USE OF THESES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
BORROWER TRANSACTIONS COSTS, SEGMENTED MARKETS AND CREDIT RATIONING:
A STUDY OF THE RURAL CREDIT MARKET IN VIETNAM

A thesis submitted for the degree of Doctor of Philosophy
of The Australian National University

By
Tran Tho Dat
July, 1998
DECLARATION

Except where otherwise indicated, this thesis is my own work.

Tran Tho Dat

July, 1998
ACKNOWLEDGMENTS

In the process of writing this dissertation, I have received substantial help, advice, comments, and suggestions from numerous individuals and institutions both in Vietnam and at the Australian National University. My greatest debt is to Dr Ross McLeod as my principal supervisor. He helped me at every step—from the formulation of my ideas in the early stages to the development of the main content and body of the dissertation. His ‘why’ questions and editing have added and enriched the arguments in every chapter of the dissertation. I would like to offer my sincere thanks also to Dr Suiwah Leung and Dr Le Dang Doanh for their comments as members of my advisory committee. Dr Leung was my supervisor for my Masters research essay, and her assistance and encouragement have followed right through to completion of this work.

I have benefited from the assistance of many people at the Australian National University. Professor Ron Duncan’s comments on the outline of the dissertation and certain chapters were very valuable. Special thanks also go to Dr Denise Hare and Dr Greg Shailer for their very careful reading and helpful comments. I am also grateful to Dr Prema-chandra Athukorala, who has devoted a great deal of his time to reviewing some chapters related to econometric works. And I offer my sincere gratitude to Mrs Billie Headon for her assistance with English language throughout the period of my studies and for other special support and encouragement.

This work would not have been completed without the support of many people and institutions in helping me to undertake the survey of farm households in
1996. I would like to express my appreciation to the Vietnam Bank for Agriculture (VBA) head office in Hanoi, the VBA office in Namha province, and especially to the steering committee and staff of the VBA branch in Binhluen district, for accepting me as a graduate student during my fieldwork, and for their assistance in arranging and carrying out the survey. I am enormously indebted to farmers and local officials in Binhmy town, Mythuan and Binhnghia communes for their time to assist me by responding to the survey. I am grateful also to the students from Hanoi National Economics University for their assistance during the survey. Their enthusiastic help and cooperation have contributed significantly to this research.

Winrock International Organisation and the Australian Agency for International Development (AusAID) provided funding for my Master of Economics of Development and then for my PhD studies. I would like to express my appreciation to both for this financial support.

Some of the findings of this research were presented at workshops held in Hanoi, Ho Chi Minh City and Canberra under the NCDS/AusAID Vietnam Economic Research Project during 1995-98. I have benefited greatly from many helpful comments and suggestions in such workshops. Special acknowledgments go to Professor James Riedel, Mr Ray Mallon, and Mr Robert Glofcheski, in particular.

I am also grateful to all my friends and colleagues for their advice and encouragement, in particular Mr Vo Tri Thanh, Mr Vu Quoc Huy, Mr Phan Dinh The, and Ms Amy Liu.
Final words of appreciation are devoted to my wife, Nguyen Thi Bich Ngoc and daughters, Tran Thi Lan Huong and Tran Thi Lan Phuong. I thank them for their invaluable encouragement and for the sacrifices they have made living far away from me during my years of study in Canberra. This dissertation is dedicated to nobody else but them.
ABSTRACT

Before agricultural reform, cooperatives and state farms were responsible for production decisions. Rural credit was supplied by the State Bank of Vietnam branches throughout the country to cooperatives and state farms according to plan allocations. Agricultural reform began in 1981 and was then enhanced by the introduction of the household responsibility system in early 1988. This reform transferred farm management and the decision-making authority from the cooperatives to individual households. Agricultural reform and financial reform have significantly changed the shape and structure of the rural financial market. The main function of the Vietnam Bank for Agriculture, established in 1988 is now to lend to individual rural households. A new system of rural credit delivery with more diversified financial institutions is emerging from the old mono-bank structure.

It is argued in this thesis that the policy of setting interest rate ceilings, the lack of a sound legal system, and the lack of experience in dealing with information relating to new clients—individual households—not only give rise to formal lenders' heavy emphasis on collateral requirements and a concentration on production loans, but also lead to the shifting of transactions costs to borrowers. As a result, these transactions costs for borrowers from formal sector lenders are very high, resulting in very high effective rates of interest for formal sector loans, especially small ones.
Data used in the dissertation were obtained from a sample survey of 150 rural households carried out by the author in 1996 in a typical area of the Red River delta in northern Vietnam—Binhluc district, Namha province. Borrower transactions costs are defined as all non-interest expenses that borrowers have to incur in seeking loans. The estimation of transactions costs indicates that prospective borrowers from the formal sector have to have on hand about VD 50 thousand to cover the out-of-pocket expense threshold. Borrower transactions costs are found to be an important barrier, discouraging small borrowers from obtaining formal loans. While these transactions costs are equivalent to 9.7 percent of the loan amount for the smallest borrowers, they account for only 0.4 percent of the loan amount for the largest. The effective costs of borrowing from various lenders show that the partition of the credit market occurs at the loan size between VD 500-1,000 thousand. The estimation of the transactions costs function shows the significant relationships between transactions costs, loan amount applied for and interest rates. The larger the loan amount applied for, the higher the transactions costs, and the lower the interest rate, the higher the transactions costs. Probit estimations of the determinants of applying for credit are undertaken separately across loans from formal lenders, relatives and friends, moneylenders, and all other informal sources. The results confirm the existence of segmentation of the credit market with respect to the loan amount applied for and loan use. An analysis of the determinants of loan rationing by the formal sector is also undertaken. The probit estimation shows that loans outstanding and loan use are used by the formal sector as indicators for rationing loan demand.
Higher interest rate ceilings, and certain financial innovations are recommended. These will contribute to the reduction of borrower transactions costs and the segmentation of the credit market, and thus bring formal sector credit to a larger portion of the rural population.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declaration</td>
<td>ii</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>iii</td>
</tr>
<tr>
<td>Abstract</td>
<td>vi</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>ix</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>xiv</td>
</tr>
<tr>
<td>Glossary</td>
<td>xv</td>
</tr>
<tr>
<td>Chapter 1: Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Objective and Approach of the Dissertation</td>
<td>10</td>
</tr>
<tr>
<td>1.3 Structure of the Dissertation</td>
<td>12</td>
</tr>
<tr>
<td>Chapter 2: A Model of the Rural Credit Market</td>
<td>15</td>
</tr>
<tr>
<td>2.1 Supply of Credit and Formal Lender Behaviour</td>
<td>15</td>
</tr>
<tr>
<td>2.1.1 A Basic Model of Supply of Credit</td>
<td>15</td>
</tr>
<tr>
<td>2.1.2 Rationing in the Presence of Ceilings on Loan Interest Rates</td>
<td>20</td>
</tr>
<tr>
<td>2.2 Behaviour of Borrowers and the Demand for Credit</td>
<td>26</td>
</tr>
<tr>
<td>2.2.1 A Basic Model of Demand for Credit</td>
<td>26</td>
</tr>
<tr>
<td>2.2.2 Ceiling Interest Rate and Borrower Transactions Costs</td>
<td>27</td>
</tr>
<tr>
<td>2.2.3 Borrower Transactions Costs and Demand for Rural Credit</td>
<td>28</td>
</tr>
<tr>
<td>Chapter</td>
<td>Title</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Determinants of Borrower Transactions Costs</td>
</tr>
<tr>
<td></td>
<td>5.1 The Concept of Borrower Transactions Costs</td>
</tr>
<tr>
<td></td>
<td>5.2 Quantification of Borrower Transactions Costs</td>
</tr>
<tr>
<td></td>
<td>5.3 The Effective Interest Rate from Various Sources</td>
</tr>
<tr>
<td></td>
<td>5.4 Determinants of Borrower Transactions Costs</td>
</tr>
<tr>
<td></td>
<td>5.5 Summary</td>
</tr>
<tr>
<td></td>
<td>Appendix to Chapter 5</td>
</tr>
<tr>
<td>6</td>
<td>Determinants of Credit Applications and Formal Sector</td>
</tr>
<tr>
<td></td>
<td>Credit Rationing</td>
</tr>
<tr>
<td></td>
<td>6.1 Analytical Framework</td>
</tr>
<tr>
<td></td>
<td>6.2 Determinants of Credit Applications</td>
</tr>
<tr>
<td></td>
<td>6.3 Determinants of Formal Sector Credit Rationing</td>
</tr>
<tr>
<td></td>
<td>6.4 Summary</td>
</tr>
<tr>
<td></td>
<td>Appendix to Chapter 6</td>
</tr>
<tr>
<td>7</td>
<td>Conclusions and Policy Implications</td>
</tr>
<tr>
<td></td>
<td>7.1 Summary of Results</td>
</tr>
<tr>
<td></td>
<td>7.2 Policy Implications</td>
</tr>
<tr>
<td></td>
<td>7.2.1 Appropriate Interest Rate Policies</td>
</tr>
<tr>
<td></td>
<td>7.2.2 Financial and Institutional Innovations</td>
</tr>
<tr>
<td></td>
<td>References</td>
</tr>
</tbody>
</table>
**LIST OF TABLES**

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 3.1</td>
<td>VBA Funding.</td>
<td>45</td>
</tr>
<tr>
<td>Table 3.2</td>
<td>VBA’s Loan Portfolio by Sectors.</td>
<td>47</td>
</tr>
<tr>
<td>Table 3.3</td>
<td>Selected Interest Rates, 1989-94.</td>
<td>49</td>
</tr>
<tr>
<td>Table 3.4</td>
<td>The Growth of PCFs: March 1994-May 1995.</td>
<td>61</td>
</tr>
<tr>
<td>Table 3.5</td>
<td>Average Interest Rates by Lender and Types of Household in Rural Vietnam, 1993</td>
<td>67</td>
</tr>
<tr>
<td>Table A.3.1</td>
<td>Major Features of Agricultural Reforms and their Impacts.</td>
<td>69</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>Binhluc District Land Allocation.</td>
<td>75</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>Binhluc District Labour Distribution.</td>
<td>76</td>
</tr>
<tr>
<td>Table 4.3</td>
<td>Loan Portfolio of the Binhluc District VBA.</td>
<td>78</td>
</tr>
<tr>
<td>Table 4.4</td>
<td>Size of Sample in Selected Town/Communes</td>
<td>84</td>
</tr>
<tr>
<td>Table 4.5</td>
<td>Characteristics of Sample Households by Location</td>
<td>87</td>
</tr>
<tr>
<td>Table 4.6</td>
<td>Credit Activities.</td>
<td>90</td>
</tr>
<tr>
<td>Table 4.7</td>
<td>Characteristics of Credit Contracts by Source</td>
<td>93</td>
</tr>
<tr>
<td>Table A.4.1</td>
<td>Information on Credit.</td>
<td>103</td>
</tr>
<tr>
<td>Table A.4.2</td>
<td>Costs of Borrowing.</td>
<td>105</td>
</tr>
<tr>
<td>Table A.4.3</td>
<td>Assets Held by the Household.</td>
<td>106</td>
</tr>
<tr>
<td>Table 5.1</td>
<td>Distribution of Loans by Transactions Costs of Borrowing from Formal Institutions</td>
<td>115</td>
</tr>
<tr>
<td>Table 5.2</td>
<td>Components of Borrower Transactions Costs in Selected Countries</td>
<td>117</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2.1</td>
<td>Supply Curve for a Lender and the Market</td>
<td>19</td>
</tr>
<tr>
<td>Figure 2.2</td>
<td>Ceiling Interest Rate and Borrower Transactions Costs</td>
<td>28</td>
</tr>
<tr>
<td>Figure 2.3</td>
<td>Borrowing Cost and Revenue: One Lender</td>
<td>31</td>
</tr>
<tr>
<td>Figure 2.4</td>
<td>Borrowing Costs and Revenues: Two Lenders</td>
<td>33</td>
</tr>
<tr>
<td>Figure 3.1</td>
<td>Rural Financial Markets</td>
<td>39</td>
</tr>
<tr>
<td>Figure 3.2</td>
<td>Number of Households Which Borrowed from the VBA</td>
<td>51</td>
</tr>
<tr>
<td>Figure 3.3</td>
<td>VBA and Other Lenders' Shares of Farm Household Market</td>
<td>51</td>
</tr>
<tr>
<td>Figure A.3.1</td>
<td>Monthly Inflation and Deposit Interest Rates</td>
<td>70</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>Map of Vietnam and Namha Province</td>
<td>72</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Map of Namha Province and Binh Luc District</td>
<td>73</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>Map of Binh Luc District and Location of the Survey Area</td>
<td>82</td>
</tr>
</tbody>
</table>
GLOSSARY

Currency Equivalents

Currency Unit Vietnamese Dong
US$1.00 = VD 11,018 (as of March 23, 1996)

Fiscal Year

January 1-December 31

Abbreviations

AusAID  Australian Agency for International Development
CPE  Centrally-planned Economy
DAI  Development Alternatives Inc.
FFI  Formal Financial Institution
GSO  General Statistics Office of Vietnam
NCDS  National Centre for Development Studies
NGO  Non-Governmental Organisation
PCF  Popular Credit Fund
ROSCA  Rotating Savings and Credit Association
RSB  Rural Shareholding Bank
SBV  State Bank of Vietnam
SHG  Self-Help Group
SIDA  Swedish International Development Authority
SOE  State-owned Enterprise
SPC  State Planning Committee of Vietnam
TSLS  Two-Stage Least Squares (Estimation)
UNDP  United Nations Development Program
UNICEF  United Nations Children’s Emergency Fund
VBA  Vietnam Bank for Agriculture
VBP  Vietnam Bank for the Poor
VD  Vietnamese Dong
VLSS  Vietnam Living Standards Survey

For Tables

..  Not available
n.a  Not applicable
-  Zero
Chapter 1

INTRODUCTION

'Those of us who work on rural finance face the dual challenge of dealing with nagging problems in low-income countries and also helping to reconstruct financial markets in economies that formally were centrally planned. The lessons learnt during the past four decades in low-income countries provide valuable guidelines for meeting both challenges.'

('Transaction Costs in Decentralised Rural Financial Markets,' Adams, 1993, Economic and Sociology Occasional Paper No. 2093, Department of Agricultural Economics and Rural Sociology, The Ohio State University)

1.1 Introduction

Rural Financial Markets

Although the role of finance and the financial system in the process of mobilising resources for investment and economic growth has long been recognised (Schumpeter, 1934), economists did not emphasise the role of money and finance in economic development prior to the contributions of McKinnon (1973) and Shaw (1973). Both McKinnon and Shaw argued that the conventional views of money and finance in economic growth were more suited to developed economies but appeared to be inappropriate to developing countries. According to them, the economies of developing countries are characterised as highly fragmented, with no uniformity of prices. The capital market is cited as a highly fragmented one, in which one’s investment opportunities, endowment of deployable capital, and opportunities for external borrowing are poorly correlated. According to McKinnon,
fragmentation of the capital market results in the misuse of land and labour, and condemns the economy to using inferior technology.

The least developed countries are characterised by the dominant role of agriculture in the economy, the employment of a large part of the population in agriculture, and widespread poverty especially in rural areas. The issues of deep divisions between rich and poor as a world characteristics and of the way that the poor can overcome their plight were hotly debated. Those who place emphasis upon the need for wealth re-distribution from the rich to the poor as a precondition to successful poverty reduction are so-called 'the redistributionists', while those who emphasize upon the virtues of self-help for income generation as the most sustainable solution to the problem of poverty take a form of 'the wealth-creationists'. Most of the more successful and effective programs of income generation include a significant component of small-scale revolving credit to help the poor to help themselves and access to credit by the poor is an essential part of poverty alleviation (Remenyi, 1991: ix-x) The vicious circle confronting farmers in developing countries can be described as follows: farmers have low earnings since they have low productivity; they have low productivity because they are constrained to traditional farming methods; they are constrained to the traditional farming methods because they lack funds to acquire the new technology; and they do not have enough funds because their earnings is low. External finance 'is therefore needed to make it possible to invest in better seeds, livestock, fertilisers, new technology, and so on. The 'traditional' view suggests, however, that since the market interest rate is too high for farmers, the only way to induce farmers to borrow in order to adopt new technology is to offer them cheap credit. The cheap credit policy is often accomplished by imposing ceilings on lending rates and/or by
setting up supply-leading financial institutions whose only function is to deliver cheap credit to farmers (Lamberte and Lim, 1987: 38).

During the 1960s and 1970s, many governments in developing countries, assisted by various aid agencies, expanded the volume of agricultural credit very rapidly, with some countries experiencing increases of 50 to 100 percent in a single year through a vast number of rural financial settings (Adams and Nehman, 1979: 165). Cheap or subsidised credit was often used to help the rural poor, and the objective of most credit programs was to reach a large number of targeted small rural farmers. Unfortunately, it became increasingly apparent that despite the sizeable expansion of credit, only a relatively small fraction of small farmers seems to have received such credit. It has been estimated that only 5 percent of farms in Africa, and about 15 percent in Asia and Latin America, have had access to formal sector credit, and 5 percent of borrowers have received 80 percent of the available credit (Braveman and Guasch, 1986: 1255).

Faced with these disappointing results, from the early 1970s a large number of evaluation studies were undertaken, which challenged the traditional view of cheap rural credit, including Donald (1976), Adams (1971, 1978), Gonzales-Vega (1976), Adams and Nehman (1979), Vogel (1981), von Pischke (1981), Ladman and Tinnermeir (1981), Adams, Graham and von Pischke (1984), and Ladman (1984). These studies argued convincingly that low interest rates are the major factor contributing to these failures. Cheap credit inhibits growth by misallocating funds to poor investments (Adams and Graham, 1981). Low interest rates have led to non-interest rate rationing in favour of better-off farmers, and credit allocation has tended to favour those who are more wealthy or better able to provide collateral (Gonzales-Vega, 1976). Low interest rates also have detrimental effects on the
viability of financial institutions, creating disincentives for savings, and inhibiting the accumulation of capital by those institutions, thus increasing their dependence on external borrowing. The percentage of loanable funds derived from rural sources in commercial banks and state-funded institutions has ranged from 5 percent to 40 percent, with the median much closer to the former figure than the latter (Braveman and Guasch, 1986: 1256). Such specialised rural credit institutions operate in the absence of active competition and self-sustainability fostering corruption and other forms of inefficiency and inequality (Ladman and Tinnermeier, 1981).

Several authors have explored the role of transactions costs in credit rationing under interest rate ceilings. Gonzales-Vega (1976) developed a microeconomic model of formal financial institutions in developing countries subject to interest rate ceilings, and showed the role of lenders' transactions costs in determining the profitability of a lending institution. Under a restrictive uniform interest rate, and assuming that the costs of loan procedures and paperwork do not vary with loan size, the lender can reduce costs per unit of money lent by making larger loans. The iron law of restrictive interest rates suggested by Gonzales-Vega (1976) indicates that the lower the interest rate ceiling, the greater the degree of credit rationing of small borrowers, and the greater the concentration of credit amongst relatively few large borrowers.

There have also been some studies on the borrower transactions costs. Nehman (1973) undertook a study of a rural market in Brazil, and found that many small borrowers did not use formal sector credit because, when transactions costs were added to the interest cost, informal credit became very competitive with formal loans. Pablo (1979) in a study of a region in the Dominican Republic found that small farmers had to incur very high transactions costs from the formal low
interest credit. Adams and Nehman (1979) examined how borrowing behaviour is affected by total borrowing costs. Relying on evidence from several countries, they also showed that relatively large borrower transactions costs discourage small borrowers from borrowing from formal lenders. Gonzales-Vega (1981) showed that under the interest rate ceilings, the lenders shifted some of their normal lending transactions costs onto the borrowers. This, accompanied by poor infrastructure prevailing in developing countries, makes the borrowing costs from formal lenders excessive high. Under these circumstances, the borrowers might not demand formal sector credit. Using a sample survey of rural households in Bangladesh, Ahmed (1982) found that there were sharp differences in borrower transactions costs between formal and informal, and small and large, loans. Ladman (1984) presented a model explaining how borrower transactions costs play an important role in the structure of rural credit markets, confirming his results in an empirical study undertaken in Bolivia. In a study carried out in the Philippines, Abiad et al. (1988) obtained similar results though with smaller estimated borrower transactions costs as compared to the Bangladesh case. They demonstrated that the borrower transactions costs were higher during the period of regulated interest rates than deregulated, indicating the impact of financial deregulations in reducing transactions costs. Cuervas and Graham (1984a) found that transactions costs were not equal for all borrowers, but that new and non-preferred clients often incurred higher transactions costs than did repeated and preferred borrowers for given loan types. Adams and Vogel (1986) argued that non-preferred clients may be forced to incur transactions costs normally absorbed by the lender as a way of discouraging them from asking for loans.
New perspectives on rural finance analyze the need to build efficient and complete rural financial markets to achieve sustainable increases in rural incomes and significant and irreversible reductions in rural poverty (Yaron et al., 1997: 52). Hettige and Steel (1996) found evidence of significant financial market fragmentation in Africa. Besley (1994) pointed out that although the policy environment and the legal and regulatory framework may be favourable, there might still be market failures in rural financial markets. Empirical research by Hulme and Mosley (1995) suggested that while credit may be an effective vehicle for boosting the incomes of the poor, it has failed in helping the poorest of the poor raise their living standard.

Rural Financial Markets in Vietnam

Prior to the 1980s, Vietnam followed the centrally-planned economy (CPE) model. The economy was characterised by state ownership of the means of production, and government control of prices and the financial system, notwithstanding having some features that differed from other CPE models in the Soviet Union and Eastern European socialist countries. Savings mobilisation and lending decisions were separated and programmed, and there was essentially no financial intermediation. Savings were mobilised by the network of a single government bank, the State Bank of Vietnam (SBV). Funds were then lent to SOEs and cooperatives in accordance with central plans. The financial system was, therefore, passive and pseudo.

In the rural sector before the agricultural reform, the government strictly controlled agricultural input and output markets. Production and management

---

1 See, for example, Fforde and Vylder (1988).
decisions were made by the cooperatives. Funds for working capital and other investment came from the resources of the cooperatives or as loans from rural financial institutions. The main functions of the rural financial system were to transfer credit from the SBV to the cooperatives according to planned allocations, and to mobilise rural savings, a major share of which was transferred to the SBV.

The economy in general, and agriculture in particular, operated inefficiently, leading to persistent shortages of goods and, by the end of the 1970s, food production had fallen to very low levels, as a result of which Vietnam had to import large amounts of rice (Fforde and Vylder, 1988). The failure of the CPE model became increasingly apparent, and pressure to reform the economy, and the agriculture sector in particular, increased significantly.

The first step to reform the agricultural sector was taken in 1981. The government tried to improve incentives in agriculture by introducing the product contract system, in which farm production was undertaken jointly by cooperatives and households. Under this system, the input market was still fully controlled, while the output market was only partly controlled; farm households could retain their output in excess of the contract level, and were allowed to sell it in the ‘free’ market. The most important change, however, was marked by the introduction of the household responsibility system in April 1988. This system officially transferred farm management and the decision-making authority from the cooperatives to individual households. The results of these reforms were quite impressive. From a country characterised by persistent food shortages before 1988, Vietnam had become the second largest rice exporter in the world by 1995.

Accompanying agriculture reforms, since 1988 the government has undertaken a wide range of financial sector reforms, of which the most important
feature has been the dismantling of the mono-bank system. The SBV gradually devolved its commercial banking functions and shifted its role more to that of a modern central bank. Four state-owned commercial banks were created, including the VBA, which was established in July, 1988 by restructuring a former department of the SBV, the Agricultural Development Bank of Vietnam. After implementing a pilot test in 1990, the year 1992 saw the first step of the VBA’s switch from lending mainly to SOEs to rural households.

These reforms have changed the shape and structure of the rural credit market radically. The reorientation of the VBA’s portfolio is reflected in the substantial increase of lending to rural households. In 1990 rural households received a minor proportion (4 percent) of formal sector credit to the rural sector. By 1992, lending to rural households was 35 percent of formal sector credit, rising to 60 and 76 percent in 1993 and 1994, respectively (World Bank, 1996: 54; VBA, 1995). The growth rate for VBA loans for the period 1990-94 was 49 percent p.a. Lending to SOEs grew at only 8 percent p.a., while the corresponding figure for non-SOEs, mainly rural households, was 157 percent p.a. The proportion of rural households reached by the VBA was 9 percent in 1992, increasing to about 20 percent in 1993, and to about 30 percent in 1994 (World Bank, 1995a: 67; World Bank, 1996: 54).

The emergence of several alternative financial institutions was also encouraged by the SBV during 1992-93. During these two years, the network of rural credit cooperatives, which had collapsed, was replaced by private rural

\[2\] The three other commercial banks are the Bank for Foreign Trade of Vietnam (Vietcombank), the Industrial and Commercial Bank (Incombank), and the Bank for Investment and Development of Vietnam.
shareholding banks (RSBs) and popular credit funds (PCFs). Following the decision to allow the establishment of PCFs in July 1993, the number of PCFs rose to 153 in March 1994, and to 207 at the end of May 1995, while the number of members increased nearly five-fold during this period (World Bank, 1996: 52).

With the help of foreign donors and funds from the Government's Hunger Eradication and Poverty Reduction program, another attempt to enhance the provision of financial services to the rural poor was the establishment of the Vietnam Bank for the Poor (VBP) in 1995, which aims to reduce poverty by becoming the main source of low interest loans for the rural poor.

However, despite these efforts to inject an enormous volume of formal sector credit into the rural sector, recent studies on the rural credit market in Vietnam have indicated that informal markets still account for the bulk of rural lending. For example, in a survey covering seven provinces in 1990, between 68 and 94 percent of farm households were reported as receiving credit from informal sources (Seibel, 1992: 72). The Vietnam Living Standards Survey (VLSS) also provides nation-wide evidence of reliance of rural households on the informal market: about 73 percent of total loans of households were obtained from informal sources in 1992-93, of which moneylenders accounted for 33 percent, and friends and relatives accounted for 40 percent (SPC and GSO, 1994: 22).

Several years have passed since formal institutions in the rural credit market shifted away from lending to state farm enterprises and collectives, and began to direct attention to the emerging private sector, where farm households dominate. A number of questions arise. Has the objective of the formal sector credit institutions

---

3 See, for example, Tran et al. (1992), Cao and Dao (1992), Seibel (1992), World Bank (1995a; 1996).
to increase farmers' access to finance been achieved? How has the increase of formal lending to the household sector affected informal lending? What are the features of the rural credit market now?

1.2 Objective and Approach of the Dissertation

It has been shown in most studies on the rural credit market in Vietnam that among the rural population, poor and small borrowers have had less access to formal sector credit; they have thus relied upon informal lenders and their limited self-finance. The VBA offices reported that approximately 10 percent of their loan volume went to poor households, which made up about 40 percent of all rural households (World Bank, 1995a: 65). The most common explanation for constrained access to formal sector credit use among the rural poor is the small size of loans, and the lack of collateral. For example, a study by the Swedish International Development Authority (SIDA) in 1991 in four provinces showed that from 64 to 100 percent of the interviewees reported that they did not borrow from the formal sector because the loans were small (Tran et al., 1992: 39). Another study by Development Alternatives Inc. (DAI) in eight villages in four provinces indicated that lack of collateral was given as an explanation for not borrowing by poor households in 50 percent of cases (DAI, 1995: 8). In a recent study carried out in Tanlap commune, Bacquang district, Hagiang Province, Tran and Nguyen (1998: 40) found that 80 percent of the poor's borrowing, most of which was small and for consumption came from informal sources. However, these studies did not examine in great depth why small borrowers did not seek loans from the formal sector, and
quantitative analysis using econometric techniques was not used in explaining the choice of credit source among borrowers and credit rationing.

The object of this dissertation is to probe the role of borrower transactions costs as a credit-rationing mechanism and to demonstrate how these costs contribute to explaining the lack of small borrowers at formal credit institutions and the structure of the rural credit market. The dissertation will show that transactions costs for borrowers from formal institutions are large, resulting in very high effective rates of interest for small formal sector loans. It will be argued that the policy of imposing interest rate ceilings, the lack of experience in dealing with information on borrowers, and the lack of a sound legal system not only give rise to formal lenders' heavy emphasis on collateral requirements and their concentration on production-oriented loans, but also lead to the shifting of transactions costs from lending institutions to borrowers as a substitute rationing mechanism. As a result, borrowers seeking small loans prefer to obtain them from informal lenders, who charge a higher rate of interest but impose lower transactions costs; by contrast, borrowers seeking larger loans may prefer to deal with formal lenders, whose interest rates are low enough to offset the high transactions costs of borrowing from them.

Data used in the dissertation are obtained from a sample survey of 150 rural households carried out by the author in 1996 in a typical area of the Red River delta in northern Vietnam—namely, Binhluc district, Namha province. A stratified two-stage sampling method was designed for the survey. Questions for the survey aimed to obtain information on the cost of credit from alternative sources, the existence of credit rationing, and various characteristics of borrowers. The data obtained from the survey are used to investigate the magnitude and determinants of borrower
transactions costs, the determinants of credit applications, and formal sector credit rationing.

1.3 Structure of the Dissertation

The remainder of the dissertation is organised as follows:

Chapter 2 presents a theoretical framework for analysing the behaviour of formal credit institutions and farm households. This framework is set up such that it can incorporate the realities of the environment in which formal credit institutions are operating and farm households are making decisions. A basic model explaining the behaviour of formal lenders is reviewed briefly and is then extended to reflect the context in which formal lenders in Vietnam operate. The behaviour of borrowers is examined in a model in which both interest rates and transactions costs are taken into account.

The purpose of Chapter 3 is to review rural credit conditions and their evolution in recent years in Vietnam. Issues related to the structure of the rural credit market, and its characteristics in terms of government, SBV, and VBA policies regarding the allocation of credit, interest rates, loan use, borrower coverage, performance etc., are analysed. The review of credit conditions provides a basis for the hypothesis that the rural credit market is segmented with respect to collateral requirements, loan use and loan size.

Chapter 4 describes the survey area—Binhloc district, Namha province—and discusses the design, representativeness, and credit characteristics of the sample. The primary data used in the analysis of borrower transactions costs, the determinants of credit applications, and of formal sector credit rationing are
collected from 1996 surveys of rural households, the district VBA branch, village and commune leaders, and representatives of the women's unions and farmers' associations in villages and communes in the area. A preliminary examination of lender and household credit data to show that the credit market is composed of several distinct submarkets, which provide credit contracts with significantly different terms and conditions, ranging from low interest rate formal sector loans with strict collateral requirements for production activities, to high interest rate loans without collateral from moneylenders and traders for a variety of purposes, is undertaken. This chapter also suggests that while formal sector borrowers incur high transactions costs, informal lending is, in general, flexible, expeditious and convenient, permitting very low borrower transactions costs. This results in a dual financial market: small borrowers go to informal lenders who charge higher interest rates but impose lower transactions costs on the borrower, while large borrowers go to formal lenders with low interest rates which offset the higher borrower transactions costs. Such a segmented credit market indicates that there is quite limited competition between lenders in the different submarkets.

Chapter 5 reviews the concept of borrower transactions costs, quantifies borrower transactions costs, conducts a comparison between the effective cost of borrowing from the formal sector and various segments of the informal sector, then examines the determinants of formal sector borrower transactions costs. This chapter attempts to show that borrower transactions costs are not constant for all participants. Small borrowers incur higher transactions costs for a given unit of loan than do large borrowers. An implication from this analysis is that small borrowers will rationally choose to borrow from informal sources rather than from the formal
sector. The determinants of formal borrower transactions' costs are also examined in this chapter by using a simultaneous equation system.

Chapter 6 presents an analytical framework to examine the determinants of credit applications, and of formal sector credit rationing, using probit regressions. This chapter formally tests the hypothesis that small borrowers seek loans from informal sources, while formal sector borrowers apply for larger loans. The probit estimations are undertaken to examine the statistical significance of the variable concerning the loan amount applied for, among other variables, in the equations explaining the credit applications from four distinct sources of credit. This chapter also presents an analysis of the determinants of loan rationing by the formal sector.

Chapter 7 summarises the main contents and findings of the study, and discusses some policy implications drawn from it.
Chapter 2

A MODEL OF THE RURAL CREDIT MARKET

This chapter sets out a theoretical framework for analysing the behaviour of formal credit institutions and farm households in Vietnam. The object is to present a framework that incorporates the realities of the environment in which formal credit institutions are operating and farm households are making decisions. The first section discusses the behaviour of formal lenders. A basic model is briefly reviewed and then extended to reflect the context in which formal lenders in Vietnam are operating. The second section examines the behaviour of borrowers and presents a model in which borrowers take into account both interest rates and transactions costs in considering from whom they will borrow.

2.1 Supply of Credit and Formal Lender Behaviour

2.1.1 A Basic Model of Supply of Credit

A variety of theoretical models attempts to explain the behaviour of formal credit institutions in developed economies. These can be classified in a number of ways. One approach suggested by Santomero (1984) is to classify the models based on the main functions of the formal financial institutions (FFIs). Another approach was suggested by Baltensperger (1980) who classified these models into 'partial models' and 'complete models'. Given the assumption that the total size of the bank's portfolio is exogenously determined, the 'partial models' try to optimise the
allocation of this given portfolio. The ‘complete models’ on the other hand attempt to explain the joint determination not only of the structure of assets and liabilities and their interaction, but also the total scale of the bank’s portfolio in maximising profits.

Unfortunately, these models are not very useful in explaining the behaviour of FFIs in developing countries, especially in rural areas. Hoff and Stiglitz (1990: 235) argued that rural financial markets, especially in developing countries where market imperfections and government intervention prevail, do not seem to work as classical competitive markets are supposed to work. These factors should therefore be taken into account in modeling the behaviour of FFIs in the rural sector in developing countries. Particular attention will be paid here to government intervention in the form of interest rate ceilings.

The model of credit supply presented here follows the basic model suggested by Gonzales-Vega (1976, 1984). The supply of credit can be derived from the marginal cost of lending. The costs of lending can be classified into four categories: (a) cost of funds; (b) cost of administration and operation; (c) risk-reducing transactions costs; and (d) the cost of default losses.

The cost of funds \((CF)\) can be determined as follows. Given different investment opportunities, the bank will be willing to lend if it can expect to at least cover all its costs, including the opportunity cost of loanable funds. The opportunity cost of loanable funds, which can be estimated from the expected marginal rate of return to the bank from alternative uses of loanable funds (Gonzales-Vega, 1976), is
often assumed to be constant \((OP)\). Hence, the cost of loanable funds for any given loan size \((L)\) is determined as\(^1\)

\[
CF = OP \cdot L
\]  

(2.1)

Costs of administration and operation \((A)\) include all costs relating to initiating, recording, handling, and collecting a loan. Costs of administration and operation are assumed to be independent of the loan size, so the average cost of administration and operation \((AA)\) will decrease as the loan size increases.

Risk-reducing transactions costs \((R)\) consist of expenditures attributable to screening and monitoring the loan, and all activities related to the reduction of possible loss from default. These expenditures are designed to reduce the probability of default, or to reduce losses if defaults occur, so the expected loss from default is a function of risk-reduction outlays. The greater the outlay on risk reduction, the less the expected default losses for a given loan. However, the greater the riskiness of the loan, the more risk reducing activities will be needed to reduce the same expected loss. It is reasonable to assume that marginal returns to expenditure on risk reduction are diminishing—i.e., a small amount of effort initially yields a large reduction in default losses, but increasingly greater effort is required to obtain the same reduction.

Default costs \((D)\) refer to the expected loss to the lender if the borrower defaults. When a loan size \(L\) is in default, the actual default cost is calculated as \((1 + AA + OP + ARR)L\), where \(ARR\) is the average risk-reducing transactions costs.

The bank can estimate the rate of default \(DR\) given its past experience plus information obtained from its risk-reducing activities. The rate of default normally

\(^1\) Assume for simplicity that loanable funds are supplied at zero cost to the lending entity.
increases as the borrower’s debt-asset ratio increases. An estimate of the default cost known as the ‘risk premium’ and defined as

\[ RP = \left( \frac{DR}{1 - DR} \right)(1 + AA + OP + A_R) \]

is added to the price of the loan. Hence, the default costs can be expressed as

\[ D = RP \cdot L \]  \hspace{1cm} (2.2)

The total transactions cost of lending \((\text{TTC})\) is defined as the sum of the administration and operation costs \((A)\), risk-reducing transactions costs \((R)\), and expected default costs \((D)\):

\[ \text{TTC} = A + R + D \]  \hspace{1cm} (2.3.1)

The sum \((R + D)\) can be referred to as the risk-related costs \((\text{RD})\). Hence,

\[ \text{TTC} = A + \text{RD} \]  \hspace{1cm} (2.3.2)

Since there is a trade-off between \(R\) and \(D\), the lender would select an optimum\(^2\) combination of the two components of risk-related costs. Transactions costs of lending can be expressed as a function of the loan size:

\[ \text{TTC} = A + \text{RD}(L) = g(L) \]  \hspace{1cm} (2.3.3)

The marginal transactions costs is:

\[ g'(L) = RD'(L) \]  \hspace{1cm} (2.3.4)

Other things being equal, the two components of risk-related costs \((\text{RD})\) will increase with the loan size, hence \(RD'(L) > 0\).

