

# **Capital Access in Rural Virginia**

by

Zana Kruja

Dissertation submitted to the Faculty of the  
Virginia Polytechnic Institute and State University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY  
IN  
AGRICULTURAL AND APPLIED ECONOMICS

APPROVED:

Daniel B. Taylor, Co-Chair

David M. Kohl, Co-Chair

Wayne D. Purcell

G. Rodney Thompson

George McDowell

July 1997

Blacksburg, Virginia

Key Words: Financial Market Adequacy, Risk, Small Business, Rural Financial Markets, Probit

# **CAPITAL ACCESS IN RURAL VIRGINIA**

by

Zana Kruja

Daniel B. Taylor, Co-chair

David M. Kohl, Co-chair

## **(ABSTRACT)**

The objective of this study is to determine whether there are inadequacies in the rural financial markets of Virginia. The analysis is based on data from a survey of farm and non-farm small businesses, in five rural counties in Virginia. A Probit model is used to determine whether the financing difficulty encountered by small rural businesses is significantly determined by non-risk characteristics of users of capital and/or non-risk characteristics of local capital markets. Four variables representing different aspects of financing difficulty are used as the dependent variables in each of the four models used in this study. These variables are, loan denial and non-local financing reported by the survey respondents, opinions of survey respondents on the adequacy of local capital markets, and their expectations on future satisfaction with the performance of the local capital market.

Businesses' risk characteristics should be the only determinant of the financing difficulty faced by capital users. However, this analysis indicates that access to capital is determined by non-risk local businesses' and local financial market characteristics as well. Among the most influential non-risk characteristics are: firm size, number of non-local locations, number of competitors in the local market, form of ownership, size of local financial institutions, and local financial institutions' specialization in lending to small businesses. In addition there are large differences in the way financing needs are met in different economic sectors in rural areas. Non-agricultural businesses seem to have less access to financing compared to agricultural businesses.

Further, there is evidence that information in rural financial markets is not complete, and that the sources of information are limited. The evidence on availability of capital is mixed and insufficient to conclude that this is an issue in rural Virginia.

The results of the analysis are used to identify ways to increase the availability of cost efficient capital for new and small businesses in rural areas in Virginia. The recommendations include considerations on how to improve governmental presence in rural capital markets to provide or facilitate better access to capital.

## **Dedication**

To my parents Shpresa and Pertef Kruja who taught me the meaning of true love, who were my antidote in a deformed communist society and whose love, sacrifices, perseverance and erudition will always be my model.

Edhe pse larg, edhe pse në botë kaq të ndryshme, dashuria për ju nuk më është zbehur kurrë.  
Faleminderit për gjithshka më dhatë në këtë jetë.

## Acknowledgments

I would like to express my deep gratitude to my supervisory committee for guiding me to the successful completion of this dissertation. Especially I would like to thank Dr. Daniel B. Taylor for being there for me and for always finding a solution to my problems; Dr. David M. Kohl for working hard with me and for sharing his insightful experience in agricultural finance; Dr. Wayne D. Purcell for emphasizing quality requirements and for always providing me with immediate feedback; Dr. G. Rodney Thompson for introducing me to the fascinating world of finance and for supporting my efforts from the first moment and all along; and Dr. George McDowell for introducing me to Virginia Tech and for helping me make a smooth transition into the American way of living.

Special thanks to the Department of Agricultural and Applied Economics for the friendly and encouraging treatment of all graduate students and for providing me with the ideal environment for learning, morally and materially. Thanks to REAP (Virginia's Rural Economic Analysis Program) for providing the necessary funding for this research.

Many thanks to all the respondents of the survey whose experience and insights provided us with a better understanding of rural financial markets in Virginia. Special thanks to Michael Ewing, G.Lyn Hayth, David Lyirly and Rob Jones for their assistance with testing the survey questionnaires.

Immeasurable thanks to my Mother, who taught me how to successfully combine a professional life with the irreplaceable role of the mother in a family; and to my Father who taught me how to analyze everything beyond face value.

Finally, I would like to thank my husband Hiqmet Çelhyka for his support and for believing in me during all this years. I would also like to thank my kids for cheering me up every time I was tired and depressed and for accepting me as a “part-time” mother. Ardita and Bled: we made it! No more sleeping without your mom's goodnight kiss; I promise to never come home late again!

# Table of Contents

<b>ABSTRACT .....</b>	<b>ii</b>
<b>DEDICATION .....</b>	<b>iii</b>
<b>ACKNOWLEDGMENTS.....</b>	<b>iv</b>
<b>LIST OF TABLES .....</b>	<b>vii</b>
<b>LIST OF FIGURES .....</b>	<b>viii</b>
<b>CHAPTER 1. INTRODUCTION .....</b>	<b>1</b>
I. RURAL DEVELOPMENT AND RURAL FINANCIAL MARKETS .....	1
II. EVIDENCE FROM VIRGINIA .....	2
II.1 <i>Consequences of financing difficulty</i> .....	3
II.2 <i>Credit availability</i> .....	3
II.3 <i>Banks</i> .....	3
II.4 <i>Reasons for turning down a loan application</i> .....	4
II.5 <i>Equity Investors</i> .....	5
II.6 <i>Micro-loan Funds</i> .....	5
II.7 <i>Problems</i> .....	5
III. PROBLEM STATEMENT.....	8
IV. OBJECTIVES .....	8
V. ORGANIZATION OF THE DISSERTATION .....	8
<b>CHAPTER 2. REVIEW OF LITERATURE .....</b>	<b>9</b>
I. BUSINESS FINANCING AND ECONOMIC GROWTH.....	9
I.1 <i>Changing characteristics of business financing</i> .....	11
I.2 <i>Financial Market Flaws</i> .....	11
I.3 <i>Why does Capital Market Failure matter</i> .....	12
II. RURAL FINANCIAL MARKETS .....	13
II.1 <i>Unique Features of Rural Capital Markets</i> .....	13
II.2 <i>Changing Rural Financial Markets</i> .....	14
II.3 <i>Are Rural Financial Markets Efficient?</i> .....	16
II.4 <i>Rural vs. Agricultural capital markets</i> .....	16
III. FINANCING DEVELOPMENT AND GOVERNMENT INTERVENTION .....	17
III.1 <i>Rationale for Government intervention</i> .....	17
III.2 <i>Government Intervention: the past and the future</i> .....	18
IV. PROBLEMS, EXISTING AND PERCEIVED.....	19
V. SOLUTIONS PROPOSED IN THE LITERATURE.....	21
<b>CHAPTER 3. METHODS .....</b>	<b>25</b>
I. CONCEPTUAL FRAMEWORK .....	25
I.1 <i>The Relevant Economic Theory</i> .....	25
I.2 <i>Hypotheses to be tested</i> .....	33
I.3 <i>Variables relevant to rural capital market performance</i> .....	33
II. PROCEDURES.....	37

II.1 The model .....	37
II.2 Procedures for obtaining the data .....	41
<b>CHAPTER 4. DATA DESCRIPTION AND ANALYSIS .....</b>	<b>49</b>
I. DESCRIPTION OF SURVEY DATA .....	49
I.1 Capital users: general business characteristics of respondents .....	49
I.2 Capital suppliers .....	54
II. THE EMPIRICAL MODEL .....	60
II.1 Model construction and Measurement of relevant variables .....	60
II.2 Model selection .....	64
II.3 Joint Hypothesis Tests for subsets of coefficients .....	65
III. ANALYSIS OF MARKET ADEQUACY .....	66
III.1 Non-risk characteristics and financing difficulty .....	66
III.2 Information .....	88
III.3 Availability of capital .....	90
III.4 Opinions on the role of Government .....	91
III.5 Technical assistance .....	91
III.6 Summary of the results of hypothesis testing .....	92
<b>CHAPTER 5. SUMMARY AND CONCLUSIONS .....</b>	<b>93</b>
I. SUMMARY OF FINDINGS .....	93
I.1 Sources of Financing .....	93
I.2 Debt and equity financing .....	94
I.3 Loan denial .....	94
I.4 Non-local financing .....	95
I.5 Satisfaction with the local market .....	95
II. GOVERNMENT INVOLVEMENT .....	96
III. POLICY ISSUES AND RECOMMENDATIONS .....	97
IV. LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH .....	100
<b>BIBLIOGRAPHY .....</b>	<b>101</b>
<b>APPENDIXES .....</b>	<b>107</b>
I. APPENDIX A .....	107
II. APPENDIX B .....	108
II.1 Case study .....	108
III. APPENDIX C .....	113
IV. APPENDIX D .....	121
IV.1 Small Business Survey .....	121
IV.2 Financial Institutions Survey .....	126
V. APPENDIX E .....	132
<b>VITA .....</b>	<b>133</b>

