecting cheap retail deposits but also in creating market presence and in reaching out to potential borrowers *(Lim and Chu, 1998).*

While small business customers are given access to the branches located closest to their premises, their accounts are not necessarily controlled or monitored out of those branches. All the four local banks have streamlined their SME businesses. The accounts of companies with a turnover of S$10 million and more are centralised at the main branches, while the smaller accounts continue to be maintained at the respective branches. This is because companies with a turnover of S$10 million and more are considered relatively transparent and the banks do not feel the need to control the accounts from where the information is collected. Hence the distance between banks and their relatively transparent small business borrowers is growing, and this can be attributed to improvements in bank efficiencies.

Method of Communicating

All the SMEs interviewed communicate with their lenders in person. The banks confirmed that they conduct personal meetings with all their small business clients at varying frequencies, with a minimum of once a quarter. Relationship managers feel the need to maintain personal contact for

the purpose of monitoring the accounts – both the performance of the businesses as well as the value of the collateral. Banks also feel the need to collect "soft" information, which can only be fulfilled by meeting their borrowers in person.

Finance companies also follow the relationship lending model and meet their borrowers in person. The frequency of contact varies with the tenor of the facility -- in the case of revolving lines of credit, the customer is met at each review; while term facilities, if problem-free, are monitored at a distance.

According to a respondent from a multinational bank that has adopted credit scoring in other Southeast Asian countries, once a customer passes the credit scoring test, a personal meeting is arranged, before a credit facility is approved – since "Character" is given a lot of weight in the five Cs of Credit[15]. The ability to lend without a personal meeting will depend on the depth of information available from the credit bureau.

Hence, lenders in the small business finance market still follow the relationship lending model, and maintain personal contact with their borrowers. Reasons for the lack of a shift from personal interaction are:

- information for the credit scoring of individuals is not available in Singapore, since Singapore does not have a credit bureau, and
- a second explanation could be that Singapore is a small island (approximately 42 kilometres East to West and 23 kilometres North to South) and the additional cost incurred in arranging personal meetings is negligible.

The Growing Use of Information Technology

The Role of Infomediaries

Singapore has a number of credit rating agencies that offer their services online. Notable amongst them are Info Credit D&B, which is a joint venture with Dun and Bradstreet, and DP Information. "Dun & Bradstreet's vision for the region is to help businesses move away from the traditional practice of non-disclosure and head towards a policy of openness and transparency in gathering and sharing information" (D&B, Singapore, 1999). Similarly, DP Info was established in 1994 to provide Singapore with the most comprehensive and updated on-line business and credit information service.

DP Info publishes the Singapore SME 500, an annual ranking directory of Singapore's most

[15] The five Cs of Credit are Character, Capacity, Collateral, Capital and Conditions.

successful SMEs based on their annual financial performance. While most of the companies that participate in the ranking are listed, the SME 500 has encouraged many business traditionalists to "step out into the light", demonstrating their support for increased corporate transparency. Most banks use the SME 500 as a marketing tool to identify potential small business customers.

While the credit rating agencies advertise credit scoring solutions "backed by (their) extensive consumer and corporate databases", according to most banks interviewed, they (the credit rating agencies) focus primarily on business information. Information on the credit history of individuals is not readily available because Singapore does not have a credit bureau. This is expected to change soon, with MAS' acceptance of the proposal put up by the Association of Banks in Singapore (ABS) to develop a credit bureau. ABS has been working on the setting up of the credit bureau for about a year, now.

However, according to a respondent from a multinational bank, that has adopted credit scoring in Southeast Asia, a reference from an existing corporate banking customer carries more weight than a report from a credit bureau, because small businesses will default on their trade creditors first. Their suppliers have access to leading indicators, whereas checks from a credit bureau are lagging indicators.

Appraisal and Monitoring

According to one of the bank respondents, the use of computers and communication technologies has contributed to the efficient processing of loan applications. The approving process is shorter and more standardised, the information handled more detailed, and the analyses more mature.

Banks have been unable to adopt credit scoring for their small business lending in Singapore, because of the lack of a credit bureau here. All the local banks have developed their own credit scoring models and have started running them simultaneously with their traditional credit approval process. Their current objective seems to be to introduce uniformity in the internal grading system, in the light of the new Basle Accord for capital adequacy. According to one of the bank respondents, while his organisation had implemented credit scoring for SMEs, it will take time for people to get used to it.