Since the marginal returns from risk-reduction activities diminish, the marginal transactions costs of lending will rise, and \(RD'(L) > 0\).

The total cost of the lending \((\text{CL})\) function is then defined as

\[ \text{CL} = OP \cdot L + \text{TTC} = f(L) \]  \hspace{1cm} (2.4)

Marginal cost \(\text{MC}\) is

\[ \text{MC} = f'(L) = OP + RD'(L) \]  \hspace{1cm} (2.5)

The first order condition for profit maximisation indicates that the supply function \(S\) can be determined by setting the nominal lending rate \((r)\) equal to \(\text{MC}\):

\(^2\) The optimum combination of the two components of risk-related costs is that which minimises total risk-related costs for a given loan size.
\[ r = OP + RD(L) \quad (2.6) \]

and solving for \( L = S \). As a result

\[ S = S(r) \quad (2.7) \quad S > 0 \]

The supply curve is then represented by the upward sloping segment of the marginal cost of lending at, and above the minimum average variable cost of lending \((r \geq \text{average variable cost})\). This cost function is represented in Figure 2.1.

Figure 2.1

Supply Curve for a Lender and the Market

\[
\begin{array}{c}
\text{Cost (\%)} \\
MC \quad OP + ARD \\
\hline
r_1 \quad r_2 \\
OP + AA \\
\hline
L_2 \quad L_1 \quad \text{Loan size}
\end{array}
\quad \begin{array}{c}
\text{Interest rate (\%)} \\
SS \\
DD \\
\hline
r_1 \\
S_1 \quad S_2 \quad D_2 \quad \text{Total loan}
\end{array}
\]

If the market supply curve is represented by \( SS \) and the market demand is represented by the curve \( DD \), then the equilibrium interest rate will be \( r_1 \). The total equilibrium volume of loans will be \( S_1 \) and the bank will lend the amount \( L_1 \). If, however, the lending rate is subject to a ceiling—say—\( r_2 \), then the bank will lend

---

3 Average variable cost of lending \((AVC)\) is \( AVC = OP + ARD \), where \( ARD \) is the average risk-related cost, \( ARD = \frac{RD}{L} \).

4 The market supply curve will be the horizontal sum of the supply curves of each lender in the market.
the amount $L_2$ and total loans will be only $S_2$. While the total of loanable funds in the market is at $S_2$; the market demand is at $D_2$; thus non-interest rationing will occur. How a formal lender uses the non-interest rationing mechanism to clear the market at $S_2$ is examined below.

### 2.1.2 Rationing in the Presence of Ceilings on Loan Interest Rates

Traditional economic theory did not differentiate financial markets from other markets or interest rates from other prices. It indicated that non-price rationing was considered as a temporary condition away from the equilibrium path. The persistence of credit-rationing, however, required a new theory of the credit-rationing process. In order to explain rationing processes in an imperfect environment, a number of approaches can be used to model lender behaviour. Hodgman (1962) made the first attempt to develop an equilibrium theory of credit rationing based on the assumption that the default risk was a function of loan size. He argued that no increase in interest rate could compensate lenders for the increased default risk if the loan is beyond a critical size, which is the borrowers' wealth. Thus, the most profitable strategy for lenders was to set a credit limit. However, Hodgman's formulation has some limitations (Braverman and Guasch, 1986: 1258). First, it cannot explain the fact that some borrowers obtain loans while others, seemingly identical, do not. Second, the interaction between lender behaviour and borrower demand does not appear in the model. Finally, it does not take account of competition among lenders.
Jaffee and Modigliani (1969, 1976) set up an extended model which explicitly took into account the interaction between lender behaviour, borrower demand, and borrower default. Their analysis was limited to a pure monopoly framework with the monopolist facing an exogenous ceiling on interest rates. This may be an appropriate approach, however, for developing countries where there is often only one lending institution in the area, operating in an environment of interest rate ceilings. Within this framework, it can be shown that a formal credit institution can increase its expected profits by rationing some clients.

As pointed out by Braverman and Guasch (1986: 1258) 'most of the early literature ignored the effects of information asymmetries prevalent in credit markets', and with the advent of the economics of information, various studies on adverse selection and moral hazard incentive problems in credit markets have been developed. A number of credit rationing equilibrium models dealing with the incentive problem that arises in asymmetrical information frameworks have been studied. Jaffee and Russell (1976) using a two-period Fisherian consumption framework with two types of borrowers—'honest' and 'dishonest'—set up a model of credit rationing, which indicated that the optimal credit rationing policy depends on the proportion of honest borrowers because of the adverse selection problem. Keeton (1979) argued for the rationality of rationing if the risk of default increased with the size of the loan or if there was a moral hazard problem. His analysis explicitly recognises the fact that borrowers change project risks when the terms of the contract change. The Stiglitz and Weiss model (1981) discussed changes in the risk of the borrowing population associated with variations in the interest rate and a fixed loan size. They argued that lenders realise that high interest rates and large loans are relatively attractive to risky borrowers, and their model tries to handle this
adverse selection problem. The moral hazard problem is also introduced in this model. On the one hand, increases in the interest rate raise the return from successful loans but, on the other hand, they increase the probability of default. The net result is that increases in the interest rate may lead to a decrease in the expected returns to lenders.

In short, even in the absence of interest rate restrictions, the imperfections and costs that exist in the rural credit markets of developing countries may justify credit rationing by profit-oriented lenders. However, as in other developing countries, a key feature of the rural credit market in Vietnam is the existence of formal credit institutions with interest rate ceilings, which also result in credit rationing as indicated above. The traditional analysis of the impact of interest rate ceilings shows that at the ceiling loan rate, resource mobilisation by the controlled institutions decreases, and therefore their total volume of lending declines. As a result, the demand for loans by all or some potential borrowers is totally or partially unsatisfied. Although the conventional model also points out that the rationing processes will have an unfavourable impact on small farmers because of the high risks and costs associated with lending to them, it fails to explain how the smaller amounts of credit are rationed out among borrower classes. Thus, the conventional analysis sheds little light on the impact of interest rate ceilings on the allocation of resources and on the distribution of income (Gonzalez-Vega, 1984: 79).

Suppose there is more than one risk-group of borrowers and the lenders can differentiate among them in terms of the expected marginal transactions costs of lending associated with each group. Then, in a market with no interest rate restrictions, the lenders will charge higher interest rates to the borrowers in the
higher risk-groups. For example, if there are two risk-groups of borrowers, then the lenders will charge borrowers in the higher risk-group an interest rate that is higher than that charged to the other borrowers. If, however, the interest rate is fixed at any point below the market clearing rate for the high risk-group, then the borrowers in that group will be rationed by the lenders as shown below.

Assume that borrowers can be divided into two risk-classes, where Risk-Class 1 comprises high risk-borrowers and low risk-borrowers belong to Risk-Class 2. Assume also that the lender is a profit-maximiser. The two risk-classes of borrowers are then represented by the different marginal transactions costs of lending such that the marginal transactions costs of lending to Risk-Class 1 will be greater than the marginal transactions costs of lending to Risk-Class 2: \( g_1' > g_2' \) (from Equation 2.3.4) for the same loan size. The marginal cost of lending to Borrower Class 1 is, therefore, higher than that to Borrower Class 2: \( f_1' > f_2' \) (Equation 2.5) for the same loan size. As a result, if the market demands for credit by the two groups are the same, then the market interest rate for Group 1 will be higher than that for Group 2—i.e., \( r_1 > r_2 \).

The total cost function \( (CL) \) can be expressed as

\[
CL = OP(L_1 + L_2) + g_1(L_1) + g_2(L_2)
\]

The marginal costs of lending to the two classes of borrowers are

\[
MC_1 = OP + g_1'(L_1)
\]

\[
MC_2 = OP + g_2'(L_2)
\]

Subscripts 1 and 2 represent Risk-Classes 1 and 2, respectively.
The optimum loan sizes for each group can be determined by setting the marginal costs of lending equal to the interest rates charged to the two classes of borrowers 1 and 2, respectively:

\[ r_1 = OP + g_1'(L_1) \]
\[ r_2 = OP + g_2'(L_2) \]

If there is an interest rate ceiling set below \( r_i \), then it can be shown that the lender will reduce loans to the High-Risk Class 1 borrowers depending on how high the ceiling is set. For simplicity, suppose that the ceiling \( r^* \) is set at \( r_2 \)—i.e., below the rate for Risk-Class 1 (\( r_2 < r_1 \)). Since \( g_2' < g_1' \) and \( g' > 0 \), the decline of \( g_1' \) involves the decrease of loan size \( L_1 \) to the optimum loan size \( L^* \) to Class 1 borrowers.

\[ r^* = r_2 = \text{OP} + g_1'(L^*) \]

As a result, Class 1 borrowers will bear the effect of rationing. The reduction in loan size will fall on Class 1 borrowers—i.e., \( L_1 \) decreases to \( L^* \).

We have: \( (r_1 - r^*) = g_1'(L_1) - g_1'(L^*) \)

If \( (r_1 - r^*) > 0 \), then \( g_1'(L_1) > g_1'(L^*) \). From \( g' > 0 \), we have: \( L_1 > L^* \), then \( L_1 \) decreases to \( L^* \).

It can be seen that if \( r^* \) is set lower—i.e., \( (r_1 - r^*) \) increases, then \( (L_1 - L^*) \) also increases. The optimum loan size \( L^* \), therefore, decreases and the rationing is more tightened.

A natural question to raise is how a formal lender with a ceiling on loan interest rates rations credit among high-risk borrowers. In Vietnam, high-risk borrowers can be rationed mostly through the lender's requirement of collateral for
loans, and the restriction of loans to production activities only. The most popular forms of collateral for formal sector loans in the rural credit market in Vietnam are homesteads and land use rights. The fact that formal loans are disbursed for up to 80 percent of the value of collateral could help formal lenders eliminate default losses (World Bank, 1995a: 126). However, in the absence of proper ownership documentation and a sound legal system, foreclosing collateral is costly and even almost impossible, as a result such collateral may be useless in cases of default. Thus, in addition to requiring collateral for loans, formal lenders in Vietnam also give priority to production loans in the expectation that loans for production activities are less risky and carry tangible returns as compared to loans for consumption.

By requiring potential borrowers to submit physical collateral and a variety of data reflecting financial projections or feasibility studies for production loans, the formal sector credit delivery system becomes complicated, and involves high borrower transactions costs. Through such procedures in selecting/screening potential borrowers, formal lenders can also shift part of their normal transactions costs onto borrowers. The role of borrower transactions costs in explaining borrowing behaviour will be examined in the next section.

---

6 The value of the collateral is defined at the time of loan application

7 The complicated credit delivery scheme in the formal sector will be examined in more detail in Chapter 5.

8 The formal credit delivery system requires borrowers to spend time and money to finish all procedures and visit the lender rather than vice versa. Of course, the level of transferability of transactions costs between borrowers and lenders has a limit, and lenders' transactions costs cannot be nil (Izumida, 1996: 44)
2.2 Behaviour of Borrowers and the Demand for Credit

2.2.1 A Basic Model of Demand for Credit

The demand for credit by a farmer will be determined by his initial endowment, production, access to and cost of alternative sources of credit, and his attitude toward risk. The initial endowment comprises human and physical capital, land, experience, technology, and is, for simplicity, assumed to remain constant during the period of production. Variable inputs include labour, seeds, fertiliser, pesticides, fuel etc. Except for household labour, variable inputs will be zero unless stored. However, the farmer can increase his use of variable inputs with external funds.

Assume that the purpose of the farmer's borrowing is to provide working capital, and that there is a conventional production function \( Q \) for the farmer subject to diminishing marginal productivity of all inputs:

\[
Q = f(F, V);
\]

\( F \) - fixed inputs; \( V \) - variable inputs;

\[
Q_v > 0 \quad \text{and} \quad Q_v < 0
\]

(2.8)

Assume that the farmer's credit cost function \( C \) is

\[
C = c(L)
\]

(2.9)

where \( L \) - amount demanded, and

\[
MC = c'(L); \quad c' > 0
\]

(2.10)

where \( MC \) - marginal cost
If we measure the cost of variable inputs in money terms, then the marginal rate of return \((MRR)\) to credit would equal the marginal value product of the variable inputs less the marginal cost of variable inputs. A profit-maximising farmer would demand credit to the point that equates the expected marginal rate of return on the credit used to the marginal cost of credit.\(^9\) Given the diminishing marginal productivity of the variable inputs, the marginal rate of return to credit also exhibits diminishing returns. Thus the demand curve for credit will be downward sloping with respect to the marginal cost of credit as depicted in Figure 2.2.

2.2.2 Ceiling Interest Rate and Borrower Transactions Costs

In Vietnam with a regulated financial market, the interest rate ceilings imposed by the SBV prevent interest rates from moving to market equilibrium rates. This results in an excess demand for credit \((Q_d)\) at the ceiling rate of \(r_c\) (Figure 2.2). The lower the imposed ceiling on \(r\) relative to the market rate \(r^*\), the greater will be the excess demand for credit.

At the regulated rate \(r_c\), while lenders are willing to lend \(Q_c\), potential borrowers would be willing to pay a higher rate \(r'\) for this limited amount of funds. As a result, borrowers will continue to seek credit equivalent to \(Q_c\) as long as their transaction costs are less than or equal to the margin \(r' - r_c\).

---

\(^9\) This will be derived in Section 2.2.3.
2.2.3 Borrower Transactions Costs and Demand for Rural Credit

An extension of the two-period Fisherian model to explain the behaviour of farmer-borrower is the so-called McKinnon model (1973). McKinnon argues that because of indivisibilities in investments and limited resource endowments, the farmer has to borrow from external sources so that he can free himself from reliance on inferior technology. This will generate benefits both to farmer-borrowers, who have better production opportunities, and to savers, who can gain by receiving higher interest rates.

The implication of McKinnon's model is that a high interest rate policy will favour the transfer of resources from less productive to more productive
entrepreneurs. It is, however, noteworthy that this model does not explicitly take into account the fact that, apart from the nominal interest cost, farmers also have to incur transactions costs to obtain loans. That is, what concerns farmers is not the interest cost alone, but the total borrowing cost, which includes the nominal interest rate plus transactions costs. There may exist cases, therefore, where the investment in new technology seems attractive enough at the nominal interest rate but the transactions costs make it unprofitable.

A model that captures the reality that farmer-borrowers concern themselves with the total borrowing costs is suggested by Ladman (1984). The model is briefly as follows:

The profit equation of the farmer-borrower is given by

$$\pi = R - (rL + BTC)$$  \hspace{1cm} (2.11)

Where:
- $\pi$ is profit
- $R$ is revenue net of costs of the resources purchased with borrowed funds, but not net of total borrowing costs
- $BTC$ is borrower transactions costs.

Equation (2.11) can be rewritten:

$$\pi = L \left[ AR - (r + ABTC) \right] \hspace{1cm} \text{or} \hspace{1cm} \pi = L \left( AR - AC \right)$$  \hspace{1cm} (2.12)

where:
- $AR = \frac{R}{L}$ is average revenue
- $ABTC = \frac{BTC}{L}$ is the average borrower transactions costs, and
- $AC = r + ABTC$ is the average total borrowing costs.

From Equation (2.11), the profit maximising condition is
\[ \frac{d\pi}{dL} = 0 \quad \text{or} \quad \frac{dR}{dL} - r = 0 \quad \text{or} \quad MRR = r \]

where \( MRR = \frac{dR}{dL} \) is marginal rate of return.

This is illustrated in Figure 2.3. The demand for credit consists of the values of the marginal rate of return resulting from the resources employed using successive loan units. Given the interest rate \( r \), the average total borrowing costs curve approaches the line that cuts the vertical at \( r \). To maximise profit, the farmer has to borrow \( L^* \) and his profit is \( L^*(AR - AC) \). The figure shows that \( T_1 \) is the borrowing threshold below which the borrower would not borrow from a lender.

When \( r \) is given while \( ABTC \) increases, the \( AC \) curve would shift upwards. This has two results. Firstly, it reduces the optimal profit of the borrower. Secondly, it increases the borrowing threshold. This means that a farmer facing higher transactions costs has to have a higher minimum loan size.

Borrower transactions costs have at least three impacts on the decision to borrow and profitability (Ladman, 1984: 109). First, larger borrower transactions costs mean higher total borrowing costs and less profits for borrowers, \textit{ceteris paribus}. Second, with a given loan rate and borrower transactions costs, there is a minimum loan size below which the borrower would not be willing to borrow from a lender. This borrowing threshold (\( T_1 \)) is the level where average total borrowing costs are equal to average revenue. For any given loan rate, the larger the borrower transactions costs, the higher the borrowing threshold. Third, the out-of-pocket costs threshold is part of \( T_1 \), and represents the amount of outlay the farmer must make in applying for a loan and before receiving the loan. A farmer who did
not have the out-of-pocket costs threshold would not be able to borrow from the lender. Even a farmer who did have the out-of-pocket costs threshold funds but faced a probability that the loan application would be rejected (and thus risked losing the funds for nothing) might not want to attempt to borrow. It is worth noting that compared to repeat and large borrowers, first-time and small borrowers would have a greater possibility of falling below the two thresholds.

### 2.2.4 Market Structure

Ladman (1984) extended this model to capture the case of one borrower and two lenders so that the borrower can have a choice of credit source. It is assumed that the farmer-borrower has two choices of lenders, namely a formal credit institution with a low nominal interest rate but high transactions costs for the
farmer, and an informal moneylender who charges a high interest rate but, in contrast, requires low transactions costs of the farmer. Suppose given the nominal loan rate and transactions costs of each lender, the amount demanded from the formal credit institution is \( L_f \), while the amount demanded from the informal moneylender is \( L_i \) and at \( L_0 \), the farmer would be indifferent between the formal credit institution and the informal moneylender (Figure 2.4). If the loan size requirement is above \( L_0 \), then the farmer prefers to borrow from the formal institution and vice versa. The thresholds of borrowing from the formal institution and the informal moneylender are \( T_f \) and \( T_i \), respectively. Any farmer who wants to borrow an amount between \( T_i \) and \( T_f \) will prefer to source funds from the informal moneylender.

One of the main implications from Ladman’s model is that offering cheap credit does not necessarily induce farmers to borrow from formal credit institutions. Depending on the total cost of borrowing from the alternative sources of credit, farmer-borrowers will decide their loan sizes. Borrowers seeking small loans will often prefer to work with lenders who charge a higher rate of interest but impose low transactions costs. In contrast, borrowers seeking larger loans may prefer to deal with lenders who charge lower interest rates but impose larger transactions costs. This explains why despite the prevalence of cheap credit schemes in many developing countries, farmers still borrow from informal moneylenders whenever their amounts demanded are less than \( L_0 \) and why several types of credit institutions can operate side by side, even though they charge quite different rates of interest. Lenders who impose high transactions costs will focus on larger loans, whereas those with low costs will tend to make smaller loans. McLeod (1991: 195) also argued that saying small firms often lack access to institutional credit is quite
misleading, and that it is more meaningful to argue that institutional lenders to some extent 'lack access to'—or cannot compete in the financing of small firms.

Figure 2.4

Borrowing Costs and Revenues: Two Lenders

Given this behaviour, rural credit markets in many developing countries are segmented. In the case of two lenders, the segment associated with lower borrower transactions costs but higher rates of interest and smaller loans is dominated by the informal portion of the market. The second segment associated with higher borrower transactions costs but lower rates of interest and larger loans corresponds to the formal portion of the market. As pointed out by Ladman (1984: 112), partitioning of the aggregate demand for loans will occur at a loan size, at which farmers are indifferent between the two lenders—i.e., where across all farmers the
effective cost of borrowing from both lenders is equal. The mandates, regulations, and operating procedures of each lender will determine borrower transactions costs and the interest rates of formal lenders. On the other hand, the competitive environment will determine the interest rates of the informal lender. Changes in market share will depend on changes in borrower transactions costs and/or in loan rates of either lender. If the loan rate and/or borrower transactions costs rise for one lender, some borrowers will seek their credit from the other lender, and this will change the partition accordingly, ceteris paribus.

In summary, ceiling interest rates are an important determinant in structuring credit markets. When formal institutions are forced to charge concessionary loan rates and thus face an excess demand for credit, mechanisms to substitute for interest rates to perform the rationing function are needed by them. According to Adams and Vogel (1986: 482), increased collateral requirements and reallocation of transactions costs to borrowers are often used as a substitute rationing mechanism. When borrower transactions costs are raised as a result of this rationing process, some potential borrowers, mainly small borrowers will go to other lenders, or go without credit, and the structure of the market will be changed.

As evidenced in Brazil (Nehman, 1973), Bangladesh (Ahmed, 1982), Bolivia (Ladman, 1984), and the Philippines (Abiad et al., 1988) large borrower transactions costs from formal lenders cause many small and new borrowers to seek loans from informal moneylenders. Adams and Nehman (1979) examined how borrowing behaviour is affected by total borrowing costs, including both transactions costs and interest payments. They present evidence from several countries showing how borrower transactions costs lead to high total borrowing costs from many FFIs. They concluded that relatively large borrower transactions
costs discourage the rural poor from borrowing from these sources. Whether this has also been the experience of Vietnam is an interesting issue and will be examined in the following chapters. The next chapter will begin the review of empirical results dealing with the main characteristics of the rural credit market in Vietnam.
Chapter 3

AN OVERVIEW OF THE RURAL FINANCIAL MARKET IN VIETNAM

After the war ended in 1975, the Vietnamese economy followed closely the centrally-planned model. By the mid-1980s, this model had begun to reveal its failure, and due to the drying up of aid from the former Soviet Union and other Eastern Europe socialist countries, Vietnam fell in a serious socio-economic crisis with inflation rate soaring up to around 400 percent in 1988, stagnated real GDP per capita growth of below 2 percent, and widespread hunger with overall poverty rate of above 70 percent.

Before the implementation of a series of reforms in agriculture, the cooperatives were responsible for production decisions; input and output markets were strictly controlled by the government; working capital and investment were financed with the resources of the cooperatives or with loans from rural financial institutions. The rural banking system acted essentially as a channel for transferring credit from the SBV to the cooperatives according to planned allocations, and for mobilising savings in rural credit cooperatives and households—then transferring a major share of these to the SBV. Since the cooperatives managed production and investment activities, they also handled borrowing. Lending to households was limited. Farmers arranged financing for investment only for their private plots, residential construction and ceremonial events such as weddings and funerals, in
part through their own savings and in part through informal borrowing, mainly from relatives and friends. Other types of informal lenders were strictly repressed.

Agricultural policy reform began in 1981 with the introduction of the product contract system, in which farm production was undertaken jointly by cooperatives and households. Under this system, input markets were still fully controlled, while output markets were only partly controlled; farm households could retain any output beyond the contract level, which they were allowed to sell in the free market. The most important change, however, was the introduction of the household responsibility system in April 1988, characterised by the allocation of land under long-term leases to farm households, and liberalisation of the input and output markets, thus transferring farm management and the decision-making authority from the cooperatives to individual households. The reforms were further enhanced by the implementation of a new Land Law in June 1993, under which households were granted land use rights that could be exchanged, transferred, inherited, leased and mortgaged.¹

The incentives for rural households generated by these reforms have resulted in a significant increase in agricultural productivity, output and rural income (Nguyen, 1995: 1). Rice output growth rates in the periods 1981-88, 1988-92, and 1992-94 were 2.05% p.a., 5.02% p.a., and 4.30% p.a., respectively, while rice yields grew at 3.23% p.a., 3.14% p.a. and 3.35% p.a., respectively. From a country characterised by food shortage, and having to import rice up until 1988, Vietnam had become the second largest rice exporter in the world by 1995. Rural income increased by 135 percent during the period 1989-92.

¹ Details of agricultural reforms and their impact can be seen in the Appendix.
These reforms have changed the nature of economic activity in the rural sector radically. Output and factor markets, especially the rural credit market, have developed rapidly. With the new system of organisation for agricultural production and the more favourable output market, demand for rural credit services has expanded. On the one hand, households must now arrange financing independently for production, investment, consumption and residential construction, as a result their demand for credit increases. On the other hand, with higher cash incomes from farm and non-farm activities, many households have a surplus of cash, which provides more opportunities for savings mobilisation and intermediation in the financial markets.

The purpose of this chapter is to review rural credit conditions and their evolution in recent years. Issues related to the structure of the rural credit market in Vietnam and its characteristics in terms of government, SBV, and VBA policies regarding the allocation of credit, interest rates, loan use, borrower coverage, and performance are analysed.

3.1 Rural Financial Markets

The structure of the rural financial markets has undergone substantial change in the last few years. Prior to the adoption of fiscal and monetary reforms and the restoration of household farming in 1988, monetary and financial developments were determined by the financing needs of the government and state enterprises. Rural credit was supplied by SBV branches throughout the country to communes, cooperatives and state farms according to planned allocations.
Households received a minor proportion (less than 1 percent) of bank credit to the rural sector (Juillard, 1994: 1).

Since 1989, the government has undertaken a wide range of financial and agricultural reforms and, as a result, the structure of the rural financial market in Vietnam has changed significantly. A new system of rural credit delivery with more diversified financing institutions is emerging from the old state bank structure. Figure 3.1 presents a simplified framework of the rural financial markets.

Figure 3.1
Rural Financial Markets

![Rural Financial Markets Diagram]
Available funds are used for various purposes. The reason for distinguishing production and non-production activities is to provide a better picture of the segmentation of the market. As pointed out in various studies (World Bank, 1995a and 1996; UNDP and UNICEF, 1996; SPC and GSO, 1994), while formal credit institutions usually focus on production loans, farm household credit needs for non-production activities are satisfied by the informal sector.

There are three ways by which rural households can finance their activities. The first is self-financing—i.e., households use their own funds to finance their activities. In developing countries where markets are characterised by ‘fragmentation’ as pointed out by McKinnon (1973) and Shaw (1973), households are more likely to engage in self-financing. Inadequate financial services, macroeconomic instability, lack of collateral are reasons why they are either forced to engage in self-financing or they make this choice after considering alternative possibilities. Before the financial sector reforms, private savings in rural Vietnam were held in three principal forms: gold, US dollars and rice (Seibel, 1992: 91). Bank saving was of negligible importance because of inconvenience and negative returns. In the absence of efficient financial intermediaries, therefore, rural households preferred to keep their savings in forms other than VD deposits, and they relied heavily on self-financing. Financial reforms, particularly interest rate adjustments which brought positive real returns to savers, have contributed to the significant change in the pattern of household savings portfolios since 1989. The strongest impact of financial sector reforms can be found in a substantial flow of

2 Bank saving was inconvenient because withdrawal of savings was difficult, and an explanation of the intended use of funds was required. Bank saving was also highly unattractive because of negative real interest rates. For example, an inflation rate of nearly 500 percent in 1986 in Vietnam reduced the value of savings by about four-fifths within a year.

3 Vietnamese Dong
savings into the financial system. During the ten-month period following the reforms, March 1989-January 1990, deposits in the Investment and Construction Bank of Vietnam and the VBA grew at 335 percent p.a., with household deposits growing at 630 percent p.a. (Seibel, 1992: 92). However, the potential is still far from being exhausted. In a rural finance survey undertaken by Cao and Dao (1992: 61) in four provinces, only 57 percent of households claimed savings and investment in the preceding year, while 41 percent stated that they kept their savings at home. Remedying the remaining weaknesses and shortcomings of the present system of savings mobilisation will have an even stronger impact on domestic resource mobilisation, permitting an expanded role for intermediaries of the financial system.

The second source of funds is the informal credit market. Although information on the informal market is scanty, recent studies (Tran et al., 1992; Seibel, 1992; SPC and GSO, 1994) have revealed the fact that the informal sector does the bulk of household level financial intermediation. The literature on informal credit markets demonstrates that the composition and operations of informal lenders have been changing through time. Previously, informal credit markets were suppressed. The recent financial liberalisation has, however, contributed to a resurgence of informal credit markets. Various recent studies have compared nominal interest rates charged by formal and informal lenders and found that interest rates charged by moneylenders are two or three times higher than the rates charged by the VBA (World Bank, 1995a: 73). As pointed out by Seibel (1992: 74), however, interest rates charged by moneylenders appear to be virtually identical to the rate that the VBA would charge if it were to apply sound commercial criteria. It is also worth noting that what concerns the farmers is the total cost of borrowing, of
which the nominal interest rate is only a part. It is widely perceived that while formal markets are more likely to place the major burden of transactions costs on borrowers, particularly when an interest rate ceiling is imposed, most transactions costs in the informal market are incurred by the lender. Hence, knowledge of the total costs of borrowing from the formal and informal markets should clarify policy issues concerning both formal and informal lending.

The third source of funds is the formal credit market, which is dominated by the VBA. However, other financial institutions, namely PCFs and RSBs are fast becoming important in rural areas, especially after the Law of Banking, Credit Cooperatives and Finance Companies was introduced in 1990. By 1992-93, the VLSS found that 27 percent of rural credit was being provided by formal lenders, leaving 73 percent being provided by informal channels involving friends, relatives and moneylenders.

The shape and character of the rural credit market are to a large extent conditioned by the monetary and credit policies of the SBV, such as its interest rate ceiling and credit targeting policies. It is important, therefore, to examine the performance of rural financial institutions as conduits for SBV funds, and also the behaviour of formal financial institutions as intermediators.

3.2 Formal Financial Institutions

The basic structure of the formal credit market in rural Vietnam is similar to that of many developing countries. There is a specialised state-owned agricultural bank—the VBA—and a network of PCFs and RSBs.
3.2.1. The Vietnam Bank for Agriculture and the Vietnam Bank for the Poor

3.2.1.1 The Vietnam Bank for Agriculture

The VBA was established in July, 1988 by restructuring a former department of the SBV, the Agricultural Development Bank of Vietnam, which was created to provide credit to state farms and cooperatives.\(^4\) It has operated under the Law of Banking, Credit Cooperatives and Finance Companies since 1990. The VBA's charter was expanded to include credit provision to farm households and to emerging private rural enterprises in 1992.\(^5\) The VBA is a government-owned financial institution whose loan interest rates are regulated by the SBV. However, the VBA selects its own investment and economic activities.

Unlike some other developing countries and centrally-planned transition economies, where rural credit cooperatives are the principal network of credit institutions reaching into the countryside, the VBA is now the major source of formal sector credit for the agricultural sector and farm households in Vietnam. Since February 1995, the VBA has had the largest network of any bank in the country, with 2,564 branches and transaction offices, averaging one banking facility per four communes. There are currently 20,000 staff, including 1,870 managers, 7,185 credit officers, and 1,022 business operations personnel in 1995. In 20 out of 53 provinces in Vietnam, the VBA is the only formal lending institution (World Bank, 1996: 10 and 53).

---

\(^4\) Its present establishment has resulted from the government's decision No. 400 dated November 14th, 1990.

\(^5\) This was promulgated by the SBV November 11th, 1992 (Decision No. 250 QD).
Sources of funds

The VBA’s loanable funds are obtained mainly from two sources: the SBV and self-mobilisation (savings mobilisation). Loans from the SBV to the VBA are primarily through refinancing and rediscounting soft loans for responding to natural disasters and epidemics, and for purchasing import commodities, such as rice and coffee. The VBA also participates in joint-venture banks and borrows from international financial institutions. Funds available to the VBA have grown significantly since 1990 (Table 3.1). From relying mainly on the SBV for funds (80 percent of the total) in 1990, the VBA’s self-mobilised funds have increased significantly, from 20 percent in 1990 to 77 percent in 1994.

Interest rates paid on demand and savings deposits generally follow SBV guidelines, but the VBA has become increasingly dependent on project-linked ‘deposit substitutes’. These substitute funding arrangements take various forms, including bonds and promissory notes. The VBA increased its dependence on deposit substitutes from 0.1 percent of total non-equity funds at the end of 1991 to 4.7 percent at the end of 1992, and to 19 percent as of September 1994. At the end of September 1994, outstanding deposit substitutes represented approximately 41 percent of total deposit substitutes of all the deposit-taking banks in Vietnam (World Bank, 1995a: 65).
Table 3.1
VBA Funding (percent)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans from the SBV</td>
<td>80</td>
<td>73</td>
<td>70</td>
<td>28</td>
<td>23</td>
</tr>
<tr>
<td>Self-Mobilised Funds</td>
<td>20</td>
<td>27</td>
<td>30</td>
<td>52</td>
<td>77</td>
</tr>
</tbody>
</table>

Note a: Figures in source document do not sum to 100 percent


**Lending activities**

Providing credit to farm households was not a government priority until 1992. Before that time, rural households had been recognised by the government as autonomous production units, and had been allotted land and forest. As a result, their demand for business credit increased enormously. After implementing a pilot test in 1990, the VBA issued 'Lending regulations for short-term, medium-term loans to farm households' (No.53/NHNN) in 1991. The VBA is now an extensive rural branch banking system which serves primarily as a direct lender, but also lends indirectly through 'economic units' such as non-governmental organisations (women’s unions, farmers’ associations etc.) and other rural financial institutions such as the RSBs and PCFs. Thus the VBA has a strong influence on the rural credit system. Recently an increase in outreach to the rural population by the VBA has been achieved through the use of joint-liability groups. These are formed either by VBA staff directly or through service organisations such as non-governmental
organisations (NGOs). In 1995, about 157,000 groups were established (World Bank, 1996: 54).

The reorientation of the VBA's portfolio toward rural households and small businesses is reflected in Table 3.2. Loans granted reached VD 9,186 billion in 1994. The growth rate for VBA loans for the period 1990-94 was 49 percent p.a. Lending to SOEs grew at only 8 percent p.a., while the corresponding figure for non-SOEs was 157 percent p.a. The proportion of lending to non-SOEs increased from 4 percent of the loan portfolio in 1990 to 76 percent in 1994. Notwithstanding the rapid growth in its lending to rural households, the VBA has also managed to maintain high repayment rates. In 1994, the rate was 95 percent (ADB, 1995: 10). Within the five years 1990-94, the VBA also demonstrated that lending to farm households on the basis of commercial banking criteria is financially viable. Having lost VD 82 billion in 1990, the bank made a profit of VD 24 billion in 1994. Taking into account the transitional nature of the economy and the VBA's brief history in lending directly to the household sector, this result is impressive.

Although the VBA is a universal bank with authority to lend to various sectors, in practice it remains a highly specialised agricultural bank, with a loan portfolio dominated by short-term production loans. Estimates of the distribution of short-term formal sector credit through the VBA in 1993 suggest that loan funds were distributed as follows: approximately 45 percent to crops (including vegetables and industrial crops such as tea and coffee); 20 percent to livestock (including pigs, chickens, cows etc.); 20 percent to other farm enterprises (e.g. fruit gardens and fisheries); and 15 percent to other economic activities (e.g. trading, small-scale processing, handicrafts etc.) (World Bank, 1995a: 63).
Table 3.2
VBA's Loan Portfolio by Sectors

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan Portfolio (VD billion)</td>
<td>1,524</td>
<td>2,393</td>
<td>3,213</td>
<td>5,139</td>
<td>9,186</td>
<td>48.92</td>
</tr>
<tr>
<td>SOEs</td>
<td>1,461</td>
<td>2,148</td>
<td>1,782</td>
<td>1,580</td>
<td>2,166</td>
<td>8.19</td>
</tr>
<tr>
<td>Non-SOEs</td>
<td>63</td>
<td>245</td>
<td>1,431</td>
<td>3,559</td>
<td>7,020*</td>
<td>156.68</td>
</tr>
<tr>
<td>Share of Non-SOEs (%)</td>
<td>4.1</td>
<td>8.6</td>
<td>35.8</td>
<td>60.3</td>
<td>76.4</td>
<td>n.a</td>
</tr>
<tr>
<td>Profit (Loss) (VD billion)</td>
<td>..</td>
<td>(82)</td>
<td>(52)</td>
<td>2.7</td>
<td>24.0</td>
<td>n.a</td>
</tr>
</tbody>
</table>

* VD 5,766 billion or 62.7 percent of total loans were to rural households.

n.a indicates not applicable.

.. indicates not available

Source: World Bank (1996: 54) and author's calculations.