## List of tables

Table 3 - 1	County Variables of Interest .....	42
Table 4 - 1	Mail survey response rates for users of capital, by sources of mailing addresses .....	49
Table 4 - 2	Agricultural and non-agricultural survey respondents distributed by the economic sector .....	50
Table 4 - 3	Agricultural and non-agricultural survey respondents distributed by total annual sales category .....	50
Table 4 - 4	Agricultural and non-agricultural survey respondents distributed by the form of business organization .....	51
Table 4 - 5	Agricultural and non-agricultural survey respondents distributed by the stage of business cycle .....	51
Table 4 - 6	Agricultural and non-agricultural survey respondents distributed by the change in sales during the last two years.....	52
Table 4 - 7	Percentage of survey respondents with increase, no change, or decrease in sales during the last two years, by the total annual sales categories .....	52
Table 4 - 8	Agricultural and non-agricultural survey respondents distributed by the manager/owner's years of experience .....	53
Table 4 - 9	Agricultural and non-agricultural survey respondents distributed by the category of debt to assets ratio.....	53
Table 4 - 10	Local loan market concentration by county .....	54
Table 4 - 11	Percentage of lenders in each county reporting real estate, consumer lending, farms, or business lending as one of their major lending activities .....	55
Table 4 - 12	Lenders' business lending specialization in each economic sector, by county.....	56
Table 4 - 13	Sample banks ranking by small business lending activity .....	57
Table 4 - 14	Lenders' responses to some of the policy opinion questions .....	60
Table 4 - 15	Statistical performance of Probit and Logit specifications of the four financing difficulty models .....	65
Table 4 - 16	Loan denial model results (Maximum Likelihood Estimates) .....	70
Table 4 - 17	Frequencies of actual & predicted outcomes for loan denial model .....	71
Table 4 - 18	Joint hypothesis tests for Loan Denial model.....	71
Table 4 - 19	Non-local financing model results (Maximum Likelihood Estimates) .....	75
Table 4 - 20	Frequencies of actual & predicted outcomes for non-local financing model .....	76
Table 4 - 21	Joint hypothesis tests for Non-local Financing Model.....	76
Table 4 - 22	Users of capital responses on their feeling about the "If" statement .....	78
Table 4 - 23	"If" model results (Maximum Likelihood Estimates) .....	80
Table 4 - 24	Frequencies of actual & predicted outcomes for "If" model .....	81
Table 4 - 25	Joint hypothesis tests for "IF" Model .....	82
Table 4 - 26	Expectations of survey respondents on satisfaction of business financing needs next year.....	83
Table 4 - 27	Market performance model results (Maximum Likelihood Estimates).....	85
Table 4 - 28	Frequencies of actual & predicted outcomes for market performance model .....	86

Table 4 - 29	Joint hypothesis tests for Market Performance Model .....	86
Table 4 - 30	Attenuation factor for each model by county (at county mean levels for each independent variable).....	88
Table 4 - 31	Survey respondents opinions on local market's terms and conditions of financing.	89
Table 4 - 32	Capital users' responses to questions on familiarity with government sponsored programs .....	90
Table 4 - 33	Sources of technical assistance used by agricultural and non-agricultural respondents .....	92

## List of figures

Figure 1.	Capital market equilibrium.....	25
Figure 2.	Interest rate in a world with risk .....	26
Figure 3.	Efficient frontier .....	27
Figure 4.	Choosing the lender's optimal portfolio .....	28
Figure 5.	Effect of market inadequacies on access to capital .....	30
Figure 6.	The effect of market segmentation and lack of competition on the efficient frontier...	31
Figure 7.	Market inadequacies causing a rotation of supply curve .....	31

## Chapter 1. Introduction

### *1. Rural development and rural financial markets*

The fact that rural areas lag behind urban areas in economic development is frequently explained by inadequacies in rural financial market. Credit access is considered to be an important factor influencing economic development. A survey conducted by the National Association of Counties (NACO), the National Association of Development Organizations (NADO) and the National Association of Towns and Townships (NATaT) in December 1992 showed that

...local officials cited as a second priority<sup>1</sup> the need to create and expand the credit available to businesses as a means of enhancing the economic development potential of their communities (Blue Ridge Study, p. 1).

The evidence supporting the influence of bank activity on local economic growth is not clear. While many researchers doubt that bank activity can “generate” local economic growth, the general opinion is that bank financing is an influential factor in rural economic development (Shaffer and Pulver, 1990).

In the literature different opinions are expressed about credit availability in rural areas, rural capital market adequacy, and their role in rural development. Shortage of capital is found to be the reason why rural areas lag behind urban areas by some authors (Markley). Even authors who do not accept the widespread credit market failure or do not acknowledge inequitable access to credit, admit that inadequate access to capital is a “major hurdle” for rural development (Freshwater). Indeed, the availability of affordable financial capital has long been recognized as an important factor in economic growth and development. It is considered an essential factor to “sustaining reasonable rates of economic growth” (Collender). Sullivan defines the role of financial markets as follows:

An efficient financial market is not sufficient to ensure that economic development will occur, but its absence can retard even the most serious efforts to spur development (p.vi).

A national study reported by the Department of Justice in 1993 classifies 93 percent of the rural banking markets as non-competitive (Collender). In this study the degree of competition in the local rural markets is defined based on the number and the sizes of banks in the market. The lack of competition can create inefficiencies in the capital market which hinder economic development. Some authors see State and Federal policies as a possible means of intervention in order to improve rural financial market performance (Drabenstott, Freshwater). Others believe that State

---

<sup>1</sup> The first priority was related to infrastructure concerns

and Federal intervention have some times increased and “perpetuated” rural financial market inefficiency through limiting market entry and competition (Collender).

In rural areas, most economic activity is carried out by small businesses, which may be divided in two groups: farm and non-farm small businesses. Non-farm small businesses do not usually attract the same attention as farms when it comes to formulating public policies in support of rural development.

Small business is considered the primary factor in development by many authors (Daniels, Kieschnick, Stam). There are many factors that determine the success of small businesses. Among those factors, the most important are the management practices, marketing practices, location of the business, efficient technology, adequate financing, and others. Lack of adequate financing directly influences the ability of the firm to survive through limiting its choice of : marketing tools, business location, technology, and so forth. One of the main advantages of small businesses is their flexibility to switch to new products in order to be able to adapt to new market conditions. Indeed this flexibility is hindered if there is not adequate financing available.

This study defines rural financial market inadequacy as the difficulty that rural businesses have acquiring funds, after correcting for business-specific risk. Rural businesses in this study include both farm and non-farm small businesses.

## ***II. Evidence from Virginia***

The importance of small businesses to the state of Virginia is evident in the 1995 Small Business Profile, compiled by the U.S. Small Business Association’s (SBA) Office of Advocacy, whose findings “clearly indicate the crucial role small businesses play in the state’s economy”<sup>2</sup>.

Recently in Virginia, non-farm small businesses are becoming more and more important because of economic and social changes in process. Significant changes to be noted are the reduction of the importance of tobacco, consolidation of hog, dairy and beef production and the related declines in Virginia’s hog and dairy sectors, and the sharp decline in the production of corn for grain in the state. Farming is no longer the dominant economic activity in rural Virginia. Cumberland and Highland Counties are the only counties with over 20 percent of earnings coming from farming. This new situation demands an increased emphasis on the support of new and small non-farm businesses in rural areas, if these areas are to maintain their economic viability.

In focus group meetings conducted by the Rural Economic Analysis Program (REAP) with the Tobacco Communities Project in 1995, lack of capital access was presented as one of the major hurdles to rural development. Specifically, lack of access to capital was said to be a problem for tobacco farmers seeking to adjust and/or diversify into other farm or non-farm activities.

---

<sup>2</sup> Small Business grows strong in Virginia. (<http://www.sbaonline.sba.gov/>)

Lending to small and new businesses involves risks that some banks are not willing to take. However, Virginia's Banks seem to undervalue the assistance given by SBA guarantees program, which reduces the risk represented by small businesses loans. None of the SBA certified lenders (Larson et al.) is included in the Virginia's top 10 lenders to small businesses<sup>3</sup>. From this observation arise two questions: "Why do the top 10 lenders not use the SBA guaranties?" and "Why are the SBA certified lenders not very active in financing the small businesses?" (see **Appendix A**).

Analysis of credit and capital issues in rural Virginia must address these issues. Before initiating the research some anecdotal evidence was collected in order to assess the need for this research. Telephone interviews were conducted with several individuals engaged in the rural financial markets in Virginia. Most of them were Small Business Development Centers' (SBDC) directors, bank lending officers, micro-loan managers, Service Corps of Retired Executives (SCORE) representatives, and small business owners. The following is a summary of the findings (see **Appendix B** for more details).