The finance company interviewed has not yet acquired a credit scoring model. According to a respondent from an international bank, the adoption of credit scoring for small business lending in Singapore will be very gradual on account of the following:

- banks are wary of bad loans after the Asian crisis and the dot.com bust, and will grow their small business lending portfolios cautiously,

- banks are waiting to see what kind of information will be available from the credit bureau, and
- they will not be in a hurry to cannibalise their existing business.

The Availability and Pricing of Credit

Availability

While banks are flush with liquidity, they are wary of non-performing loans. This, together with the practice of fully secured lending backed by personal guarantees, results in credit rationing for SMEs in Singapore. According to an intermediary who arranges finance for SMEs, the appetite for unsecured loans is limited.

The owner of a small local automobile accessories firm said: “Due to our small size and lack of economies of scale, SMEs are limited by the resources and capabilities such as insufficient skills and finance” *(Menkhoff and Kay, 2000).*

According to the SME respondents, there has been no change in the availability of credit -- banks continue to restrict their limits to the value of the collateral available. The banks, including the foreign banks interviewed, admitted that the credit limit set for each customer is restricted to the value of the collateral provided. In addition to collateral, personal guarantees are obtained from the owners of SMEs, as a confirmation of their commitment to the business. The DTI Small Business Council (UK) states in its annual report that banks routinely demand guarantees from SMEs even when security is available, and that this "may be detrimental to the demand for loan finance" *(Business Banking News 2001).*

The opening up of credit markets consequent upon the adoption of credit scoring, will depend on the depth of the information available from the credit bureau, and the implementation of credit scoring by banks into their approval process. A bank respondent from a multinational bank said: “We use credit scoring for relatively large companies with a reasonable track record, in need of cash”. According to him, smaller companies or start-ups would fail their credit scoring test, because they do not lend to companies that do not prepare financial statements.

Pricing

SMEs in Singapore pay a premium for capital. Banks, for the purpose of pricing their loans use either of the two benchmarks – SWAP (which represents money market rates) and Prime, which is the individual bank’s lending rate. Most SMEs pay a spread over Prime, which is usually the higher of the two benchmarks. The spread over prime varies from one and a half percent to six percent. The most common interest rate charged seems to be prime plus two or two and a half percent. In addition to the interest rates, SMEs typically pay higher spreads on trading in foreign

exchange, and also pay various transaction fees to their banks.

The pricing differential within the standard distribution of small businesses is very low. This is because most small businesses are similarly risk-weighted under the traditional credit approval system.

The Exception

According to a few bank respondents, there is a segment of the SME finance market that is sought after by banks and finance companies – this comprises companies with a turnover of S$10 million or more, which are aiming to go public. These companies start complying with more stringent reporting requirements and are therefore considered more informationally transparent. Pricing in this segment is competitive, and there is no credit rationing.

The evidence collected from the annual reports of 13 listed companies does not support this claim. There seems to be no change in the structure and pricing of the facilities provided to these companies. Their bank loans continue to be collateralised and the interest rates paid by them range between prime plus one and a half to prime plus two and a half percent. However, given the small size of the sample, there is a possibility that it is not representative of the market.

Micro-Credit

Some of the local banks have increased their focus on the micro company segment i.e. companies with a turnover of S$5 million and less. One of the banks has a separate division that handles small business accounts with a turnover of S$5 million and less. Another local bank has a sub-division that looks after accounts of companies with a turnover of S$1 million and less. While these companies have always been included in the banks' target market, the difference is that the banks are now allocating separate resources to understand and specifically cater to the needs of these micro companies.

The Competitiveness of Small Business Finance

Banks are increasingly looking at lending to SMEs as a sustainable business in the long term. According to the four local banks interviewed, the SME finance market has become more competitive in the last couple of years. They attribute the increase in competition to:

- Globalisation: the recent opening up of domestic markets to foreign banks, which has resulted in greater competition to finance SMEs. Small businesses are better informed about competitors' products and pricing.
- The race amongst the local banks, to be the largest: Local banks are "asset hungry" and compete on price in a bid to grow their asset book. This is in line with the government's thrust

to develop Singapore's banks into significant regional players.

An increase in competitiveness should have been passed on to the customers in the form of more favourable prices. There was no evidence of this in the data collected from the annual reports of the listed SMEs. The SMEs interviewed were asked about the frequency of solicitation in the last year, and how it compared with the frequency of solicitation in the last three years. Two of the respondents were not solicited at all. According to them, an SME has to go to the bank rather than the other way around. Three of them said that they were solicited more frequently in the last year and that they were even approached by foreign banks whereas earlier, they were solicited by local banks only. The facilities offered by the foreign banks, were, however, no different in terms of collateral and price than those provided by local banks.