Interest rate

Financial sector reforms, especially the upward adjustment in nominal interest rates and the linking of nominal interest rates to the inflation rates, have permitted interest rates for deposits and loans to be positive in real terms since 1989, except during 1990-91.\(^6\) Table 3.3 shows the major changes in the interest rates during the period 1989-94. During the early stages of the transition in 1989-92 the SBV introduced maximum lending rates differentiated according to sector. Deposit rates were also differentiated by type and holder of deposits. In 1993 the

\(^6\) Monthly changes in the inflation rate and deposit interest rates during 1988-95 are contained in the Appendix.
SBV moved away from imposing sector-specific lending rates and instead, introduced different rates for financing fixed assets and working capital.

The SBV’s current interest rate policy sets ceilings on lending rates, but with no directly imposed floor for deposit rates. There is, however, a maximum of 0.35 percent per month on the spread between deposit and lending rates, which implies a minimum for deposit rates given lending rates subject to the maximum. The SBV argues that a minimum for deposit rates encourages commercial banks to attract savings, while a maximum lending rate provides some restraint on risky lending practices (World Bank, 1996).

There are two problems with the rural loan interest rate structure. First, it is widely perceived that the maximum spread between lending and deposit rates fixed at 0.35 percent per month provides inadequate net interest income to sustain most commercial banks. This is particularly true for rural banks due to geographical constraints, poor transport and communications infrastructure in rural areas, especially in remote and mountainous regions, and low staff productivity. Factors which contribute to low average employee productivity include the exclusive use of cash in loan transactions, the use of manual record keeping systems, and employees’ lack of experience in dealing with new clients. In these circumstances, the work of field loan officers who are mainly based in the district towns is severely restricted. As a result, the VBA’s presence at the commune and village levels involves high transactions costs. The second major issue is the inverted rate term

---

7 See for example UNDP and UNICEF (1996) and Creusot et al. (1998).

4 Data for 1993 showed that there were 95 household loans per bank employee as compared to 272, 117, 376, and 110 in the Badan Kredit Kecamatan, the Bank Rakyat Indonesia Unit Desas in Indonesia, the Bank for Agriculture and Agricultural Cooperatives in Thailand, and the Grameen Bank in Bangladesh, respectively (author’s calculation from Yaron (1994)).
Table 3.3

Selected Interest Rates, 1989-94 (Percent per month; end of period)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deposit rates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Demand deposits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Households</td>
<td>5.0</td>
<td>2.4</td>
<td>2.1</td>
<td>1.0</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Economic units</td>
<td>1.8</td>
<td>0.9</td>
<td>1.0</td>
<td>0.3</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Three-month savings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Households</td>
<td>7.0</td>
<td>4.0</td>
<td>3.5</td>
<td>2.0</td>
<td>1.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Economic units</td>
<td>3.0</td>
<td>1.8</td>
<td>2.1</td>
<td>1.5</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Lending rates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>3.7</td>
<td>2.4</td>
<td>3.3</td>
<td>2.5</td>
<td>n.a</td>
<td>n.a</td>
</tr>
<tr>
<td>Industry and Transport</td>
<td>3.8</td>
<td>2.7</td>
<td>3.0</td>
<td>2.0</td>
<td>n.a</td>
<td>n.a</td>
</tr>
<tr>
<td>Commerce and Tourism</td>
<td>3.9</td>
<td>2.9</td>
<td>3.7</td>
<td>2.7</td>
<td>n.a</td>
<td>n.a</td>
</tr>
<tr>
<td>Fixed capital</td>
<td>n.a</td>
<td>0.8</td>
<td>0.8</td>
<td>1.8</td>
<td>1.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Working capital</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
<td>2.7</td>
<td>2.1</td>
<td>2.1</td>
</tr>
</tbody>
</table>

n.a indicates not applicable.


structure for loans. Although medium- and long-term lending rates were raised as of December, 1994, they are still slightly lower than short-term lending rates. In January 1996, for example, the ceiling on interest rates for short-term loans was set at 1.75 percent per month while that for medium and long-term loans was set at 1.7 percent per month. As a result of the inverted term structure, the bank cannot offer competitive deposit interest rates that could facilitate increased long-term savings. This distorts the allocation of scarce financial resources toward medium- and long-
term lending. Clearly the rates on medium and long-term loans do not reflect different maturities or credit risk premiums properly, and simply act as a barrier to more effective intermediation in the rural credit market.

**Outreach**

The number of households which borrowed from the VBA during 1992-95 is shown in Figure 3.2. From almost one million rural households in 1992, the number rose rapidly to seven million in 1995.

The proportion of rural households reached by the VBA can be seen in Figure 3.3. The proportion was 9 percent in 1992 increasing to about 20 percent in 1993, and to more than 30 percent in 1994. The VBA has substantially increased its outreach due to its large network of branches, recently augmented by the establishment of sub-district transaction offices and mobile banking teams to visit villages. The use of joint-liability groups has also contributed further to the expansion of its coverage.⁹

However, it is clear that the present demand for VBA loans is high because the loan rate is substantially less than rates offered by informal lenders. Heavy reliance on collateral and the focus on loans for production purposes are overriding features of the VBA’s lending policy in performing a non-interest rate rationing function. The 1989 SBV Resolution stated that ‘cooperatives, business groups, private households, individuals and joint ventures between individuals involved in production and services and state servants engaged in family businesses must offer

---

⁹ In 1993, the VBA introduced the Credit Operation Manual No 499/A stipulating the limit in terms of relief on loans to individuals without collateral through joint-liability groups. Loans of up to VD 500 thousand made through joint-liability groups generally do not require collateral.
Figure 3.2

Number of Households Which Borrowed from the VBA (millions households)


Figure 3.3

VBA and Other Lenders' Shares of Farm Household Market (percent)

collateral assets whenever applying for a loan from banks' (World Bank, 1995a: 55). The predominant types of collateral in the formal sector rural credit market are homesteads, and land use rights.\textsuperscript{10} The Land Law and subsequent implementation decrees promulgated in 1993 formed the basis of the establishment of management of land by specifying rights and obligations of users. Land-use rights may be transferred, mortgaged, rented, exchanged, or inherited, although some discretion is left to local authorities to recognise a number of these rights. Land users are given land use certificates. While international experience shows mixed results regarding the impact of land titling on efficiency and equity, the issuance of land use certificates in Vietnam appears to be a promising factor reinforcing perceived security of tenure among households (UNDP and UNICEF, 1996). With the land use certificates serving as an acceptable form of collateral, farm households gain access to formal sector loans. The SBV Resolution of 1989 also stipulates that the loan amount should not exceed 80 percent of the value of the asset pledged at the time of loan application. In principle, with this limitation the VBA could completely eliminate losses due to default. However, non-unified legislation on collateral, unambiguous rules and related decrees, which are often frustrated by inconsistent local decisions in the case of enforcement and liquidation of collateral make confiscation of collateral by formal lenders sometimes impossible or time-consuming and costly.\textsuperscript{11} Faced with such difficulties in contract enforcement and

\textsuperscript{10} In Vietnam, the government owns land, with the cultivator having use rights for 10-15 years for annual crops and longer for tree crops, rather than outright ownership. Farmers can use land use rights as legal collateral for formal loans.

\textsuperscript{11} The SBV’s ‘Regulation on Assets as Collateral in Borrowing from Banks’ was issued in 1989 in the absence of a law on collateral, and indicated that a lender should request the ‘legal authority’ to liquidate the asset and recover the principal and interest of loans in default. However, it is unclear who is the ‘legal authority’ referred to (World Bank, 1995a: 56). In addition, the rights to mortgage and sell are interpreted quite differently from region to region. For example, the transfer of land use rights is restricted in some communes.
liquidation of collateral, together with excess demand created by the ceiling on lending rates, a further response of the VBA has been to focus on production loans only. The VBA perceives that production loans carry tangible returns; thus they are more likely to be repaid than non-production loans. Credit needs for non-production activities are, therefore, satisfied informally. Furthermore, the lengthy and complex approval procedures for VBA loans which involve high borrower transactions costs per unit of loan also mean that any pressing demand for credit and small loans are met by the informal sector. It is estimated that three out of four eligible applicants leave the VBA without obtaining a loan (ADB, 1995: 8).

Among the rural population, the poor has the weakest access to formal sector credit. Although the recent reforms have contributed to growth, poverty remains a major challenge. Data from the VLSS indicate that about 51 percent of the population live in poverty and that 90 percent of the poor are in the rural sector. The incidence of poverty is about 57 percent in rural areas (World Bank, 1995b: 12). While the national annual per capita income is US$220, the figure for rural households is only about US$86—less than half—and the per capita income of households in the lowest quintile is only about US$45. Poor households, which comprise the bulk of the rural population, are constrained by small non-production loans to smooth consumption and lack of collateral. Although land reform in Vietnam aims at reaching the right balance of efficiency and equity, landlessness is still a serious problem, particularly in the Mekong Delta where most land use rights certificates have been issued, and where many households (10 percent or more) have become landless after selling these rights to larger farmers. Many farmers in
the north have become landless because they failed to pay taxes (UNDP and UNICEF, 1996: 46).

In addition to the lack of adequate collateral, poor households’ access to formal sector credit has also been limited by low education, geographical isolation, and poor communication facilities resulting in a reliance on informal lenders and limited self-finance. VBA officers estimate that the proportion of poor households actually served by the VBA was significantly lower than their proportion in the rural population: only 10 percent of its loan volume went to poor households, which made up about 40 percent of the total (World Bank, 1995a: 65).

3.2.1.2 The Vietnam Bank for the Poor

Established in 1995, the Vietnam Bank for the Poor (VBP) was created partly in response to the concentration of the VBA on non-poor farmers with adequate collateral, and more generally to enhance the provision of financial services to the poor.\(^{12}\) It aims to reduce poverty by providing the main source of low interest loans for the rural poor, and is an important part of the Government’s Hunger Eradication and Poverty Reduction program.\(^{13}\) The VBP’s objective is to mobilise funds to lend exclusively to the poor. Because it offers cheap credit, the VBP is discouraged from mobilising its own funds by promoting rural savings thus

\(^{12}\) The VBP was established by Government Decree No.525/TTg of August 31, 1995, and began operations on January 1, 1996.

\(^{13}\) Also in the framework of the Government’s Hunger Eradication and Poverty Reduction program, some special credit programs based on the Council of Minister’s decisions 120/HDBT, 327/HDBT in 1992 to create employment and policies for the use of bare land, denuded hills, forests, alluvial flats, and water bodies were launched. The main characteristics of these programs are to provide some target borrowers with preferential rates.
has always been dependent on the SBV and the VBA for discounted funds. During the initial phase, the VBP receives funds from the VBA’s Fund for Preferential Loans to Poor Households as well as poverty alleviation funds from government and external sources. The VBP currently uses the existing infrastructure and personnel of the VBA at the district and commune levels. Loans from the VBP are collateral-free, with maturities up to three years. They are generally limited to the equivalent of VD 1 million, and are only for setting up production or service businesses.

The level of outreach of the VBP in its first year of operation was impressive. An initial portfolio of loans was transferred to it from the VBA, but this soon doubled and after just one year of operation VBP loans totaled US$120 million—somewhat less than 15 percent of VBA’s lending (UNDP and UNICEF, 1996: 66). While the cost of lending to the poor appears to be higher than to the non-poor, the VBP’s interest rate policy is inconsistent with its stated objective of maintaining the value of its capital and covering the cost of operations. In the third quarter of 1996, the lending rate was only 1.0 percent per month, while the comparable VBA rate was 1.7 percent per month. It has been estimated that the VBP’s annual cost of operations will be equivalent to about 10 percent of the value of the loan portfolio, and that at least another 4 percent needs to be retained to cover bad debts (UNDP and UNICEF, 1996: 67). It is clear that inadequate allowance for administration costs in the provision of microfinance is more severe for the VBP than for the VBA. Under these conditions, the VBP will require substantial and continued subsidisation to remain viable. While the objectives and rationale for this type of bank are well founded (Benjamin, 1994; Foundation for Development Cooperation, 1995; Yaron, 1994), several aspects of the institutional framework
need to be designed carefully to reflect best practice in banking for the poor to avoid the risk of distorting the financial markets, and to create a market-friendly role for the government. The VBP currently acts as a mechanism for income redistribution, but in doing so it distorts the credit market. The VBP, therefore, faces a dilemma. On the one hand, it operates as a channel for preferential loans to the rural poor, as directed by the government. On the other, it aims to meet its financial autonomy objective. In practice, however, it has to sacrifice the latter. Without financial support from the government and international donors, the VBP is unlikely to become financially sustainable.

Since demand for rural credit is much higher than the amount available through the VBA, the emergence of several alternative private financial institutions was encouraged by the SBV during 1992-93. During these two years, the network of former rural credit cooperatives which had collapsed was replaced by private rural shareholding banks and popular credit funds. 14

3.2.2 Other Formal Financial Institutions

3.2.2.1 Rural Shareholding Banks

Even prior to the passage of the National Law on Banks, Cooperative Credit Institutions and Financial Establishments in 1990, there were 15 commercial shareholding banks operating in both rural and urban areas. Most of the existing rural shareholding banks (RSBs) have gradually taken the place of the former rural

14 Rural credit cooperatives were organised in North Vietnam in 1956 and in the South in 1976. While 7,500 rural credit cooperatives existed in 1990, only about 64 remained in operation in 1994. The number declined sharply because they were largely unregulated and acted as informal institutions. As a result of ‘adverse selection’ and ‘moral hazard’ they lost funds, and most of them collapsed during 1990-94 (World Bank, 1995a: 72).
credit cooperatives in rural areas. They are located mainly in the south, and 44 had been licensed by 1995 (UNDP and UNICEF, 1996: 67). A RSB typically has about 50-60 shareholders, a few of whom have large holdings. All shareholders are local people who have close and/or family relationships with each other. They are usually rich or well-off.

Operating funds of RSBs are derived from chartered equity, deposit mobilisation and borrowings. As evidenced in a case study of five RSBs chartered equity amounted to 18.6 percent of total funds, deposits 38.5 percent, and borrowings, 42.9 percent (Dao and Nguyen, 1993: 18). Another study indicates that large proportions (50-80 percent) of rural bank funds are obtained directly from the VBA (World Bank, 1995a: 71). The RSBs on-lend these funds to rural households at higher interest rates, and in many cases operate as VBA service centres. The dependence of the RSBs on the VBA for funds also means that they do not effectively compete with the VBA. Although the RSB interest rate on deposits is 0.5 or 1 percent higher than that at the local VBA, the RSBs still face the ceiling (on loan rates) imposed by the SBV, so their capacity in savings mobilisation is still weak. Primary savers, who represent a relatively small clientele of the RSBs, are traders. Other people with savings would rather lend through the informal market, which offers higher interest rates. In addition, the RSBs are still viewed as fairly risky. It appears that they do not have equal access with the VBA to the SBV loans and insurance.

In general, the largest portion of loans from RSBs flows to farm households in their service areas. Although there is no restriction on loan use, the RSBs prioritise their loans for investment by the private sector, with the bulk—70 percent—allocated to production, such as rice crop intensification, land-leveling,
and the development of fruit gardens (Dao and Nguyen, 1993: 20). Credit to rural traders and others accounts for a relatively small proportion of total lending. The RSBs report that they meet 10-30 percent of the estimated credit needs in their area, which is similar to the percentages quoted by the VBA district branches (World Bank, 1995a: 71). As with the VBA, rural bank loans carry short maturities (3-6 months).

In contrast to the loan portfolios reported by the VBA district and province offices, where the poor represent a minor borrower category, the proportion of funds loaned to the poor by the RSBs significantly exceeds the proportion of poor households in the district where they operate. In the service areas of RSBs interviewed, poor households received 60 percent of the loan volume, while they constituted only 30 percent of households (World Bank, 1995a: 65). The policy of waiving collateral on small loans is an important factor explaining the RSBs' stronger emphasis on lending to the rural poor.

The initial performance of the RSBs has been quite impressive. The repayment rate from a survey of five rural banks was remarkably high at 98 percent (Dao and Nguyen, 1993: 20). Most defaults are the result of crop damage.

3.2.2.2 Popular Credit Funds

The history of credit and trading cooperatives in rural Vietnam before 1992 was one of clear failure, although there were some instances of successful private initiatives in credit cooperatives with the help of NGOs (Cao and Dao, 1992). Since the VBA was unable to fill the vacuum left by the failure of the former rural credit cooperatives, in addition to the establishment of RSBs, a pilot project of the SBV to
increase small farmers' access to formal sector credit was conducted during 1993, based on Popular (or Peoples') Credit Funds. These are commune-based rural credit institutions, and are modeled after the *Caisse Populaire* system in Quebec, Canada. This system consists of a set of regional credit funds at the provincial level, built around a central credit fund. The central fund, which receives 40 percent of its capital from the SBV and the balance from shares issued to the local and regional units, has the responsibility of safeguarding regional and local credit funds. The regional funds are in charge of examining and supervising the operation of local funds and allocating capital to the latter.

As voluntary membership economic units, each local credit fund has at least 12 founders. PCFs have been now approved in 34 out of 50 provinces. Table 3.4 shows the growth of PCFs from March, 1994 to May, 1995 in terms of number of PCFs, PCF members, and borrowing and lending positions. With the approval for PCFs in July, 1993, the number of PCFs rose to 153 in March, 1994, and to 207 at the end of May, 1995. Geographical coverage increased from 14 provinces comprising 78 districts to 34 provinces. The number of members increased nearly five-fold during this period (World bank, 1996: 52).

PCFs have two kinds of share capital: permanent shares and qualification shares. Permanent shares, which are of much higher value than qualification shares, are purchased by the founders and receive dividends. Qualification shares have a minimum nominal value of VD 30 thousand and earn no interest. Deposits are accepted from both non-members and members. A strong feature of PCFs as rural financial institutions is the increasing share of deposit funding of loans. Deposits accounted for about 64 percent of loans outstanding in March, 1994, but for 88 percent by May, 1995.
Although the PCFs maintain high lending positions the scope of their financing operations is still quite limited, as the volume of funds managed is relatively small. Loan interest rates although depending on deposit rates are still subject to the ceilings imposed by the SBV. However, a spread of 0.5 to 0.7 percent per month between the two is accepted, and the SBV states that the spread can be as high as 1 percent over the PCF average cost of funds (World Bank, 1996: 52).

Although there is no restriction on loan use, PCFs often provide short-term credit in the form of working capital loans for crop production and livestock raising. Deposits are not a prerequisite for receiving a loan, but a farmer must buy a qualification share in the fund. The typical loan size varies from VD 250 thousand to VD 1 million, and the smallest loan reported has been just VD 50 thousand (World Bank, 1995a: 70).

Despite the fact that the interest rates on loans from PCFs are a little higher than those charged by the VBA, PCF loans are attractive to farmers. The system is characterised by commune-level units, and its operations focus on providing access to financial services for small rural borrowers and savers. Thus, it has closer contacts with small farmers than the VBA does. In rural Vietnam, characterised by poor infrastructure, simplifying loan procedures (thus reducing the time required to apply for loans), and shortening the distance between the borrowers' homes and the lenders are likely to improve access for the rural poor.

---

15 Loans outstanding in 1994 of the VBA and PCFs were VD 9,186 and VD 14 billion, respectively as shown in Tables 3.2 and 3.4.

16 The road density of Vietnam is only 0.03 km/square km, compared with ratios of 0.15 for Thailand and 0.52 for the Philippines. As much as 90 percent of local roads are unpaved (World Bank, 1996: 4).
### Table 3.4
The Growth of PCFs: March 1994–May 1995

<table>
<thead>
<tr>
<th></th>
<th>March, 1994</th>
<th>May, 1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of PCFs</td>
<td>153</td>
<td>207</td>
</tr>
<tr>
<td>PCF members</td>
<td>12,000</td>
<td>65,268</td>
</tr>
<tr>
<td>Capital (VD billion)</td>
<td>4.8</td>
<td>15.7</td>
</tr>
<tr>
<td>Deposits (VD billion)</td>
<td>9</td>
<td>108.7</td>
</tr>
<tr>
<td>Outstanding loans (VD billion)</td>
<td>14</td>
<td>123.3</td>
</tr>
<tr>
<td>Deposits/Outstanding loans (%)</td>
<td>64.3</td>
<td>88.2</td>
</tr>
</tbody>
</table>

*Source:* World Bank (1996: 52) and author’s calculations.

As the system of PCFs expands, and as a result the range of financial services is widened, access for borrowers and savers will be improved, and savings mobilisation and loan repayment will be emphasised.

### 3.3 The Informal Financial Market

An enormous expansion of formal sector credit has been injected into the rural sector through a vast number of institutional settings of the VBA network, the RSBs and the PCFs. Although the formal financial institutions have experienced remarkable increases both in total amount of credit disbursed and in number of borrowers, they have not been able to catch up with the growth in credit demand in the rural sector. The estimation from the VBA shows that the formal sector credit system met about 30 percent of its credit requirement in 1994 (World Bank, 1996:...
Furthermore, since formal lenders do not provide a comprehensive range of rural financial services, informal lenders are found to play a very important role in rural areas.

In Vietnam the planning model was implemented only partially, and a repressed market economy always coexisted with the planned economy (Fforde and Vylder, 1988). An informal financial market was part of this repressed economy. Financial liberalisation since 1989 has contributed to a flourishing of informal financial markets.

The coexistence of the formal and informal sector means that they specialise in providing different products in the rural financial market. While formal institutions restrict their loans to investment purposes and insist on physical collateral, consumption loans, and loans where collateral is unavailable are served by informal lenders. In addition, the lengthy approvals procedures for formal sector loans also mean that loans needed immediately are satisfied informally. Hence, in this context the choice of borrowing between formal and informal credit sources is not available.

Although scanty, available information on informal credit indicates that the informal sector provides the bulk of rural financial intermediation. In a survey undertaken by the Ministry of Agriculture and Food Industry covering seven provinces in 1990, between 68 and 94 percent of farm households received credit from informal sources during the preceding year (Seibel, 1992: 72). In another survey carried out in 1991 in four provinces, Cao and Dao (1992: 19) estimated that, on average, 45.8 percent of farm households borrowed from informal sources. The VLSS also provides evidence of the reliance of rural households on the informal market: about 73 percent of total loans of households were obtained from
informal sources in 1992-93, of which moneylenders accounted for 33 percent, while friends and relatives accounted for 40 percent.

Nation-wide, it is impossible to measure precisely the total volume of rural credit, and the share of the formal and informal sector over time since data on informal lending are incomplete. Except for the VLSS, which indicated that informal lending comprised 73 percent of the total value of loans obtained by farmers in 1992-93, no study on rural finance has produced a figure for the total amount of nation-wide informal credit. However, conversations with VBA staff revealed that although informal credit played a very important role during the early years of financial reform, its share has clearly fallen—especially in financing production activities—since the VBA’s reorientation of lending to individual households in 1991.

In the context of rural Vietnam, there are four major types of participation in informal finance: mutual lending among family members, relatives, friends and neighbours; rotating savings and credit associations (ROSCAs) or *Hui*; moneylenders; and traders. The operation of particular informal lenders can be described briefly as follows:

Relatives, friends and neighbours lend to each other at negotiated rates, which may be low (neighbours) or in many cases (relatives and close friends) zero. Instead, granted labour or grants as implicit interest payment are common practices. The purpose of loans obtained from relatives, friends and neighbours include repairing or building houses, children’s schooling and emergency consumption (such as medical treatment, funerals), but they are rarely for the purchase of inputs for production. House construction is the primary purpose of informal non-commercial loans, and relatives tend to be the preferred source for housing loans.
Loans may be in cash, but are mostly in kind, in the form of paddy, gold. Loans for building are often in gold and for longer terms (1-2 years). Loans in cash are for shorter terms (three, six or nine months). Repayments are easily rescheduled if necessary, and collateral is mostly not required. Relatives, friends and neighbours are the most favourable sources of credit for rural households since their loans carry low interest rates and have flexible repayment schemes.

*Hui* is one type of ROSCA set up voluntarily by members, and the organisations are not formally registered. These associations are formed in order to enable members to help each other financially. Members are often relatives, close friends and neighbours. Savings are collected weekly or monthly, and loans are given with or without interest. The so called non-commercial ROSCAs or self-help groups (SHGs) have existed for many years. Recently, this type of SHGs has developed with the supervision of NGOs and formal credit institutions, and it is often linked with the local formal credit institution or local authority to reduce transactions costs and enhance peer monitoring loans among groups. The World Bank and other international donors have also pushed for channeling funds to SHGs through NGOs such as the women’s unions, the farmers’ associations (UNDP, 1996). Another type of ROSCAs called commercial *Hui* involving bidding for the savings collected each round, is now more popular. Membership is extended to include non-neighbours in villages/communes. Savings mobilised may be in the form of cash, rice or gold, and each member can draw on the pool of savings collected weekly or monthly on a rotating basis. Interest rates are charged by the member who gets the loan through bidding, hence they are closed to the market. The number of members and the amount of money a *Hui* gets depend to some
extent on the need and resources of those who participate. Although there is no data available as to the total volume of these saving and credit activities, it is believed that almost all merchants and small entrepreneurs participate in *Hui* (World Bank, 1995a: 78).

In the absence of an effective formal financial system, and the lack of funds from relatives and friends, the existence of moneylenders is understandable. Moneylenders had been strictly repressed, but have become prominent since the financial reforms in 1989. Experience shows that where access to the formal financial sector is limited and loanable funds are scarce, the moneylenders’ monopolistic power is strong and the interest rates they charge can be very high. In contrast, where access to the formal sector is improved, the difference between the rates charged by moneylenders and the formal sector may only reflect the costs and risks of the segmented markets (UNDP and UNICEF, 1996: 69-70). There are signs that the interest rates charged by moneylenders have fallen in recent years because of lower inflation rates and the growth of formal sector loans with lower interest rates. During 1990-92, the average rate was 6-7 percent per month, and the maximum recorded was 25 percent per month (Seibel, 1992: 74). Rates in 1995-96 were 3.5-5 percent on average, and the maximum was about 10 percent (UNDP and UNICEF, 1996: 71-2).

Moneylender loans seem to be the most flexible loans available to rural borrowers. Terms and conditions of loans from moneylenders are very diverse, and loans can be provided in a timely manner. In general, lenders pay little or no attention to the use of loans. No collateral is needed, and they routinely allow roll­overs and loan rescheduling. Moneylenders can also provide loans to non-local borrowers if the latter are willing to pawn their possessions, such as gold,
motorbikes, and bikes. Loans from moneylenders are characterised by their small size, and can be used to satisfy all needs ignored by the formal sector.

The traders-lenders have mostly made their appearance since the financial reform in 1989, and often lend by selling farm inputs on credit. Loans are repaid by delivery of crop products following the harvest, on the basis of predetermined prices. Lending rates charged by traders have also been falling recently. In 1990-92, farmers had to pay rates as high as 10 percent per month (Tran et al., 1992: 61), but now the common rate is 6 percent (UNDP and UNICEF, 1996: 71). In many communes, cooperatives now play the role of such traders, but the different feature is that they have easier access to formal financial and trading markets.

The VLSS indicates that although there is considerable variation, short-term informal rates are usually about two or three times higher than the level of comparable formal rates. With the expansion of the formal credit institutions in recent years, a narrowing of the interest rate differentials between formal and informal loans, particularly with loans for production activities is observed (Tran and Nguyen, 1998: 37). Selected interest rates from various sources calculated from the VLSS are shown in Table 3.5.

It is noteworthy that the common complaint about 'usurious' moneylenders and traders appears not to be based on appropriate calculations. Interest rates charged by moneylenders and traders on small short-term loans are often converted into a medium- or long-term rate and may over-estimate the actual charge. If the loan is small and if the effective interest rate (encompassing transactions costs as well as the nominal lending rate) is taken into account, it is often more efficient to borrow from a moneylender than from a formal source. A number of recent studies
have also revealed that small borrowers prefer to borrow from informal sources rather than from the formal sector (Tran and Nguyen, 1998: 43).

Table 3.5

Average Interest Rates by Lender and Types of Household in Rural Vietnam, 1993 (percent per month)

<table>
<thead>
<tr>
<th>Type of lender</th>
<th>Farm household</th>
<th>Non-farm household</th>
<th>All households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moneylender</td>
<td>5.8</td>
<td>9.8</td>
<td>6.7</td>
</tr>
<tr>
<td>Relatives</td>
<td>2.4</td>
<td>4.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Private individuals</td>
<td>2.5</td>
<td>7.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Private Banks</td>
<td>4.7</td>
<td>10.0</td>
<td>3.8</td>
</tr>
<tr>
<td>Government Banks</td>
<td>2.7</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Cooperatives</td>
<td>2.6</td>
<td>2.9</td>
<td>2.5</td>
</tr>
<tr>
<td>Others</td>
<td>2.8</td>
<td></td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>3.3</strong></td>
<td><strong>7.4</strong></td>
<td><strong>4.0</strong></td>
</tr>
</tbody>
</table>

*Source: UNDP and UNICEF (1996: 70)*

3.3 Summary

The years since agricultural and financial sector reforms have seen an enormous amount of credit injected into the rural sector through an evolving system of formal financial institutions. From the brief examination of the rural credit market following the reforms, it is clear that increased outreach of the formal sector in recent years has contributed to a corresponding decline of the informal credit market (World Bank, 1996; UNDP and UNICEF, 1996). This seems to suggest that formal and informal lenders are competitors in the rural credit market. However,
given the ceiling on formal interest rates and the excess demand for formal sector credit resulting from this, formal lenders are forced to rely on interest rate substitutes to ration credit. Under the circumstances of a weak legal framework during the transition, a lack of information on new clients, and a lack of experience in dealing with such information when formal lenders shift their loan portfolio towards rural households, formal lenders are observed to concentrate both on production loans and collateral (World Bank, 1995a and 1996; UNDP and UNICEF, 1996).

Requiring collateral for loans and focusing on production loans, on the one hand, exclude those farmers without collateral and those who seek non-production loans. On the other hand, this provides formal lenders with a credit delivery system through which they can sort out, screen potential borrowers, and reallocate part of their normal transactions costs to borrowers. This credit delivery system thus involves high borrower transactions costs, which impinge most heavily on small borrowers. It is, therefore, hypothesized that borrowers seeking small loans will prefer to work with informal lenders who charge a higher rate of interest but impose low transactions costs, and in contrast, borrowers seeking larger loans prefer to deal with formal lenders who charge lower interest rates but impose larger transactions costs. These considerations provide the basis for the hypothesis that the rural credit market is segmented into various sub-markets in which, quite possibly, formal and informal lenders might be performing complementary roles. The segmentation derives from the requirement and the type of collateral offered, the use of loans, the level of interest rates and borrower transactions costs, and the size of loans. The following chapters will discuss these issues further based on data from a rural household survey undertaken by the author in a district in Vietnam.
APPENDIX TO CHAPTER 3

Table A.3.1

Major Features of Agricultural Reforms and their Impacts*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agricultural production</strong></td>
<td>Collectivised</td>
<td>Partly decollectivised</td>
<td>Fully decollectivised</td>
</tr>
<tr>
<td><strong>Land</strong></td>
<td>Under cooperative control; restricted access to land</td>
<td>Allotted to individual farm households; insecure tenure</td>
<td>Long-term lease to individual farm households</td>
</tr>
<tr>
<td><strong>Farm decision</strong></td>
<td>Made by planning department and centralised</td>
<td>Made by planning without consideration of market forces</td>
<td>Made by individual farm households</td>
</tr>
<tr>
<td><strong>Farm operations</strong></td>
<td>Done by cooperatives</td>
<td>Jointly done by cooperative and households</td>
<td>Made by individual farm households</td>
</tr>
<tr>
<td><strong>Farm income</strong></td>
<td>Based on work time spent in cooperatives</td>
<td>Based on work time and amount of output beyond contract level</td>
<td>Total output after paying land tax and other contribution to local funds</td>
</tr>
<tr>
<td><strong>Input and output</strong></td>
<td>Strictly controlled by government; low output price; untimely supply of inputs</td>
<td>Partly controlled by government; fully controlled input supply; partly controlled output market</td>
<td>Fully liberalised</td>
</tr>
<tr>
<td><strong>Impacts</strong></td>
<td>No incentive</td>
<td>Partial incentive</td>
<td>Full incentive</td>
</tr>
<tr>
<td><strong>Level of self-sufficiency in rice</strong></td>
<td>Food shortage; imported rice</td>
<td>Food shortage in 1987-88</td>
<td>Self-sufficient in rice; exported rice</td>
</tr>
</tbody>
</table>

* CS : Contract system

Source: Nguyen (1995: 15)
Figure A.3.1
Monthly Inflation and Deposit Interest Rates

Note: TD interest rate = Time deposit interest rate.
      DD interest rate = Demand deposit interest rate.

Chapter 4

SAMPLE SURVEY

This chapter describes the survey area, discusses the design, representativeness, and credit characteristics of the sample. The data used in the analysis of borrower transactions costs, the determinants of credit applications, and of formal sector credit rationing were collected from surveys of rural households, the district VBA, village and commune leaders, and representatives of women's unions and farmers' associations in villages and communes conducted in 1996 in the Binh Luc district, Namha province.

4.1 Description of Binh Luc District

Namha province is considered as representative of socioeconomic and physical environments in the Red River Delta in the north of Vietnam (Figure 4.1). More than 90 percent of the population in the province lives in rural areas and earns a living from various kinds of agricultural production (Namha Province Statistical Bureau, 1996). The rainfall, temperature and soil in the province allow two crops in a year. Binh Luc district, a low-lying area in the northwest of Namha province located approximately twenty kilometres northwest of Namdinh city, was selected for the survey (Figure 4.2). In Binh Luc district, farm households account for 97 percent of total households (Binh Luc District Statistical Office, 1996).
Figure 4.1
Map of Vietnam and Namha Province
Figure 4.2
Map of Namha Province and Binhluc District
Farmers in the district used to grow only one crop a year, but with the recently improved irrigation system, two crop seasons are now feasible, as in other areas in the Delta. The Chaugiang river originates from the Red river, flowing from west to east, marking the northern border with Lynhan district. Another smaller river—the Sat—runs through the district, linking the Day and the Chaugiang rivers. The annual average temperature is 24.3°C and the annual average rainfall is 1,884 millimetres.

The transportation system has changed rapidly due to the province’s increased spending on road maintenance and construction in recent years. There is a twenty kilometre highway running from the west to the east through Binhmy town. The so-called ‘united’ railway from Hanoi to Ho Chi Minh City, which has two stops in the district, runs parallel to the highway. In 1994, there were a total of 25 kilometres of paved inter-district roads, and 130 kilometres of unpaved inter-village/commune roads (Binhluc District Statistics Office, 1995).

The irrigation system has also been improved in recent years. The district has 187 pumping stations, and irrigating channel stretching 215 kilometres (Binhluc District Statistics Office, 1996). And by 1996, most villages and communes in the district has access to electricity.

Table 4.1 shows the allocation of land in the district across various crops. The main crop is rice, which is double-cropped and accounts for 59 percent of total land (and 88 percent of cultivated land). Cassava, tomatoes, and sweet potatoes are the principal non-rice annual crops, occupying 8 percent of total land. Land for perennial crops such as oranges and bananas represents 5 percent of the total. In addition to the cropland distributed by the cooperatives, tendered land (mainly land used for fishponds), accounting for 4 percent of the total, is distributed by bidding.
for its management in a specified period of time. The household responsibility system began to be implemented in Binh Luc in 1988, and in 1993 land use right certificates began to be issued, which provided an incentive for rural households to invest more in land, especially land for perennial crops.

Table 4.1

Binh Luc District Land Allocation

<table>
<thead>
<tr>
<th></th>
<th>Area (ha)</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total land</strong></td>
<td>19,947</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Cultivated</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual crops</td>
<td>14,290</td>
<td>71.64</td>
</tr>
<tr>
<td>Rice</td>
<td>13,275</td>
<td>66.55</td>
</tr>
<tr>
<td>Other</td>
<td>11,685</td>
<td>58.58</td>
</tr>
<tr>
<td>Other</td>
<td>1,590</td>
<td>7.97</td>
</tr>
<tr>
<td>Perennial crops</td>
<td>886</td>
<td>4.44</td>
</tr>
<tr>
<td>Water surface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>1,015</td>
<td>5.09</td>
</tr>
<tr>
<td>Other</td>
<td>1,154</td>
<td>5.79</td>
</tr>
<tr>
<td>Other</td>
<td>3,617</td>
<td>18.13</td>
</tr>
</tbody>
</table>


The population of Binh Luc district in mid-1994 was 192,042, which included 89,364 labourers. Rural reforms began in 1981, then in 1988 land began to be allocated under long-term leases to farm households; input and output markets began to be liberalised, and farm management and the decision-making authority
were transferred from the cooperatives to individual households. This resulted in a reallocation of rural labour among various agricultural and non-agricultural activities. With the government permitting the establishment of private enterprises providing transportation services for goods and people, processing agricultural products, repairing bicycles, motorcycles, small tractors etc., and with the easing of restrictions on labour mobility, labourers have had more opportunities and greater freedom to travel in search of new jobs, especially non-agricultural ones. Although there has been a perceived increase in such jobs, the rural workforce was still dominated by agricultural labourers (Table 4.2).