### II.1 Consequences of financing difficulty

Cases A,B,C,D,E,F, and G in **Appendix B** are all stories from small businesses that are still going on, but lack of financing is keeping them from growing. It is known that small business growth is one basis for rural development. The financial difficulty of small businesses in rural areas can translate into slow development.

### II.2 Credit availability

Currently there is more money available than ever, but still there is demand for more. However, an increase in credit availability is not always the solution. Most of the small businesses ask for assistance with financing. What small businesses need now is training, follow-up, and mentors.

When the respondents were asked on how they felt about the statement "If you have a business idea and a good business plan, there is always money for you" not everybody agreed. This is especially not true in the case of new businesses. Ideas are not enough. With new businesses the owners must be able to provide equity capital for a portion of the project and if they cannot, they will need to find a partner, or find friends and/or family who will invest and take part of the risk.

### II.3 Banks

Banks are more conservative now because of increased regulation, documentation and stricter underwriting standards. According to most directors of Small Business Development Centers (SBDC), banks do not like to give loans under \$100,000, but there is significant demand for this kind of loan. Large banks in general do not do small loans, often setting a minimum of \$75,000, since there are fixed costs related to each loan. Small local banks tend to fill the niche. When small banks lend to startups, they consider the personal income instead of potential business income. They look for any income from the spouse that might be used to pay the bills during the

---

<sup>3</sup> Small Business grows strong in Virginia. (<http://www.sbaonline.sba.gov/>)

start-up period. They give what is called “character loans”, based on their judgment of the character of the borrower, and management potential.

In contrast to the general opinion of most SBDC directors on bank loans, there are large banks that have started to focus more on small loans to small businesses. For instance NationsBank recently made a change in its policy towards small business lending. They created a new division specialized in small business lending, called Business Banking. The bank segments small business lending and commercial lending. Keeping the small business loans separated from the commercial loans helps to give equal attention to each group of loans. There is also a system of incentives: the more loans they make to the small businesses the more they are compensated. Loans can start from a minimum of \$5,000. The typical size is about \$50,000. There are also larger loans of \$100,000 or more. NationsBank covers the entire state of Virginia. The new policy towards small business loans makes it more competitive with the small local banks. However, evidence suggests that small local banks are still more aggressive in pricing their.

When the borrowers need assistance in improving the presentation of a business idea, the loan officers direct them to a Small Business Development Center (SBDC), or to the Service Corps of Retired Executives (SCORE). They usually help the applicants in the process of preparing the business plan. From phone calls with SBDC directors, we found that 75 percent of people asking for their assistance in developing business plans are referred by banks.

Large banks seem to use the SBA loan programs more. Usually, when the applicant is approved for a SBA loan guarantee, the banks accept the loan. Still, the large banks seem to have a higher percentage of loan applications turned down than smaller banks. The rejection rate for large banks is 20-30 percent, while for small community banks, this rate is about 10 percent.

Even though there are some problems with small and new business financing, the general opinion is that banks should not be forced to “help” small businesses. If there are not good chances to succeed in the market, the best thing that can happen to a start-up is to be denied by banks before starting to invest (see case O in **Appendix B**).

#### II.4 Reasons for turning down a loan application

The main reasons for a small businesses loan application to be rejected are:

- 1) past history (which is considered a good predictor of the future) including bankruptcy in the past, tax judgment history, and late credit payment; and
- 2) present problems, such as losing money at the present time (see case J in **Appendix B**), insufficient cash flow, too many loans at the same time, and so forth.

In general, the banks do not fund expansion, turnaround and atypical situations. However, the most difficult loans to be obtained are those for start-up businesses. Lack of sufficient collateral, experience, business plans, cash flow projections, and personal credit rating are the main reasons for the rejections.

## II.5 Equity Investors

Equity capital is generally not available for starting small businesses. SBDCs report many cases when they have been looking for investors. Investors were not interested. In rural areas the population density is not high enough for much equity investment. In highly populated areas it is easier to find this kind of investor. Equity investing is more available for expansion cases. In most cases equity capital is not provided by pure investors, but by other business owners who want to diversify.

## II.6 Micro-loan Funds

Given the nature of the bank loans and given the fact that small loans are not preferred by most banks, new sources of funds recently became available to small businesses, known as micro-loan funds. Usually they are very small funds and are restricted to very small amounts of lending, with a maximum of \$25,000. Some of them do not lend directly. Instead they provide 50 percent loan guaranties. Most of them are non-profit funds. Some of them also provide business training. The interest rate is higher for micro-loan funds.

Almost no efforts are made to advertize these funds because a flood of demand is expected. They “try to control demand”. This is another indication that more capital may be needed in rural areas.

There are some conditions to be satisfied in order to get a micro-loan. These loans are available only for non-bankable credit requests, caused by low personal credit rating, lack of collateral, or lack of track record. Micro-loan funds charge higher interest rates than banks. The borrowers will first go to the bank, and then come to the micro loan fund only if turned down by the bank. The typical borrowers from the micro loan funds are those without personal savings necessary to pay the first 18 months bills, start-ups, and businesses with no possibility to grow into big businesses.

## II.7 Problems

The preliminary evidence suggests that economic development in rural communities is being constrained by inadequate access to capital. These “inadequacies” appear to prevail for a number of reasons, some of which are explained in this section.

### *II.7.1.a Consumer Behavior:*

Propensity to save and invest is very low: most people spend all they have. To the contrary of what one might expect, people in rural areas are not more conservative concerning the use of credit than those in urban areas. Age differences are a better determinant of the propensity to save with older residents more likely to save larger proportions of their income. A serious problem for the start-up businesses is when they do not have money of their own to invest. It is a bank requirement that 10 to 20 percent of project’s cost must be covered by the business owner. If they cannot invest their own money they cannot start the business.

*II.7.1.b Type of business:*

There is a bias in the banking community against technology companies. They do not understand computer companies, software companies, and so forth. Even when Federal programs provide grants, banks do not approve the loan if they are not familiar with the nature of the business.

Restaurant start-ups are not looked on favorably by most of the banks. They are considered very risky because of the high failure rate (see case I in **Appendix B**).

*II.7.1.c SBA lending programs:*

The process is based on absolute numbers and analysis. No consideration is made of the borrower's vision and personal character. There tends to be no personal contact at all. Small local banks tend not to use them even when the banking community is highly competitive. From a SBDC director we learned that the local banks "avoid SBA loan programs". They do not use them as a tool, because there is a cost related to the paperwork required to get a SBA loan and because they have had many cases when the SBA has been very slow in paying the guarantee in case of delinquent loans (see case L in **Appendix B**).

Even local branches of large banks do not use SBA loan guaranties. None of Virginia's SBA certified and/or preferred lenders is included in the list of the top 10 lenders to small businesses during 1995 (see **Appendix B**).

*II.7.1.d Size of the loan:*

Small businesses usually need small loans starting from \$5,000 to \$20,000. Banks are not interested in this size of loan since there are fixed costs related to the process of evaluation of every loan application. "We need to be very creative to interest the banks" said a SCORE representative.

Micro Loan Funds are supposed to solve this problem, but they have very stringent requirements. Those funds face the same problems nationwide. They try to work with minorities, in higher risk situations, with no collateral available, and so forth. Since limited funds are available they work on a rotation basis, and because failure rate is 50 percent or more, they often run out of funds.

*II.7.1.e Operating capital for start-ups:*

It is relatively easier to find financing for capital investment, since the building, machinery, and/or the equipment can serve as collateral. But capital investment is only a portion of the expenses. For starters there is little chance of getting operating capital because of the lack of collateral (see case H in **Appendix B**).

*II.7.1.f Collateral:*

There are some capital investments that have a low or non-existent collateral value. These include high technology equipment, equipment that could be obsolete in a short time, and no broad market for the equipment.

*II.7.1.g Incompetent sources of advice:*

Small businesses frequently get incompetent advice. For instance, there are many lawyers that do not advise them to incorporate, but instead to raise more debt financing. This advice could be right in the short term, but in the long term this hurts any business plans to expand since they appear heavily loaded in liabilities, and banks are reluctant to finance their projects (see Case K in **Appendix B**).

*II.7.1.h Women:*

Women encounter more difficulties in getting access to capital. They often do not have a credit history and usually it takes finding a partner for them to be able to start a business (see case M in **Appendix B**). Many of them lack collateral, business experience, and personal savings.

*II.7.1.i Information:*

There are many sources of information on business financing, but still there is the need of improvement in the ways to reach people who might need this kind of information. The information could be distributed better across the state. Different localities do not have the same access to information.

*II.7.1.j Technical assistance:*

Usually small businesses make very little effort to identify the market demand for their product. They often under-value the marketing and do not want to hear about it. Future projections for the market are a very important factor in starting a business as well as in interesting the bank in financing the project (see case O in **Appendix B**).

Small business owners need assistance in understanding the importance of these projections as well as in doing the actual research. SBDCs do not have the staff to do this. This could be one of the points for future action to enhance credit availability in rural areas.