Small businesses in Singapore are not content with the banking services available to them, and this is reflected in the extract from the Straits Times, below:

Wednesday, October 10, 2001 : THE STRAITS TIMES [16]

WHAT INDUSTRY GROUPING WANTS

Improving companies' cash flow through a business-friendly bank providing low interest rates, tops the wish list of the Singapore Confederation of Industries (SCI)[17].

The SME bank "could also take over SME loans that private commercial banks may increasingly find unattractive to provide" said SCI chief, Robin Lau.

---

[16] An excerpt from the Straits Times

[17] The SCI is an umbrella trade association representing more than 1200 companies in the manufacturing and manufacturing services industry.

Chapter 5

Conclusion

Conclusion

The paper investigated developments in small business finance in Singapore, to test the following hypothesis

The information revolution will reduce the information opacity of small business borrowers and increase the competitiveness of small business finance.

The financial services industry in Singapore is developing rapidly on account of the Internet and new technologies. However, changes in the small business finance market seem to be occurring at a slower pace. The evolution of small business finance in Singapore is different from that in the US -- contributed by the differences in the size and age of the respective markets, the structure of the financial services industries and the governments' priorities for development.

The domestic credit market is dominated by the local banks who do not face the disaggregation, deconstruction or de-averaging of their business or value chains.

The domestic credit market in Singapore is dominated by the domestic banks who control approximately 75% of the market. Competition has been restricted on account of the high entry barriers, and local banks practice universal banking. These banks have invested in an extensive network of branches which continues to be a source of competitive advantage to them. These trends are not consistent with the literature (see Crane and Bodie (1996) and Evans and Wurster (2000) -- banks are threatened by the growth of new institutional forms and face the fragmentation of their value chains; and the increased use of the Internet as a distribution channel is reducing the importance of branches as a source of competitive advantage for banks).

Banks are the primary providers of credit to small businesses, though there are signs of a reduction in importance amongst relatively larger companies.

While the development of the corporate debt market is resulting in the disintermediation of banks amongst large corporates, banks continue to be the primary providers of credit to small businesses in Singapore. There are signs, however, of the reduction in the importance of banks in financing SMEs with a turnover of S$10 million and more, who increasingly seek the stock market to finance their operations.

The financing trend of small businesses in Singapore is consistent with more concentrated markets.

The financing trend of small businesses obtained from the financial reports of 13 listed SMEs is consistent with the 1999 Levy Institute survey of small business (Moudud 2000), and Petersen and Rajan (1994), according to whom as firms get older in more concentrated markets, they borrow smaller amounts from outside sources and rely more on equity and internal funds.

There is evidence of an increased focus by local banks on the micro-loan market.

There is evidence of an increased focus by local banks on the micro-loan market, a segment whose needs till recently, were ignored. This is consistent with Meyer (1997), according to whom, as technology and markets improve such that relatively transparent small business borrowers can be financed outside the bank, other, more opaque borrowers will enter the bank intermediation process.

The distance between banks and their small business borrowers is growing, which can be attributed to improvements in bank productivity.

Small businesses in Singapore still prefer to maintain personal contact with their lenders and bank with the financial institution closest to their premises. However, the distance between banks and their relatively transparent small business borrowers is growing, as banks move the control of these accounts to the main branch. The growing distance can directly be attributed to improvements in bank productivity. This is consistent with Petersen and Rajan (2000). There is a difference, however, in the two markets -- in the US, firms are choosing more distant lenders and are communicating with them in more impersonal ways, whereas in Singapore, the growing distance is at the instance of the banks while firms continue to access the branch next door.

Lenders still follow the relationship lending model. There are few signs of increased corporate transparency.

All categories of lenders, i.e. local banks, multinational banks and finance companies follow the relationship lending model, and maintain personal contact with their customers. Small businesses are still considered informationally opaque, though there are a few signs of increased corporate transparency with the increase in the activities of infomediaries.

According to the literature, the adoption of credit scoring by lenders has played a crucial role in increasing the informational transparency of small businesses. The adoption of credit scoring by new entrants viz. large banks or finance companies, has resulted in opening up the credit markets for small businesses and increasing the competitiveness of small business finance. (The evidence suggests that there are alternatives to credit bureaux, such as references from existing large corporate clients, for the increased availability of information. However, the reach and impact of such alternatives is limited -- to commercial banks and SME suppliers of large corporates.)