Table 4.2

Binhluc District Labour Distribution, 1994*

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of labourers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>89,364</td>
<td>100.00</td>
</tr>
<tr>
<td>Agriculture</td>
<td>87,420</td>
<td>97.82</td>
</tr>
<tr>
<td>Industry and handicrafts</td>
<td>149</td>
<td>0.17</td>
</tr>
<tr>
<td>Trading</td>
<td>102</td>
<td>0.11</td>
</tr>
<tr>
<td>Services</td>
<td>103</td>
<td>0.12</td>
</tr>
<tr>
<td>Other</td>
<td>1,590</td>
<td>1.78</td>
</tr>
</tbody>
</table>

* Labour here refers to the population aged 15-55 for female and 15-60 for male


The average income per household in 1994 was VD 560 thousand, ranging from VD 170 thousand to VD 3,500 thousand (Binhluc District Statistical Office, 1995). The main source of income is from rice growing. Vegetables are primarily produced for home consumption. Sweet potatoes are partly produced for own use and partly for sale, while fruit is commonly sold.
Animal husbandry is the second main source of income. Pigs, chickens, ducks, and fish are most commonly produced. Most households raise two or three pigs and a dozen chickens a year, and they sell their livestock products on the market.

4.2 Lenders in the Area

The essential difference between formal and informal lenders is that the former operate under the regulation of the SBV while the latter do not. Under this classification, the formal institutions in the district consist of the district VBA and two PCFs and informal lenders comprise relatives and friends, traders, moneylenders, and ROSCAs. Traders who operate by dealing in input and output markets include private dealers and cooperatives.

4.2.1 Formal Lenders

In the formal credit market, the most important source of credit is the district VBA. Although there are two PCFs operating in Binhmy town and Ngocelu commune, the scope of their financial operations is still quite limited, since the volume of funds managed is relatively small in comparison with that of the VBA.

Established in 1991, the district VBA has a head office in Binhmy town and is in charge of providing credit within several categories to 28 communes in the district. There are also two transaction offices whose main functions are to mobilise savings and disburse loans below VD 1 million. Loans greater than VD 1 million are disbursed at the head office.
Savings mobilisation still plays a minor role as a source of funds for the district VBA, accounting for 29 percent and 23 percent of total loans outstanding in 1993 and 1994, respectively (Binhluc District VBA Branch, 1995). Table 4.3 details the bank's loan portfolio during 1993-94.

### Table 4.3

**Loan Portfolio of the Binhluc District VBA (VD million)**

<table>
<thead>
<tr>
<th></th>
<th>1993</th>
<th>1994</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loan</td>
<td>Percent</td>
</tr>
<tr>
<td></td>
<td>outstanding</td>
<td></td>
</tr>
<tr>
<td><strong>Total loans</strong></td>
<td>11,251</td>
<td>100.00</td>
</tr>
<tr>
<td><em>Medium-term</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State farms and cooperatives</td>
<td>116</td>
<td>1.03</td>
</tr>
<tr>
<td>Households</td>
<td>1,026</td>
<td>9.12</td>
</tr>
<tr>
<td><strong>Short-term</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State farms and cooperatives</td>
<td>1,103</td>
<td>9.80</td>
</tr>
<tr>
<td>Households</td>
<td>9,006</td>
<td>80.05</td>
</tr>
</tbody>
</table>

*Source: Binhluc District VBA Branch (1995).*

Medium-term loans increased more rapidly than short-term loans during 1993-94 mostly due to the increase of funds from a World Bank project that focused on providing loans with maturities of one to three years. In 1993, while lending to state farms and cooperatives represented 1.0 and 9.8 percent of medium- and short-term loans outstanding, the amounts for households were 9.1 and 80.0 percent, respectively. The year 1994 saw a further shift of lending to the household sector—medium and short-term lending to state farms and cooperatives accounted for 0.3
and 4.1 percent, respectively, while households accounted for 22.9 and 73.0 percent of the medium and short-term loan portfolios. Overdue loans at the end of 1994 accounted for 1.48 percent of total loans outstanding. The bank is faced with some practical difficulties in dealing with defaulters since foreclosure of the borrowers’ assets requires the cooperation of the bank, the people’s committees and legal authorities at communes, which is typically costly and time consuming to the bank.

There are various credit delivery schemes, characterised by differences in terms of interest rates charged, loan purpose, target clients etc. The ‘normal’ scheme provides mainly short-term loans for production activities, not distinguishing non-agricultural from agricultural purposes, financed by savings mobilisation and by the province VBA. The interest rates in this normal scheme, which range from 1.75 percent to 2.8 percent per month, are subject to a ceiling set by the State Bank of Vietnam. There are also ‘targeting schemes’ that use funds from foreign donors and from the government. One program using funds from the World Bank project provides mostly medium-term loans for agricultural activities, with an interest rate of 1.6 percent per month. Another program operating on the basis of SHGs delivers credit for production activities using funds from group savings and the Dutch Rabobank. Interest rates are the same as for the normal scheme. A third scheme, using funds from the government, provides loans to poor

---

1 Overdue loans are subject to interest rates, which are 50 percent higher than normal rates. In 1994 the largest overdue loans were from two cooperatives in the district.

2 Conversations with bank staff show that only a few legal cases were brought against households when defaulting, and none for cooperatives and state farms.

3 The government argues that differentiating interest rates is a way to achieve social objectives and the district VBA has a number of special funds from the government and foreign donors to lend with preferential interest rates.

4 During the period May 1995 to May 1996, the ceiling on interest rates for short-term loans was reduced from 2.8 percent to 1.75 percent per month.
farmers for production activities, with an interest rate of about 1.5 percent per month.

The average deposit rate as calculated by the bank in 1994 was 1.53 percent, while the average lending rate was 2.52 percent. The difference between these rates generated a profit for the bank of VD 388 million. The average monthly salary of the bank staff in 1994 was VD 594 thousand which was comparable with other public servants' salaries in the district.

4.2.2 Informal Lenders

The scope and characteristics of informal credit transactions in the area have not been covered in the literature. It is widely perceived, however, that before 1989 there were very few informal transactions, and that most of these were between relatives, friends and neighbours. This is understandable, since informal lending by professional moneylenders and traders was strictly suppressed in the past, and households did not have much need for loans for investment. With the establishment of the household as an autonomous production unit, the demand for credit for production activities increased, and informal lenders re-emerged to fill the vacuum left by formal lenders. Although the informal credit market in the district was characterised by a diverse set of lenders, conversations with bank staff, members of people's committees and women's unions in communes showed that informal lenders can be grouped into some categories: relatives and friends.
moneylenders, traders, ROSCAs, and others. Since there are very few landless farmers, the role of landlords and tenancy markets in providing interlinked credit is negligible. During the three years 1992-94, with eased restrictions on establishing small businesses, the number of traders in the region increased significantly, and they began to compete strongly with many cooperatives in communes in supplying fertilisers and pesticides. There are only a few professional moneylenders in the district, who are often traders, small shopkeepers or relatively wealthy farmers. Informal loan transactions are mostly undertaken in the local market or at the lender's place of business.

4.3 Sample Design

A household sample survey was conducted to examine and explain the role of borrower transactions costs in the rural credit market. Like other districts in Vietnam, Binh Luc is divided administratively into towns and communes. Both are further divided into villages. There are 28 communes and one town (Binhmy) in the district. A total of 150 households in Binhmy and two of the communes, Mythuan and Binh Nghia (representing different conditions in terms of production and business activities, and transportation facilities), were selected to conduct the sample survey (Figure 4.3).

---

5 Others include lenders who do not come under mentioned categories, and whose identities were not specified clearly. For example, we came across one type of lender that is difficult to classify as either informal or formal. These are the cooperatives. Their operations are much the same as those of traders—advancing inputs (seeds, fertilisers) to their members and being repaid in amounts of farm outputs at harvest time. Since these groups are not regulated by the government or the SBV, they have been classified here as informal and categorised as others.
Figure 4.3
Map of Binhue District and Location of the Survey Area
A stratified two-stage sampling method (Cochran, 1977) was designed for the survey. A total of 150 households were interviewed and divided equally so that we had information on 75 bank borrowers and on another 75 non-bank borrowers who had not taken loans from the bank. In the first stage, the 150 households interviewed in each commune were distributed according to town/communes with a distribution proportional to the number of households in each town/communes. In the second stage, the number of households interviewed in each village in town/communes was determined again proportionately to the number of households in each village. Villages formed the primary unit in town/communes selected. Each primary unit was divided into secondary units of household. The names of borrowers who had taken bank loans in each village could be obtained from the bank. Subtracting these from the population in the village gave us the list of those who had not taken loans from the bank. The list of bank borrowers in the village was selected such that it reflected various schemes of VBA loan delivery. The list of non-bank borrowers in the village was selected at random. Table 4.4 summarises the size of the sample undertaken in selected town/communes.

The questionnaire used to obtain information about the demand for credit, the existence of being credit constrained, characteristics of loan contracts such as amounts borrowed, costs of borrowing from different sources, time taken to obtain loans, and other information about the borrowers is shown in the Appendix.

In order to reduce the likelihood of inaccurate recall by the interviewee, questions were limited to activities within the previous year. Since most farmers borrow from the bank infrequently (usually only once or twice a year), the probability of forgetting the interest rate charged and transactions costs is minimal.
Table 4.4  
Size of Sample in Selected Town/Communes

<table>
<thead>
<tr>
<th>Town/Commune</th>
<th>Size of sample (Number of households)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binhmy</td>
<td>28</td>
</tr>
<tr>
<td>Mythuan</td>
<td>46</td>
</tr>
<tr>
<td>Binhnghia</td>
<td>76</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>150</strong></td>
</tr>
</tbody>
</table>

In addition, some information obtained from borrowers was able to be double-checked against that obtained from the bank. The survey was conducted during the period from the first week of June 1996 to the end of August 1996. The reference period was the year from June 1995.

Since many bank borrowers may not have wished to disclose information about amounts spent on bribes or other payments to officials of the bank when obtaining a loan, respondents were asked simply to report total cash transactions expenditures in connection with the loan, excluding interest payments. In this case, care was taken in explaining carefully and in detail to respondents about what should be included in these cash transactions expenditures, such as application fees, travel expenses, food and entertainment expenses, bribes etc.

The total time actually forgone in connection with a loan by a borrower can be defined by the number of days needed to be spent away from work. Care was also taken here to distinguish this from the waiting time which counts from the time the loan is initially applied to the time the loan is actually obtained. A problem that
arises in determining the opportunity cost of this time is how to calculate the prevailing market rate for labour at different times of the year. Fortunately, the survey shows that most agricultural loans are taken about three months before the harvest period.

As a result of the small sample size, it is necessary to accept relatively high variances in the sample estimates. Another problem needing to be considered is that of systematic over-reporting or under-reporting. This problem often arises in surveys in which the enumerators are perceived as officials of the government (Ahmed, 1982: 85). However, this may be overcome by using students as the investigators and explaining that the purpose of the survey is academic only.

4.4 Characteristics of the Sample

The sample sizes of farm households in the various locations and their production and socioeconomic characteristics are presented in Table 4.5.

Binhmy town, where the bank is located, is situated on a highway and a railway station. This allows members of some households to seek additional sources of income off the farm, either through employment in the township or by operating small-scale non-agricultural businesses such as bicycle and motor cycle repair shops, bars, restaurants and grocery shops. Non-farm household heads in the sample accounted for 21.4 percent, and farm household heads having second jobs, mainly off-farm, 53.6 percent. In Mythuan commune, which is located eight kilometres from the bank, the soil type and rainfall pattern dictate that the main crop is rice. Since the same highway runs through the commune as in Binhmy, farmers in Mythuan also have opportunities to earn non-farm income by trading fruit,
processed food and rice, but the number of farm household heads who have second jobs here is much less than in Binhmy.

Next to the Chaugiang river, ten kilometres away from the bank, is Binhnhgia commune where, although the average farm size is half that of Mythuan, the better soil allows farmers to grow corn, tomatoes and sweet potatoes, in addition to two main rice crops. The cropping intensity in Binhnhgia, measured by the number of months land is used in a year, is 12/12. That is, land is fully utilised, which is not the case in the other two communes. The small river offers farmers the opportunity to raise fish as a source of income. In addition, the traditional professions such as noodle processing and silk production can provide extra income during quieter farming periods. This explains the high number (56.6 percent) of Binhnhgia farm household heads who have second jobs.

In the three town/communes, rice is the most important crop and a major source of income. Crop yields across the three communes are nearly the same. The age of household heads and the size of households are not significantly different in the three communes, while household heads in Binhmy and Binhnhgia have slightly more schooling than in Mythuan.

It is also of interest to compare the sample data with those for the district as a whole. According to district records, non-farm households at the end of 1994 accounted for 2.71 percent, which was less than the percentage of 5.33 in the sampled households (Binhluc District Statistical Office, 1995). The possible explanation for this discrepancy is that during 1995 and early 1996, the number of non-farm households, especially in Binhmy town, increased significantly. Many households leased their cultivable land and switched from farming to more
Table 4.5

Characteristics of Sample Households by Location*

<table>
<thead>
<tr>
<th>Item</th>
<th>Binhmy</th>
<th>Mythuan</th>
<th>Binh nghia</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size (Number of Households):</td>
<td>28</td>
<td>46</td>
<td>76</td>
<td>150</td>
</tr>
<tr>
<td>Non-farm household heads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>6</td>
<td>2</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>(21.43)</td>
<td>(-)</td>
<td>(2.63)</td>
<td>(5.33)</td>
<td></td>
</tr>
<tr>
<td>Farm household heads having a second job</td>
<td>15</td>
<td>8</td>
<td>43</td>
<td>66</td>
</tr>
<tr>
<td>(53.57)</td>
<td>(17.39)</td>
<td>(56.57)</td>
<td>(44)</td>
<td></td>
</tr>
<tr>
<td>Farm size (sao²)</td>
<td>5.44</td>
<td>9.01</td>
<td>5.69</td>
<td>6.66</td>
</tr>
<tr>
<td>Productivity of paddy growing (kg/sao-crop)</td>
<td>156</td>
<td>150</td>
<td>158</td>
<td>155.17</td>
</tr>
<tr>
<td>Cropping intensity (months/year)</td>
<td>10</td>
<td>10</td>
<td>12</td>
<td>11.01</td>
</tr>
<tr>
<td>Age of household head (years)</td>
<td>48.59</td>
<td>43.39</td>
<td>45.04</td>
<td>45.18</td>
</tr>
<tr>
<td>Schooling of household head (years)</td>
<td>8.00</td>
<td>6.71</td>
<td>7.73</td>
<td>7.47</td>
</tr>
<tr>
<td>Size of households</td>
<td>4.89</td>
<td>4.73</td>
<td>4.33</td>
<td>4.56</td>
</tr>
<tr>
<td>Dependency ratio (%)</td>
<td>12.66</td>
<td>19.21</td>
<td>18.97</td>
<td>17.86</td>
</tr>
<tr>
<td>Gender ratio (%)</td>
<td>39.28</td>
<td>43.48</td>
<td>44.73</td>
<td>43.33</td>
</tr>
</tbody>
</table>

* parenthesis indicates percentage

* 1 sao = 360 square meters

- indicates zero

profitable non-farm activities, such as food-processing enterprises, motor and bicycle repair shops, and transporting people and goods.

The average farm size per household in the district is 7.53 sao compared to 6.66 sao in the sampled households. The explanation for the smaller farm size in the
sample is that cultivated land per household is lower in Binh nghia and Binh my than the district average.

The final noticeable difference is the average household size. The district statistics indicate that the average household size was 3.93 persons, less than the average 4.56 persons in the sample. This could be the result of a difference in the definitions of a 'household' between the survey and the district registrar. The survey identified a household as having one identified household head and included all members residing in the household for at least three months. According to this definition, households in which three generations were residing together were not uncommon. However, this type of household was often split into two households when compiling the official data, according to the district registrar.

4.5 Credit Activities

Credit activities of sample households by borrowing status and source are presented in Table 4.6. The proportion of household heads that did not take any loan ranged from 6.5 percent in Mythuan to 13.2 percent in Binh nghia. By comparison, in a survey of 337 households undertaken in four provinces in 1995 in Vietnam, non-borrowers accounted for 24.9 percent on average, ranging from 7.3 to 40.5 percent (DAI, 1995: 4). In China, surveys in 1987-88 in three counties indicated that from 21.5 to 78.5 percent were non-borrowers (Feder et al., 1989: 514). The share of non-borrowers is similar in Binh my and Mythuan, whereas it is higher in Binh nghia. Household heads who did not borrow were asked the reasons for not borrowing. There were two main reasons: the availability of sufficient resources from own savings, and the existence of credit binding constraints, especially for
formal sector credit. Some household heads applied for credit but were rejected, while others did not apply, perceiving a high probability of being rejected. The most common reason for not borrowing in Binh nghia was 'no need to borrow' due to the smoother cash flow of farm households which had higher crop intensity, and the prevalence of small off-farm business and non-farm activities in this commune. Smaller farm sizes and less seasonal and more stable cash incomes from such activities, as compared to rice cropping activities, diminished the demand for credit by Binh nghia households. This is confirmed not only by the incidence of borrowers status, but also the average number of transactions per household, which is smaller in Binh nghia than in Mythuan and Binh my.

There were marked differences among the sample in the distribution of credit activities by source. Only 3.6 percent of Binh my households borrowed exclusively from the formal market compared to 10.9 percent in Mythuan, and 26.3 percent in Binh nghia.

Half borrowers in Binh my took loans from both the formal and informal markets, as compared to 32.6 percent in Mythuan, and only 10.5 percent in Binh nghia. The fact that many households in Binh my sought loans from both the formal and informal sectors implies the possibility of formal sector credit rationing. Farmers in Binh my, although having smaller farms, had more favourable conditions for larger scale off-farm activities requiring much capital. Their large demand for capital encouraged Binh my farmers to seek loans from the formal sector. However, their demand for formal sector credit is constrained by lack of physical collateral. As can be seen below, the terms and conditions of loans from relatives and friends are most favourable, but the small share of borrowing from these sources indicates
### Credit Activities

<table>
<thead>
<tr>
<th>Items</th>
<th>Binhmy</th>
<th>Mythuan</th>
<th>Binh Nghia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-borrowers (percent)</td>
<td>7.14</td>
<td>6.52</td>
<td>13.16</td>
</tr>
<tr>
<td>Borrowers from the formal market only (percent)</td>
<td>3.57</td>
<td>10.87</td>
<td>26.32</td>
</tr>
<tr>
<td>Borrowers from the informal market only (percent)</td>
<td>39.28%</td>
<td>50.00%</td>
<td>50.00%</td>
</tr>
<tr>
<td>of which relatives and friends only (percent)</td>
<td>5.57%</td>
<td>6.52%</td>
<td>14.47%</td>
</tr>
<tr>
<td>Borrowers from both formal and informal markets (percent)</td>
<td>50.01%</td>
<td>32.61%</td>
<td>10.52%</td>
</tr>
<tr>
<td>Number of credit transactions*</td>
<td>67</td>
<td>87</td>
<td>91</td>
</tr>
<tr>
<td>Average number of credit transactions per household</td>
<td>2.57</td>
<td>2.04</td>
<td>1.37</td>
</tr>
<tr>
<td>Average loan sizes (VD thousands) per transaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Formal</td>
<td>4,140</td>
<td>1,850</td>
<td>2,540</td>
</tr>
<tr>
<td>VBA</td>
<td>7,970</td>
<td>3,960</td>
<td>4,820</td>
</tr>
<tr>
<td>PCF</td>
<td>10,430</td>
<td>3,960</td>
<td>4,820</td>
</tr>
<tr>
<td>II. Informal</td>
<td>2,080</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relatives</td>
<td>3,010</td>
<td>1,090</td>
<td>910</td>
</tr>
<tr>
<td>Friends</td>
<td></td>
<td>950</td>
<td>2,480</td>
</tr>
<tr>
<td>Traders</td>
<td>3,020</td>
<td>1,000</td>
<td>1,090</td>
</tr>
<tr>
<td>Moneylenders</td>
<td>200</td>
<td>440</td>
<td>320</td>
</tr>
<tr>
<td>ROSCAs</td>
<td>4,970</td>
<td>1,520</td>
<td>960</td>
</tr>
<tr>
<td>Others</td>
<td>1,070</td>
<td>750</td>
<td>620</td>
</tr>
<tr>
<td></td>
<td>290*</td>
<td>510</td>
<td>-</td>
</tr>
</tbody>
</table>

- indicates zero; * or number of loans disbursed

---

*A total of 150 households were interviewed and divided equally so that we have information on 75 VBA borrowers and on another 75 non-VBA borrowers. However, in Binhmy besides the VBA, there is a PCF working as a formal institution; hence the number of borrowers who took loans only from the informal sector here is less than 50 percent.*
that rationing exists not only with formal sector lenders but also in the case of relatives and friends.

It is also clear that household borrowing from the formal sector is larger in terms of the amount of credit per transaction. In addition, small borrowers frequently borrow from informal lenders. Most small borrowers in the study area are those who have little cultivable land, and grow only rice. It is very hard for them to raise productivity substantially given limited land of poor quality. Lacking the capacity to diversify cropping, and hence their sources of income, small farmers often face a higher risk of income volatility than larger farmers. Their demand for credit is mostly small, and for purposes such as buying fertiliser, pesticide, and other inputs for rice growing. Such loans normally average less than VD 1,000 thousand for one crop. This finding is also confirmed by a recent study by Tran and Nguyen (1998: 41).

Table 4.7 characterises credit contracts by source for the three locations taken together. The average amount of formal sector credit per transaction is VD 5,250 thousand, nearly double the average loan size from moneylenders, and much larger than from the other sources. This figure is very close to that reported in a study by DAI (1995: 9) indicating that the average loan size from the VBA was VD 5,458 thousand.

Loanable funds of the bank in the district come from different sources and at different rates, and lending is also undertaken in various schemes with interest rates subject to the maximum set by the SBV, ranging from 1.5 percent to 2.8 percent per

---

7 Since terms and conditions for loans from relatives and friends are similar, these two sources are added together. This is also the case with loans from ROSCAs and other sources in Table 4.6. Others now include also ROSCAs throughout the thesis unless otherwise specified.
month, and averaging 2.1 percent per month. Various interest rates can also be observed in the informal market. Small loans from relatives and friends for a short-term and for emergency needs such as illness and funerals carry no interest, while a very low rate of 1 percent can be found if loans are in or in terms of gold and for purposes such as business or residential construction. Moneylenders in the study area charged rates ranging from 3 percent to 6 percent, depending on how a borrower’s potential to repay is evaluated and on the interaction between supply and demand. Traders in the area operate by giving advances in-kind (fertiliser, pesticide, other inputs, and rice) on the basis of promises to repay with farm products or cash at harvest time, either at a price negotiated in advance or at the market price prevailing at harvest time. Loans from traders are often undertaken two or three months before harvest, when cash income is very little. This provides a more likely explanation of why interest rates charged by traders are highest among informal lenders. The rates of ROSCAs and cooperatives that provide inputs and receive products after harvest are higher than formal sector rates, but lower than the rates charged by moneylenders and traders.

Borrower transactions costs, defined as all kinds of expense incurred by borrowers other than interest, are measured here as a percentage of the loan amount. While borrower transactions costs are of negligible importance for loans from moneylenders, traders and others, they account for 1.65 percent on average of formal sector loan amounts. Loans from relatives and friends also carry an

---

8 Borrower transactions costs comprise travel costs, application fees, expenditure on food, tea and cigarettes to entertain bank staff, possible bribes, and the opportunity cost of time. These are examined in detail in the next chapter.
### Table 4.7
Characteristics of Credit Contracts by Source

<table>
<thead>
<tr>
<th>Items</th>
<th>Formal sector</th>
<th>Relatives and friends</th>
<th>Money-lenders</th>
<th>Traders</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of credit transactions</strong></td>
<td>78</td>
<td>52</td>
<td>56</td>
<td>17</td>
<td>42</td>
</tr>
<tr>
<td><strong>Average amount (YD thousand)</strong></td>
<td>5,250</td>
<td>1,690</td>
<td>2,770</td>
<td>350</td>
<td>530</td>
</tr>
<tr>
<td><strong>Monthly interest rate (percent)</strong></td>
<td>2.11</td>
<td>0.38</td>
<td>4.14</td>
<td>4.89</td>
<td>3.77</td>
</tr>
<tr>
<td><strong>Transactions costs ratio (percent)</strong></td>
<td>(1.5-2.8)</td>
<td>(0-1.5)</td>
<td>(3-6)</td>
<td>(4-6)</td>
<td>(2-4)</td>
</tr>
<tr>
<td><strong>Collateral requirements (percent):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land and homestead</td>
<td>98.7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Promissory note</td>
<td>-</td>
<td>-</td>
<td>19.64</td>
<td>76.47</td>
<td>76.19</td>
</tr>
<tr>
<td>Others</td>
<td>1.3</td>
<td>-</td>
<td>1.78</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>None</td>
<td>-</td>
<td>100</td>
<td>78.58</td>
<td>23.53</td>
<td>23.81</td>
</tr>
<tr>
<td><strong>Purpose (percent):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural production</td>
<td>100.00</td>
<td>11.54</td>
<td>23.21</td>
<td>82.35</td>
<td>80.95</td>
</tr>
<tr>
<td>Consumption</td>
<td>-</td>
<td>15.38</td>
<td>17.85</td>
<td>16.75</td>
<td>11.91</td>
</tr>
<tr>
<td>Construction</td>
<td>-</td>
<td>30.79</td>
<td>1.78</td>
<td>-</td>
<td>2.38</td>
</tr>
<tr>
<td>Social (marriages, funerals)</td>
<td>-</td>
<td>9.62</td>
<td>7.14</td>
<td>-</td>
<td>2.38</td>
</tr>
<tr>
<td>Health</td>
<td>-</td>
<td>11.54</td>
<td>10.71</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Others</td>
<td>-</td>
<td>21.13</td>
<td>39.31</td>
<td>-</td>
<td>2.38</td>
</tr>
<tr>
<td><strong>Forms of credit (percent):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash</td>
<td>100.00</td>
<td>32.69</td>
<td>92.85</td>
<td>-</td>
<td>19.05</td>
</tr>
<tr>
<td>In-kind</td>
<td>-</td>
<td>51.92</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gold</td>
<td>-</td>
<td>1.92</td>
<td>-</td>
<td>82.35</td>
<td>76.19</td>
</tr>
<tr>
<td>Inputs</td>
<td>-</td>
<td>13.47</td>
<td>7.15</td>
<td>17.65</td>
<td>4.76</td>
</tr>
<tr>
<td><strong>Loan term (percent):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short (12 months or less)</td>
<td>88.46</td>
<td>75.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Medium (13-36 months)</td>
<td>11.54</td>
<td>11.53</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Unspecified</td>
<td>-</td>
<td>13.47</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Regularity of contract (percent):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior contract</td>
<td>42.31</td>
<td>17.31</td>
<td>73.21</td>
<td>64.71**</td>
<td>69.05</td>
</tr>
<tr>
<td>First time</td>
<td>57.69</td>
<td>82.69</td>
<td>26.79</td>
<td>35.29</td>
<td>30.95</td>
</tr>
<tr>
<td><strong>Fungibility of credit (percent)</strong></td>
<td>21.79</td>
<td>5.77</td>
<td>1.79</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

a: parentheses indicate the range of interest rates and borrower transactions costs ratios, respectively.

- indicates zero
intermediate level of transactions costs—1.12 percent. It is worth noting that although interest-free loans from friends and relatives are often perceived as an important feature of the rural credit market in transitional economies like Vietnam and China, other kinds of payment in the form of labour service, reciprocity, and gifts are common. This provides an explanation for the high borrower transactions costs with loans from relatives and friends as compared to other informal sources.

Formal sector loans are subject to strict collateral requirements. Homesteads and land use rights are the most common form of collateral for formal sector loans. It was found in the survey that the bank in fact relied on the value of collateral rather than forecasts of the profitability of the project when evaluating the risk of loss on any given loan. This fact can be explained by several reasons. First, the bank staff lack knowledge and expertise in evaluating the projects' profitability. Second, most bank staff know that they are required by internal regulations to visit and evaluate the projects before loans are delivered, but they are sometimes constrained from doing so by the poor transportation system. Formal lenders' monitoring of the use of loans, which is often taken in the form of regular visits to project sites is even more rare. The emphasis of the bank on screening loan applicants rather than monitoring the use of loans suggests that adverse selection rather than moral hazard is the primary problem facing the bank. The difficulty that the bank has in obtaining information about borrowers and loan use and lack of experience in dealing with

---

9 The VLSS indicated that in rural areas, this interest-free lender category made up 40 percent of all money lent (SPC and GSO, 1994: 22). In a survey of two provinces in China, Feder et al. (1989: 514) reported that the percentage of informal transactions which were interest-free accounted for from 68 percent to 100 percent.

10 Poor roads and lack of adequate transportation make it difficult for bank staff to go on field trips—which is the only way to get information on loan use. One bank official reported that he was in charge of monitoring 200 borrowers, and could visit only five or six borrowers a day.
such information explain why it relies on collaterised borrowers while informal lenders do not. No collateral is required for loans from relatives and friends. However, it should be noted that relatives and friends can rely on reputation as an important factor in enforcing credit contracts, because loss of reputation through opportunistic behaviour will constrain future borrowing opportunities. Moneylenders were found to use collateral for 21.4 percent of total transactions to extend loans to new clients, mainly in the form of promissory notes.11

Traders advance various kinds of inputs, even to non-local residents, for periods of 3-4 months and 76.5 percent of such transactions are secured with promissory notes. In a few cases, a third party guarantee is used. As mentioned earlier, the role of cooperatives in rural areas in providing extension services and inputs in advance is not uncommon. In such cases, collateral in the form of promissory notes is essential. When physical collateral is considered in securing a loan, there is only one loan from the moneylender in the sample, which is collaterised in physical terms, and all loans in the informal sector use collateral substitutes. In screening prospective borrowers, while the bank tends to focus on collateral, informal lenders of various types mentioned above rely mainly on personal knowledge of the character and family history of borrowers. As compared to formal sector lenders, informal lenders in the survey area have more advantages in terms of borrower proximity and personal ties for countering adverse selection and moral hazard. In the rural credit market, the need to personalise ties to minimise information asymmetry is crucial for informal lenders. Moneylenders and traders were commonly found to develop these personal ties when extending their activities

---

11 This type of collateral is still considered illegal in Vietnam, and there is no official sanction for these arrangements.
to other localities. Their new clients, although normally having promissory notes as collateral, are often introduced by a person known by the lenders, who typically can only give a verbal guarantee.

Since applicants from ROSCAs are in general homogeneous, loan screening is done according to the commitment of the application to the association’s goal at the time of setting up the association. Cooperatives screen loans essentially through assessing the prospective borrowers’ character and repayment history.

Yotopoulos and Froio (1991) suggest that informal lenders have better repayment records than do formal sector lenders mainly because they regularly monitor the uses to which their loans are put by visiting the project sites. It was, however, found in our survey that this type of monitoring was rather minimal even for loans from moneylenders and traders. The reason is that loans from moneylenders and traders are for a variety of uses; thus there is very little need to visit project sites regularly. Furthermore, when lending is localised, the need for project visits is reduced, and even in the case of lending in other localities, the need for monitoring is low because moneylenders know the person who introduced the borrower to them. This is also evidenced in some Sub-saharan countries (Nissanke and Aryeetey, 1995; Aryeetey, 1996).

Since the VBA concentrates on production loans, all non-production loan requirements are satisfied in the informal market. However, it is observed that production loans are also the characteristic of traders and cooperatives. Loans from traders and cooperatives are small and in-kind (inputs). Borrowers seek production loans from traders and moneylenders when they need small amounts and/or for a very short time. A few borrowers have to rely on moneylenders for large loans because they currently have outstanding debts with the bank and/or lack adequate
collateral; hence they are not eligible for formal sector loans. The fact that most loans from relatives and friends are for residential construction is consistent with the VLSS (SPC and GSO, 1994). Limited competition in providing consumption loans between formal and informal lenders is quite possible to explain the high divergence of interest rates in the study area.

Unlike other developing countries (Yadav et al., 1992; Feder et al., 1989) where formal sector credit has been provided mostly in kind, all formal sector loans, and the overwhelming majority of moneylender loans in this survey, were in cash. Since the majority of loans from relatives and friends is for construction, which requires a large outlay and for a longer time, loans in gold from these sources comprise 51.9 percent of the total.

A prevailing feature in the rural credit markets of less-developed countries is the predominance of short-term credit (Feder et al., 1989: 517). This is also the case with our study. While in the informal market, relatives and friends are the only source of medium-term and unspecified loans, formal sector medium-term loans account for only 11.5 percent and no long-term loans for more than 36 month were observed. This is understandable because the bank lacks funds for medium- and long-term loans.

Although the bank's declared policy is to provide production loans, fungibility exists with formal sector credit and 21.8 percent of total transactions were found to have been used for other purposes. Although in an 'everybody-is-watching-everybody' community like rural Vietnam where farmers face difficulty in diverting institutional credit to purposes such as construction or social events, it

12 Such loans, which typically take place among relatives and friends can be rolled over from time to time, depending on the borrower's ability to pay.
is not easy to detect whether a borrower uses part of an institutional loan for day-to-day consumption or for repayment of another debt. For loans from relatives and friends, any such diversion is more likely to be noticed, and so this was observed in only 5.8 percent of transactions.

4.6 Summary

From the preliminary examination of lender and household credit data, the main finding of this chapter is that the credit market is segmented. It is apparent that the market is composed of several distinct submarkets, which include a formal sector and various segments of an informal sector. These submarkets provide credit contracts with significantly different terms and conditions, ranging from low interest rate formal sector loans with strict collateral requirements for production activities to high interest rate loans without collateral from moneylenders and traders for a variety of purposes. The data show that loans with term less than 12 months dominate the sample and the only lenders in the survey that provide medium-term loans, albeit on a very limited scale, are formal sector lenders, relatives and friends. Such a segmented credit market indicates there is quite limited competition among different submarkets. The differences in interest rates, collateral requirements, acceptable loan purposes, and loan maturities are understandable. While formal sector interest rates are regulated by the SBV, informal rates are determined entirely by market forces. Given regulated, below-market interest rates and lack of experience in dealing with information relating to new clients, formal lenders faced with excess demand ration out many potential borrowers by concentrating only on production loans and imposing requirements for physical collateral. As a result, all non-production loans are satisfied by the informal sector.
Although the transactions costs results calculated from the sample are sensitive to some assumptions, it has been found that formal sector borrowers incur higher transactions costs. By contrast, informal lending is, in general, flexible, expeditious and convenient, which permits very low borrower transactions costs. As shown in the theoretical model by Ladman (1984) in Chapter 2, when borrower transactions costs are taken into account, large borrowers will rationally seek loans from the formal sector, while small borrowers will prefer to obtain loans from informal sources. As a result, the segmentation of the rural credit market also derives from the amount of the loan applied for. Although formal sector lenders in the study area focused on production loans, it has been found that the majority of small loans for production activities were provided by traders and other informal sources. While formal lenders specialise in providing production loans, they are unable to compete with traders and other informal lenders in providing small production loans. The issue of borrower transactions costs and the role of these costs among other factors in explaining the determinants of credit applications and formal sector credit rationing in a segmented market will be examined further in the following chapters.

13 The assumptions include the fact that the 'social capital creation' required by the Bank in group lending has not been included in the estimation of transactions costs; the likely overvaluation of workdays lost in applying for a formal sector loan when it is assigned unskilled daily wage rate while the costs associated with borrowing from an informal sector moneylender are easily understated because little or no value is given to the time spent 'after hours'.
Sample questionnaire$^{14}$

A. For households:

1. Town/commune:
2. Village:
3. Household:

B. Profile of the household's head and the household:

1. Age:
2. Sex:
3. Main occupation:
4. Other occupation:
5. Level of education (in number of schooling years):$^{15}$
6. Do you know that there are formal lenders (VBA/PCF) operating in the locality?
7. Do you understand the lending regulations of formal lenders?
8. Size of cultivated land holdings (excluding homestead):
   a) owned and operated (sao):
   b) owned but operated by others (sao):

---

$^{14}$ This questionnaire is adapted from Ahmed (1982).