The financing difficulties described above were judged as sufficient evidence to initiate a broader research project to confirm or refute the existence of financial market inadequacies. This dissertation is the result of that effort.

### **III. Problem Statement**

The question faced by Virginia today is: “Does capital access in rural Virginia represent a challenge for new or expanding operations?” The answer to this question is impeded by a number of conditions. A comprehensive study on capital access in rural Virginia has never been conducted. The national literature on the access of rural businesses to financial markets and the need for government action is becoming outdated. Most of the research done in this field dates from the late 1980’s. Financial markets have undergone substantial changes since that time, and new analysis is needed. There is the need for recent data in Virginia, to document the effects of the recent changes in the rural financial markets and the reaction of the financial market participants to these changes.

### **IV. Objectives**

The primary objective of this study is to determine how well the rural capital market is functioning in Virginia. Its focus is to find out whether there are rural financial market inadequacies in Virginia. It will identify any points of market failure on either the demand or supply side of the capital market. Further, it will identify whether there is an overall financial market inadequacy, or whether only some aspects of these markets need improvement.

The specific issues to be addressed are:

- 1) Whether firms in rural areas are able to acquire sufficient funds on a timely basis.
- 2) Further analysis is needed concerning obtaining financing in rural Virginia, to determine whether there are difficulties and whether these difficulties are related to lack of capital, lack of knowledge of available resources, lack of preparation by people seeking financing, or a mismatch between the type of financing requests and available financing.
- 3) This research will contribute to the identification and evaluation of ways to increase the availability of cost efficient capital for new and small businesses in rural areas in Virginia.
- 4) Finally, the results will help to determine whether there is a need for a governmental presence in providing or facilitating access to capital.

### **V. Organization of the Dissertation**

The following chapter includes a presentation of the existing literature on financing rural development. It will include existing problems in current rural financial markets as perceived by different authors followed by the proposed solutions in the literature. Chapter three presents the methods of analysis used in the present study in order to detect any financial market inadequacy in the rural areas. The conceptual framework is followed by the procedures for obtaining and analyzing the data. Chapter four includes a descriptive analysis of the data obtained from the survey participants, the empirical model estimation, and the analysis of the results after running the model. Chapter five contains a summary of the dissertation, the policy implications and the recommendations of the study.

## **Chapter 2. Review of Literature**

### ***1. Business Financing and Economic Growth***

Historically, researchers have tried to understand the role of business financing in economic growth. Intuitively, everyone accepts the tremendous importance of capital availability for new investment projects. Research shows that the majority of social scientists accept the significant role of the banking system in economic growth and development (Green). In the words of Litvak and Daniels “it goes without saying that capital formation is crucial to the process of economic growth” (p.11).

However, empirical evidence supporting the connection between the quantity and performance of bank credit and aggregate economic activity is somewhat ambiguous. Indeed, the ambiguity of this empirical evidence reflects the dimensions of the relationship. Economic growth has many aspects and business financing appears to affect each aspect in a different way. Differences in studies of bank credit and economic activity pertain to the strength as well as to the direction of the relationship.

For instance, Barkley and Helander did not find any statistical evidence that bank lending leads (in a time context) economic development in non-metropolitan areas. Bernake and Lown do not find any evidence that differences in growth rates of bank loans across states in the U.S. explain the inter-state differences in employment growth. While on the contrary, Samolyk (1991) found a positive causal statistical relationship between interstate loan growth rates and growth rates of state output. In a later study, Samolyk (1994) explains that due to information costs, regional banking conditions can affect local economic activity by impacting the region’s ability to fund local investments. Localized information costs suggest that the banking sector’s problems may constrain economic activity in financially distressed regions, whereas no such link need be evident in financially sound regions. Cromwell found that bank failures in local markets retard subsequent employment growth, particularly for small firms which are thought to rely more on banks for their financing needs. Bauer and Cromwell present evidence of the effects of bank structure and profitability on the birth of new firms. Furthermore, since the attraction of new firms is an important goal of local economic development policies, it could be concluded that effective business financing from profitable banks can lead to economic development.

However, it is important to recognize that credit is only one of the important factors influencing economic development. As such it cannot ensure that economic development will take place. Some authors even claim the opposite. Green argues that “in fact the rapid expansion of credit in the United States in the 1970s has produced increased instability in the economy (p.5)”. According to Green, this side effect of credit expansion justifies the government presence in the financial markets, in an effort to direct economic development and growth.

Economic development of an area depends on the decision of private firms to do business there. This decision depends on whether the area represents an attractive place to invest, given its market conditions and other production costs. Capital along with labor, land, energy, and raw materials are the principal costs of production. However, as Litvak and Daniels point out, the cost of capital generally only amounts to about 10 percent of the total sales of a corporation and there is no evidence of large differences in the cost of capital between different regions. All this evidence makes it appear that capital is not the most important consideration in an investment location decision.

Summing up the literature on rural banking Verbrugge comments on the role of business financing:

... the fact remains that while financing is an important aspect of development, it is not the primary determinant. The more fundamental characteristics of an area such as market access, transportation facilities, labor supply, and resources are the causal forces of development (p.36).

Capital appears to be most important when rapid growth is in process. More capital is needed when the economy is growing. In the words of Litvak and Daniels “very rapid job-creating growth creates ... an insatiable demand for more and more capital (p.11)” and lack of capital might cause cessation of growth. However, although capital is necessary for growth, it is not a sufficient condition. Other factors such as market conditions, labor cost and quality, raw materials, and management have an important role in the process.

Not only is capital insufficient by itself, but often readily available money can encourage market imperfections leading to erroneous resource allocation due to the financing of projects destined to fail. According to Litvak and Daniels the kind of financing received by businesses is of crucial importance because “the wrong kind of money - debt instead of equity, ... or short-term debt instead of long - can totally jeopardize an otherwise good business (p.11)”.

Acknowledging the limitations of the role of capital markets in development, does not lead to the conclusion that well-functioning capital markets do not matter. According to Litvak and Daniels, “simply because capital does not lead the way does not mean that well-functioning capital markets are a critical enabling factor in ... development (p.1)” because without them a faulty allocation of funds may take place and the capital available may not be used in the most productive way. Such misallocation means giving up opportunities for economic growth.

Other authors also see capital allocation to different businesses as the mechanism which makes efficient financial markets an important factor for economic growth. The search for businesses which are expected to generate sufficient profit to cover repayment of the capital borrowed with interest, translates into the search for successful businesses. Allocating capital to these businesses means contributing to economic growth (Collender). Financial markets enforce the successful allocation of capital in two ways. Since interest is what keeps lenders in the market, if they make loans to businesses that cannot repay with interest, they may be forced to exit the market.

Besides, the lender has a legal responsibility to make sound loans. The source of the loan is depositors' money, and the law requires that depositors' money be repaid to them.

Summing up, capital is a necessary but not a sufficient condition for economic growth. Its presence usually cannot make up for lack of markets or management, labor or raw materials. But the absence of capital, when all other factors are in place, can keep a firm from generating new jobs and economic activity. According to Litvak and Daniels "the central issue in thinking about financial markets and economic development is whether capital is being made available to those enterprises that can employ it most productively (p.17)".

### 1.1 Changing characteristics of business financing

Today's capital markets contain a wider range of choices for business financing than in the past. Financial decisions are seen as a source of value creation. Opler (p.1-7) discusses the main changes in today's capital markets. A summary of his discussion follows:

1. Business managers have developed another attitude toward debt financing. Debt's role is perceived differently based on the tax advantages of leverage. As a result the firms have "significantly increased the amount of debt on their balance sheets (p.2)" over time.
2. Firms have also learned that capital structure management should differ in different stages of business cycles. The tax advantage of debt financing does not hold in recessionary periods given the increased risk of financial distress and the diminished importance of tax benefits.
3. A series of regulatory acts have benefited small business financing. Small businesses today have more financing options. Banks are allowed more freedom to make "character" loans. SBA loans, factoring, supplier financing, government technology development loans, and so forth represent some other financing options available to small businesses.
4. Innovations in the investment banking industry have made the world of financing different. In the last decade, over 50 new financing instruments have been created.
5. Banks are no longer the only short term lenders. More and more large firms meet their need for short and medium term debt in the commercial paper and medium-term note market. As a result banks appear to be more interested in small business loans.
6. Working capital management has become an important issue not only for large companies but also for small and medium size businesses.

### 1.2 Financial Market Flaws

The capital allocation process favors those businesses that promise higher expected returns, and lower risk. At first glance this process appears to make economic sense. However, according to Litvak and Daniels this capital allocation process has a number of flaws:

- 1- Businesses that promise competitive investment return are denied funding for reasons such as lack of risk pooling mechanisms in the financial market, which discourage capital suppliers from promising investment projects; lack of sufficient lender information about certain kinds of businesses; high transaction costs of making and following loans to some kinds of businesses; existence of financial institutions with a monopoly position; financial institutions practiced race, sex, or political discrimination against borrowers; existence of unintended side

effects of government regulation and intervention. These forms of capital market flaws are known in the literature as capital market inadequacies.