Since Singapore does not have a credit bureau, the effect of the adoption of credit scoring, or the information revolution, on the competitiveness of small business finance could not be tested. To that extent, the findings of the paper are limited.

The information revolution will reduce the information opacity of small business borrowers……

While there are signs of an increase in the informational transparency of some small businesses on account of the increase in the activities of infomediaries, the evidence suggests that the ability to lend without financial statements or without a personal meeting will depend on the depth of the information available from the credit bureaux, and how banks decide to incorporate credit scoring into their loan review.

……and increase the competitiveness of small business finance.

Multinational banks have entered the small business lending market in Singapore, because they view it as a sustainable business in the long term and as an opportunity to increase their market penetration. They currently focus on the relatively larger businesses and follow the relationship-lending model. The evidence shows that there is no significant change in the availability and pricing of credit.

Most banks have either acquired or developed their own credit scoring models and are waiting for the setting up of the credit bureau. Finance companies have not acquired or developed credit scoring models. Akhavein, Frame and White (2001) study the pattern of adoption of credit scoring for small business lending by banking organisations in the US in the middle 1990s and conclude that larger banking organisations introduced innovation earlier. The adoption of credit scoring could result in banks re-examining their SME strategy, which could lead to a larger number of new entrants and increased competition in small business finance. This paper suggests further research in the adoption pattern of credit scoring by banks for small business finance in Singapore, and the effect of the same on bank-small firm relationships.

Currently, relationships, branch network and cost of funds propositions are powerful competitive advantages for domestic banks. It is hoped that this paper will stimulate them to consciously think about their value propositions for the future.

Bibliography

1. Akhavein, Jalal, W. Scott Frame, and Lawrence J. White "The Diffusion of Financial Innovations: An Examination of the Adoption of Small Business Credit Scoring by Large Banking Organisations", Federal Reserve Bank of Atlanta, Working Paper 2001-9, April 2001, available at http://papers.ssrn.com
2. Berger, Allen N., Seth D. Bonime, Daniel M. Covitz and Diana Hancock, "Why are Bank Profits So Persistent? The Roles of Product Market Competition, Informational Opacity, And Regional/Macroeconomic Shocks", Board of Governors of the Federal Reserve System, Washington, USA, Journal of Banking and Finance 24 (2000) 1203-1235
3. Business Banking News July 2001, Banking Liason Group, www.bankexperts.co.uk/banking-news.htm
4. Crane, Dwight B. and Zvi Bodie "Form Follows Function: The Transformation of Banking", Harvard Business Review, Reprint 96205, March-April 1996
5. Daniel, Emmanuel, "When the Future of eBanking is Written", The Asian Banker, January 26, 2000.
6. Daniel, Emmanuel, "The Threat of Commoditisation and the Changing Nature of Relationships in the Financial Services Industry Today", a presentation at the IBM-Siebel System's Executive eBriefing for the Financial Services Industry, June 19, 2001
7. Evans Philip and Thomas S. Wurster, "Blown to Bits: How the New Economics of Information Transforms Strategy", Harvard Business School Press, 2000
8. Feldman, Ronald "Small Business Loans, Small Banks and a Big Change in Technology Called Credit Scoring" The Region, (Federal Reserve Bank of Minneapolis), September 1997
9. KPMG, "Survey of Financial Institutions in Singapore : A Statistical Profile" Volume 1999, KPMG Peat Marwick Management Consultants Pte. Ltd.
10. Lim, Guan Hua and Singfat Chu, "Efficiency and Returns: An Empirical Study of Six Singapore-Listed Banks", Asia Pacific Journal of Finance Volume 1, 197-207, 1998
11. Low, Linda, "Singapore's Competitiveness in Financial Services", Working Paper Series, National University of Singapore, January 2000
12. Menkhoff, Thomas and Lena Kay, "Worlds Apart? Reflections on the Relationship Between Small Entrepreneurs and External Change Advocates in Singapore" Working Paper Series, Department of Sociology, National University of Singapore, 2000
13. Meyer, Lawrence H (Federal Reserve Board), "The Role of Banks in Small Business Finance", Conference on Small Business Finance, Leonard N Stern School of Business, Berkley Centre for Entrepreneurial Studies and New York University Salomon Centre, May 23, 1997
14. Monetary Authority of Singapore Annual Report 2001
15. Monetary Authority of Singapore 2000 Survey of the Singapore Corporate Debt Market
16. Moudud, Jamie K., "1999 Levy Institute Survey of Small Business: An Impending Cash Flow Squeeze", Policy Notes 1999/9, The Jerome Levy Economics Institute, 1999