$^{15}$ This is derived by combining the data in the highest level qualifications attained and years of school. For example, if a person reported that he/she finished two years in a vocational school and his/her highest grade completed was 10, then his/her years of schooling is 12.
c) not owned but operated on a share-cropping basis (sao):

9. Number of members in the household:

10. Number of dependants in the household.\(^\text{16}\)

C. Information on Credit:

1. If you require credit (cash/in-kind), when do you need it most (specify):
   a) Harvest time:
   b) Inter-harvest time:
   c) Land preparation time:
   d) Other:

2. Have you obtained any credit (cash/in-kind) since June, 1995?
   YES ☐ NO ☐
   If NO, skip to Section D.

3. If YES, for each source of credit that you borrowed from, answer the following questions below (specified in Table A.4.1):
   a) Name the different sources of credit that you borrowed from (VBA, PCFs, relatives, friends, moneylenders, traders, others etc.).
   For each source of credit, answer the following questions:
   b) If you borrowed ‘in-kind’, state the type of commodity or service you borrowed; and for d) and e) state the market value in VD.
   c) What is the purpose of the loan you stated to the lender?
   d) What is the amount of the loan that you initially requested?
   e) What is the amount of the loan that you finally received?

\(^{16}\) Dependants are defined as those under 15 or above 65 years of age.
f) When did you initially inquire about getting the loan?

g) When did you finally receive the loan?

h) Have you ever taken any loans from the lender before? How many loans?

i) How far is the lender’s office (or home in the case of informal lenders) from your home?

j) Did you need any collateral in applying for the loan?

YES □ NO □

If NO skip to l).

k) If YES, what type of collateral was required by the lender:

* Home and homestead

* Land use right certificate

* Other asset certificate

* Others

l) Did you get the loan:

* directly from the lender?

* through a group or other institutional arrangement (through women’s unions, farmers’ associations etc.)?

m) What use did you make of the loan?

n) Do you have any position in the commune/village?

o) Do you have any close relation with bank staff?
Table A.4.1. Information on Credit

| Source (a) | 
| Commodity or service (b) | 
| Purpose of loan stated (c) | 
| Amount of loan requested (d) | 
| Amount of loan received (e) | 
| Date of inquiry (f) | 
| Date of receipt (g) | 
| No. of previous loans (h) | 
| Distance (i) | 
| Type of collateral (k) | 
| How to get credit (l) | 
| Actual use of credit (m) | 
| Position in village/commune (n) | 
| Close relation with bank staff (o) | 

4. For each source of credit that you borrowed from, answer the following questions in Table A.4.2 at the end of the questions below:

   a) If you had to pay back the loan in-kind, state the commodity or service paid back or due.

   b) What was the market value of the commodity or service you paid back?
c) If you paid back in cash, how much was the interest payment? (if the loan has not matured yet, state the total interest payment due).
d) How much did you spend initially as an application fee?
e) Beside any application fee, how much did you spend in order to fill out the forms and be eligible for the loan? (Including payments to an agent, if any, travel costs and/or other costs in connection with the loan, any other entertainment and bribes to expedite the loan. You do not have to categorise the payments, just state the total expenditure).
f) How many days did you spend away from your normal work in connection with the loan? (This will include only work-days missed in connection with the loan. Do not include those days that you would not have been gainfully employed and you did not spend in connection with the loan).

   * Time for travelling to and from the lender's place.
   * Time at lender's premises.
   * Time to finish all procedures in connection with the loan.

g) How many trips did you make to the lender in connection with the loan?
h) For each work-day missed in connection with the loan, did you employ someone to replace you and at what rate? If you did not employ anyone, what would be the best estimate of your daily income forgone?
i) What is the maturity of the loan?
Table A.4.2: Costs of Borrowing

<table>
<thead>
<tr>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodity or service (a)</td>
</tr>
<tr>
<td>Market value of commodity or service (b)</td>
</tr>
<tr>
<td>Total interest cost (c)</td>
</tr>
<tr>
<td>Application fee (d)</td>
</tr>
<tr>
<td>Travel and misc. entertainment expenses (e)</td>
</tr>
<tr>
<td>No. of work-days missed (f)</td>
</tr>
<tr>
<td>No. of trips (g)</td>
</tr>
<tr>
<td>Opportunity cost of each work-day (h)</td>
</tr>
<tr>
<td>Maturity of the loan (i)</td>
</tr>
</tbody>
</table>

5. For those transactions which were not with formal lenders:
   a) Why did you not obtain the loan from formal lenders?
      * Applied for formal loan but rejected.
      * Did not apply for formal loan because of perceiving a strong probability of being rejected.
      * Did not apply for formal loan because did not want.
   b) What is the most important factor that led you to borrow from the informal sources? Briefly explain.

D. For those who did not borrow from June 1995.
   1. Why did you not obtain credit from formal sector lenders?
      a) Did not apply because no need for credit.
      b) Applied but rejected.
c) Did not apply because perceiving a strong likelihood of being rejected.

2. How did you finance your production/business activities from June 1995?

E. For all households: Assets held by the household

State the major assets that belong to the household in Table A.4.3

<table>
<thead>
<tr>
<th><strong>Table A.4.3 Assets Held by the Household</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asset</strong></td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Cultivated land</td>
</tr>
<tr>
<td>Buffaloes and Cows</td>
</tr>
<tr>
<td>Plough</td>
</tr>
<tr>
<td>Irrigation pump</td>
</tr>
<tr>
<td>Bicycle</td>
</tr>
<tr>
<td>Motorcycle</td>
</tr>
<tr>
<td>Television</td>
</tr>
<tr>
<td>Video recorder</td>
</tr>
<tr>
<td>Radio-cassette</td>
</tr>
<tr>
<td>Homestead</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

Total estimated market value:
Chapter 5

DETERMINANTS OF BORROWER TRANSACTIONS COSTS

Based on the overview of the rural credit market and the preliminary examination of the rural household survey in Binhue district reported in Chapters 3 and 4, it is apparent that although a significantly increasing amount of formal sector credit has been injected in recent years into the rural sector, where farm households dominate, little of such credit has been found to reach small farmers, who represent a major share of the rural population. This chapter approaches the issue by applying the concept of borrower transactions costs. It is hypothesised that the formal sector, facing excess demand created by the ceiling on interest rates, has rationed credit by implementing a credit delivery system through which it can screen, sort out, and shift some of its normal transactions costs to potential borrowers.¹ This system has thus involved high borrower transactions costs which make the effective cost of borrowing from the formal sector for small loans actually higher than that from the informal market. Consequently, loans provided through the formal sector primarily reach farmers with large demand for credit, and informal lenders are still very active in providing small loans.

The chapter is divided into four sections. The concept of borrower transactions costs is discussed in Section 5.1. Section 5.2 quantifies borrower transactions costs.

¹ The bank could simply use a lottery system to allocate available funds and eliminate excess demand. But this method cannot reduce the lender’s risk as some high-risk borrowers might win in the lottery while some very low-risk applicants may miss out.
transactions costs from the survey data. Section 5.3 compares the effective cost of borrowing from the formal sector and various segments of the informal sector. The determinants of borrower transactions costs are examined in Section 5.4.

5.1 The Concept of Borrower Transactions Costs

Transactions costs play an important role in credit allocation and the structure of the rural financial market, as shown in past studies (for example, Ahmed (1982), Ladman (1984), Cuevas (1984), Cuevas and Graham (1984a, 1984b, 1985), Abiad et al. (1988), Puhazhendhi (1995)).

Transactions costs are the costs incurred in a transaction other than the cost of the goods, and services themselves. Since it is difficult to get information on prices, quantities, qualities of goods and services transacted in the market, it should be assumed that market transaction is costly. Broadly speaking, transactions costs may include search costs, selection costs, contract negotiations costs, monitoring costs involved in the execution of projects or financial performance, and any residual costs associated with the settlement of broken or amended contracts. More specifically, transactions costs can be defined as those costs incurred in formalising and executing contracts (Graham et al., 1996: 82).

Transactions costs in the financial market refer to the resources required to transfer one unit of funds between participants (borrowers and lenders). According to Cuevas (1984), transactions costs are a measure of ‘friction’ in the functioning of financial markets. There are specific reasons why financial transactions generate significant transactions costs. First, the essence of financial transactions lies in the characteristic that they are completed only when the borrower finally discharges the
loan, and consequently financial transactions involve uncertainty. In the process of finding suitable borrowers, lenders have to collect and analyse information to assess the capacity and willingness of borrowers to repay the loans. At the same time, borrowers searching for appropriate lenders have to demonstrate their creditworthiness. These reasons are especially important in the rural financial markets of developing countries, where information on creditworthiness of customers is restricted and costly. Second, participants in financial transactions have to negotiate the terms and conditions of the contract, and monitor its execution. It is therefore irrelevant to assume in financial transactions that interest is the only cost. The level of transactions costs among participants is influenced by the efficiency of financial markets, which in turn depends on financial regulations, internal efficiency of banks and other financial intermediaries, and the interaction of the demand and supply of credit (Puhazhendhi, 1995: 4).

Transactions costs are incurred by both borrowers and lenders. For the lender these include the expense of mobilising funds for on-lending, the cost of collecting information about potential borrowers, and the cost of extending, maintaining and collecting loans. Borrower transactions costs, which are the main concern of this thesis, include all non-interest expenses that borrowers have to pay in dealing with loans. These include the following:

1. Loan charges beyond interest payments, such as application and service fees, and the closing cost payable to the lender. The lender may also impose borrower transactions costs by deducting interest charges in advance.

2. In many cases borrowers may be forced to negotiate with someone (an extension agent, a local official or leader, or a consigner) outside the formal lending
agency before a loan application is formally reviewed, and payments are involved in these arrangements. Gifts and bribes may be involved in some cases.

(3) Finally, a very important component of transactions cost is the borrower’s time and travel expenses involved in the loan transaction. Borrowers are often required to visit the formal lender a number of times to negotiate the loan and make repayments. These visits may involve travelling long distances and long periods of waiting. When loan transactions are undertaken in planting and harvesting periods, the opportunity cost of the borrower’s time is substantial (Adam and Nehman, 1979: 167).

In the late 1970s and early 1980s, supply side credit programs emphasising targeted credit to a marginal clientele at a subsidised interest rate were common. However, the transactions costs of credit, especially those for borrowers were not commonly discussed and documented. Studies on borrower transactions costs began to emerge in the mid-1980s, including studies by Ahmed in Bangladesh (1982), by Cuevas and Graham in Honduras (1984a, 1985), and Abiad et al. (1988) in the Philippines. In brief, these results strongly suggest that the net impact of rationed credit through subsidised interest rate programs trying to reach small farmers only succeeded in raising the transactions costs for the very same class of borrowers who were able to access the credit programs. Adams and Ghate (1992) pointed out that in financial transactions, especially those involving small amounts, transactions costs may weigh more heavily in borrowers’ decisions than interest payments. As pointed by Ladman (1984), offering cheap credit does not necessarily induce farmers to borrow from formal sector credit institutions. Depending on the total cost of borrowing from various sources, which includes transactions costs plus interest payments, farmer-borrowers decide from whom they will borrow. Borrowers
seeking small loans will often prefer to deal with lenders who charge a higher rate of interest but impose low transactions costs. In contrast, borrowers seeking larger loans may prefer to work with lenders who charge lower interest rates but impose larger transactions costs.

5.2 Quantification of Borrower Transactions Costs

As pointed out in the previous chapter, while borrower transactions costs comprise 1.65 percent of the loan size from the formal sector on average, they are negligible for loans from informal sources. This section thus focuses on the quantification of borrower transactions costs in the formal sector. As mentioned earlier, since formal sector lending rates in the study area are subject to ceilings below the market clearing rate, the bank cannot charge for bearing extra risk or hire extra personnel to conduct additional risk-reducing activities, and so has to devise ways to ration the excess demand while still selecting the lower-risk borrowers from among all applicants. One of the rationing mechanisms adopted by the bank is to implement a complex delivery system through which it can sort out and screen potential borrowers.  

At least four kinds of borrower transactions costs are observed, which include the following:

---

2 The procedure for borrowing from the bank can be summarised as follows. When applying for a VBA loan, one has to see the bank official in charge in the commune/town and it is not always easy to see this official because he has no office in the commune/town, and he is very mobile. After seeing the bank official, the applicant has to fill out a paper called 'business production project', and an application form. The bank official then conducts an on-site visit to evaluate the feasibility of the proposed project. If it is considered feasible, the applicant is then asked to fill in another form to certify his or her asset property right and/or land use right, with at least three signatures from authorities at different levels in the village and commune. Finally, the bank official makes an appointment at the branch to deliver the loan.
(1) *Loan charges* through application fees collected by the lender (over and above the interest payments); service fees collected by local officials or leaders in the commune and village; and service fees related to collateral certification.

(2) *Travel expenses* incurred during dealing with the loan. Most rural residents in the study area are very poor, with access only to primitive means of transportation and communication. The distance from the borrower’s home to the bank ranges from 1 to 15 kilometres, averaging 5.7 kilometres. The most popular means of transportation is by bicycle. Furthermore, lack of understanding of the lending regulations contributes to the frequency of visits to the bank. The number of trips required to complete the loan observed in the survey ranged from 1 to 5, averaging 2. Bad roads and poor infrastructure mean that the borrowers have to spend a long time to get all the documents completed and signed by the different authorities to meet the bank’s requirements.

(3) *Costs to attract the bank officials’ attention.* With the interest rate ceiling, the bank perceives itself as doing a favour for borrowers. This results in borrowers having to deal with several bureaucracies in order to obtain a loan. Expenses in the form of tea, cigarettes, and food are also commonly involved. In many cases, borrowers effectively have to pay expenses for the field trip of the bank official. In addition, since different lending schemes with different contractual terms and conditions are undertaken by the VBA branch,⁢ rent-seeking in the form of implicit or explicit demands for gratuities, gifts and bribes for bank officials are not uncommon. Since many borrowers might not disclose the amounts spent on bribes

---

⁢ There is a variety of interest rates because of the VBA policy of loan targeting. The VBA argues that differentiating interest rates by use of loan is a way to achieve the government’s social objectives, such as lower loan rates for financing fixed assets to encourage longer-term investment in agriculture.
and gifts, they were asked to report total cash expenditures net of interest payments and application fees. Conversations with borrowers revealed that often the bribe is proportional to the size of the preferential loan.

(4) In reality, the most significant transactions cost incurred by borrowers is the time involved in the loan transaction. The bank requires a considerable amount of documentation in support of loan applications, and there are usually long delays between the filing of an application and the rendering of a decision by the bank’s loan officers. Borrowers were asked how long they had to wait from the time they first asked for the loan until they received it. The answers ranged from 7 to 35 days. It is estimated that for loans below VD 10 million, one week is needed; for loans above VD 10 million, ten days; and for loans above VD 20 million, borrowers have to wait one month, as approval from the VBA at the provincial level is needed in this case. Delays in getting the loan impose costs on the applicant in terms of opportunities forgone. Some applicants have to withdraw from the formal credit market if their expected transactions costs are so large that the expected rate of return on their investments (net of transactions costs) is less than the interest rate on the loan. Other applicants who find that the net rate of return on their investments exceeds the interest rate will be willing to incur additional transactions costs in the form of gifts or bribes. And there would also be some who would stay in the market, even if the cost of borrowing is higher than the rate of return because of the sunk cost effect of past transactions costs. Interviewees were asked to recall the number of days of work actually missed as distinct from the total waiting time in

---

4 The survey found that much paperwork and bureaucratic procedures overlapped. In addition, bank officials in practice paid little attention to this paperwork. This causes an apparent deadweight loss to the society.

5 For them, the marginal cost of getting the loan is minimal.
applying for the loan. In order to determine the opportunity cost of their time associated with the loan, the calculation of the cost of each workday lost is essential. Questions were given to borrowers to recall their actual payments for hiring somebody else during their time away from work or to evaluate the actual income forgone because of leaving work when they were attending to the loan. If the borrower was unable to report such information, the prevailing market wage rate for male workers in the borrower's occupation in the village was often used as the cost of each workday lost (Ahmed, 1982: 84). Another problem that arises in applying the prevailing market wage rate is that it varies for different periods of the year. However, most loans in the survey were taken 3 or 4 months before the harvest, i.e., in the land leveling period. Hence, the land leveling wage rate was used in most cases as the rate prevailing in the area in our study.

Table 5.1 shows the frequency distribution of loans by total transactions costs and its two components: cash outlays (application fees, travel and other expenses such as entertainment and miscellaneous), and the cost of workdays lost. It can be seen that about 50 percent of the borrowers incurred cash costs from VD 26–50 thousand and about 6 percent incurred cash costs between VD 76–100 thousand with an average cash cost of about VD 50 thousand for the sample, which accounted for 57 percent of total transactions costs. The two components of cash outlays incurred by borrowers in the process of applying for and receiving their loans were fees, and travel and other expenses, which accounted for more than 19 percent, and 38 percent of total transactions costs, respectively. In terms of the opportunity cost of lost work time, about 90 percent of borrowers incurred costs from VD 26–50 thousand and about 7 percent incurred costs from VD 51–75 thousand, and the average cost for the sample was around VD 36 thousand,
## Table 5.1

**Distribution of Loans by Transactions Costs of Borrowing from Formal Institutions (number of cases)**

<table>
<thead>
<tr>
<th>Amount (VD thousand)</th>
<th>Application fees</th>
<th>Travel and other expenses</th>
<th>Cash outlays</th>
<th>Cost of workdays lost</th>
<th>Total transactions costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3) = (1)+(2)</td>
<td>(4)</td>
<td>(5) = (3)+(4)</td>
</tr>
<tr>
<td>0-25</td>
<td>69</td>
<td>33</td>
<td>8</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(88.46)</td>
<td>(42.31)</td>
<td>(10.25)</td>
<td>(15.38)</td>
<td>-</td>
</tr>
<tr>
<td>26-50</td>
<td>9</td>
<td>36</td>
<td>40</td>
<td>70</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(11.54)</td>
<td>(46.15)</td>
<td>(51.28)</td>
<td>(89.74)</td>
<td>(3.85)</td>
</tr>
<tr>
<td>51-75</td>
<td>-</td>
<td>6</td>
<td>23</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>(7.69)</td>
<td>(29.49)</td>
<td>(7.69)</td>
<td>(34.62)</td>
</tr>
<tr>
<td>76-100</td>
<td>-</td>
<td>3</td>
<td>5</td>
<td>-</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>(3.85)</td>
<td>(6.41)</td>
<td>-</td>
<td>(39.74)</td>
</tr>
<tr>
<td>101-125</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>(2.56)</td>
<td>-</td>
<td>(12.82)</td>
</tr>
<tr>
<td>Above 125</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(8.97)</td>
</tr>
<tr>
<td>Average**</td>
<td>17.01</td>
<td>32.76</td>
<td>49.77</td>
<td>36.64</td>
<td>86.41</td>
</tr>
<tr>
<td></td>
<td>(19.64)</td>
<td>(37.82)</td>
<td>(57.46)</td>
<td>(42.54)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

* Figures in parentheses indicate percentages.

** Figures in this row indicate the amount in VD thousand on the sample averages.

- indicates zero.
which accounted for 42 percent of total transactions costs. Of the opportunity cost of time, about 21 percent was due to time travelling to and from the bank; 29 percent was due to time spent in the bank premises, and the remaining 50 percent was due to time spent to carry out all procedures required by the bank.\textsuperscript{6} The distribution of loans by total transactions costs shows that about 74 percent of all borrowers had costs from VD 51–100 thousand and about 9 percent incurred costs in excess of VD 125 thousand. On average, the prospective borrower from the formal sector had to pay VD 86.41 thousand in addition to interest charges. Moreover, the borrower had to be willing to risk this amount of out-of-pocket and time costs before knowing whether or not the loan application would be accepted. In practice, however, it is noted that borrowers were usually informed of the probable decision at an early stage of negotiations, so the risk cost was not as high as it might appear. The table also indicates that prospective borrowers from the formal sector also had to have on hand about VD 50 thousand for out-of-pocket costs (out-of-pocket threshold). Those who did not have this amount available had to forego the formal market.

Since there has been no previous study of transactions costs in the rural credit market in Vietnam, borrower transactions costs estimates from the study are compared with those found in other countries. Table 5.2 presents a comparison of components of borrower transactions costs from our survey with those in selected other countries. Four studies in Bangladesh (Ahmed, 1982), Bolivia (Ladman, 1984), the Philippines (Abiad et al., 1988), and ours in the case of Vietnam involved field surveys at the farm level, and documented the explicit (cash outlays) and implicit (cost of workdays lost) non-interest costs incurred by borrowers in the

\textsuperscript{6} These figures are not presented in Table 5.1.
process of securing and repaying their loans. Borrowers in the Philippines incurred much heavier cash outlays than the cost of workdays lost—81.1 and 18.9 percent of total borrower transactions costs, respectively. These figures were very similar in the case of Bangladesh. The data for Vietnam and Bolivia show that the proportions of cash outlays and costs of workdays lost in borrower transactions costs are somewhere between those of Bangladesh and the Philippines.

Table 5.2
Components of Borrower Transactions Costs in Selected Countries (percent)

<table>
<thead>
<tr>
<th>Country</th>
<th>Cash outlays</th>
<th>Cost of workdays lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>51.7</td>
<td>48.3</td>
</tr>
<tr>
<td>Bolivia</td>
<td>69.7</td>
<td>30.3</td>
</tr>
<tr>
<td>Philippines</td>
<td>81.1</td>
<td>18.9</td>
</tr>
<tr>
<td>Vietnam</td>
<td>57.5</td>
<td>42.5</td>
</tr>
</tbody>
</table>

Sources: Abiad et al. (1988: 13); Ahmed (1982: 133); Ladman (1984: 115); and author’s survey.
Table 5.3 presents a breakdown of the average transactions costs of borrowing from the formal sector by loan size. It can be seen that although total transactions costs are higher for larger loan sizes, they are lower per unit of dong borrowed.7

Table 5.3
Average Borrower Transactions Costs from the Formal Sector (VD thousand)*

<table>
<thead>
<tr>
<th>Loan size (VD thousand)</th>
<th>Number of cases</th>
<th>Cash outlays</th>
<th>Cost of workdays lost</th>
<th>Total transactions costs</th>
<th>Ratio of transactions costs to loan size (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest through 500</td>
<td>2 (2.56)</td>
<td>31.00</td>
<td>12.50</td>
<td>43.50</td>
<td>9.67</td>
</tr>
<tr>
<td>501-1,000</td>
<td>5 (6.41)</td>
<td>28.00</td>
<td>28.00</td>
<td>56.00</td>
<td>6.22</td>
</tr>
<tr>
<td>1,001-2,500</td>
<td>17 (21.79)</td>
<td>37.35</td>
<td>37.06</td>
<td>74.41</td>
<td>4.03</td>
</tr>
<tr>
<td>2,501-5,000</td>
<td>36 (46.15)</td>
<td>55.67</td>
<td>37.24</td>
<td>91.35</td>
<td>2.10</td>
</tr>
<tr>
<td>5,001-10,000</td>
<td>14 (17.95)</td>
<td>55.17</td>
<td>40.00</td>
<td>107.57</td>
<td>1.26</td>
</tr>
<tr>
<td>10,001-20,000</td>
<td>2 (2.56)</td>
<td>53.70</td>
<td>45.00</td>
<td>142.50</td>
<td>0.71</td>
</tr>
<tr>
<td>20,001- through highest</td>
<td>2 (2.56)</td>
<td>71.43</td>
<td>60.00</td>
<td>145.00</td>
<td>0.43</td>
</tr>
<tr>
<td>Sample average</td>
<td>78</td>
<td>49.77</td>
<td>36.64</td>
<td>86.41</td>
<td>1.65</td>
</tr>
</tbody>
</table>

* Figures in parentheses indicate percentages.

7 Most borrower transactions costs are basically the same irrespective of the loan size, and thus constitute a ‘fixed cost’ (There are, of course, some items such as stamp duty, service fees which increase as the loan size increases). Thus we cannot assume that when the loan size doubles, borrower transactions costs will double. Consequently, borrower transactions costs per dong borrowed will fall as loan size increases.
When we view transactions costs as a proportion of the loan amount received, the general pattern in the last column of the table supports the hypothesis that transactions costs reflect economies of scale. Small borrowers are therefore penalised by a ‘tax’ on borrowing at rates proportionally greater than those paid by larger borrowers. While transactions costs use up quite a large portion of the loan proceeds—about 9.7 percent for loans under VD 500 thousand, they use up only 0.43 percent for loans above VD 20 million.

Next, we compare the incidence of transactions costs as a percentage of the loan amount and as a proportion of the interest rate charged, as estimated on the basis of our survey, with those in selected countries. Abiad et al. (1988) summarised the findings of several studies on the incidence of borrower transactions costs in various countries, which are presented in Table 5.4.

The results for Vietnam, based on the findings of this study are shown in the last column of the table. Excluding the case of Bangladesh because of its extreme values, the other six exhibit transactions costs which, as a percentage of loan amount, range from a low of 1.2 percent for Peru to 5.2 percent for Panama. The same tendency can also be observed when transactions costs are measured as a proportion of interest rates, with the maximum 46.4 percent in Panama and the minimum 4 percent in Peru. If the Philippines figure is considered to be midway

---

8 As pointed out by Abiad et al. (1988: 31), the unusual values of transactions costs both as a proportion of loan amount and of interest rate is attributed to the unusually small loan size characteristic of the survey and relatively low nominal interest rate in Bangladesh in comparison with those recorded in the Latin America, the Philippine studies and our survey in the case of Vietnam. For example, the average loan size and the explicit interest rate in the Bangladesh case are US$130 and 12 per cent p.a., respectively while the comparable figures in our study in the case of Vietnam are about US$500 and 25.2 per cent p.a.
within this range, transactions costs in Vietnam inferred from our study are closer to those in the lower half of the range.

### Table 5.4

**Comparison of Borrower Transactions Costs for Selected Countries***

<table>
<thead>
<tr>
<th></th>
<th>Bangladesh</th>
<th>Ecuador</th>
<th>Honduras</th>
<th>Panama</th>
<th>Peru</th>
<th>Philippines</th>
<th>Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transactions costs as</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>percentage of loan amount</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample average</td>
<td>21.7</td>
<td>2.8</td>
<td>3.0</td>
<td>5.2</td>
<td>1.2</td>
<td>3.1</td>
<td>1.65</td>
</tr>
<tr>
<td>Small loans</td>
<td>29.4</td>
<td>5.3</td>
<td>5.9</td>
<td>5.7</td>
<td>3.9</td>
<td>4.2</td>
<td>9.67</td>
</tr>
<tr>
<td><strong>Transactions costs as</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>percentage of interest rate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample average</td>
<td>180.8</td>
<td>22.9</td>
<td>23.1</td>
<td>46.4</td>
<td>4.0</td>
<td>17.4**</td>
<td>6.45</td>
</tr>
<tr>
<td>Small loans</td>
<td>245.0</td>
<td>47.7</td>
<td>45.4</td>
<td>50.9</td>
<td>13.0</td>
<td>25.0</td>
<td>38.37</td>
</tr>
</tbody>
</table>

* In the table small loans in the case of Vietnam include all loans in the first group of loan size in Table 5.3.
** The figure is adjusted to cover the whole period encompassed by the study, prior to and after deregulation of interest rates. This is not the same as the figures provided by Abiad et al. (1988: 31). *Source: Abiad et al. (1988: 31) and author’s survey.*
In all countries, the level of transactions costs on small borrower loans is two or three times higher than that for the sample average. Although transactions costs from our study are a little higher than only those in Peru based on the sample average, comparison of transactions costs for small loans should shed much light on the burden of implicit charges on small borrowers. This shows that transactions costs for small loans as a percentage of the loan amount from our study are far higher than those in other countries, except Bangladesh. Moreover, transactions costs in our study were equivalent to about 38 percent of the explicit interest rates, which is higher than the figures for Peru and the Philippines.

Table 5.5 shows borrower transactions costs from formal lenders and various informal sources of loans.

Table 5.5

Average Borrower Transactions Costs for Formal and Informal Sources

<table>
<thead>
<tr>
<th>Sources</th>
<th>Application fees</th>
<th>Travel and other expenses</th>
<th>Cash outlays</th>
<th>Cost of workdays lost</th>
<th>Total transactions costs</th>
<th>Ratio of transactions costs to loan (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal lenders</td>
<td>17.01</td>
<td>32.76</td>
<td>49.77</td>
<td>36.64</td>
<td>86.64</td>
<td>1.65</td>
</tr>
<tr>
<td>Relatives and friends</td>
<td>-</td>
<td>14.11</td>
<td>14.11</td>
<td>4.81</td>
<td>18.92</td>
<td>1.12</td>
</tr>
<tr>
<td>Moneylenders</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.11</td>
<td>0.11</td>
<td>0.004</td>
</tr>
<tr>
<td>Traders</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.19</td>
<td>0.19</td>
<td>0.053</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.02</td>
<td>0.02</td>
<td>0.004</td>
</tr>
</tbody>
</table>

- indicates zero.
The transactions costs from moneylenders, traders and other sources are very low, and comprise a negligible proportion of the loan size. Informal lenders require no application fees; travel and other expenses are very low; and the cost of workdays lost is minimal. They utilise local information in screening potential borrowers, and perform the loan monitoring at low costs because of their proximity. Informal lenders often rely on long-established credit ties and they can increase the probability of repayment at lower costs than formal lenders who lack accumulated past information on new clients and are distant. It is worth noting also that although most loans from relatives and friends carry no interest rate in transitional economies like Vietnam and China (Feder et al., 1989: 514), implicit interest payments in the form of free labour service, mutual help, and gifts are common, resulting in a higher transactions costs ratio for loans from relatives and friends as compared to other informal sources.

5.3 The Effective Interest Rate from Various Sources

One way to look at the effect of borrower transactions costs on the cost of rural credit is to estimate the effective cost of credit to borrowers. Since borrower transactions costs are mostly incurred prior to receiving the loan, we assume for simplicity here that all transactions costs are incurred prior to, and at the time of obtaining the loan. As a result, these costs should be deducted from the loan to arrive at the net value of the loan received. The effective interest paid by borrowers will be measured as the difference between the total repayment that is due at the end of maturity of the loan and net amount borrowed. The effective rate \( e \) on the net loan received is then
\[ e = (1 + r) \left( \frac{L}{L - TC} \right)^n - 1 \]  

(5.1)

\( r \) is the nominal interest rate
\( n \) is loan term (periods)
\( e \) is effective interest rate (percent per period)

This effective rate reflects the rate of interest per period on the increment of funds available to the borrower.

Table 5.6 shows average effective monthly rates of interest for different loan sizes in the formal market and in various segments of the informal market.

**Table 5.6**

**Effective Monthly Interest Rates from Various Sources by Loan Sizes (percent per month)**

<table>
<thead>
<tr>
<th>Average size of loan (VD thousand)</th>
<th>Formal sector</th>
<th>Moneylenders</th>
<th>Traders</th>
<th>Others</th>
<th>Relatives and friends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 500</td>
<td>5.08 (2)</td>
<td>4.33 (21)</td>
<td>4.99 (16)</td>
<td>4.19 (33)</td>
<td>0.82 (14)</td>
</tr>
<tr>
<td>501-1,000</td>
<td>4.09 (5)</td>
<td>4.21 (7)</td>
<td>4.50 (1)</td>
<td>3.94 (8)</td>
<td>0.90 (14)</td>
</tr>
<tr>
<td>1,001-2,500</td>
<td>2.87 (17)</td>
<td>4.04 (14)</td>
<td>-</td>
<td>2.10 (1)</td>
<td>0.43 (15)</td>
</tr>
<tr>
<td>2,501-5,000</td>
<td>2.50 (36)</td>
<td>4.63 (13)</td>
<td>-</td>
<td>-</td>
<td>1.78 (1)</td>
</tr>
<tr>
<td>5,001-10,000</td>
<td>2.13 (14)</td>
<td>3.00 (1)</td>
<td>-</td>
<td>-</td>
<td>0.18 (1)</td>
</tr>
<tr>
<td>10,001-20,000</td>
<td>1.96 (2)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>20,001+</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>highest</td>
<td>2.06 (2)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sample average</td>
<td>2.66 (78)</td>
<td>4.29 (56)</td>
<td>4.96 (17)</td>
<td>4.09 (42)</td>
<td>0.72 (45)*</td>
</tr>
</tbody>
</table>

Figures in parentheses indicate the number of transactions.

* The number is different from that in Table 4.7 in Chapter 4 because of 7 loans for which maturity was unknown.

* indicates zero.
In most cases, the average effective rate decreases as the size of the loan increases, especially in the case of the formal market. For the smallest borrowers it is as high as 5.08 percent per month, and for the largest borrowers it is as low as about 2.06 percent. Comparing effective rates in the two markets, we can see that in the formal market, the average effective rate for the sample is 2.66 percent per month, which is lower than the rate in all other segments of the informal market, except for the rate for relatives and friends. However, for loans below VD 500 thousand, the effective rate is higher in the formal market (except for relatives and friends), while for larger loans (above VD 500 thousand), the effective rate is lower than in most segments of the informal market. Partitioning of the demand will occur at a loan volume where farmers are indifferent among different lenders—i.e., where the effective cost of borrowing from alternative sources is equal. In the study area, the calculation of effective rates of interest indicates that partitioning of the credit market will occur at a loan size between VD 500 thousand and VD 1 million. Changes in partitioning of the market will depend on changes in borrower transactions costs and/or in the lending rates of each lender. If borrower transactions costs in the formal sector were reduced, partitioning of the market would occur at a smaller loan size, and more small borrowers would seek credit from the formal sector, ceteris paribus.

5.4 Determinants of Borrower Transactions Costs

At least three studies have examined the determinants of borrower transactions costs: the study in Bangladesh by Ahmed (1982), the study in the Philippines by Abiad et al. (1988), and the Puhazhendhi study for India (1995).
Ahmed estimated the determinants of borrower transactions costs in Bangladesh using a single equation, in which loan amount is an explanatory variable. However, as pointed out by Cuevas and Graham (1985), transactions costs should also be considered by borrowers as part of the total loan price, hence the appropriate model is a system of simultaneous equations in which transactions costs and loan amount are endogenous variables. Abiad et al. (1988) and Puhazhendhi (1995) tested this approach in the Philippines and India, respectively. The system of simultaneous equations is also applied in our case to estimate the determinants of borrower transactions costs.

The borrower transactions costs are hypothesised to be determined by the following factors:

1) Since multiple lending rate schemes are implemented by the bank in the study area, nominal interest rates are considered to be an important factor that affects transactions costs incurred by borrowers. The lower the interest rate, the greater the benefit of obtaining the loan, hence the more the borrower will be willing to pay. Gifts and bribes are typically proportional to the amount of the preferential loan. In addition, since the procedures used to determine who is eligible for preferential loans are more complicated than those in delivering normal loans, the time taken in obtaining such loans will be longer, and the opportunity cost of workdays lost and other related expense will be greater.

2) Although the cost of completing the loan application is not essentially dependent on the loan amount applied for, some parts of transactions costs do differ. The larger the loan amount applied for, the more stamp duty and fees the borrower has to pay. Also, in case of large loans, the bank tends to be more careful.
It often requires borrowers to provide additional documents. As a result, the time and other costs borrowers will have to incur are greater.

3) Borrower transactions costs are also influenced by factors that characterise borrowers themselves, such as prior credit relationships with the bank and their influence on bank personnel. Borrowers who have prior credit relationships are expected to incur lower transactions costs than those who do not, since they understand better the bank's requirements. It is also expected that for repeat borrowers the bank might simplify the loan procedure if they have a good credit rating. Borrowers who have a close relationship with the bank personnel or have a position in the community are able to influence the bank's decision. They are expected to use their influence in reducing the time and other costs in obtaining loans.

4) Borrower transactions costs are affected by the institutional arrangements involved in the credit delivery system (i.e., individual or group borrowing), and

5) Finally, the proximity of borrower's residence to the bank is also expected to be a factor affecting borrower transactions costs.

In the light of these considerations, the borrower transactions costs function is specified as follows:

\[
\ln TC = \alpha_0 + \beta_1 \ln r + \beta_2 \ln L + \eta_1 \ln INFU + \eta_2 \ln PRE + \rho \ln ARR + \mu \ln DIS \tag{5.2}
\]

where:

- \( TC \) = Borrower transactions costs (VD thousand)
- \( r \) = Nominal interest (percent per month)
- \( L \) = Loan amount applied for (VD thousand)
\[ INFLU = \text{Dummy variable for influence}^9 \]
\[ \text{INFLU} = 1 \text{ if the borrower is considered to be influential} \]
\[ \text{INFLU} = 0 \text{ if not} \]
\[ PRE = \text{Dummy variable for a prior relationship with the bank} \]
\[ \text{PRE} = 1 \text{ if the borrower has a prior relationship with the bank} \]
\[ \text{PRE} = 0 \text{ if not} \]
\[ ARR = \text{Dummy variable for the institutional arrangement in obtaining the loan} \]
\[ \text{ARR} = 1 \text{ if the borrower obtained the loan as an individual} \]
\[ \text{ARR} = 0 \text{ if the borrower obtained the loan through a group} \]
\[ DIS = \text{Distance of bank from residence (kilometres)} \]

The loan demand equation is specified on the basis of the hypothesis that the demand for credit is determined by various factors:

1) the cost of borrowing, comprising the interest rate charged and transactions costs;

2) the financial strength of the borrower including the assets of the household (home, and other financial assets), and the size of the land recognised by land use rights.\(^{10}\) These variables are used as a measure of the household’s wealth.