- 2- Businesses that provide socially beneficial services or products are denied funding because they do not promise competitive investment return. In other words, even when the capital market functions adequately, it is possible that the outcomes are not desirable from a social welfare standpoint. Freshwater asserts that “society may be unhappy with the outcome (p.77)” of capital allocation process, which is based only on capital market efficiency principles.

### 1.3 Why does Capital Market Failure matter

Capital market failures have an impact on economic development. According to Litvak and Daniels, there are two important facts to consider when dealing with the issue of capital market failure:

- 1- The majority of businesses which suffer from capital market imperfections are small businesses.

Large firm borrowing is characterized by large loans, available track record, available collateral, and other features that make banks more inclined to accept their loan applications. Besides, the capital market changes mentioned above suggest that the large firms are becoming more and more independent of commercial bank lending practices.

- 2- Small firms contribute crucially to job creation.

Birch (1979) was the first to provide evidence that the formation and growth of small firms accounts for virtually all job growth. According to Birch all parts of the country lose jobs through the closing and downsizing of business establishments. On the other hand new jobs are created everywhere from new or expanding businesses. In a growing area the number of new jobs created exceeds the number of jobs lost. Birch found that businesses which employ fewer than 20 people create 66 percent of the replacement jobs and that 80 percent of replacement jobs are created by businesses under four years of age.

More recently, Dennis, Phillips and Starr (1994) analyzed the role of small businesses in job creation. Their data reconfirm Birch’s findings showing that “small businesses have been the primary source of net new employment in the United States over the past 25 years”. They summarize the criticism of Birch’s work pointing out the deficiencies of different critics, and conclude that most of the criticism about Birch’s work is not on the basic thesis but on technical details.

## **II. Rural Financial Markets**

### **II.1 Unique Features of Rural Capital Markets**

The literature and past experience suggest that there are a number of features that tend to be unique to rural capital markets. A number of studies have provided specific examples.

Many researchers point out that rural businesses have fewer financing choices compared to businesses located in metropolitan areas. The number of financial institutions in rural areas is generally limited and commercial banks are the major supplier of financial capital. According to Drabenstott most financing is done by local banks, or by local branches of regional banks. He asserts that “rural areas appear to have fewer competitors and fewer channels to broader capital markets”. Sullivan admits that a wide variety of financial institutions are present in rural financial markets including private institutions, non-profit organizations, governmental agencies, but still the commercial banks perform the primary role in financing the rural small businesses. As a result, rural businesses may not be offered enough choices for financing their activity. Milkove (1996) asserts that the number of financial institutions “available to residents of the average rural county are well below those available to residents of the average urban county (p.45)”.

Drabenstott states that rural banks are generally small and do not have good access to non-deposit capital sources. According to him, availability of such capital sources is an important characteristic which determines the degree of satisfaction of local demand for credit. On the other hand, he argues that the small rural banks “suffer disproportionately from regulatory reporting burdens (p.4)”.

Collender asserts that rural areas are geographically isolated and have low population densities. He suggests this contributes to rural financial market inefficiency. Shaffer and Pulver (1990) seem to agree with this, arguing that rural and isolated locations are characterized by constrained availability of capital for economic growth. They contend that geographic isolation influences the access to equity capital, lenders’ decisions in approving loan requests, as well as local lenders’ engagement in business financing.

Low population densities suggest that rural banks should serve broad geographical areas. However, Sullivan reports evidence that this is not true. According to him many rural banks are characterized by very limited service areas. This is specially true for business lending: “business loan market for many banks is approximately a 10-15 mile radius around the bank’s headquarters (p.3)”. Lending to businesses beyond these limits consists of increased risk given the increased information costs which small rural banks are not prepared to afford. In addition, bank marketing to dispersed businesses is very expensive (Blue Ridge Study). The need to keep a reasonable rate of fixed and variable costs is behind the hesitation of local lenders to expand beyond the tight limits of their geographic area of service.

This limited geographic scope gives to the local lenders an irreplaceable role. According to Shaffer and Pulver (1990) “if financial needs are not adequately served locally, they will probably not be served by capital sources in nearby markets (p.40)”. This role, combined with the dominance of banks in rural financial markets, translates into increased limitation of financing choices available to rural businesses.

Rural areas do not have good access to equity capital markets. According to Drabenstott, in most rural areas equity capital markets are non-existent. The lack of local equity markets combined with very limited access to broader capital markets drives up the debt to equity ratios. Drabenstott considers the debt equity ratios of rural businesses to be much higher “than an optimum mix of capital might suggest (p.4)”.

Another characteristic of rural capital markets is the lack access to secondary markets. The only secondary market available in rural markets is Farmer Mac (see below), a secondary market for farm mortgages, which according to Drabenstott, is limited in size and scope.

Milkove (1996) analyses the consolidation trend in the banking industry during the last 15 years, and points out that this trend has been slower in rural communities. In addition the consolidation effect has been partially offset by the increase in the number of local branches of banks operating in rural areas. He maintains that these differences will be preserved in the future.

Other than commercial banks there are also some other important institutions in the rural financial markets:

The Farm Credit System (FCS) is a network of cooperative lending institutions established in 1916. It operates as direct lender to agricultural producers, agricultural cooperatives, farm-related businesses, and rural residents.

The Federal Agricultural Mortgage Corporation (Farmer Mac), established in 1988, was designed to operate as a secondary market in agricultural real estate and rural home loans.

The Small Business Administration (SBA), created during the Great Depression, makes lending possible in conditions when risk-averse banks could deny lending to projects and/or firms that might improve economic growth.

## II.2 Changing Rural Financial Markets

Recently, rural financial markets are experiencing profound changes. According to Ellinger these changes reflect the changes in the agricultural economy and technological progress as well as changes in the competitive structure of the financial services industry and in borrower demands. Put in his words “a fundamental concern among rural borrowers and depositors is the impact the changes have on the cost and availability of credit and bank services (p.652)”.

Indeed, some of these trends are clearly benefiting the rural borrowers giving more access to broader capital markets. Milkove (1990) asserts that rural financial markets are now “tied more

closely to national and international markets”. He explains this fact with the technological progress and improved communication, which combined with the deregulation of the banking industry, have increased the presence of financial institutions in rural financial markets.

Increased competition in rural financial markets is partially offset by the national trends of increased bank consolidation. Even though rural financial markets are expected to follow a more gradual consolidation process, this consolidation will affect the rural communities in the future. Milkove (1996) argues that the communities which will be more affected by the consolidation trends are those currently served by large banks which are more likely to participate in interstate banking. Further he argues that there are gains and losses to rural communities coming from this process of consolidation. He reports that rural residents frequently believe that “outside ownership of a bank is as bad as losing the bank outright (p.43)”. Non-local banks have less knowledge of the local market, and less experience in evaluating loan applications from local businesses. Bank consolidation also means diminished local competition, which may be translated into increased costs of borrowing for local businesses.

However, Mikove also points out the possible gains from the consolidation process. First, the replacement of small local banks with large banks operating across several states increases the lending limits, and the size of the loan will not represent a problem. Second, large banks bring with them more experience and a larger range of financial services. Third, they are geographically diversified and are less affected by local economic declines and this contributes to increased involvement in local lending. Fourth, uncommon businesses in the local area might not be uncommon to large banks given their broader experience. This increases the chances of granting a loan to these types of businesses. Fifth, large banks have also proved to be more familiar with government loan programs and guaranties. This increases the chance to broaden the range of businesses and investment projects that might be served by the banking system beyond conventional credit. Finally, some regional banks maintain the local managers after consolidation, to benefit from their experience and knowledge of the local area. (Milkove, 1996).

Given that rural economies are made mainly of small businesses, another important change influencing rural financial markets is the trend benefiting small businesses. Milkove (1990) presents as an example of this trend “the renewed respect [with which] the larger banks are looking at small businesses (p.35)”, as large firms obtain more of their short and medium term financing through the note and commercial paper market.

In terms of government support, an important tendency today is that the Federal Government is accepting an indirect role in financial markets “with greater emphasis on market solutions and return of responsibility to the State and local governments (p.81)” (Freshwater). This is both good news and bad news because while it gives more room for customized credit policy in Virginia based on the local and regional characteristics, less funding is available from outside and more state government involvement may be required.