17. Nehmzow, Claus, "The Internet Will Shake Banking's Medieval Foundations" April, 2001 available at - http://www.arraydev.com/commerce/jibc/9702-01.htm
18. Ng, Edward H K, "Structure, Conduct and Performance Relationships in the Singapore Banking Industry", National University of Singapore, Research Paper series #96-24, April 1996
19. Petersen, Mitchell A. and Raghuram G. Rajan "The Effect of Credit Market Competition on Lending Relationships", University of Chicago, National Bureau of Economic Research (NBER), available at http://papers.ssrn.com November 1994
20. Petersen, Mitchell A. and Raghuram G. Rajan "Does Distance Still Matter? The Information Revolution in Small Business", Northwestern University and University of Chicago, available at http://papers.ssrn.com, October 2000
21. Rosenberg, Hillary "Credit Markets 2000. Interest rates are up but so is competition for small business borrowers. If you want credit, it's yours." BusinessWeek Online, September 11, 2000
22. "SME 21 Positioning SMEs for the 21st Century", Singapore Productivity and Standards Board, 2000
23. Tan Chwee Huat, "Financial Markets and Institutions in Singapore", Singapore University Press, 1999
24. The Economist, "The Virtual Threat - a Survey of Online Finance", May 20th, 2000
25. The Economist, "Banks Behaving Badly", March 2001
26. The Straits Times, "What Industry Grouping Wants", October 2001

Annexures

Singapore's Banking Industry - A Brief History

(Ng 1996)

Before World War II, the British Exchange banks - the Hongkong and Shanghai Banking Corporation (HSBC), the Mercantile Bank (now part of HSBC) and the Chartered Bank (now Standard Chartered Bank) - dominated the scene. The exchange banks dealt with the government, major corporations and the well-to-do Chinese. The local banks were small and insignificant. They dealt with the general Chinese population and intermediated for them with the Exchange banks. There were several foreign banks, such as the Bank of China and ancestors of what are now ABN-AMRO, Citibank and the Bank of Tokyo, that dealt with trade and their nationals.

In 1946, Singapore became a separate Crown Colony. Initially, a number of foreign banks either returned, or entered for the first time. The late 1940s and early 50s also saw the formation of several domestic banks. In 1967, the Banking Act was enacted and the Monetary Authority of Singapore (MAS) was established in 1970. From independence to the present, Singapore has maintained the currency board system it had inherited. The MAS thus has all the powers of a central bank except the authority to issue currency notes.

Over the years, Singapore adopted policies to protect local banks, so that they could grow and assume a larger share of the domestic market. After 1970, the government stopped authorising the creation of Full Banks either in the form of *de novo* local banks or through the entry of foreign banks. In 1971, the MAS created the category of Restricted Bank licences. In 1973, the government created the Offshore Bank licence. The offshore banks deal mainly with non-residents and large corporations and so have little impact on the domestic middle and retail markets.

In May 1999, the Government of Singapore announced plans to liberalise the banking industry in Singapore, allowing more banks to obtain licenses to operate in Singapore and broadening the scope of banking activities in which banks may participate. The Government now welcomes new, rivalrous entrants to the domestic market because MAS is encouraging domestic banks to merge, and it would like to prevent the emergence of a domestic duopoly.

As at August 2001, there were 130 commercial banks in Singapore, eight of which were locally incorporated.

The majority of finance companies were established in the 1950s. They focus on providing small-scale financing. Finance companies may not operate customers' accounts which are repayable on demand. They are also not allowed to grant unsecured credit facilities exceeding S$5000. As at August 2001, there were 10 finance companies in Singapore.

NUMBER OF BANKS AND FINANCE COMPANIES IN SINGAPORE

Type of Institution	Number as at August 2001
COMMERCIAL BANKS	130
Local Banks	8
Foreign Banks	122
Foreign Full Banks	23
Restricted Banks	19
Offshore Banks	80
MERCHANT BANKS	56
REPRESENTATIVE OFFICES OF BANKS	58
FINANCE COMPANIES	10

Loans and Advances to Non Bank Customers

(MAS Monthly Statistical Bulletin)

S$ Billion

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Merchant Banks	1.7	1.3	1.4	1.1	1.3	1.2	1.1	0.8	0.7	0.8
Finance Companies	8.7	9.6	11.5	14.7	16.3	16.8	17.9	16.8	15.6	15.8
Commercial Banks	64.0	69.1	78.5	91.0	109.0	127.0	143.2	151.6	147.2	154.0