---

9 Borrowers were asked whether they had a relationship with bank officers or had community positions. Since many borrowers may not have wanted to disclose this personal information, we double checked these answers by asking other farmers in the community.

10 In Vietnam, the government owns the land, and farm households are given land use rights rather than outright ownership. According to the Land Law promulgated in 1993, however, land use rights may be transferred, mortgaged, rented, exchanged, or inherited.
and resource endowment as well as an indicator of its liquidity requirements for production;

3) the availability and availment of credit from informal sources.

The loan demand equation is specified as

\[ \ln L = a_0 + b_1 \ln TC + b_2 \ln r + c_1 \ln ASSET + c_2 \ln FARM + d \ln \text{INFOR} \]  

(5.3)

where:

- \( ASSET \): Value of assets (VD thousand) of the borrower
- \( FARM \): The area of land, which is recognised by land use rights (sao)
- \( \text{INFOR} \): Dummy variable for availment by borrower of credit from informal sources
  - \( \text{INFOR} = 1 \) if bank borrower has obtained credit from informal sources
  - \( \text{INFOR} = 0 \) if not

The two-stage least squares (TSLS) method is applied to quantify the influence of various factors on loan demand and borrower transactions costs, using the cross section data from the survey consisting of 75 formal borrowers with 78 transactions. The parameter estimates and t-statistics are reported in Table 5.7. The basic statistics of the variables used in this regression are summarised in Table A.5.1 in the Appendix.

The model passes all diagnostic tests. The F-tests indicate reasonable explanatory power of the model for the survey data. Although the coefficients of determination \((R^2)\) in both equations are low (0.45 and 0.39 in the loan demand and
transactions costs equations, respectively), but this is not unusual for studies using cross sectional data.

In the loan demand equation, the following determinants of loan demand are found to be statistically significant: 1) transactions costs incurred by the borrower, and 2) the value of assets of the borrower. For the borrower, transactions costs are up-front costs in terms of out-of-pocket expenses and the cost of time spent in obtaining the loan. As these costs increase, the borrower will rationally choose to borrow more from the bank, so that the total cost of borrowing per unit of dong borrowed declines. The positive sign for the variable ASSET, as expected, shows that loan demand is greater for households with more assets. As mentioned earlier, physical assets such as homesteads and other assets are the most common collateral for formal loans in the study area. The greater is the value of assets available to use as collateral, the larger the loan that can be applied for.

The interest rate charged on loans turns out to have an unexpected sign, although this variable is not statistically significant. This result is surprising. A possible explanation is the design of the bank's lending activities, according to which smaller loans usually involve lower interest rates. The lowest rate in the study area applies to loans for the poor. Conversations with poor borrowers revealed two reasons for often applying for small loans. First, they are risk-averse, and the typical activities financed with formal loans are cropping and animal husbandry activities, which do not need much capital. Second, they ask for small loans because they perceive there would be a strong chance of being rejected if they apply for large loans.
Table 5.7

Estimating the Transactions Costs Function

<table>
<thead>
<tr>
<th>Right hand side variables</th>
<th>Loan demand (lnL)</th>
<th>Transactions costs (lnTC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>t-value</td>
</tr>
<tr>
<td><strong>CONST</strong></td>
<td>-14.3632(^{+})</td>
<td>-3.7878</td>
</tr>
<tr>
<td>lnL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lnTC</td>
<td>3.1460(^{+})</td>
<td>4.8096</td>
</tr>
<tr>
<td>lnr</td>
<td>0.6796</td>
<td>1.0507</td>
</tr>
<tr>
<td>lnASSET</td>
<td>0.7969(^{*})</td>
<td>2.9161</td>
</tr>
<tr>
<td>lnFARM</td>
<td>0.0088</td>
<td>0.0427</td>
</tr>
<tr>
<td><strong>INFOR</strong></td>
<td>0.0052</td>
<td>0.0288</td>
</tr>
<tr>
<td><strong>INFLU</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lnDIS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R(^2)</td>
<td>0.4466</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>11.6218</td>
<td></td>
</tr>
<tr>
<td><strong>Diagnostic Tests:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional Form</td>
<td>0.4896</td>
<td></td>
</tr>
<tr>
<td>Normality</td>
<td>0.4922</td>
<td></td>
</tr>
<tr>
<td>Heteroscedasticity</td>
<td>0.0081</td>
<td></td>
</tr>
</tbody>
</table>

\(^{+}\) significant at the 1 percent level;  
\(^{*}\) significant at the 5 percent level;  
\(^{*}\) significant at the 10 percent level.  
F = F value.  
Number of observations = 78.
Although the area of land owned by the borrower (FARM) has the expected sign, it is not statistically significant. This suggests that formal sector loans are typically used for purposes other than buying inputs for cropping activities. This is consistent with the VLSS results, which indicated that the majority of loans for farm inputs come from private credit sources and cooperatives (World Bank, 1995a: 73).

The use of informal credit (INFOR) is not significant in relation to loan demand from the formal sector. However, the positive sign of the coefficient implies that informal credit is a complement rather than a substitute for formal sector credit.

Let us turn now to the transactions costs equation.

All coefficients have the expected signs, except for INFLU. Two of the six variables in the transactions costs equation are found to be significant in determining the level of transactions costs: the nominal interest rate, and the loan amount applied for. The larger the loan amount applied for, the higher is the magnitude of transactions costs. In contrast, the lower are the interest rates, the higher the transactions costs. Since all the dependent and independent variables are measured in logarithms (except the dummy variables), the regression coefficients are interpreted as elasticities. It is worth noting that the elasticity of transactions costs with respect to the nominal interest rate is calculated here in terms of a one percentage point increase or decrease (i.e., at an interest rate of 2 percent, an increase of one percentage point involves a 0.02 percent increase). Ceteris paribus, a 10 percentage point (0.2 percent) increase in the nominal interest rate from, say 2 percent, to 2.2 percent reduces transactions costs to borrowers by 3.6 percent. A 10 percent increase in loan amount applied for would increase transactions costs by 1.9 percent.
The variable, $INFLU$ which has an unexpected sign is not significant in our regression. The reason that can explain the unexpected sign and insignificance of this variable is those who are regarded as influential receive favours from the bank officers mainly in the form of being offered preferential loans with lower interest rates. In exchange for receiving these cheaper loans, borrowers are expected to repay bank officers with gifts or gratuities. These costs are likely to offset the reduction in transactions costs from using their influence.

The results show that borrowers who had a prior credit relationship with the bank did not incur transactions costs significantly lower than those of borrowers who did not. This would appear to indicate that the bank relies on financial strength rather than on accumulated information on borrowers; hence past costs incurred in loan applications did not contribute to the reduction of transactions costs for repeat borrowers. This would also suggest that the bank lacks experience in making use of accumulated past information on borrowers.

Although variable $ARR$ has a positive sign, indicating that group borrowing contributes to the reduction of borrower transactions costs, this relationship is not significant. The group borrowing scheme in the survey area, which emerged in 1995, still plays a minor role—only about 6 percent of the total loans outstanding in 1995 were through groups (Binhluc District VBA Branch, 1996). Of the total of 78 transactions with the formal sector in our sample, there were only 8 transactions undertaken through groups. Our interviews with group members revealed that borrowing through groups, on the one hand, is likely to reduce the time that the

---

$^{11}$ An examination of the correlation matrix of the independent variables presented in Table A.5.2 in the Appendix shows a low correlation among all variables, except for $INFLU$ and $lnr$, which has a correlation of -0.66. However, conventional wisdom suggests that such correlation is not too high to create the multicollinearity problem.
member had to spend with the bank in seeking a loan, but on the other hand, required more time to be spent with the group, especially for newly established groups. The net result was that group borrowing did not contribute significantly to a reduction of the opportunity cost of time for borrowers. Since the cash outlay components of borrower transactions costs were nearly the same for both individual and group borrowing, total borrower transactions costs in group borrowing schemes were not significantly lower than those for individual borrowing.

Now we compare our results with those for the Philippines and India where the simultaneous equations model was also used to estimate the transactions costs function. In the case of the Philippines, based on data from a household survey consisting of 176 bank borrowing households in six predominantly rural, agricultural areas, Abiad et al. (1988: 15) estimate transactions costs and loan demand functions using two-stage least squares. The results of the estimations reveal two significant factors: the type of bank and the distance to the bank. The bank dummy variable is positively related to borrower transactions costs, indicating that transactions costs are higher for rural banks than for non-rural banks.\(^\text{12}\) The coefficient of the distance variable, which is measured in terms of travelling time to and from the bank, has a positive sign, indicating that borrowers who live further from the bank have significantly higher transactions costs.

The study by Puhazhendhi (1995: 62) focuses mainly on the quantification of cost-effectiveness of the credit flow through a new channel in which the rural poor have better access to the intermediation of NGOs and SHGs, using a survey of

\(^{12}\) The dummy variable for type of bank is equal to 1 and 0 for rural and non-rural banks, respectively. Non-rural bank includes commercial banks, private development banks, cooperative rural banks, land bank cooperatives, the Philippine National Bank, Development Bank of the Philippines.
150 households. Two variables are significantly related to transactions costs: the type of bank (dummy) and the NGO/SHG intermediation (dummy). As in the case of the Philippines, the results indicate that borrowing through non-rural (commercial) banks lowers borrower transactions costs. Due to the intermediation of NGOs/SHGs, group lending significantly reduces transactions costs by reducing the time spent by individual borrowers at bank premises, together with the elimination of cumbersome documentation procedures.

In our study area, the VBA dominates the formal sector credit market, hence the bank dummy is not included in the regression. Although group lending through SHGs is positively related to transactions costs, indicating that group lending contributes to a reduction in transactions costs, the reduction is not statistically significant. The lack of a significant relationship between group lending and transactions costs raises some doubts as to its effectiveness in reducing transactions costs. This might suggest that some barriers to group lending still may be preventing its effect in reducing the time incurred by borrowers and eliminating cumbersome documentation procedures. Since the number of loans through group lending schemes was not sufficiently large, a more conclusive answer to this question cannot be provided here.

It is interesting, however, to observe the significant relationships in our case between transactions costs, loan amount applied for and interest rates. The larger is the loan amount applied for, the higher the magnitude of transactions costs. In contrast, the lower are the interest rates, the higher the transactions costs. These

---

13 Among 78 formal sector credit transactions, there were only 3 non-VBA transactions.
results are also consistent with the findings by Ahmed (1982) in Bangladesh, and Cuevas (1984) in Honduras.  

5.5 Summary

From the examination of data from a household survey, this chapter has quantified borrower transactions costs and analysed their role in explaining the quantitative structure of the rural credit market. The determinants of borrower transactions costs have also been examined.

The results indicate that in order to pursue a formal sector loan, one has to have about VD 50 thousand available for upfront cash outlays. Those who do not have enough funds to cover the out-of-pocket threshold will pre-select out of the formal sector market. This is an important constraint for the poor in the area in obtaining formal loans. Borrower transactions costs are a barrier to small borrower borrowing from the formal sector. It has been also shown that among borrower transactions costs, the cost of work days lost and travel plus other expenses (entertainment, gifts etc.) make up the two largest parts (42.5 percent and 37.8 percent, respectively).

Borrower transactions costs are found to be an important factor discouraging small borrowers from using formal sector loans. While these costs make up a substantial part of total borrowing costs for the smallest borrowers (9.7 percent of the loan size), they play a negligibly important role for the largest borrowers (0.4

14 A study carried out by Cuevas in Honduras in early 1980s found that a one percent increase in the nominal interest rate in a subsidised credit program would lead to 1 per cent decline in borrower transactions costs (Graham et al., 1995: 90).

15 The annual average income per household in Binhiuc district in 1995 was VD 560 thousand (Binhiuc District Statistical Office, 1996).
percent of the loan size). This confirms the findings of a variety of studies in developing countries. The effective costs of borrowing, taking into account not only the explicit interest rate but transactions costs as well, are calculated and compared among different sources of credit. One of the main conclusions drawn is that small borrowers will rationally choose to borrow from informal lenders rather than from the formal sector. The partition of the market occurs at the loan size between VD 500-1,000 thousand, where the effective cost of borrowing from informal and formal markets is the same. If borrower transactions costs from the formal market were reduced, the partition of the market would change and more borrowers would be willing to borrow from the formal market.

Since our survey was undertaken in a district in the Red River Delta, the borrower transactions costs observed are likely to be downwardly biased relative to the level of such costs elsewhere in the country. In more remote and mountainous areas, borrower transactions costs are expected to be much higher, especially for ethnic minorities who are more isolated from the formal sector. Most of them live in remote areas far away from passable roads, making it difficult for them to get access to financial institutions providing credit and savings facilities. Longer distances to the bank, poor information flows, lack of awareness and understanding loan regulations in the formal sector, etc are factors that contribute to higher borrower transactions costs.

The level of borrower transactions costs is determined by two factors: the nominal interest rate and the loan amount applied for. The insignificance of the

---

16 Among 150 household heads interviewed in the survey, two did not even know there was any formal lender in the area, and 37 knew but did not understand, or misunderstood, the lending regulations of formal lenders.
estimate on a prior credit relationship suggests that the bank lacks experiences in dealing with information available to repeat borrowers. The lower is the nominal interest rate, the higher the borrower transactions costs. Lower nominal interest rates in the survey area are often applied for reasons of loan targeting, which occurs with funds provided by donors and the government for particular purposes such as for a specified crop, for the purchase of machinery, or for poor farmers. Loan targeting imposes additional transactions costs on borrowers in complying with the particular eligibility requirements. Borrowers who obtained ‘cheap’ loans incurred higher non-interest payments. Some of them could not even afford to cover the cash outlay threshold, and had to self-select out of the credit programs targeted at them.\(^\text{17}\)

The estimation of the transactions costs function by the TSLS method indicates that at the nominal interest rate of 2 percent, a 0.2 percent increase involves a 3.6 percent decrease in borrower transactions costs.

It is worth noting that an optimum outcome can be obtained in a segmented market where informal lenders have cost advantages over formal lenders in lending to small borrowers; it cannot under the ceilings of interest rate. If the bank did not face the ceiling on interest rates, the higher interest rates would eliminate or at least reduce the excess demand and encourage the bank to simplify the complicated procedures for obtaining formal sector loans, and reduce or waive some of the cash outlays of the borrower (such as application fees and service fees). These would be expected to contribute to the reduction of travel costs and other opportunity costs.

\(^{17}\) For example, in lending programs for the poor, village and commune committees cooperate with the bank officials to identify eligible borrowers. Several meetings are held in the villages to nominate these borrowers then a proposal list is compiled and passed to the bank, which is responsible for credit delivery. These procedures require the poor to complete more sets of loan application forms, and to pay more up-front costs than for normal loans. A woman in the women’s union in one commune said that a poor farmer, in order to obtain a loan of VD 500 thousand, has to pay VD 50 thousand to complete all the documents required (not including the various other costs).
Thus the cash outlay threshold of the borrowers would also decline. Consequently, the partition of the market would be changed in favour of smaller borrowers.
<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Variance</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>lnTC</td>
<td>4.4176</td>
<td>0.2897</td>
<td>0.0839</td>
<td>3.7377</td>
<td>5.0434</td>
</tr>
<tr>
<td>lnL</td>
<td>8.2462</td>
<td>0.9526</td>
<td>0.9075</td>
<td>5.9915</td>
<td>11.5129</td>
</tr>
<tr>
<td>lnFARM</td>
<td>1.9163</td>
<td>0.4371</td>
<td>0.1911</td>
<td>0.6931</td>
<td>2.7726</td>
</tr>
<tr>
<td>INFOR</td>
<td>0.6667</td>
<td>0.4745</td>
<td>0.2251</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>lnTCFIT*</td>
<td>4.4176</td>
<td>0.1888</td>
<td>0.0356</td>
<td>3.8093</td>
<td>4.8234</td>
</tr>
<tr>
<td>lnLFIT*</td>
<td>8.2642</td>
<td>0.6537</td>
<td>0.4273</td>
<td>6.5966</td>
<td>9.7255</td>
</tr>
</tbody>
</table>

* Number of observations = 78

* Indicates the fitted value in the first-stage regression of lnTC and lnL on all independent variables in Equations 5.2 and 5.3.
### Table A.5.2
Correlation Matrix of Variables Used in Equation (5.2)

<table>
<thead>
<tr>
<th></th>
<th>ln(r)</th>
<th>ln(L(\ln LFI1))</th>
<th>ln(DIS)</th>
<th>ln(FLU)</th>
<th>PRE</th>
<th>ARR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ln(r)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ln(L(\ln LFI1))</td>
<td>-0.30 (-0.44)</td>
<td>1.00 (1.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ln(DIS)</td>
<td>0.01</td>
<td>0.16 (0.35)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ln(FLU)</td>
<td>-0.66</td>
<td>0.39 (0.57)</td>
<td>0.09</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRE</td>
<td>-0.20</td>
<td>0.23 (0.34)</td>
<td>-0.03</td>
<td>0.23</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>ARR</td>
<td>-0.22</td>
<td>0.46 (0.68)</td>
<td>0.18</td>
<td>0.14</td>
<td>0.16</td>
<td>1.00</td>
</tr>
</tbody>
</table>

### Table A.5.3
Correlation Matrix of Variables Used in Equation (5.3)

<table>
<thead>
<tr>
<th></th>
<th>ln(r)</th>
<th>ln(TC(\ln TCFIT))</th>
<th>ln(ASSET)</th>
<th>ln(FARM)</th>
<th>INFOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ln(r)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ln(TC(\ln TCFIT))</td>
<td>-0.42 (-0.65)</td>
<td>1.00 (1.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ln(ASSET)</td>
<td>-0.09</td>
<td>0.16 (0.24)</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ln(FARM)</td>
<td>-0.05</td>
<td>-0.13 (-0.15)</td>
<td>0.10</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>INFOR</td>
<td>0.06</td>
<td>-0.12 (-0.19)</td>
<td>-0.05</td>
<td>0.07</td>
<td>1.00</td>
</tr>
</tbody>
</table>
DETERMINANTS OF CREDIT APPLICATIONS AND
FORMAL SECTOR CREDIT RATIONING

In the previous chapter, borrower transactions costs and their determinants were examined. It was shown that the borrower transactions costs of formal lenders are not equal among borrowers. Small borrowers incur higher transactions costs per dong borrowed than do large borrowers. An implication of this is that small borrowers will rationally choose to borrow from informal sources rather than the formal sector. This is consistent with the well-known literature supporting the view that small farmers are rationed out of the formal credit market (Gonzalez-Vega, 1976 and 1984; Ladman, 1984). Using data from the household survey, this chapter formally tests the hypothesis that small borrowers seek loans from informal sources, while larger borrowers apply for formal sector loans. Probit estimations are undertaken to examine the statistical significance of the loan amount applied for, among other variables, in the equations explaining the determinants of credit applications. The determinants of formal sector credit rationing are also examined.1

6.1 Analytical Framework

Unlike transactions in ordinary goods, in which the only term of the contract

---

1 During fieldwork it was found that interviewees generally had access to informal sources without any credit rationing—specifically, from moneylenders and traders. This chapter thus examines only the determinants of credit rationing in the formal sector.
is price, a combination of variables such as the amount of the loan, purpose of the loan, the collateral required, the repayment schedule and the price (the interest rate) constitute the terms of a credit contract. It is necessary for borrowers to choose the credit source that offers the most attractive combination of contract terms. On the other hand, lenders must also decide whether to ration credit demand based on information on the borrowers' creditworthiness. What can be observed in this process is the amount borrowed and the existence of credit rationing. Let us define $I_1^*$ as the decision of a household as to whether to apply for a loan, and $I_2^*$ as the decision of the lender as to whether to ration a loan applicant. Then the indicator variables have the following forms:

$$I_1 = 1 \text{ if the household applies for a loan; } = 0 \text{ otherwise}$$

$$I_2 = 1 \text{ if the lender rations a loan applicant; } = 0 \text{ otherwise}$$

While it is simple to determine whether a household is an applicant from a given source of credit, the issue of how it can be classified as being credit-rationed or not is much more challenging. There are various empirical approaches to solving this problem. Sial and Carter (1994) suggested estimating the shadow value of capital for producers, and comparing this with prevailing market loan rates. According to this approach, large gaps between the shadow value of capital and prevailing loan rates demonstrate the presence of credit constraints. Unfortunately the heterogeneity of production activities both within and across households in the survey made it impractical to measure rates of return for each activity, so this approach was not feasible here. Kochar (1991) adopted an alternative approach, taking loan applications as a signal of demand, and equating no application to no demand and no rationing. In this case, the distribution of $I_2$ can be only specified for
the subset of observations $I_1 = 1$, but not for the subset $I_1 = 0$, resulting in a truncated sample (Maddala, 1983: 281). Using this approach, Kochar (1991) estimated credit access for farmers with different wealth in India, and found that poorer farmers who did not apply for credit were constrained by the absence of investment opportunities, rather than by being rationed in the credit market. This approach appears not to be relevant in our study, however, because some non-applicants from the formal sector perceived that the lenders would reject their applications for reasons of inappropriate loan use or inadequate collateral. As a result, they self-selected themselves not to apply for credit from the formal sector. Thus the more realistic and relevant approach adopted in this study is that suggested by Feder et al. (1990), who investigated latent loan demand by asking households about their credit market experiences. Using this approach we can define $h^*$ over the whole sample.\(^2\) In particular, all applicants for formal sector credit can be divided into two groups: constrained and not-constrained. The group of constrained applicants includes those for whom the loan amount agreed to is less than that applied for, and those whose requests were totally rejected. Non-formal sector applicants are also classified as constrained or not-constrained. The reason is that there may have been some household heads who wanted to obtain formal sector credit but did not apply, since they perceived no chance of receiving credit from the formal sector. These non-formal sector applicants are, therefore, classified as

---

\(^2\) Zeller (1994) used the same approach to examine the determinants of credit rationing in Madagascar. He pointed out that when conceptualised as a sequential decision process, participation in borrowing can be divided into two stages. At stage one, the household decides whether to apply for credit and, at stage two, the lender decides whether to give the applicant all the credit applied for, or to partially reduce the credit amount, or to totally reject the applicant's demand. However, his model is a joint-decision model rather than a sequential model.
constrained. Thus, in order to analyse the outcome of a borrower’s participation in the credit market, factors affecting his or her demand for credit and the lender’s rationing need to be separated, and a joint-decision or two-decision model (Maddala, 1983: 279) is applied.

6.2 Determinants of Credit Applications

In order to analyse statistically the determinants of credit applications from various sources of credit, a univariate probit model is specified, with the characteristics of the household, the household head and the loan contract as independent variables. The model is estimated separately across loans from formal sector lenders, relatives and friends, moneylenders, and all other informal sources. Separate consideration of the various market segments helps to identify similarities and differences between the segments involving the determinants of credit applications. The equation for estimating the probability of applying for a loan is as follows:

\[
\text{Prob}(l_{it}^*) = f(HH_{it}, HE_{it}, LL_{it})
\]

(6.1)

where:

- \( HH_{it} \) — vector of household head’s characteristics
- \( HE_{it} \) — vector of household’s endowments
- \( LL_{it} \) — vector of loan characteristics

The vector of household head’s characteristics — \( HH_{it} \) — includes age, age squared, gender, education and influence. Since older household heads tend to have
more human capital and experience, and therefore a wider range of investment opportunities, it is hypothesised that they are more likely to apply for credit.

In rural Vietnamese households, it is widely perceived that the husband is more likely to interact with formal lenders, while the wife is more often involved in informal credit arrangements. Nevertheless, formal lenders do not discourage participation by women, and there are even some credit programs targeting women only (Tran et al., 1992). A study by Fong (1994: 16) found that in the majority of cases, those receiving formal sector credit were men; some sources estimated that as many as 90 percent of all borrowers from the VBA are men. However, Tankha et al. (1995: 10) commented that this is likely to change in the near future. Conversations with farmers and bank officers in the study area revealed that the gender of the household head usually depends on who has the greater financial acumen in the family, and that the household’s decision to apply for loans, especially from the formal sector, is made jointly by the husband and wife. Therefore, the effect of gender of the household head on the probability of applying for formal sector credit is unknown, a priori.

It is hypothesised that the number of years of schooling of the household head may have a positive effect on loan applications, especially for formal sector loans, since schooling augments returns on capital, ceteris paribus and, therefore, credit demand (Zeller, 1994: 1903). In a study in Nepal (Yadav et al., 1992: 431), the coefficients of schooling were negative in the regressions for both moneylenders and relatives and friends, indicating that better educated farmers may rely more on self-finance and on formal sector credit. In our study area, household heads with more years of schooling are more likely to be able to exploit investment opportunities for both farm and non-farm activities, and to better understand the
loan regulations of the formal sector, and so would be more likely to apply for formal sector loans than those less educated.

Conversations with farmers and bank officers also revealed that those who are considered to be influential in the community, such as those who have positions of authority (village leaders, commune leaders) or social responsibility (leaders of women’s unions, farmers’ associations), or those who have a close relationship with bank officers, can more easily obtain access to formal sector loans, and especially to preferred loan schemes. Hence a dummy variable that reflects whether a borrower is considered to be influential or not is used as an explanatory variable.³

The vector of households’ endowments affecting credit demand—$HE_1$—includes variables related to amount of land managed (farm size, farm size squared), and variables reflecting household size, such as the number of dependants and adults. In rural Vietnam, land has been distributed relatively equally, according to the amount of land available to the commune and the number of workers in each household, to ensure that each family has enough land for subsistence.⁴ Most of the land in the study area is low-lying, and is used mainly for rice growing. Although farm size was found to be not statistically significant as a factor affecting loan demand among formal sector borrowers, the question as to whether it affects the decision to apply for credit from various sources is worth examining.

³ This variable was already determined for those who borrowed from the formal sector and used in estimating borrower transactions costs in Chapter 5. It is now extended to capture those who did not borrow from the formal sector.

⁴ Household land holdings are readjusted from time to time, based on changes in household size and number of workers.
The number of dependants, defined as household members who are under fifteen or above sixty-five years of age, is hypothesised to have a positive effect on the probability of applying for informal credit, due to the demands for food and education, while the number of adults in the household is hypothesised to affect positively the opportunity of obtaining credit from the formal sector, since formal lenders' production-oriented loans tend to rely on labour provided by adults.

The vector of loan characteristics—$LL_1$—includes the loan amount applied for and loan purpose. As mentioned earlier, due to high transactions costs, formal sector loans are normally large, while small borrowers rationally seek loans from informal sources. Thus the hypothesis that the loan amount applied for plays a significant role in households' decision as to the source of loans is formally tested here.

Because of formal lenders' concentration on production loans, non-production loans are obtained mainly in the informal market. The coexistence of formal lenders and various other lenders in the informal market suggests the importance of loan purpose as an explanatory variable in the credit application regression. We distinguish three categories of loan purpose. The first—$CAT1$—consists of crop working capital loans only, such as loans to buy fertiliser, seed, pesticides etc. With low-lying land, rice is the main crop; the demand for working capital for rice growing is typically small, and is met mainly by traders and cooperatives in the area. The second category—$CAT2$—comprises loans for fixed assets, animal husbandry (mainly pig and cattle raising), fisheries, and non-crop activities (including silk production and processing). This type of loan is characterised by large size, and is mainly provided by the formal sector.
The third category—CAT3—includes all non-production loans, such as for normal consumption, education, housing construction, weddings, funerals, and all other purposes not included in the first two categories. Relatives, friends and moneylenders are the major providers of loans for these purposes.

Summary definition of variables

\[ AGE = \text{age of the household head} \]
\[ AGESQ = \text{age of the household head squared. This is used to capture non-linearity in relation to household head's age} \]
\[ SEX = \text{sex of household head (} = 1 \text{ if male; } = 0 \text{ if female)} \]
\[ INFLU = \text{influence (} = 1 \text{ if household head has a social responsibility in the commune or a close relationship with bank officers; } = 0 \text{ otherwise)} \]
\[ EDU = \text{household head's number of years of schooling} \]
\[ FARM = \text{farm size measured by area of land in sao managed by the household} \]
\[ FARMSQ = \text{farm size squared} \]
\[ DEP = \text{number of dependants in the household} \]
\[ ADULT = \text{number of adults in the household, which is the household size minus the number of dependants} \]
\[ L = \text{loan amount applied for} \]
\[ CAT1 = \text{loan purpose category 1} \]
\[ CAT2 = \text{loan purpose category 2} \]
\( CAT3 \) = loan purpose category 3. (This variable is dropped and used as the control category.)

\( CONST \) = intercept term, which reflects the case when the household head is female, has no influence, and the loan purpose is Category 3.

A univariate probit model\(^5\) (Maddala 1983: 27) is used to estimate the determinants of the decision as to where to apply for credit among different sources. The results are presented in Table 6.1.

**Interpretation of Results**

The regressions for the four different sources of credit reject the hypothesis that all the slope coefficients in each model are equal to zero, as indicated by the likelihood ratio tests in Table 6.1. Relatively high percentages of correct predictions (ranging from 79.6 percent to 94.2 percent) indicate fairly good fits of these models. The effect of a change in the independent variable on the probabilities of borrowing from different sources is calculated in terms of elasticity or marginal effect where appropriate.\(^6\)

---

\(^5\) Due to the small sample size, the results from the probit estimation may be different from those using logit estimation. However, logit estimations (not reported here) show no difference in terms of the significant determinants of credit applications.

\(^6\) The Appendix shows the likelihood ratio test, marginal effects and elasticities as computed in the probit model.
Table 6.1

Estimation Results of Determinants of Credit Applications

<table>
<thead>
<tr>
<th>Explanatory variable</th>
<th>Formal sector</th>
<th>Relatives and friends</th>
<th>Moneylenders</th>
<th>All other informal lenders</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>-0.0533</td>
<td>0.1209</td>
<td>0.0352</td>
<td>0.0633</td>
</tr>
<tr>
<td></td>
<td>(-0.6208)</td>
<td>(1.2741)</td>
<td>(0.4850)</td>
<td>(0.5422)</td>
</tr>
<tr>
<td>AGESQ</td>
<td>0.0006</td>
<td>-0.0012</td>
<td>-0.0004</td>
<td>-0.0006</td>
</tr>
<tr>
<td></td>
<td>(0.6169)</td>
<td>(-1.2484)</td>
<td>(-0.5775)</td>
<td>(-0.5367)</td>
</tr>
<tr>
<td>SEX</td>
<td>0.0798</td>
<td>0.0256</td>
<td>0.1445</td>
<td>-0.3868</td>
</tr>
<tr>
<td></td>
<td>(0.3122)</td>
<td>(0.1187)</td>
<td>(0.7067)</td>
<td>(-1.2133)</td>
</tr>
<tr>
<td>EDU</td>
<td>0.0022</td>
<td>0.0063</td>
<td>-0.0243</td>
<td>-0.0526</td>
</tr>
<tr>
<td></td>
<td>(0.0401)</td>
<td>(0.1267)</td>
<td>(-0.5426)</td>
<td>(-0.6681)</td>
</tr>
<tr>
<td>FARM</td>
<td>0.4837^</td>
<td>0.0475</td>
<td>-0.2395</td>
<td>-0.0213</td>
</tr>
<tr>
<td></td>
<td>(2.3945)</td>
<td>(0.2586)</td>
<td>(-1.5055)</td>
<td>(-0.0807)</td>
</tr>
<tr>
<td>FARMSQ</td>
<td>-0.0243^</td>
<td>-0.0051</td>
<td>0.0125</td>
<td>0.0030</td>
</tr>
<tr>
<td></td>
<td>(-2.0514)</td>
<td>(-0.4724)</td>
<td>(1.3734)</td>
<td>(0.1991)</td>
</tr>
<tr>
<td></td>
<td>[-2.2837]</td>
<td>[-0.6916]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEP</td>
<td>-0.2156</td>
<td>0.1506</td>
<td>0.3662^</td>
<td>0.1177</td>
</tr>
<tr>
<td></td>
<td>(-1.0131)</td>
<td>(0.8621)</td>
<td>(2.2526)</td>
<td>(0.4652)</td>
</tr>
<tr>
<td>ADULT</td>
<td>-0.0593</td>
<td>0.0111</td>
<td>0.0864</td>
<td>0.2378</td>
</tr>
<tr>
<td></td>
<td>(-0.3933)</td>
<td>(0.0855)</td>
<td>(0.7234)</td>
<td>(1.3101)</td>
</tr>
<tr>
<td>INFLU</td>
<td>0.4567</td>
<td>-0.5429</td>
<td>-0.5488</td>
<td>-0.2923</td>
</tr>
<tr>
<td></td>
<td>(0.7089)</td>
<td>(-0.8575)</td>
<td>(-1.1250)</td>
<td>(-0.1731)</td>
</tr>
<tr>
<td>L</td>
<td>0.1419^</td>
<td>0.0063</td>
<td>-0.0181</td>
<td>-0.5139^</td>
</tr>
<tr>
<td></td>
<td>(2.5563)</td>
<td>(0.4613)</td>
<td>(-0.9021)</td>
<td>(-2.1055)</td>
</tr>
<tr>
<td></td>
<td>[0.6358]</td>
<td>[-2.0302]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAT1</td>
<td>0.4116</td>
<td>-1.7386^</td>
<td>-5.8486</td>
<td>2.9757^</td>
</tr>
<tr>
<td></td>
<td>(0.7097)</td>
<td>(-4.0280)</td>
<td>(-0.0071)</td>
<td>(6.7668)</td>
</tr>
<tr>
<td>CAT2</td>
<td>2.5195^</td>
<td>-1.2424^</td>
<td>0.0085</td>
<td>-0.3528</td>
</tr>
<tr>
<td></td>
<td>(5.8974)</td>
<td>(-5.2518)</td>
<td>(0.0402)</td>
<td>(-0.7851)</td>
</tr>
<tr>
<td>CONST</td>
<td>-3.0990</td>
<td>-3.3042</td>
<td>-0.8339</td>
<td>-2.7604</td>
</tr>
<tr>
<td></td>
<td>(-1.3410)</td>
<td>(-1.5351)</td>
<td>(-0.4783)</td>
<td>(-1.0517)</td>
</tr>
</tbody>
</table>

Likelihood ratio test
Percentage predicted correctly

7 SHAZAM understands the two variables FARM and FARMSQ as being independent of each other; hence the elasticity at mean of FARM printed out from SHAZAM output is not correct. The elasticity at mean of FARM in this case should be calculated as: \( E_{\text{FARM}} = \left( \frac{\partial \hat{Y}}{\partial \text{FARM}} \right) \frac{\text{FARM}}{F(X' \beta)} \) where

\[
\frac{\partial \hat{Y}}{\partial \text{FARM}} = f(X' \beta)(\beta_{\text{FARM}} + 2 \beta_{\text{FARM}} \text{FARM}).
\]
Number of observations = 260. The number of observations here is the number of transactions. Many households borrowed from various sources of credit during the study period, so a household may appear more than once. Non-borrowers are also included in the regression. Numbers in () are asymptotic t-values; Numbers in [ ] are elasticities at mean; Numbers in { } are marginal effects at mean; Dependent variable = 1 if the household applies for credit, = 0 otherwise. # significant at the 5 percent level; + significant at the 1 percent level.

In the model for the formal sector, four estimated coefficients are significantly different from zero at the 95 percent or 99 percent confidence levels, and all have the expected sign. First, the larger the farm size, the higher the probability the household will apply for formal sector credit. Households with larger farm size demand more credit because of the better opportunity to diversify crops (amongst rice, corn, potatoes, tomatoes etc.) and to engage in animal husbandry (fish, pigs, cows). An increase in farm size therefore raises the absolute amount of credit demanded from the formal sector. When the loan demanded exceeds the level where the effective cost of credit between the formal and informal sectors is the same (the partition point of the credit market), borrowers will rationally choose to borrow from the formal sector. The increase in farm size also increases the collateral value of land, thus allowing households to borrow from the formal sector. However, it is worth noting that once the loan amount applied for is beyond the partition point, so that the household decides to borrow from the formal sector, farm

---

8 If the examination of choice of credit sources is the focus such that only borrowers are taken into account, the number of observations then falls to 245. In this case, the probit regressions of the formal sector, relatives and friends, and all other informal lenders lead to no changes in terms of statistical significance of estimated parameters. The only change appears in the case of moneylenders, in which the confidence interval of DEP falls to about the 85 percent level, while FARM turns out to be significantly and negatively related to the probability of applying for loans, with a confidence interval of 90 per cent. Results of these regressions are presented in the Appendix.
size is no longer a significant factor in determining the loan amount applied for, as shown in the formal loan demand estimation in the previous chapter. This indicates that the positive relationship between farm size and the loan applied for, and thus choice of formal sector credit occur essentially for the small farm size class. The insignificant association between farm size and the amount of formal sector loans demanded for the larger farm size class cannot be explained by the credit rationing associated with the lack of collateral, because land is one of the most suitable types of collateral for formal sector loans. This may indicate that larger borrowers make the deliberate choice of using formal sector credit for production activities other than cropping, which do not necessarily depend on farm size. In particular, if the farm size of the household is greater than the mean by 1 percent, the probability of that household’s loan coming from the formal sector increases by 0.38 percent.9

Second, while farm size positively affects the probability of borrowing from the formal sector, farm size squared has the opposite effect, implying that the positive relationship between farm size and probability of applying for sector formal sector loans becomes weaker as farm size increases.