### II.3 Are Rural Financial Markets Efficient?

Rural Financial markets are dominated by local bank lending to businesses and consumers. Businesses in rural areas usually do not have much choice, other than to borrow from the local bank. However, according to Morsman, commercial lending is not the most profitable part of the banking industry nationwide. It is characterized by low margins for error, meaning that “a loan officer must be right 99.5 percent of the time to achieve acceptable profitability (p.1)”. There is no one-size-fits-all product in commercial lending. Each loan application must be considered based on its specific characteristics. Moreover, commercial lending is a highly cyclical business in which losses in the downturn of the business cycle often exceed the profits during the rise. All this makes business lending in rural areas very conservative.

Many authors claim that rural financial markets are characterized by low competition. Collender’s study, based on Department of Justice data, reports that 93 percent of rural banking markets are classified as non-competitive. The low level of competition is an indicator of possible market inefficiency.

Still, researchers are reluctant to admit that rural financial markets are inefficient without being able to test the hypothesis of market inefficiency. Shaffer and Pulver (1990) emphasize the importance of the empirical study of both supply and demand for business loans, and criticize the existing studies which are generally based on incomplete information:

...the data needed to ascertain if rural capital markets are performing adequately are not generally available. Public policies tend to be based on anecdotal data, incomplete information, and untested hypotheses (p.40).

### II.4 Rural vs. Agricultural capital markets

For many years attention has been focused on the performance of agricultural capital markets. However, farming represents a relatively small part of rural economic activity. According to Stam it “is no longer the dominant industry in rural America”. Drabenstott reports that agriculture is the main source of income only in less than a quarter of rural counties in the nation. This fact makes it clear that rural development depends on all rural businesses and not just agriculture.

Drabenstott asserts that rural capital markets “have not received the same attention” as agricultural capital markets. The United States now has “one of the most efficient agricultural capital markets in the world (p.6)”. Interest rates faced by farm borrowers are linked to market interest rates, and lenders compete keenly for quality farm loans. In contrast, non-farm rural businesses have fewer capital options than farmers.

This observation is confirmed by Shaffer and Pulver (1990). Based on extensive research on capital markets in rural Wisconsin and the analyses of other rural areas across the country, they

conclude that while in general rural financial markets are performing adequately, “particular types, sizes, and stages of non-farm businesses may have difficulty acquiring sufficient capital in certain markets (p.40)”. According to this study, small or very large businesses as well as new businesses are the most exposed to rural financial market inefficiencies.

### **III. Financing Development and Government Intervention**

Banks play an important role in economic development. This role is not limited to financing businesses. It may involve providing information on sources of financing other than bank loans, providing technical assistance, and promoting the area to outside businesses in order to make possible new investments in the area. However, the most important part of their involvement in economic development is accepting sound loan applications. Banks should not be forced to accept bad loans, not only because this would violate the market laws, but also because this can never help development. As Milkove (1990) writes “a bank should not be in the business of making loans with only marginal repayment chances (p.36)”. If there is a gap between what the private financial institutions can do and what is needed for development, government intervention may be required.

However, as Collender states “public lenders, rarely succeed in allocating capital efficiently and often are not intended to do so (p.1)”. The goal of public lenders is related to issues such as reduction of income inequality, protection of businesses which provide socially beneficial services or products and so forth. These are plausible goals as long they do not interfere with the financial market efficiency.

#### **III.1 Rationale for Government intervention.**

Government intervention may be justified when there is a capital gap that the private financial institutions cannot fill. This capital gap may be a consequence of financial market failure or may be a simple reflection of the conflict between financial market outcomes and social welfare goals. According to Freshwater:

Market failure arguments contend that imperfect capital markets provide less than adequate amounts of capital to rural entities. Imperfections include inadequate information, lack of competition, and high transaction costs.

Social welfare arguments allow non-market criteria to play a role in determining the best allocation of capital. Even if the market is efficient, society may be unhappy with the outcome (p.77).

As mentioned above, there are authors who argue that even well-functioning capital markets will fail to provide financing to investment projects that do not promise a competitive investment return but provide socially beneficial services or products that are not provided by other investments (Litvak, Daniels).

Shaffer and Pulver (1990) discuss when financial difficulty experienced by businesses may be considered an indicator of financial market inadequacy. If an investment project is not funded by financial suppliers for reasons such as high risk, or poor investment plan, the financial market cannot be considered inadequate. However, if an investment project is not funded for reasons related to the financial institutions limitations, such as lack of experience with certain businesses, high cost of information, or for reasons related to non-risk characteristics of the borrower, then the market can be considered inadequate. "Financial markets should perform adequately when all users have the same access to financial capital, after adjusting for the riskiness of specific firms and their loan needs (Shaffer and Pulver, 1990, p.39)." Some researchers have found that there are sections of capital markets which are imperfect and that it is especially difficult for firms to raise certain kinds of capital, such as equity capital. (Greenwald, Levinson and Stiglitz).

When capital markets are inadequate the role of the government becomes important. Capital market failures may mean that specific enterprises cannot get the funds they need, even though they may promise competitive investment returns and their product is socially desirable. Capital market imperfections may cause denial of financing to young, small, profitable firms who create the majority of the nation's new jobs. According to Litvak and Daniels, in these cases "access to capital and the government's ability to influence that access, becomes of real importance (p.26)".

### III.2 Government Intervention: the past and the future.

Government influence in financial markets in the past has been characterized by a direct government presence in the financial markets. This influence ranges from programs tending to enhance market efficiency to regulations that limit free competition. Collender characterizes FCS, Farmer Mac and other government sponsored enterprises as market efficiency programs. They were designed to enhance competition by providing means to overcome barriers such as restrictive banking laws and regulations, geographic isolation of some rural areas, and inadequate communication possibilities.

As contradictory as it seems, Collender reports other cases when government actions "have perpetuated market inefficiency". He maintains that "in many cases the US financial markets have been purposefully segmented (p.1)" using as an example the restrictions on within-state and interstate branching of financial institutions.

Today, the tendency is to emphasize the indirect role of the government in financial markets. Instead of participating in the supply side of the capital market, government is more involved in providing support to private financial institutions in order to enhance their involvement in financing development. This new tendency is justified by the common knowledge that private institutions are more likely to allocate the capital efficiently (Freshwater).

However, there is still criticism of government development efforts. Litvak and Daniels argue that the states' concern in development finance is mostly focused on encouraging large firms to locate their new branches in underdeveloped areas. Their criticism is based on the fact that large

firms account for about one-half of job creation and they are not the ones who face the existing financial market inadequacies. On the contrary, the young, small and growing firms are the ones that contribute to the majority of net new job creation and are more likely to face capital market imperfections (Litvak and Daniels, p.52).

Some authors maintain that not only is the form of government intervention changing, but also the rationale of government involvement is changing from the correction of rural capital market imperfections towards criticism of societal impacts of market outcomes (Freshwater). However, it remains to be determined whether the market outcomes are unsatisfactory because of market inadequacies or because of social welfare considerations.

#### **IV. Problems, Existing and Perceived**

Most authors agree that rural businesses do not have the same access to loans as businesses in urban areas. One of the main reasons for this is that banks face high marketing costs in areas with low population density. In those areas, businesses are scattered over a relatively broad geographic territory and are more difficult to reach by the banks' marketing services. Some suggest that since it takes "innovative marketing strategies" to reach those markets, the government might use subsidies to encourage and support the banks' efforts (Blue Ridge Study).

Barkley and Helander's study indicates that bank lending does not lead local economic development. Instead, bank lending seems to be related to past local economic activity. They call this "passive behavior of banks" and explain it by using bank management theory. The funds needed for economic development are mostly provided by long term loans. Banks are not the best source of long term loans since they rely mostly on short term deposits. The lack of other financial institutions and markets that can provide long term financing to rural businesses is a major problem that needs to be addressed.

According to Freshwater, many entrepreneurs in rural areas claim that urban areas have better access to capital. The number and the types of financial institutions present in rural areas has increased significantly, but this has not solved problems related to credit rationing and high interest rates. Describing the results of a survey conducted in 1988 by the National Federation of Independent Business (NFIB), Freshwater reports that both rural and urban members of the NFIB consider commercial bank loans as high interest loans. Also, rural borrowers face higher interest rates relative to urban borrowers, but this is partly offset by lower collateral requirements in rural areas. Freshwater maintains that dissatisfaction with high interest rates is not necessarily a sign of capital market inadequacy. Dissatisfaction with interest rates may be due to businesses' dissatisfaction with U.S. monetary policy.

While there are no widespread inadequacies in rural financial markets, it is important to note that the businesses experiencing the most difficulties in obtaining debt and equity financing, after correcting for risk differences, are the businesses "on the leading edge of rural development".

Shaffer and Pulver (1990) explain these difficulties with the lack of knowledge and experience in packaging funds and in assessing risk.