% Change Over Previous Year

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Merchant Banks	2.3%	1.7%	1.5%	1.1%	1.0%	0.9%	0.7%	0.5%	0.4%	0.5%
Finance Companies	11.6%	11.9%	12.6%	13.8%	12.8%	11.6%	11.0%	9.9%	9.6%	9.3%
Commercial Banks	86.0%	86.4%	85.9%	85.2%	86.1%	87.6%	88.3%	89.6%	90.0%	90.3%

Year End Balances of Corporate Debt and Domestic Credit

(MAS 2000 Survey of the Corporate Debt Market and Monthly Statistical Bulletin)

S$ Billion

	1995	1996	1997	1998	1999	2000
Domestic Credit	127	145	162	169	163	171
Corporate Debt	11	14	18	20	27	34

Market Shares – Small Business Finance

(Extrapolation)

S$ Billion

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Domestic Credit	74.4	80.0	91.4	106.8	126.5	145.0	162.2	169.3	163.5	170.6
Small Business Loans	29.8	32.0	36.6	42.7	50.6	58.0	64.9	67.7	65.4	68.2
Finance Companies	8.7	9.6	11.5	14.7	16.3	16.8	17.9	16.8	15.6	15.8
Commercial Banks	21.1	22.5	25.0	28.0	34.4	41.2	47.0	50.9	49.8	52.5
Market Shares										
Finance Companies	29%	30%	32%	34%	32%	29%	28%	25%	24%	23%
Commercial Banks	71%	70%	68%	66%	68%	71%	72%	75%	76%	77%

Listed SMEs – Structure and Pricing of Facilities

(Annual Reports)

Name of Company	For the Year 2000 (S$ 000s)			
	Turnover	Total Investment in Fixed Assets	Interest Rate on Bank Loans	Bank Loans – Clean or Secured
Pakara Technology	2,005	2,405	5.90 – 8.80%	Fully secured
Cybermast Limited	540	202	8.55 – 9.00%	Fully secured
Ho Wah Genting	1,440	5,332	6.75 – 8.75%	Fully secured
Twinwood Engineering	1,631	6,483	6.75%	Fully secured
Inno Pacific Holdings	3,587	922	No bank financing	N A
Wepco Limited	8,207	10,444	7.50 – 10.00%	Unsecured
Eastern Publishing Ltd.	8,251	8,551	No bank financing	N A
Asia Medic	12,624	238	No bank financing	N A
Mayfran International (6 Months)	11,836	4,554	Prime + 1.5 – 2%	Fully secured
Fuji Offset Plates	23,551	5,219	4.44 – 9.45%	Fully secured
Presscrete Holdings	0	0	6.25 – 8.00%	Fully secured
United International Securities	26,157	0	No bank financing	N A
Tong Meng Industries	1,558	134	No bank financing	N A

Listed SMEs – Consolidated Financing Pattern : 1996 - 2000

(Annual Reports)

S$000s

For the Year :	1996	1997	1998	1999	2000
Fixed Assets	56449	49817	48359	47336	44484
Investments	321902	272107	259278	382469	315836
Current Assets	145947	155173	124477	121419	183608
Total Assets	**524298**	**477097**	**432114**	**551224**	**543928**
Financed by:					
Share Capital	433744	385726	348360	481099	474111
Other internal funding	3519	8627	8834	13169	16238
Total Internal Funding	**437263**	**394353**	**357194**	**494268**	**490349**
Bank Loans	38992	35361	33433	16894	12502
Hire Purchase	2107	1728	916	748	1292
Trade Credit	15377	14608	10641	11839	12672
Other Creditors	30559	31047	29930	27475	27113
Total External Funding	**87035**	**82744**	**74920**	**56956**	**53579**
Total	**524298**	**477097**	**432114**	**551224**	**543928**

Financing Pattern

	1996	1997	1998	1999	2000
Internal financing	83.4%	82.7%	82.7%	89.7%	90.1%
External financing	16.6%	17.3%	17.3%	10.3%	9.9%
Bank financing	7.4%	7.4%	7.7%	3.1%	2.3%
Finance Companies	0.4%	0.4%	0.2%	0.1%	0.2%
Trade Creditors	2.9%	3.1%	2.5%	2.1%	2.3%
Other Creditors	5.8%	6.5%	6.9%	5.0%	5.0%