Third, the hypothesis that large borrowers would rationally seek loans from the formal sector is confirmed here by the coefficient on the loan amount applied for, which is positive and significant at the 99 percent confidence level. This result also implies that small borrowers are effectively rationed out of the formal sector by

---

9 While this result again supports the stylised view of farmers with small land holdings being rationed out of the formal market commonly found in many developing countries (Ladman, 1984), it appears to differ from the case of China. West (1991: 88), using a logit model, indicated that area of land managed by the household was not significant, since farmers in the same county were relatively homogeneous, and land was not a significant discriminator. However, our survey found that in the Binhluu district the average farm size per household in Binhmy and Binhngia communes is only half that of Mytuan commune.
the imposition of high transactions costs. The result implies that if the loan amount
applied for is greater than the mean by 1 percent, the household is 0.64 percent
more likely to choose a loan from the formal sector.

Fourth, the intention to use the loan for production activities, but not for
crop working capital only, has a positive and significant impact on the household’s
decision to borrow from the formal sector. That is, if the loan is classified as
Category 2, the household is more likely to obtain the loan from the formal sector.

The model for the determinants of applying for loans from relatives and
friends reveals two significant predictors: loan Categories 1 and 2. Both of these
variables are found to be significantly different from zero at the 99 percent
confidence level, and have the expected signs. The intention to use loans for
Category 1 and 2 purposes reduces the probability of a household borrowing from
relatives and friends. This result is consistent with a World Bank report (World
Bank, 1995a: 73), which states that ‘house building was the primary reason for
informal non-commercial loans, and relatives tended to be the preferred source of
housing loans’.

The only predictor of applying for loans from moneylenders that is
statistically significant at the 95 percent confidence level is the number of
dependants in the household. The more children the household has, the more
household’s food consumed, and the greater the health and education expenses.
Since formal sector lenders do not provide loans for such uses, the only sources are
informal lenders. Households with relatively many dependants rely significantly on
informal moneylenders for loans for such purposes, which are made available for
durations ranging from a few weeks to two or three months, and with negligible
waiting time between loan request and disbursement. Specifically, an increase of
one dependant in the household, as compared to the mean, increases the probability that the household will apply for credit from moneylenders by 0.15. In contrast with the models of reliance on formal sector lenders and on relatives and friends, where loan purpose plays a statistically significant role, loan purpose is found to be not significant here. This indicates that informal moneylenders provide loans for a variety of purposes, including consumption loans, without explicit collateral requirements.10

Turning to the model for all other informal lenders, it is found that two coefficients are statistically significant and have the predicted signs. First, the loan amount applied for is significant at the 95 percent confidence level, with a negative sign. A one percent increase in the loan amount requested as compared to the mean makes it 3.65 percent less likely to have come from such lenders. As mentioned earlier, traders and cooperatives operating in the study area mainly finance inputs such as fertiliser, pesticides, seeds etc., and receive repayment in farm outputs in return at harvest time at pre-determined rates of interest. The loan amount for such uses averages only VD 500 thousand. This result again confirms that because of high transactions costs, small borrowers choose to avoid formal sector lenders. Second, loan purpose Category 1 is found to be significant at the 99 percent confidence level, and has a positive effect on the household’s decision to request

10 The survey found that moneylenders have much more information about the borrower’s capacity and willingness to repay loans than formal lenders. They knew the sources of income of borrowers, and undertook enforcement, such as confiscating fruit, pigs or paddy if borrowers defaulted. Zeller (1994: 1905) also indicates, in the case of Madagascar, that ‘informal borrower-lender relationships are often based on long-established social ties or business relationships. Honouring these relationships is especially crucial for vulnerable households, since they do not want to lose access to the informal credit and insurance system. In terms of crises, it can therefore be expected that informal loans are repaid first’.
loans from traders or cooperatives. This is consistent with the VLSS data, which suggest that the majority of loans for farm inputs come from private credit sources and cooperatives.\textsuperscript{11}

In all four probit regressions, household head characteristics—namely age, age squared, gender, level of education, influence, and the number of adults in the household—do not have significant explanatory power. The insignificance of the age and gender variables implies that there is no evidence of formal lender discrimination against the young or women. It was also expected that three variables—level of education, influence of the household head, and number of adults in the household—would have a significant positive effect on the decision to borrow from the formal sector, because a formal sector credit institution can reasonably be expected to extend loans to knowledgeable, influential household heads, and households with more workers. These variables are found not to be significant determinants of the borrowing decision from any source, however.

These unexpected results may have several explanations. Most borrowers request loans from not one but several sources. The average number of transactions per household during the study period was 1.81, and there was one household which had as many as eight transactions. The preferred source of loans for rural households is relatives and friends, since such loans carry the lowest effective interest rates and have flexible repayment requirements. It is reasonable to assume, therefore, that households do not choose to borrow from the formal sector or other

\textsuperscript{11} The VLSS data suggest that in rural households which rely on credit to cover their purchases of seed, 9 per cent of credit comes from private sources, 30 per cent from government sources (VBA), and the remainder from cooperatives; for purchasing fertiliser, they obtain 13 per cent from private credit sources, 38 per cent from the government, and 49 per cent from the cooperatives; for buying pesticides, a nearly identical pattern is observed (World Bank, 1995a:73).
informal lenders unless they are unable to borrow from relatives and friends. Then, depending on a variety of factors affecting both demand for and supply of credit, the household decides, for each transaction, from whom it will borrow. The coexistence of various sources of credit in a household's borrowing portfolio suggests that household characteristics may be less likely to become statistically significant for a given source of credit regression.

Several possible reasons can be identified for the insignificance of each variable. First, the insignificance of EDU in the model for the formal sector indicates that educated household heads can rely in part on self-finance and in part on various informal sources of credit, not only on formal sector credit. It also may be the case that educated farmers facing an investment requiring a large amount of credit are rationed by the loan limits imposed by the formal sector; hence they have to seek additional loans from other sources. Second, although influential borrowers have an advantage in obtaining formal preferential credit, the scale of such credit is normally small; hence the estimated coefficient in the formal sector regression is not significant. Third, the results also indicate that households with more adults are not significantly more likely to apply for credit, especially from the formal sector, because such households can in part rely on their own labour and self-finance.

Finally, it is worth mentioning that the signs of most significant variables in the formal sector credit regression are opposite to those in the informal market regressions (the loan amount applied for in the formal sector and in all other informal lenders regressions; loan purpose Category 2 in the formal sector and in the relatives' and friends' regressions). This is the case even within the informal sector regressions (loan purpose Category 1 in the regressions for relatives and
friends and all other informal lenders). This suggests that formal institutions and various agents of the informal sector are alternative sources of credit. The strong substitutability in the loan amount applied for and loan purpose confirms the segmentation of the credit market.

It may be interesting to compare our results for Vietnam with those from China. As in China since 1979, Vietnam has been implementing a series of reforms in the organisation of agricultural production since 1988 that have radically changed the nature of economic activities in the rural sector. The important feature of the agricultural reforms in both countries was the introduction of the 'household responsibility system', which makes individual households, rather than cooperatives, the decision-makers and managers of production and business activities. One of the markets that has developed to a significant degree in both China and Vietnam following these reforms is the rural credit market. The first quantitative study of the determinants of applying for formal sector and informal credit in China appears to be that by West (1991). She analysed data from a two-year (1987-88) farm-household survey in Qingyuan county, Guangdong province, using a logit model. The results for 1987 show three significant variables as the determinants of choice of credit source between the formal and informal sector: the beginning-of-year level of savings deposits, loan purpose, and the household's location. From results for 1988, the significant predictors of choice of credit source are age of the household head, educational level of the household head, area of cultivated land, savings deposits, loan purpose, and the household's location.

Although the variables included in the models adopted by West differ from those used here, the comparison is interesting because West's study covers the period in China when formal sector credit conditions were much the same as those
presently existing in Vietnam—i.e., characterised by ceiling interest rates and a formal sector policy of focusing on production loans. The main difference lies in the structure of the formal sector credit market. In China at that time, rural credit cooperatives provided the principal network of formal credit institutions that reached into the countryside, while in our study most formal sector credit was obtained from the VBA. Savings deposits held at rural credit cooperatives as a form of collateral were the most important predictor of choice of credit source in the case of China. The main common conclusion from West’s study and the present study is that loan purpose is an important variable in determining the choice of applying for loans from the formal and informal sectors. Since West did not include loan size as an explanatory variable, we have no means of comparing the significance of this variable in the two countries.

6.3 Determinants of Formal Sector Credit Rationing

For the 150 household heads interviewed, 245 transactions are recorded, of which 78 transactions were with formal lenders. Looking first at these transactions with the formal sector, responses to the questions on the amount applied for and the amount actually received show that among these transactions, 10 could be considered to be constrained, since the amounts of credit actually received were less than those applied for; the other 68 transactions were classified as not-constrained. The total 167 (= 245-78) non-formal sector transactions were classified as formal sector constrained or not-constrained by asking the borrower why she/he did not undertake the transaction in question in the formal sector. The typical reasons for not doing so included non-production loan use; lack of collateral acceptable to
formal lenders; small amount of credit needed; and urgent need for credit. As a result, among these 167 transactions, 63 were identified as formal sector constrained transactions, either by being rejected or being perceived to be rejected. Non-borrowers were also asked why they did not borrow from the formal sector. Thirteen of the total 15 non-borrowers revealed that they had no need for credit, and so were classified as not-constrained non-borrowers. Two of these 15 non-borrowers reported that they wanted to borrow from the formal sector but did not apply, perceiving a high chance of rejection, since they still had an outstanding debt with the formal sector. These two households then fell into the group of constrained non-borrowers. Hence, the total number of transactions considered to be formal sector constrained were 75 (= 10+63+2).

In order to estimate the determinants of being credit constrained, many of the variables in the model of credit applications were examined again: the vector of household head's characteristics—$HH_1$—affecting the lender's decision (as in Equation (6.1)); the vector of household's endowment—$HE_2$—(as in Equation (6.1), but with an additional variable, which is the ratio of loan amount applied for to the value of household liquid assets—$LASSET$—to proxy for the household's ability to repay the loan in the case that future income is less than expected; ability to fulfil the collateral requirement—$COL$; and outstanding debt—$LO$, of the household); vector of loan characteristics $LL_2$ (as in Equation (6.1), but not including $L$). The model can be expressed by the following equation:

---

12 Zeller (1994) used this model to estimate the determinants of credit rationing by informal lenders and formal credit groups in Madagascar. In the probit regression of being credit constrained, Mill's ratio from the model of credit application was included as an additional regressor to correct for selection bias in the model of credit application. However, Hecman (1979), who was the first to use Mill's ratio to correct for selection bias suggested that it was only relevant to put the inverse of Mill's ratio calculated from the probit regression in the first-stage as an additional regressor in the second-stage OLS regression when attempting to run OLS on truncated samples. Hence, we do not put Mill's ratio in our regression of being credit constrained.
where:

\( HH_1 \) — vector of household head characteristics affecting the lender's decision, as in Equation (6.1).

\( HE_2 \) — vector of household characteristics affecting the lender's decision, as in Equation (6.1), but also including

\[ LASSET = \frac{L}{ASSET} \]

such as homestead, durable goods, livestock, monetary savings etc. that could be liquidated in order to repay a loan, and \( L \) is the amount applied for

\( COL = \) dummy variable ( = 1 if the household has adequate collateral to satisfy formal sector lender's loan requirements; = 0 otherwise)

\( LO = \) dummy variable ( = 1 if the household had an outstanding debt with formal sector lender; = 0 otherwise).

Table 6.2 presents the probit regression results for being credit constrained by the formal sector. Again, the likelihood ratio test reported in the regression rejects the hypothesis that all the slope coefficients in the model are equal to zero. This model also presents a relatively good fit, as reflected in the percentage predicted correctly — 76.9 percent. Two variables are found to be significantly different from zero at the 99 percent confidence level in explaining formal sector credit rationing: outstanding debt, and loan use Category 2.
### Table 6.2

**Determinants of Credit Constraint in the Formal Sector**

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Estimates</th>
<th>Asymptotic t-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>0.0126</td>
<td>0.1671</td>
</tr>
<tr>
<td>AGESQ</td>
<td>-0.0001</td>
<td>-0.1113</td>
</tr>
<tr>
<td>SEX</td>
<td>0.0665</td>
<td>0.3180</td>
</tr>
<tr>
<td>EDU</td>
<td>0.0728</td>
<td>0.0461</td>
</tr>
<tr>
<td>FARM</td>
<td>-0.1712</td>
<td>-1.0791</td>
</tr>
<tr>
<td>FARMSQ</td>
<td>0.0081</td>
<td>0.0977</td>
</tr>
<tr>
<td>DEP</td>
<td>0.2296</td>
<td>1.3636</td>
</tr>
<tr>
<td>ADULT</td>
<td>0.1580</td>
<td>1.3255</td>
</tr>
<tr>
<td>INFLU</td>
<td>0.4881</td>
<td>1.1375</td>
</tr>
<tr>
<td>LASSET</td>
<td>1.0143</td>
<td>1.5040</td>
</tr>
<tr>
<td>LO</td>
<td>1.3819*</td>
<td>4.5529</td>
</tr>
<tr>
<td>CAT1</td>
<td>-5.9769</td>
<td>-0.0215</td>
</tr>
<tr>
<td>CAT2</td>
<td>-0.7923*</td>
<td>-2.9828</td>
</tr>
<tr>
<td>COL</td>
<td>-0.0668</td>
<td>-0.2479</td>
</tr>
<tr>
<td>CONST</td>
<td>-1.3877</td>
<td>-0.7740</td>
</tr>
</tbody>
</table>

Likelihood ratio test 84.41
Percentage predicted correctly 76.92

Number of observations = 260.
Dependent variable = 1 if the household is rationed, = 0 otherwise.
# significant at the 5 percent level;
+ significant at the 1 percent level.
Having an outstanding debt with a formal lender significantly increases the probability of being credit rationed, \textit{ceteris paribus}. And requiring the loan for Category 2 purposes significantly reduces the probability of being credit rationed in the formal sector. This is an expected result, since the formal sector only provides loans for production purposes. Furthermore, various schemes existed for encouraging farmers to invest in fixed assets such as tractors, paddy processing machines, and pumps. The variables $EDU$ and $LASSET$ are not found to be significant predictors of formal sector credit rationing. The variable $EDU$ even has the unexpected sign. Most formal sector loans in the survey area were for animal husbandry (pigs, cows), fisheries, and silk production, suggesting that experience, rather than level of education, is important for such activities.\footnote{Household surveys in rural China also indicate that formal education may not be as important for cropping, animal husbandry, and fishery activities. 'Education level also may not be a good proxy for successful management in commerce, industry, or transportation' (West, 1991: 90).}

We again compare the determinants of being formal sector credit constrained in our case with that in China. At least two studies have dealt with this issue in China: one by West (1991), and the other by Feder et al. (1990). The basic similar feature in all three studies is that being credit constrained is defined as an upper bound, since both households whose loan requests were denied or reduced, and households which felt their loan requests would be rejected, are included. West's regression identifies four variables as significant at the 90 percent confidence level or higher: age of household head, number of household workers, loan outstanding, and household's location. Feder et al. (1990), using data collected in December, 1987 in Ganzhuling in Jilin province, found that three variables were significant at the 90 percent confidence level or higher: number of adults in the household, savings in financial institutions, and last season's income. Recalling that
the two significant variables in our regression are loan outstanding and loan use Category 2, it can be seen that our result is closer to that of West. These two studies suggest that loan outstanding is, among other things, a significant predictor of being formal sector credit constrained.

6.4 Summary

Using data from the household survey, this chapter has analysed the role of the loan amount applied for and other factors in explaining the determinants of credit applications from various sources and of credit rationing in the formal sector.

One of the main conclusions drawn earlier when examining the role of borrower transactions costs and the effective cost of borrowing was that small borrowers will rationally choose to borrow from informal lenders rather than from the formal sector. In this chapter, four sources of credit were distinguished, and the significance of the loan amount applied for variable was tested formally in a probit regression model of determinants of credit applications. The results confirm the existence of segmentation of the credit market with respect to the loan amount applied for. Other characteristics of the segmented market were also examined, and farm size and loan use also appear to be significant predictors of borrowers' decisions to apply for formal sector credit. The results show that a positive relationship between farm size and choice of formal sector credit exists essentially for the small farm size class, indicating that formal sector credit is more often the choice of households with larger farms. They also confirm that the formal sector concentrates on production loans, while informal lenders tend to provide loans for a
variety of purposes, including consumption. Households with more dependants have to rely on informal moneylenders for their consumption needs if they have no access to credit from relatives and friends.

If formal lenders did not face ceilings on interest rates, excess demand for formal sector loans would not occur. They would thus be more likely to hire more staff to obtain additional information on borrowers, to monitor loans and to enforce repayment. As a result, they would be more likely to diversify and expand their loan portfolios to encompass consumption loans, which are more often needed by small and poor farmers.14

At least two factors have been found to explain heterogeneity in borrowing behaviour and segmentation of the rural credit market: regulated interest rates in the formal sector and the problem arising from asymmetric information in the rural credit market. Regulated interest rates create excess demand for formal sector credit, leading to credit rationing. Because of the high cost of acquiring borrower-specific information, the lack of experience in dealing with such information, and the lack of a sound legal system, risk-reduction behaviour by formal lenders is manifested in a heavy reliance on collateral requirements, a concentration on production loans, and the shifting of transactions costs from lenders to borrowers. The resulting higher borrower transactions costs make the effective cost of small loans from the formal sector substantial compared to that from informal lenders. While efficiency can be achieved in a segmented market if the segmentation is due

---

14 The study by Zeller (1994: 1898) in Madagascar shows that repayment rates of consumption loans compared to production loans do not differ greatly. In poor households, where the main production factor is labor, expenditure for food, health care, clothing, and education appear critical in maintaining the household's ability to generate income, and credit may sometimes be a cost-efficient means of smoothing consumption.
to the different availability of information about borrowers on the part of various lenders, it cannot be achieved if segmentation is due to the regulation of interest rates (Yadav et al., 1992: 434). With regulated interest rates borrower transactions costs continue to be high, resulting in formal sector loans' remaining unattractiveness to smaller farmers.

An analysis of the determinants of loan rationing by the formal sector has also been presented, which indicates that the formal sector uses loans outstanding and loan use in rationing loan demand. Households that are credit constrained by the formal sector have to rely on informal sources for consumption-smoothing loans. If such households also have no relatives and friends able to help them, it is quite possible that they will face very high interest rates from informal moneylenders. If the goal is to reach more of the rural poor through formal sector loans, the formal sector has to expand the scope of its loan portfolio. In order to do so, formal lenders must be permitted to charge rates high enough to cover all costs involved in operating their expanded loan portfolio.
APPENDIX TO CHAPTER 6

A.6.1 Probit Model

In the probit model, an Index \( I_i \), which is a linear function of the independent variables and has a range from \(-\infty\) to \(+\infty\), is created. For observation \( i \), \( I_i \) is

\[
I_i = X_i' \beta
\]

This index is then translated to a range of 0-1 using a cumulative density function. The normal distribution is assumed, such that the probability of occurrence of the dependent variable, \( P(Y = 1) \) is as follows:

\[
P_i = F(I_i) = F(X_i' \beta) = \int_{-\infty}^{I_i} \frac{1}{\sqrt{2\pi}} \exp(-t^2/2) dt
\]

where \( F() \) represents the cumulative normal density function. At \( I_i = 0 \), the probability is 0.5, and the regular cumulative normal table can be used to calculate the probabilities with various values of \( I_i \).

Note that the estimated coefficients show the effect of a change in an independent variable on the index, rather than on the dependent variable. After the coefficients have been estimated, the predicted probabilities can be computed as

\[
\hat{Y_i} = \hat{P_i} = F(X_i' \beta)
\]

Also note that the effect on the dependent variable is different for each observation. For each observation \( i \), this marginal effect can be calculated for the \( k \)th coefficient when using \( f() \) as the normal density function:

\[
ME_{ik} = \frac{\partial P_i}{\partial X_{ik}} = f(X_i' \beta) \beta_k
\]

Because the marginal effect is different for every observation, it is often computed at the mean value of \( X \) and \( Y \).
The elasticity for the $k$th coefficient is calculated as

$$E_k = \left( \frac{\partial \hat{\beta}}{\partial X_k} \right) \frac{X_k}{F(X; \beta)}$$

Elasticity at means can be calculated as

$$E_m = \left( \frac{\partial \hat{\beta}}{\partial X_m} \right) \frac{\bar{X}_m}{F(\bar{X}; \beta)}$$

SHAZAM output labels this as 'elasticity at means'.

A test of the null hypothesis that all the slope coefficients are zero can be carried out using the likelihood ratio procedure. The log likelihood function, $L(\beta)$, is given by:

$$L(\beta) = \sum_{i=1}^{T} \left[ Y_i \ln[F(X_i; \beta)] + (1 - Y_i) \ln[1 - F(X_i; \beta)] \right]$$

Define $S$ as the number of successes ($Y_i = 1$) observed in $N$ observations. Then the maximum value of the log likelihood function under the null hypothesis is

$$L(0) = S \ln \left( \frac{S}{N} \right) + (N - S) \ln \left( \frac{N - S}{N} \right)$$

If all coefficients except the intercept are zero, the likelihood ratio test statistic, $2[L(\beta) - L(0)]$, has an asymptotic $\chi^2_{(k-1)}$ distribution.
A.6.2 Summary of Statistics and Correlation Matrix of Variables Used in Equations (6.1) and (6.2)

Table A.6.1

Summary of Statistics of Variables Used in Equation (6.1)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std.Dev</th>
<th>Variance</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>44.708</td>
<td>10.428</td>
<td>108.75</td>
<td>22</td>
<td>80</td>
</tr>
<tr>
<td>AGESQ</td>
<td>2107.1</td>
<td>986.97</td>
<td>974110</td>
<td>484</td>
<td>6400</td>
</tr>
<tr>
<td>SEX</td>
<td>0.5923</td>
<td>0.4924</td>
<td>0.2424</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>EDU</td>
<td>7.5423</td>
<td>2.3616</td>
<td>5.5774</td>
<td>2.00</td>
<td>13.00</td>
</tr>
<tr>
<td>FARM</td>
<td>7.2308</td>
<td>3.1849</td>
<td>10.143</td>
<td>1.00</td>
<td>16.00</td>
</tr>
<tr>
<td>FARMSQ</td>
<td>62.388</td>
<td>56.479</td>
<td>3189.8</td>
<td>1.00</td>
<td>256.00</td>
</tr>
<tr>
<td>DEP</td>
<td>0.9115</td>
<td>0.7378</td>
<td>0.5443</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>ADULT</td>
<td>3.8269</td>
<td>1.1377</td>
<td>1.2943</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>INFLU</td>
<td>0.0692</td>
<td>0.2543</td>
<td>0.0647</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>L</td>
<td>2.9745</td>
<td>7.5863</td>
<td>57.552</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>CAT1</td>
<td>0.1846</td>
<td>0.3887</td>
<td>0.1511</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>CAT2</td>
<td>0.4538</td>
<td>0.4988</td>
<td>0.2488</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>I(formal)</td>
<td>0.3000</td>
<td>0.4591</td>
<td>0.2108</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>I(rela. &amp; frie.)</td>
<td>0.2000</td>
<td>0.4008</td>
<td>0.1606</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>I(moneylenders)</td>
<td>0.2154</td>
<td>0.4119</td>
<td>0.1696</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>I(other info. lenders)</td>
<td>0.2296</td>
<td>0.4197</td>
<td>0.1761</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

* Number of observations = 260.
Table A.6.2

Summary of Statistics of Variables Used in Equation (6.2)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std.Dev</th>
<th>Variance</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>44.708</td>
<td>10.428</td>
<td>108.75</td>
<td>22</td>
<td>80</td>
</tr>
<tr>
<td>AGESQ</td>
<td>2107.1</td>
<td>986.97</td>
<td>974110</td>
<td>484</td>
<td>6400</td>
</tr>
<tr>
<td>SEX</td>
<td>0.5923</td>
<td>0.4924</td>
<td>0.2424</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>EDU</td>
<td>7.5423</td>
<td>2.3616</td>
<td>5.5774</td>
<td>2.00</td>
<td>13.00</td>
</tr>
<tr>
<td>FARM</td>
<td>7.2308</td>
<td>3.1849</td>
<td>10.143</td>
<td>1.00</td>
<td>16.00</td>
</tr>
<tr>
<td>FARMSQ</td>
<td>62.388</td>
<td>56.479</td>
<td>3189.8</td>
<td>1.00</td>
<td>256.00</td>
</tr>
<tr>
<td>DEP</td>
<td>0.9115</td>
<td>0.7378</td>
<td>0.5443</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>ADULT</td>
<td>3.8269</td>
<td>1.1377</td>
<td>1.2943</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>INFLU</td>
<td>0.0692</td>
<td>0.2543</td>
<td>0.0647</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LASSET</td>
<td>0.0984</td>
<td>0.2157</td>
<td>0.0465</td>
<td>0.00</td>
<td>2.8571</td>
</tr>
<tr>
<td>CAT1</td>
<td>0.1846</td>
<td>0.3887</td>
<td>0.1511</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>CAT2</td>
<td>0.4538</td>
<td>0.4988</td>
<td>0.2488</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LO (formal)</td>
<td>0.1154</td>
<td>0.3201</td>
<td>0.1025</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>COL (formal)</td>
<td>0.4885</td>
<td>0.5003</td>
<td>0.2508</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>I2 (formal)</td>
<td>0.2885</td>
<td>0.4539</td>
<td>0.2060</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

* Number of observations = 260.
Table A.6.3
Correlation Matrix of Variables Used in Equation (6.1)

<table>
<thead>
<tr>
<th>AGE</th>
<th>AGESQ</th>
<th>SEX</th>
<th>EDU</th>
<th>FARM</th>
<th>FARMsq</th>
<th>DEP</th>
<th>ADULT</th>
<th>INFLU</th>
<th>L</th>
<th>CAT1</th>
<th>CAT2</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGESQ</td>
<td>0.99</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEX</td>
<td>0.04</td>
<td>0.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>-0.18</td>
<td>-0.21</td>
<td>0.19</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FARM</td>
<td>-0.23</td>
<td>-0.23</td>
<td>0.15</td>
<td>-0.14</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FARMsq</td>
<td>-0.21</td>
<td>-0.20</td>
<td>0.13</td>
<td>-0.12</td>
<td>0.98</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEP</td>
<td>-0.46</td>
<td>-0.42</td>
<td>-0.04</td>
<td>-0.07</td>
<td>0.20</td>
<td>0.17</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADULT</td>
<td>0.15</td>
<td>0.08</td>
<td>0.12</td>
<td>-0.02</td>
<td>0.39</td>
<td>0.39</td>
<td>-0.37</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFLU</td>
<td>-0.04</td>
<td>-0.05</td>
<td>0.16</td>
<td>0.07</td>
<td>0.34</td>
<td>0.37</td>
<td>-0.05</td>
<td>0.30</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>-0.02</td>
<td>-0.04</td>
<td>0.09</td>
<td>0.31</td>
<td>-0.69</td>
<td>-0.07</td>
<td>-0.13</td>
<td>0.16</td>
<td>0.17</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>CAT1</td>
<td>-0.01</td>
<td>0.02</td>
<td>-0.01</td>
<td>-0.16</td>
<td>0.20</td>
<td>0.19</td>
<td>0.07</td>
<td>0.99</td>
<td>-0.01</td>
<td>-0.16</td>
<td>1.00</td>
</tr>
<tr>
<td>CAT2</td>
<td>-0.19</td>
<td>-0.21</td>
<td>0.08</td>
<td>0.31</td>
<td>-0.08</td>
<td>-0.06</td>
<td>-0.10</td>
<td>0.09</td>
<td>0.15</td>
<td>0.29</td>
<td>-0.43</td>
</tr>
</tbody>
</table>

Table A.6.4
Correlation Matrix of Variables Used in Equation (6.2)

<table>
<thead>
<tr>
<th>AGE</th>
<th>AGESQ</th>
<th>SEX</th>
<th>EDU</th>
<th>FARM</th>
<th>FARMsq</th>
<th>DEP</th>
<th>ADULT</th>
<th>INFLU</th>
<th>LASSET</th>
<th>LO</th>
<th>CAT1</th>
<th>CAT2</th>
<th>COL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGESQ</td>
<td>0.99</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEX</td>
<td>0.04</td>
<td>0.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>-0.18</td>
<td>-0.21</td>
<td>0.19</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FARM</td>
<td>-0.23</td>
<td>-0.23</td>
<td>0.15</td>
<td>-0.14</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FARMsq</td>
<td>-0.21</td>
<td>-0.20</td>
<td>0.13</td>
<td>-0.12</td>
<td>0.98</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEP</td>
<td>-0.46</td>
<td>-0.42</td>
<td>-0.04</td>
<td>-0.07</td>
<td>0.20</td>
<td>0.17</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADULT</td>
<td>0.15</td>
<td>0.08</td>
<td>0.12</td>
<td>-0.02</td>
<td>0.39</td>
<td>0.39</td>
<td>-0.37</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFLU</td>
<td>-0.04</td>
<td>-0.05</td>
<td>0.16</td>
<td>0.07</td>
<td>0.34</td>
<td>0.37</td>
<td>-0.05</td>
<td>0.30</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LASSET</td>
<td>-0.04</td>
<td>-0.06</td>
<td>0.12</td>
<td>0.32</td>
<td>-0.08</td>
<td>-0.07</td>
<td>-0.12</td>
<td>0.08</td>
<td>0.17</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LO</td>
<td>-0.01</td>
<td>-0.02</td>
<td>0.30</td>
<td>0.13</td>
<td>-0.19</td>
<td>-0.17</td>
<td>-0.12</td>
<td>-0.02</td>
<td>-0.05</td>
<td>-0.02</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAT1</td>
<td>-0.01</td>
<td>0.02</td>
<td>-0.01</td>
<td>-0.16</td>
<td>0.20</td>
<td>0.19</td>
<td>0.07</td>
<td>0.00</td>
<td>-0.01</td>
<td>-0.18</td>
<td>-0.14</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>CAT2</td>
<td>-0.19</td>
<td>-0.21</td>
<td>0.08</td>
<td>0.31</td>
<td>-0.08</td>
<td>-0.06</td>
<td>-0.10</td>
<td>0.09</td>
<td>0.15</td>
<td>0.31</td>
<td>-0.15</td>
<td>-0.43</td>
<td>1.00</td>
</tr>
<tr>
<td>COL</td>
<td>-0.11</td>
<td>-0.09</td>
<td>0.11</td>
<td>0.11</td>
<td>0.20</td>
<td>0.19</td>
<td>0.02</td>
<td>0.05</td>
<td>0.16</td>
<td>0.20</td>
<td>-0.33</td>
<td>0.27</td>
<td>0.33</td>
</tr>
</tbody>
</table>
Table A.6.5

Estimation Results of Determinants of Credit Applications
(Excluding Non-borrowers)

<table>
<thead>
<tr>
<th>Explanatory variable</th>
<th>Formal sector</th>
<th>Relatives and friends</th>
<th>Moneylenders</th>
<th>All other informal lenders</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGE</strong></td>
<td>-0.0537</td>
<td>0.1055</td>
<td>-0.0036</td>
<td>0.0716</td>
</tr>
<tr>
<td></td>
<td>(-0.6232)</td>
<td>(0.9840)</td>
<td>(-0.0448)</td>
<td>(0.5449)</td>
</tr>
<tr>
<td><strong>AGESQ</strong></td>
<td>0.0006</td>
<td>-0.0010</td>
<td>-0.0001</td>
<td>-0.0007</td>
</tr>
<tr>
<td></td>
<td>(0.6207)</td>
<td>(-0.9115)</td>
<td>(-0.0028)</td>
<td>(-0.5053)</td>
</tr>
<tr>
<td><strong>SEX</strong></td>
<td>0.0764</td>
<td>-0.0467</td>
<td>0.1006</td>
<td>-0.4777</td>
</tr>
<tr>
<td></td>
<td>(0.2981)</td>
<td>(-0.2025)</td>
<td>(0.4790)</td>
<td>(-1.4031)</td>
</tr>
<tr>
<td><strong>EDU</strong></td>
<td>0.0031</td>
<td>0.0116</td>
<td>-0.0260</td>
<td>-0.0437</td>
</tr>
<tr>
<td></td>
<td>(0.0550)</td>
<td>(0.2115)</td>
<td>(-0.5544)</td>
<td>(-0.4922)</td>
</tr>
<tr>
<td><strong>FARM</strong></td>
<td>0.4824*</td>
<td>-0.0548</td>
<td>-0.3304*</td>
<td>-0.0394</td>
</tr>
<tr>
<td></td>
<td>(2.3826)</td>
<td>(-2.801)</td>
<td>(-1.9484)</td>
<td>(-1.1407)</td>
</tr>
<tr>
<td><strong>FARMSQ</strong></td>
<td>-0.0242</td>
<td>0.0005</td>
<td>0.0173*</td>
<td>0.0042</td>
</tr>
<tr>
<td></td>
<td>(-2.0406)</td>
<td>(0.0459)</td>
<td>(1.7920)</td>
<td>(0.2688)</td>
</tr>
<tr>
<td><strong>DEP</strong></td>
<td>-0.2231</td>
<td>-0.0410</td>
<td>0.2639</td>
<td>-0.0042</td>
</tr>
<tr>
<td></td>
<td>(-1.0407)</td>
<td>(-0.2143)</td>
<td>(1.5398)</td>
<td>(-0.0152)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.0290)</td>
<td></td>
</tr>
<tr>
<td><strong>ADULT</strong></td>
<td>-0.0645</td>
<td>-0.1199</td>
<td>0.0277</td>
<td>0.1512</td>
</tr>
<tr>
<td></td>
<td>(-0.4247)</td>
<td>(-0.8692)</td>
<td>(0.2255)</td>
<td>(0.7897)</td>
</tr>
<tr>
<td><strong>INFLU</strong></td>
<td>0.4605</td>
<td>-0.4817</td>
<td>-0.4894</td>
<td>-0.0381</td>
</tr>
<tr>
<td></td>
<td>(0.7171)</td>
<td>(-0.7337)</td>
<td>(-0.9815)</td>
<td>(-0.0224)</td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>0.1401*</td>
<td>0.0023</td>
<td>-0.0222</td>
<td>-0.7106*</td>
</tr>
<tr>
<td></td>
<td>(2.5141)</td>
<td>(0.1572)</td>
<td>(-1.9615)</td>
<td>(-2.3088)</td>
</tr>
<tr>
<td><strong>CAT1</strong></td>
<td>0.3760</td>
<td>-2.0270*</td>
<td>-5.8384</td>
<td>2.7401*</td>
</tr>
<tr>
<td></td>
<td>(0.6397)</td>
<td>(-4.4585)</td>
<td>(-0.0118)</td>
<td>(6.0879)</td>
</tr>
<tr>
<td><strong>CAT2</strong></td>
<td>2.4901*</td>
<td>-1.49*</td>
<td>-0.1379</td>
<td>-0.3814</td>
</tr>
<tr>
<td></td>
<td>(5.7540)</td>
<td>(-5.9728)</td>
<td>(-0.6291)</td>
<td>(-0.8276)</td>
</tr>
<tr>
<td><strong>CONST</strong></td>
<td>-3.0319</td>
<td>-1.7522</td>
<td>0.8587</td>
<td>-2.2676</td>
</tr>
<tr>
<td></td>
<td>(-1.2973)</td>
<td>(-0.6757)</td>
<td>(0.4172)</td>
<td>(-0.7140)</td>
</tr>
</tbody>
</table>

|                      | 157.02        | 72.17                 | 39.99        | 186.79                    |
|                      |              | 87.35                 | 77.96        | 93.88                     |

Likelihood ratio test
Percentage predicted correctly

Number of observations = 245.
Numbers in ( ) are asymptotic t-values;
Numbers in [ ] are elasticities at the mean;
Numbers in { } are marginal effects at the mean.
Dependent variable = 1 if the household applies for credit, = 0 otherwise.
+ significant at the 1% level;
# significant at the 5% level;
* significant at the 10% level.
Chapter 7

CONCLUSIONS AND POLICY IMPLICATIONS

The emphasis of the Vietnamese government on rural development is understandable. After nearly ten years of reform, Vietnam is still predominantly agrarian and rice is still the major agricultural product. About 80 percent of the population live in rural areas, and 70 percent of these rely exclusively on farming. Agriculture has played a leading role in the transition to a market-oriented economy through the introduction of the product contract system in 1981, and the household contract system in 1988. This transition has resulted in a substantial increase in the demand for credit by rural households to finance working capital and investment.