According to Sullivan there are some federal programs that are available but are not used widely by rural lenders and borrowers for one reason or another. An example is provided by Federal Small Business Loan Programs that appear to be “dramatically underutilized” in Virginia. This under-use may indicate that there is potential for using the federal credit programs (Blue Ridge Study). In other words, private financial institutions should be given incentives to use these programs as an external source of funds. Lending to small and new businesses involves risks that some banks are not willing to take. However, as discussed in the first chapter, Virginia banks seem to undervalue the assistance given by the SBA guarantees program, which reduces the risk represented by small businesses loans. Analysis of credit/capital issues in rural Virginia must address these issues. The adequacy of existing services of credit will need to be examined in the analysis and in efforts to determine the proper role of the state.

Shaffer and Pulver (1990) report a number of rural capital market dimensions requiring particular attention. Their basic premise is that adequately functioning capital markets distinguish different loan applications based exclusively on the business risk involved. Their research discovered that there are some non-risk factors that are significant in determining financing difficulty experienced by non-farm rural businesses. According to them, these non-risk factors merit special attention since they indicate the rural financial markets dimensions which “could hamper rural development efforts (p. 42-44)”. Among the important findings of Shaffer and Pulver are:

- 1) Firm size influences four of the indexes that Shaffer and Pulver used to measure businesses financing difficulty. After correcting for risk characteristics, small and very large firms experience relatively more loan denials and loan underfunding compared to other firms. They also appear to use more non-local sources of financing, which might indicate dissatisfaction with the local financial markets conditions. When asked about their opinion on the performance of the local financial markets, they appear to be more dissatisfied compared to other firms.
- 2) Uncommon businesses as well as businesses in highly concentrated sectors of the local economy experience difficulty in obtaining capital locally. This difficulty is not related to their risk characteristics, but rather to the lack of the financial institutions’ experience in evaluating non-common businesses’ loan applications on the one hand and to the need for loan portfolio diversification on the other.
- 3) Businesses in the start-up or pre-venture stages are identified by Shaffer and Pulver as the most difficult businesses stages to obtain financing for, regardless of other business risk characteristics.
- 4) The lender’s size affects loan limits and the lender’s experience in evaluating loan applications. It also affects the lender’s access to non-local capital. Though access to outside capital

markets is improving, this can be a problem for small rural banks. However, this influence is partially offset by what some authors call small bank “aggressive” lending. The authors find that local markets where lenders’ size determines the financing difficulty experienced by businesses are not functioning adequately.

In addition Shaffer and Pulver (1990) indicate that rural markets are characterized by inadequate efforts of local lenders to find outside funds for local projects. Relying exclusively on local deposits represents a serious limitation of funds available to finance local development. They also believe that deregulation of the banking industry poses another threat to these limits, given the increased outside competition for deposits (p.49).

Shaffer and Pulver (1990) indicate that equity capital has not received adequate attention in rural capital markets. Drabenstott states that most rural businesses rely on debt financing. Equity funds are especially needed in the start-up stage, and rural businesses in this stage use considerably less equity capital than start-ups in urban areas. Not only is it the case that equity is not used very much, but demand also is very limited. According to Shaffer and Pulver, lack of information is the main reason explaining the weak demand for equity. Businesses in rural areas are less knowledgeable about sources and benefits of using equity capital to finance investment projects.

The Shaffer/Pulver study thus provides a useful background for consideration of the situation in Rural Virginia. There appear to be a number of non-risk factors that impact on capital markets in rural areas.

Drabenstott indicates that rural banks are characterized by high loan-deposit ratios. Considering this as a measure of bank lending capacity, he perceives lending limits to be restrictive and to negatively influence rural businesses’ capital access.

Finally, many authors contend that secondary markets for rural loans are not well-developed (Drabenstott, Shaffer and Pulver). This means rural banks have to face more risk given the lack of geographic diversification in their loan portfolios.

## ***V. Solutions proposed in the literature***

The following are some of the possible solutions to the problems of rural development financing, recommended by different authors. In general, experience from the agricultural capital markets needs to be used in the rural capital markets. Drabenstott (p.10) recommends four approaches intended to close gaps in rural capital markets:

1. “Enhancing liquidity and competition in rural capital markets.”

In order to ensure higher liquidity for rural banks he proposes giving them access to the Farm Credit System funds. He supports this idea with the fact that FCS has been a

good wholesaler of agricultural financial funds. Also, local banks are more knowledgeable of the local loan market and can do a better job in providing the capital to businesses. According to Drabenstott, in addition to enhancing liquidity, a direct result of this recommendation will be enhancing competition in the local rural markets.

Freshwater goes further and recommends government intervention to increase liquidity in order to “enhance the performance” of the rural capital markets (p.88). He proposes that the government can give the opportunity to local capital providers to “recycle funds”, through selling a part of their loan portfolio out of the local market, and reinvesting the proceeds in the local market. In this way, the local knowledge of local lenders can be used without the limits imposed by the availability of capital and the portfolio diversification requirements.

2. “Improving secondary markets in rural America.”

Rural capital markets lack the ability to diversify loan portfolios beyond the local markets. Farmer Mac is the only secondary market in rural America, and its scope is limited to mortgage loans. While Drabenstott accepts that the authority of Farmer Mac could be broadened, he argues that the best way to develop secondary markets in rural areas would be to create a new mechanism, which would be able to address the unique needs and risks of rural businesses.

3. “Developing rural equity markets.”

Attempting to increase the presence of equity financing in rural capital markets, Drabenstott, proposes to improve the supply of equity. While prizing the experience of bank owned Small Business Investment Companies (SBIC) in providing equity to small businesses, he proposes the establishment of new state rural venture programs which would match public funds with private sources of venture capital. The involvement of public funds in these programs would ensure the achievement of regional diversification, which would contribute to increased efficiency of the local capital market.

4. “Evaluating federal and state rural credit programs.”

Before starting a new state program the experience of existing programs must be evaluated. Currently there are different kinds of programs in place from direct loans and loan guaranties to programs attempting to improve the capital market efficiency. Some of them may not be yielding the desired results, and some others may provide useful information for future programs.

There are still other possibilities that supplement or extend beyond Drabenstott’s suggestions. Shaffer and Pulver (1990) recommend the establishment of a clearinghouse system, serving as a referral system, to direct rural businesses to the appropriate sources of financing. This solution is along the same lines with the information agency proposed in the Blue Ridge Study:

Any clearing house should be the depository for all the information pertaining to available loan programs. This agency could designate an entity within each region of Virginia to serve as its regional affiliate. Existing institutions such as the planning district commissions, small business development centers, regional chambers of commerce, ... could serve in this capacity (Blue Ridge Study, p. 34).

Freshwater shares this opinion, proposing government action to improve business information, ...thus providing potential borrowers with the means to make better business plans and lenders with more information to assess the risk potential of nontraditional loan requests (Freshwater, p.87).

Federal actions could improve efficiency in rural financial markets by enhancing competition. According to Collender, the Federal actions now should include reforming the existing government sponsored enterprises as well as reforming bank regulations. The purpose of these reforms should be “lowering barriers to market entry” and “reducing market segmentation” (p.4).

Concerning the problem of under-utilization of Federal programs designed to help rural development, Sullivan proposes a mechanism to heighten competition among rural capital providers as a long term solution. He also proposes short term solutions such as technical assistance programs designed to “help develop attractive financing packages (p.15)” for borrowers or lenders.

Shaffer and Pulver (1990) also agree on the positive role of technical assistance to individual businesses. They propose programs aimed at providing technical assistance with business plans, and debt or equity requests, in order to lower the rejection rate for loan applications. Shaffer and Pulver agree that capital providers also may need technical assistance to evaluate loan applications from businesses with which they are not familiar. The proposed solution to this problem is that “the government might identify someone who could help analyze the application (p.53)”.

Addressing the problem of diversification of bank loan portfolios, Shaffer and Pulver (1990) propose additional incentives to local lenders to use government guarantee programs and to use loan participation among banks. Freshwater is also concerned with the lack of geographic diversification of rural lenders. He agrees with the idea of using loan guarantees to spread the event risk, and he also proposes a mechanism, facilitated by the government, to pool loans.

Consistent with today’s tendency to emphasize the indirect role of the government in rural financial markets, Litvak and Daniels (p.8-9) suggest the following solutions:

1. The government can provide easier access to government funding for businesses in underdeveloped areas which promise competitive returns on investment, but are characterized as “capital poor”.

2. To encourage businesses' involvement in under-developed areas, the government might use subsidies such as providing financing at interest rates lower than market rates. This may be considered as a compensation to the businesses for higher operation costs.
3. "Saving endangered plants may be sometimes a cost effective way of "creating" jobs". The role of the government in this process is to provide funding for transfer of ownership to people who can successfully manage an "essentially profitable" business.
4. Communities should be given more authority in dealing with externalities and equity considerations of the economic activity of local businesses, even when those businesses are obtaining capital from the government. This is considered to be the most effective way of combining business and community interests.