The formal financial sector has been restructured from a mono-bank to a two-tier banking system. The VBA was established as an independent entity to undertake commercial banking activities in the rural sector, and has been moving towards financing rural households and away from financing SOEs and cooperatives. The VBA and other rural financial institutions such as the RSBs and the PCFs have experienced a considerable expansion in the volume of loans to agriculture. The government has used a number of credit programs to foster agricultural production, and has also attempted to help the rural poor by creating the VBP, whose main function is to provide them with cheap credit.

These efforts have met with both success and failure. Although the formal institutions have been successful in providing credit for production activities, they have been unsuccessful in extending loans to a large portion of the rural population—in particular the poor and small borrowers—as had been hoped. The
purpose of this dissertation has been to show that the imposition of interest rate ceilings and other repressive financial policies not only leads to segmentation of the rural credit market, but also reduces the supply of credit to the poorer segment of the rural population—the very people who are supposed to be helped by the government. The SBV and government policy of imposing ceilings on lending interest rates has resulted in excess demand for loans, and forced formal institutions to devise substitutes for interest rates for rationing the available funds amongst potential borrowers. These substitutes include restricting loans to production purposes, relying heavily on collateral requirements, and the implementation of a complex credit delivery system within which formal sector lenders can sort out, screen, and shift part of their transactions costs to potential borrowers. In these circumstances, borrowers in the formal credit market incur excessive transactions costs, making small loans unattractive as compared to those from alternative sources. As a result, the credit market is segmented. While formal institutions focus on production loans, the demand for consumption loans is satisfied in the informal market. Farmers with access to the formal sector are mainly large borrowers with suitable assets to use as collateral. Small borrowers lack access to this sector. This chapter summarises the empirical findings of the previous chapters, and discusses several policy implications.

7.1 Summary of Results

Chapter 2 presented a theoretical framework for analysing the behaviour of formal credit institutions and farm households in Vietnam. A simple model of the supply of credit was presented to show that under interest rate ceilings, and given
two risk-groups of borrowers, the high risk-group will be rationed by the lender. It was shown that in the context of rural Vietnam, high-risk borrowers are rationed mostly through the lender's stringent requirement of collateral for loans, and the restriction of loans for use in production activities only. By requiring potential borrowers to provide collateral and to furnish a variety of data reflecting feasibility studies for production loans, the formal sector credit delivery system causes borrowers to sustain high transactions costs. Through such procedures in selecting and screening potential borrowers, formal sector lenders can also off-load part of their normal transactions costs onto borrowers.

A basic model of demand for credit, taking into account the fact that farmers have to meet transactions costs to obtain loans in addition to the nominal interest cost, was then presented. This model indicated that borrower transactions costs have at least three impacts on the decision to borrow and on profitability. First, larger borrower transactions costs mean higher total borrowing costs and less profit for borrowers, ceteris paribus. Second, with a given interest rate and level of borrower transactions costs, there is a minimum loan size below which the borrower would not be willing to borrow. For any given interest rate, the larger are the borrower transactions costs, the higher the borrowing threshold. Third, a farmer who did not have the funds to cover the out-of-pocket costs expenses incurred in applying for the loan prior to receiving it would not be able to borrow. Even a farmer who did have enough funds but faced a high probability that the loan application might be rejected (and thus risked losing the funds for nothing) might not want to attempt to borrow.

This model is also used to explain the segmentation of the rural credit market. In the case in which there is a formal sector lender and an informal lender,
the segment associated with lower borrower transactions costs but higher rates of interest and smaller loans is dominated by the informal lender. The other segment, associated with higher borrower transactions costs but lower rates of interest and larger loans, is dominated by the formal lender. It was shown that ceilings on interest rates are an important determinant in the structure of credit markets. When formal institutions are forced to charge loan rates below market clearing levels, and thus face excess demand, increased collateral requirements and the shifting of transactions costs to borrowers are often used as substitute rationing mechanisms (Adams and Vogel, 1986). When borrower transactions costs are raised as a result of this rationing process, some potential borrowers—mainly the smaller ones—will go to other lenders, resulting in the market structure just described.

Chapter 3 reviewed rural credit conditions, and showed that the structure of the rural financial markets has undergone substantial change in the last few years. A new system of rural credit delivery involving more diversified financial institutions is emerging from the old mono-bank structure. Prior to the restoration of household farming, and to the adoption of fiscal and monetary reforms, rural credit was supplied by SBV branches throughout the country to communes, cooperatives and state farms, according to planned allocations. Since 1989, however, the government has undertaken a wide range of financial and agricultural reforms, as a result of which the VBA now constitutes an extensive rural banking system, and has a strong influence on the rural credit market. From relying on the SBV for 80 percent of total loanable funds in 1990, the VBA’s self-mobilised funds have increased substantially, accounting for 77 percent of the total by 1994.

The reorientation of the VBA’s lending portfolio toward rural households and small businesses started in 1990. This switch has demonstrated that lending to
farm households on the basis of commercial banking criteria is financially viable. However, the SBV’s current interest rate policies of setting ceilings on lending rates and imposing a maximum spread between deposit and lending rates has forced the VBA—now essentially operating as a profit-oriented lender—to ration credit. A complex credit delivery system through which the VBA can screen out many potential borrowers and shift part of its transactions costs to them is applied.

Arguing that cheap credit is a way of achieving social objectives, and in response to the concentration of the VBA on large farmers, the government’s efforts to target cheap credit to the rural poor have involved establishing the VBP in 1995, and launching a number of credit programs. With low lending rates, and no emphasis on savings mobilisation, the VBP is not financially sustainable, and has always to rely on subsidised funds from the government and donors.

Since the demand for rural credit is much greater than the amount available through the VBA, the emergence of several alternative private financial institutions was encouraged by the SBV during 1992-93. During these two years, the network of collapsed former rural credit cooperatives was replaced by private RSBs and PCFs. However, these institutions’ dependence on the VBA for loanable funds also means that they do not compete effectively with it.

Despite the significant expansion of formal sector credit in recent years, informal lenders still provide the bulk of rural financial services. It is noteworthy that the former planning model was implemented only partially, and informal markets have always coexisted with the planned economy. Financial liberalisation

---

1 There are a number of government programs which provide credit for poverty alleviation. The main ones are the programme for hunger eradication and poverty reduction, the program to re-green barren hills, and the national program for employment promotion.
since 1989 has further contributed to a flourishing of informal credit markets. In the
context of rural Vietnam, there are four major types of participation in informal
finance: mutual lending among family members, relatives, friends and neighbours;
hui; moneylenders; and traders. While formal lenders are observed to concentrate
only on secured loans for production purposes, informal lenders also offer
unsecured loans for non-production needs. The rural credit market is therefore
segmented into various sub-markets, in which formal and informal lenders perform
complementary roles. As was explained, the formal sector credit delivery system
involves high borrower transactions costs, which impinge most heavily on small
borrowers. It was shown that borrowers seeking small loans preferred to obtain
them from informal lenders, who charge a higher rate of interest but impose low
transactions costs—and, in contrast, that borrowers seeking larger loans preferred to
obtain them from formal lenders, who charge lower interest rates but impose high
transactions costs.

Chapter 4 described the survey area, sample design and representativeness,
and characteristics of the surveyed households and credit activities. The primary
data used in the analysis of borrower transactions costs, the determinants of credit
applications and formal credit rationing were derived from a household survey and
conversations with the district VBA, village/commune leaders, and representatives
of women's unions and farmers' associations in villages/communes, in 1996. The
survey site was perceived as representative of the socioeconomic and physical
environments of the Red River Delta in the north of Vietnam. The sources of credit
included formal institutions (the district VBA and two PCFs) and various informal
lenders, such as relatives and friends, traders, moneylenders. A sample survey of
150 rural households was conducted, using a stratified two-stage sampling method.
A questionnaire was used to obtain information about loan amounts applied for and actually borrowed, the costs of borrowing from different sources, the time taken to obtain loans, the existence of formal sector credit rationing, and characteristics of the interviewees.

A preliminary examination of the lender and household credit data indicated the coexistence of various submarkets that provide credit services that differ from each other---ranging from formal sector, low interest rate loans, for production activities and with strict collateral requirements, to unsecured high interest rate loans for a variety of purposes from moneylenders and traders. It also showed that there were significant differences in the amounts borrowed and the borrower transactions costs ratios among the different sources of credit.

Chapter 5 discussed the concept of borrower transactions costs, then proceeded to quantify them, to conduct a comparison between the effective cost of borrowing from the formal sector and various segments of the informal sector, and to examine the determinants of borrower transactions costs. Borrower transactions costs were defined as all non-interest expenses that a borrower had to pay in dealing with a loan. These included the following: (1) loan charges by the lender, service fees collected by local officials or leaders in the communes and villages, and service fees related to collateral certification; (2) travel expenses; (3) other costs of attracting bank officers’ attention; and (4) the opportunity cost of the time involved in the loan transaction.

The estimation of transactions costs indicated that the prospective borrower from the formal sector had to have on hand about VD 50 thousand to cover preliminary out-of-pocket costs. It was shown that the cost of work days lost, and travel plus other expenses (entertainment, gifts, bribes etc.), made up the two largest
parts of borrower transactions costs (42.5 percent and 37.8 percent, respectively). Borrower transactions costs were found to be an important barrier that discouraged small borrowers from applying for formal sector loans. While these transactions costs made up 9.7 percent of the loan size for the smallest borrowers, they accounted for only 0.4 percent of the loan size for the largest borrowers. The effective costs of borrowing, taking into account both the explicit interest rate and transactions costs, were calculated and compared among different sources of credit. The results showed that partition of the credit market occurred at a loan size between VD 500-1,000 thousand, where the effective cost of borrowing from the informal and formal markets was approximately the same.

The results of estimations of formal sector borrower transactions costs were then compared with those for other countries. Transactions costs computed from our study in Vietnam were a little higher than those for Peru, based on the sample average, but for small loans they were far higher than those in all other countries except Bangladesh. Also, transactions costs in our study were equivalent to about 38 percent of the explicit interest rate, which was higher than those in Peru and the Philippines.

Borrower transactions costs in the formal sector were hypothesised to be determined by several factors, including the nominal interest rate, the loan amount applied for, factors characterising borrowers themselves (prior credit relationships with the bank; influence in the community), institutional arrangements involved in the credit delivery system, and the proximity of borrower's residence to the bank. A simultaneous equations model was used to estimate the determinants of borrower transactions costs. The estimation of the transactions costs function using TSLS regression applied to this showed significant relationships between transactions
costs (in absolute terms), the loan amount applied for and interest rates: the larger the loan amount applied for, the higher the transactions costs; and the lower the interest rate, the higher the transactions costs. These results were consistent with the findings of Ahmed (1982) in Bangladesh, and Cuevas (1984) in Honduras. The results indicated, in particular, that at a nominal interest rate of 2 percent per month, a 0.2 percent increase in the nominal interest rate involves a 3.6 percent decrease in borrower transactions costs, while a 10 percent increase in the loan amount applied for would increase transactions costs by 1.9 percent. The insignificant relationship between transactions costs and prior credit relationships suggests the bank’s lack of experience in making use of accumulated past information on borrowers.

Chapter 6 attempted to identify the determinants of credit applications from various sources, and of formal sector credit rationing. In order to formally test the hypothesis that small borrowers seek loans from informal sources while larger borrowers prefer to apply for formal sector loans, probit estimations were undertaken to examine the statistical significance of the loan amount applied for, among other variables, in the equations for credit applications. These regressions were estimated separately across loans from formal lenders, relatives and friends, moneylenders, and all other informal sources, with the characteristics of the household, the household head and the loan contracts as independent variables. The results confirmed the existence of segmentation of the credit market with respect to the loan amount applied for.

Other characteristics of the segmented market were also examined, and farm size and loan use appeared to be significant predictors of borrowers’ decisions on whether to apply for formal sector credit. It is noteworthy that the positive relationship between farm size and choice of formal sector credit occurred
essentially for the class of small farm size, indicating that formal sector credit is
delivered principally to households with large farms. The results also showed that
households with more dependants had to rely on informal moneylenders to smooth
their consumption. It was also found that the signs of most significant variables in
the formal sector credit regression were opposite to those in the informal market
regressions, suggesting that formal institutions and various agents of the informal
sector are alternative sources of credit.

Chapter 6 also presented an analysis of the determinants of loan rationing by
the formal sector. The approach adopted for determining whether a formal sector
applicant or a non-formal sector applicant can be classified as constrained or not-
constrained was that suggested by Feder et al. (1990). The probit estimation showed
that the existence of loans outstanding on the part of applicants and loan use are
used by the formal sector in rationing loan demand.

Due to the limited time and financial support available the sample size for
the survey was small, so an assessment of the wider applicability of the study is
necessary. Although small in area, Vietnam is geographically diverse, and it is
difficult to take any district as representative of the whole. The country is
commonly divided into seven geographic-economic regions: Northern Uplands,
Red River Delta, North Central, Central Coast, Central Highlands, Southeast, and
Mekong Delta. Regional disparities in the incidence of poverty are often used to
rank development among the regions. According to the VLSS, the poorest area
is the North Central region, with a poverty incidence of 71 percent, followed
by the Northern Uplands region, with a poverty incidence of 59 percent.\(^2\) These two regions are poorer than the national average, and account for about 40 percent of all the poor in Vietnam, while comprising only 29 percent of the population. They are characterised by poorer infrastructure, with households mainly engaged in subsistence and semi-subsistence farming and forestry. At the other end of the spectrum, the Southeast (which includes Ho Chi Minh City) is found to exhibit the lowest incidence of poverty (33 percent), and households in this region have higher income levels than the national average. The Red River Delta has a poverty incidence rate of 49 percent, slightly lower than the national level of 51 percent (World Bank, 1995b: 10). Government officials in Namha province stated that Namha can be seen as representative of the Red River Delta, and conversations with VBA officers in Namha province revealed that the VBA in Binhluc district is ranked about average for the province in terms of banking performance.

However, since there is a highway and a railway running through the district, the survey area is somewhat above the nation-wide average with respect to access to markets, and hence in the degree of commercialisation. (Although the survey households are more representative of farm households that still rely primarily on farm activities in general, and rice production in particular, they do have some access to non-farm activities, such as transporting local food, and many individuals work as wage earners in small local enterprises.) Thus the estimates of

\(^2\) The poverty lines for Vietnam are set based on a benchmark per capita calorie requirement of 2,100 calories per day, with the composition of the underlying food bundle chosen as representative of typical consumption patterns in Vietnam while taking into account geographic price differentials in the cost of the same food basket. Using this approach, separate poverty lines have been calculated, taking into account local variations in prices for seven different regions, and for urban and rural areas in each region. Taking the population-weighted average of these seven regions, the national average poverty line is set at VD 1,090 thousand per person per year. Comparing this poverty line with the distribution of per capita consumption expenditure from the VLSS, about 51 per cent of the Vietnamese population are classified as poor (World Bank, 1995b: 7).
borrower transactions costs drawn from our study are likely to be underestimates of the average for the whole country. Formal sector borrower transactions costs are expected to be much higher for people living in remote and mountainous areas, and especially for ethnic minorities, who are generally more isolated from the formal sector. Most of the latter live in remote areas far from passable roads and from financial institutions providing credit and savings facilities. Longer distances from the bank, poorer information systems, a lack of awareness of formal lenders' existence in the area, a lack of understanding of loan regulations in the formal sector and so on are factors that contribute to higher borrower transactions costs, higher out-of-pocket costs and higher borrowing thresholds for people living in such areas, so they have less access to formal sector credit.

7.2 Policy Implications

The policy implications that can be drawn from the study relate to interest rate policies, and financial and institutional innovations in the formal sector.

7.2.1. Appropriate Interest Rate Policies

The SBV currently imposes both ceilings on lending rates and a maximum spread between deposit and lending rates at formal sector institutions in rural area. It argues that a maximum lending rate provides some restraint on risky lending practices, while a maximum spread between deposit and lending rates encourages commercial banks to maintain the deposit rate high enough to attract savings. However, recent studies have argued that ceilings on lending rates are set too low as compared to market clearing rates (at one half or one third of comparable informal
rates. Interest rate ceilings create excess demand and force the VBA to ration credit, which it does in part by shifting part of its transactions costs to borrowers so as to raise the effective cost of borrowing. It is also noteworthy that the VBA, which dominates the formal rural credit market, is a state-owned bank. Employees of the bank have little incentive to maximise its profitability. In these circumstances, interest rate ceilings—which imply subsidies to loans recipients—create an incentive on the part of potential borrowers to bribe bank officials in order to obtain such loans, and for the officials to solicit such bribes. It can therefore be expected that rationing mechanisms will be chosen partly on the basis of their capacity to maximise pay-offs to officers of the bank, rather than to maximise the profits of the bank itself.

The switch from lending to cooperatives and state-owned farms to individual households that typically request relatively small loans increases the importance of transactions costs at the VBA. Employees of the VBA have little experience of how to assess the creditworthiness of new clients. Building new relationships between the bank and its clients, and removing antiquated and inefficient work habits involves substantial costs for the VBA. In these circumstances, the current maximum spread of 0.35 percent per month between deposit and lending rates is widely perceived not to provide adequate net interest income to sustain even the most efficient rural banks (UNDP and UNICEF, 1996: 66). As mentioned in Chapter 4, the VBA in Binhluc in 1994 had a monthly average deposit rate of 1.53 percent, while the monthly average lending rate was 2.52 percent, implying a spread of 0.99 percent. This spread generated a profit for the

---

3 See, for example, Cao and Dao (1992), Tran et al. (1992), SPC and GSO (1994), DAI (1995), UNDP and UNICEF (1996), and Creusot et al. (1998).
bank of VD 388 million. If the maximum spread of 0.35 percent had been applied, the bank would have experienced a loss of VD 2,102 million, ceteris paribus. A recent study of microcredit programs in the Red River Delta by Creusot et al. (1998: 20) showed that, in order to be financially sustainable in lending to small farmers with an average loan size of US$50, the spread would need to be as high as 2 percent.

In an attempt to help the rural poor, the VBP was established to provide them with loans with low interest rates, and a number of cheap credit programs were launched. As experienced in other developing countries, these low interest credit programs have encountered serious financial difficulties and are characterised by various shortcomings. Cuevas and Graham (1984b) showed that banks in Honduras that managed such programs incurred substantially higher loan transactions costs per unit of money lent than did the banks that avoided them. It is apparent that the subsidised rates applied at the VBP do not even cover its operating costs, thus undermining its financial sustainability and discouraging savings mobilisation (World Bank, 1996: 11). Furthermore, cheap credit often flows to low rate of return projects. In fact, borrower transactions costs tend to be inversely correlated with the rate of return (Sacay et al., 1985: 125). Farmers with low profitability tend to be willing to pay higher transactions costs. Cheap loans are often not available when needed, and are restricted to particular purposes. A collaborative study based upon the experiences of NGOs, UN agencies and bilateral donors in 1996 found that, in Vietnam, the poor are capable of repaying loans at interest rates equal to or higher than those available for equivalent loans from the main rural financial institutions (UNDP, 1996).
The above criticisms of ceilings on interest rates and subsidised rates for the rural poor do not, however, imply the necessity for full interest rate liberalisation at this stage for Vietnam. The country has not yet established a level of macroeconomic stability that is robust enough to bear the impact of fully market determined interest rates (World Bank, 1995a: v). Also, because the VBA and the VBP are fully backed up by the government, interest rate liberalisation might encourage these banks to accept excessively risky borrowers, thus further jeopardising their profitability and soundness. The appropriate interest rate policy implication, therefore, is that the lending rate ceilings should be gradually increased until the spread between deposit and lending rates becomes high enough to cover the banks' cost of funds, administration costs and loan losses. Formal lenders are observed to focus on production loans, since they face excess demand for credit and lack adequate information on potential borrowers. According to them, production loans generate cash flows that make it possible to service the loan, in contrast with non-production loans. If ceilings on interest rates were set higher, the excess demand for formal sector loans would be reduced, and formal lenders could afford to hire more staff to obtain more information on borrowers, to monitor loans and to enforce repayment. As a result, they would be more likely to extend formal financial services to encompass consumption loans, since other aspect of borrowers' capacity to repay could be considered.

As shown in Chapter 5, the higher is the interest rate, the lower the borrower transactions costs, since lenders have less incentive to shift such costs away from themselves. Thus the formal sector could be expected to become more 'borrower friendly' if interest rates were higher. Application fees would be likely to be waived, and the VBA would have an incentive to simplify the procedures for
obtaining loans. It might even go so far as to set up small mobile banks to accommodate individuals in small communes/villages. All of these changes could be expected to contribute to a reduction of travel costs and other non-interest borrowing costs. Furthermore, with higher interest rates and less excess demand for credit, bank officials would have less power to extract unintended benefits for themselves. Thus formal sector borrowers would face lower out-of-pocket costs and have lower borrowing thresholds, and the partition of the credit market would be changed in favour of a larger number of small farmers. Experience in many developing countries shows that changes in loan transactions costs have an important impact on small farmers' borrowing decisions, since these costs are large relative to nominal interest rates (Adams and Nehman, 1979). If loan rates are not increased, the incentive to reduce borrower transactions costs will not exist, and many small farmers will continue to rely on the informal market.

As has been emphasised throughout this dissertation, segmentation of the rural credit market results from the low interest rate policy. While economic efficiency can be achieved in segmented markets if the segmentation is due to the different availability of information about borrowers on the part of various lenders, it cannot be achieved if it is due to controls on interest rates. While formal institutions have very narrow loan portfolios focused exclusively on production activities, informal lenders provide a much wider range of financial services. Hence with higher interest rates, segmentation induced by the ceilings will tend to be eliminated, and formal lenders will participate more actively in rural lending.

Higher loan interest rates will also encourage the mobilisation of savings by formal institutions. There is abundant evidence that substantial amounts of savings can be mobilised in the rural areas of developing countries, and that positive real
rates of interest for depositors are particularly effective in mobilising these savings. Recent data show that farmers in Vietnam can and do save, and that they respond significantly to policies such as higher real rates of interest (Table 3.1 in Chapter 3). Success in savings mobilisation is a key factor determining the viability of financial institutions. The role of fully fledged financial intermediaries is not only to lend but also offer deposit facilities for savers. Financial institutions that have a high share of savings relative to government fundings in their total liabilities are likely to have a continual flow of funds available for lending, and they may tend to be more careful and efficient in their allocation of loans; those that neglect savings mobilisation are not genuine intermediary institutions, and their reliance on government or donor funding tends to extend to reliance on these sources to cover losses incurred from bad lending practices (Adams and Vogel, 1986: 486). This is apparently true in the case of the VBP, which always depends on government and donor funding; its lending rates are so low that it cannot offer attractive deposit rates. By involving themselves actively in savings mobilisation, financial institutions can obtain useful information about the savings behaviour of their clients that allows them to improve their estimates of creditworthiness, and to help farmers to learn about doing business with banks.

7.2.2 Financial and Institutional Innovations

Borrower transactions costs can be separated into those that result from interest rate ceilings and/or loan targeting, and those that are in essence associated with the friction of financial intermediation. Attributing the VBA's limited reach to small borrowers solely to interest rate ceilings and other financial controls, and not
to the inherent characteristics of the rural credit market, may lead to unrealistic policies or an overemphasis on 'getting-the-price-right' interest rate reform. Interest rate increases can be used only up to a point, beyond which the probability of repayment might be reduced due to moral hazard and adverse selection. This is particularly true for Vietnam, where the macroeconomy has not yet been fully stabilised so as to be able to absorb the impact of interest rates being fully liberalised. Furthermore, interest rate liberalisation is a necessary but not sufficient condition to minimise large loan bias. Papua New Guinea provides an example of this bias still existing, even in the case of unsubsidised rural credit (Fernando, 1990). Hence any attempt to increase the VBA's outreach to the rural poor simply by raising interest rates—especially in remote and mountainous areas—would have limitations, and other measures related to financial and institutional innovation should be adopted.

Gradual liberalisation of interest rates should, therefore, be complemented by a widening of the operating frontier of formal sector financial institutions. Since the VBA is a major provider of formal financial services in rural areas, reform of the VBA's operations is at the heart of formal sector financial innovation. Given the long history of repression and restrictions, and the fact that it is still at an early stage of the innovation process, the scope for innovation and reform of the VBA is wide. An important innovation could be the reorientation of the VBA's direct lending to individual rural households to allocating wholesale credit using commission agents, linking the bank with informal lenders and SHGs, and moving to group lending.

A recent innovation has been the introduction of the services of commission agents such as NGOs (the women's unions and the farmers' associations) and rural financial institutions, such as RSBs and PCFs. This idea has a long history, and
there have been a number of types of commission agents in developing countries. Recent experience in India (Puhazhendi, 1995) and the Philippines (Llanto and Chua, 1996) using NGOs as commission agents shows great success in reducing both lender and borrower transactions costs. NGOs in rural Vietnam, such as the women’s unions and the farmers’ associations, are important mass organisations which have a broad network covering nearly every village and commune.\(^4\) Compared to the VBA, these agents have various advantages in attracting deposits, collecting information on potential borrowers, collecting loan repayments, and educating the rural population regarding transactions with banks and the application of new technology in farming. These agents can therefore contribute to reducing the transactions costs of rural credit, and hence provide the VBA with improved access to small borrowers amongst the rural population.

Many authors have also recommended the use of the informal lenders as commission agents (Adams and Vogel, 1986; Yotopoulos and Floro, 1991). They recommend that enhancing the strength of formal sector intermediaries does not necessarily mean substituting formal for informal credit. Experience from various countries shows that monopoly profits in informal lending are less than had been widely assumed, and that informal lenders provide some financial services more efficiently than do formal credit institutions, especially for the poor, and there is a growing consensus that informal credit is well suited to most rural conditions (Von Pischke et al., 1983).

The rural credit market in Vietnam is fragmented; formal and informal lenders serve groups of clients with distinct characteristics and needs, and there is

\(^{4}\) These NGOs were established during the Vietnam War, and are considered essentially as government-related organisations.
almost no interaction between them. The potential complementary role of formal and informal credit arises from the fact that the former specialises on larger, more established borrowers, leaving the informal sector to service the rest. There is little flow of funds between the two segments. Whereas the VBA relies heavily on collateral, informal lenders use a web of interpersonal relationships as vehicles for creating and enhancing trust. As mentioned previously, although repressed in the former centrally planned economy, informal lenders always coexisted with formal lenders. Informal lenders have long personal relationships with their borrowers and, given their locational advantage in obtaining information, they are usually very effective in disbursing loans, monitoring borrowers, and handling loan repayments. Chapter 5 showed that borrowers from informal sources appeared to incur much lower transactions costs than those from formal sources. Linking up with informal lenders that have a comparative advantage in reaching the poor cost-effectively would thus allow the VBA to increase its outreach to a larger portion of rural households. Our survey also found some examples of traders obtaining loans from the VBA and on-lending mainly to small farmers in the region; such traders are cited by the bank as the most reliable and efficient borrowers. The policy of channeling formal sector credit through informal lenders can therefore be justified on efficiency grounds.

Another recent important innovation by the VBA has been to lend through groups, and to enhance linkages between the VBA and SHGs. Ladman and Afcha (1990) viewed group lending as an innovation in reaching a wider clientele of small borrowers in a cost-effective manner, and as one of the most promising recent financial market innovations. Adams and Ladman (1979: 85) suggested a number of reasons why a formal lender might want to use group loans. First, the lender’s costs
can be reduced, since a single loan is made to a group of farmers instead of a number of individual loans. Second, loan delinquency should be reduced if the group members are jointly liable for the repayment of loans. And third, more technical assistance can be provided for any given cost of delivery. Group loans should also bring benefits to the borrowers, principally in terms of lower transactions costs, since many of the procedures associated with applying for and repaying loans can be done on a collective basis.

However, as noted by Adams and Ladman (1979), group lending programs have met with mixed success. While the Grameen Bank in Bangladesh is often cited as a successful example of group lending, experience in Bolivia, in contrast, suggests that group lending does not necessarily enable lenders to realise the benefits listed above (Ladman and Afcha, 1990). Although the theory of peer monitoring (Stiglitz, 1990) suggests the benefit of this approach, success still depends on the purpose of the group organisation and how groups are organised. Huppi and Feder (1990) conclude that most of the unsuccessful experiences have been due to shortcomings in implementation rather than due to the inadequacy of the approach itself.

In Vietnam, the VBA's use of group lending programs has become widespread since 1991, and such programs have also been adopted more recently by other formal financial institutions. Such schemes have taken two basic forms: jointly liable borrower groups, and group credit facilities without joint liability. While the former is characterised by not requiring collateral, full repayment of all group loans is mandatory before new loans are provided, and loan repayment is the collective liability of the group. With these arrangements the VBA and other formal rural lenders can reduce the transactions costs associated with making and
collecting repayments on what otherwise would be many small loans. Some 157,000 groups have been formed, either by the VBA itself or through service organisations or NGOs (World Bank, 1996: 54). Group size ranges from 15 to 50 members, and there are normally two or three groups in each village. Although so far there is no comprehensive empirical evidence to shed light on the advantages and disadvantages of group lending programs in Vietnam, the cost advantages of group transactions are perceived to be being realised on the lending side (World Bank, 1995a: 62). Our estimates of the determinants of borrower transactions costs suggest that group lending brings about a reduction in borrower transactions costs, but the lack of statistical significance in this relationship indicates that the potential advantages of group lending in reducing the time involved in the borrowing process and eliminating cumbersome loan procedures have not yet been realised. Since the sample size is not sufficiently large, more research on the effect of group lending on borrower transactions costs should be undertaken. Recent successful experience in other countries has provided lessons that argue for the formation of smaller, more homogenous groups that minimise the 'free rider' problem and for avoiding both the top-down formation of groups and the neglect of savings mobilisation (Ghate et al., 1992).

SHGs in Vietnam are nothing new, having been widespread in the form of hui in villages for decades in the rural area (Than, 1993: 90). In 1991, SHG development was officially sanctioned, with NGOs the promoting agency. At present, neither the VBA nor other formal financial institutions can directly cover rural Vietnam at the village level, so linking the VBA with SHGs may become a viable means of reducing transactions costs and improving rural households' access

---

to formal finance. Since these groups belong to the informal financial sector and do not have the required maturity to qualify fully for linking with the VBA, efforts should be directed to upgrading existing SHGs into full-fledged local financial intermediaries.

Linking the VBA with SHGs and making group loans can also enhance savings opportunities among the rural poor. At present, there are generally no savings requirements for groups formed by the VBA. Innovations in lending should be accompanied by innovations for mobilising household savings. The availability of deposit services in rural areas is extremely limited, forcing rural households to save in low return, very small scale investments in physical assets that are both relatively unsafe and illiquid. Hence an essential function of formal financial intermediaries is to mobilise small amounts from many savers so that loans for relatively large projects involving economies of scale can be made. On average, depositors will have lower incomes than borrowers (Adams and Vogels, 1986: 485). Linking the VBA and other formal financial intermediaries with SHGs is therefore a better way to help the rural poor than is cheap credit. The initial experience of linking the VBA with SHGs—the ‘Credit Scheme for Poor Farmers’ of the Farmers’ Association in Dong son district, Thanhhoa province—shows great success (Seibel, 1992: 77).

It is apparent that, although not the only explanation, an important factor for the lack of the VBA’s outreach in rural areas is excessive transactions costs. The present VBA network is a district-based system, and loan approvals, disbursements, and repayments, and deposits require clients to visit the district-based bank office. The poor accessibility and communications prevailing in rural areas imply substantial costs in providing financial services. The financial innovations and
reforms recommended in this chapter would help to reduce these costs, providing access to formal sector credit to many more rural borrowers, especially small ones. With a decline in the transactions costs of borrowing, and the consequent increase in demand for credit in the formal market, the demand for credit in the informal market will decrease, so interest rates in that market will tend to decrease. In other words, an expansion of the VBA would result in greater competition, and would tend to reduce any monopoly profit that may occur in informal lending.

The VBA is a state-owned financial institution. Although it has achieved a substantial increase in savings mobilisation from the non-bank public, an important source of its funds is the government. As a result, it is still burdened with social welfare objectives, and still operates as an agent of the government in carrying out government programs. Hence, accompanying reform in interest rate policy and financial innovation, a decentralised decision making process that gives more independence to the VBA would help it respond more quickly to price signals, and gain more experience in acting as a fully-fledged commercial bank. At the same time, as the VBA has moved away from the central credit planning system, a greater need for project and risk analysis capabilities, especially in relation to new clients, has emerged. Training in financial management and the use of accounting software should be provided to bank management and staff. These improved skills will enhance the VBA's autonomy and accountability in a new competitive environment.

In order to encourage the VBA to be more innovative, stronger competition within the formal sector should be fostered. RSBs and PCFs should be expanded
and strengthened, and financial policies should be liberalised to allow for more small-scale, private, non-bank financial institutions to be established in rural areas.

Although relying on collateral for loans, the VBA still fears losses from defaults if loans are disbursed for non-production purposes because of the difficulty in foreclosing on defaulters’ collateral. The bank currently relies heavily on the local peoples’ committees in the foreclosure process. In principle, this role would be more efficiently and effectively fulfilled by the courts. However, given a weak and inadequate legal system, the liquidation of collateral in the event of default is currently treated in a fragmentary manner. Judicial methods of resolution are avoided by the VBA if possible, due to their complexity, the time and expense involved, and the VBA’s lack of experience in dealing with such matters. Hence, establishing transparent enforcement of the rights and obligations of parties involved in financial contracts would allow the VBA, while still relying on collateral, to diversify its loan portfolio, and provide more comprehensive financial services to the rural population. The cost of monitoring loan use therefore might be reduced, and willful default would become less common, contributing to a reduction in the total cost of lending.

Widespread rural poverty will force policymakers in Vietnam to continue to promote agricultural development, and agricultural credit will continue to be a major part of these efforts. Rural financial markets that serve the majority of the rural population can play a crucial role in economic development. As in other developing countries and transitional economies, the Vietnamese government attempts to influence lenders’ behaviour through regulations. Although the concept of a market economy has been widely accepted, the government is attempting to
modify it to become a 'socialist-oriented' model, so that it can control and command it (Riedel and Commer, 1996). The tendency of the government to use policies that repress the financial market in general, and the rural financial market in particular, through interest rate ceilings will not provide a healthy environment for the growth of rural finance in the future. The rural financial market could contribute more to overall efficiency and equity objectives if appropriate policies were adopted. Lessons learnt over the past forty years about rural credit markets in most developing countries, particularly those involving state-owned agricultural credit institutions, have suggested a minimalist, market-oriented role for the government. The mere injection of credit through state-owned financial institutions, without being accompanied by an appropriate interest rate policy and in the absence of imaginative financial innovations has failed to bring formal sector credit to a large portion of the rural population, and to create a healthy rural financial market. If the past is any guide to the future, policies should focus on creating a competitive environment and on proper institutional design. A healthy rural financial market requires that interest rates should be high enough to enable formal sector lenders to cover the costs of providing financial services, and positive deposit rates should be maintained so as to enhance the mobilisation of private savings in rural areas.
REFERENCES


----------, 1993. 'Transaction Costs in Decentralised Rural Financial Markets,' Economic and Sociology Occasional Paper No. 2093, Department of Agricultural Economics and Rural Sociology, The Ohio State University, Columbus.


________ and D.H. Graham, 1984a. ‘Rationing Agricultural Credit in LDCs: The Role and Determinants of Transaction Costs for Borrowers,’ Agricultural Finance Program, The Ohio State University, Columbus.


Foundation for Development Cooperation., 1995. *Banking With the Poor*, Brisbane, Australia.


Pischke (eds) *Undermining Rural Development with Cheap Credit*, Bounder, Westview Press.


Puhazhendhi, V., 1995. Transaction Costs of Lending to the Rural Poor: Non-Governmental Organisations and Self-help Groups of the Poor as Intermediaries for Banks in India, Foundation for Development Cooperation, Brisbane, Australia.


Riedel, J. and B. Comer, 1996. ‘Transition to Market Economy in Vietnam’, Paper presented in a Seminar at the Australian National University, March, and
forthcoming in W.T. Woo, J. Sachs. and S. Parker, (eds), (forthcoming),