For some authors, it is important to change the focus of government action to equity financing. Current Federal programs use credit enhancements to help beginning farmers purchase commercial farms; but higher debt loads increase financial risk. Dodson recommends that "future federal policy may need to go beyond traditional credit programs and encourage equity investments or provide tax advantages to land owners who sell or rent their land to beginning farmers (p.1)". Sullivan goes further, asserting that "the efficiency of rural debt markets may benefit from marginal changes in government involvement, but much larger efficiency gains are possible within rural equity markets. At the heart of the problem with the rural equity markets is the lack of an institution or mechanism for systematically bringing entrepreneurs and investors together (p.15)".

Rural capital initiatives must be part of a total body of effective rural development policy if that growth objective is to become a reality. There is the need for a state-level rural development policy. Put in Sullivan's words "the Nation lacks a clear, coherent rural development policy (p.13)". The lack of a formal policy for rural development hinders the ability to evaluate alternative rural credit programs. In order to be able to choose the best way of financing rural development, there is the need for an effective and cohesive rural development policy, and development of such a policy is arguably the first step that the state should take. The policy can provide the standards needed in the process of evaluation of alternative rural credit programs. (Sullivan). "Without a careful definition of the problem, an established set of strategic goals or vision, an implementation structure to coordinate initiatives, and a process for evaluating progress, economic policies can become static and thus ill-suited to political and economic changes that may occur in the states future (Like, Ventriss, Reed, p.17)."

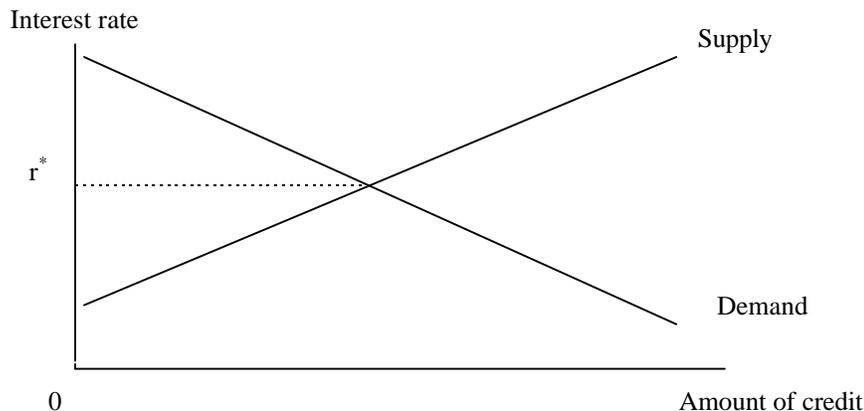
## Chapter 3. Methods

### I. Conceptual Framework

The starting premise of this study is that lack of efficient credit access is one of the obstacles of rural development. As indicated in the first two chapters, published research as well as anecdotal evidence show evidence of malfunctions in Virginia's rural capital markets. Therefore, in order to support rural development in Virginia, there is a need to find out whether the financial market in rural Virginia is functioning adequately. Studying the ability of financial markets to satisfy the demand for capital in rural areas is especially of current interest in Virginia, where fundamental adjustments are in progress due to economic changes that are occurring across the state.

#### I.1 The Relevant Economic Theory

In this study, the concept of capital market adequacy for rural businesses is considered within the framework of a market-clearing model. The market-clearing model applied to the financial capital markets assumes that the financial markets clear and match demand for and supply of credit at an equilibrium real interest rate.

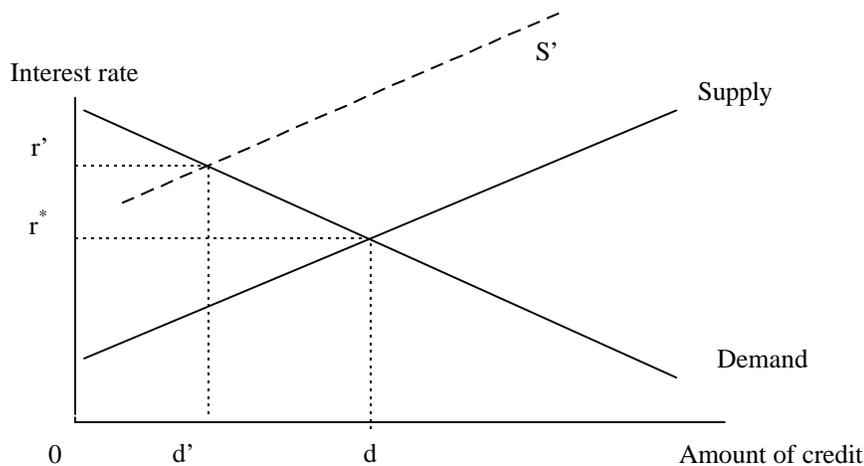


**Figure 1. Capital market equilibrium**

This approach assumes perfect market conditions which include: No taxes, transaction costs, or binding regulations; Assets are perfectly divisible and marketable; Perfect competition exists among financial institutions; Information is costless and available to all participants; All participants make rational, economic decisions; and all decisions are made in a world of certainty. The equilibrium interest rate  $r^*$  in Figure 1 is the real risk-free rate of interest. In reality, capital markets are characterized by uncertainty and different financial products represent different degrees of risk. As a result, the nominal interest rate is made of the real risk-free interest rate plus several additional premiums which represent adjustments for purchasing power risk, default risk, liquidity risk, and maturity risk (Brigham and Gapenski):

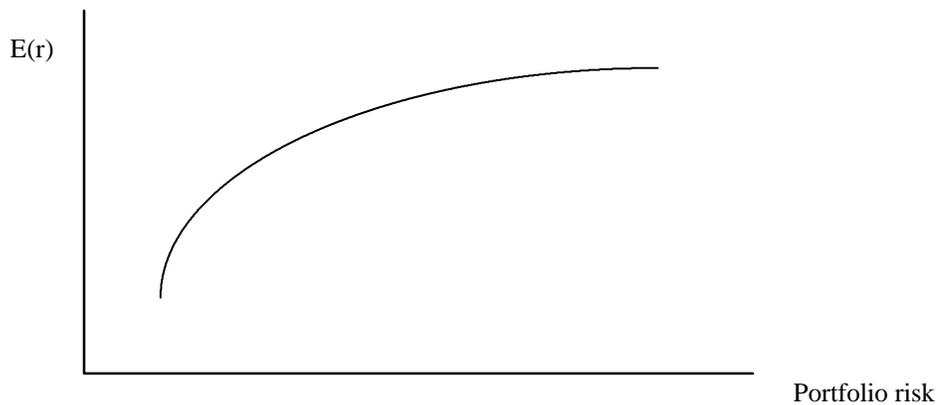
$$r = r^* + I + D + L + M$$

When default risk is higher and all other conditions remain the same, the supply curve shifts to the left. This means that for the same amount of loanable funds available, the interest rate charged will be higher (see Figure 2). The underlying assumption here is that lenders are risk-averse. For the same level of expected return they prefer low risk instead of high risk. They differ from each other only in terms of the level of risk-aversity.



**Figure 2. Interest rate in a world with risk**

One way to quantify risk is to represent it with the level of variance in the expected return of an investment. Markowitz, 1959 was the first to use the efficient frontier concept to explain the choices available to any investor (in our case, financial institution). Now the efficient frontier model is widely used by financial analysts, stock market practitioners and macroeconomists. The efficient frontier is the set of efficient points in the risk-return plane, given a certain set of investments available to the lender. Each point in the efficient frontier represents the maximum expected portfolio return for a given level of variance, or the minimum portfolio variance for a given level of return (see Figure 3). Each point, except for the extreme portions of the efficient frontier, represents a portfolio of investment projects chosen from the entire set of available investment projects. The extreme points of the efficient frontier represent one individual investment with the highest expected return available for the maximum (minimum) level of variance.



**Figure 3. Efficient frontier**

The efficient frontier is derived using the following model. A given portfolio of  $n$  investment projects is characterized by the portfolio expected return,  $E(r_n)$  and the portfolio variance,  $Var(n)$ :

$$E(r_n) = \sum_{i=1}^n W_i E(r_i)$$

$$Var(n) = \sum_{i=1}^n W_i^2 Var(i) + \sum_{i=1}^n \sum_{j=1}^n W_i W_j Cov(i, j)$$

Where:  $W_i$  = weight of the  $i$ -th investment project in the portfolio  
 $E(r_i)$  = expected return of the  $i$ -th investment project  
 $Var(i)$  = variance of the expected return of the  $i$ -th investment project

From the definition of the efficient frontier, each point of the efficient frontier can be found through a minimization problem as below:

$$\text{Min: } Var(n) = \sum_{i=1}^n W_i^2 Var(i) + \sum_{i=1}^n \sum_{j=1}^n W_i W_j Cov(i, j)$$

$$\text{s.t. } \sum_{i=1}^n W_i E(r_i) = E^*$$

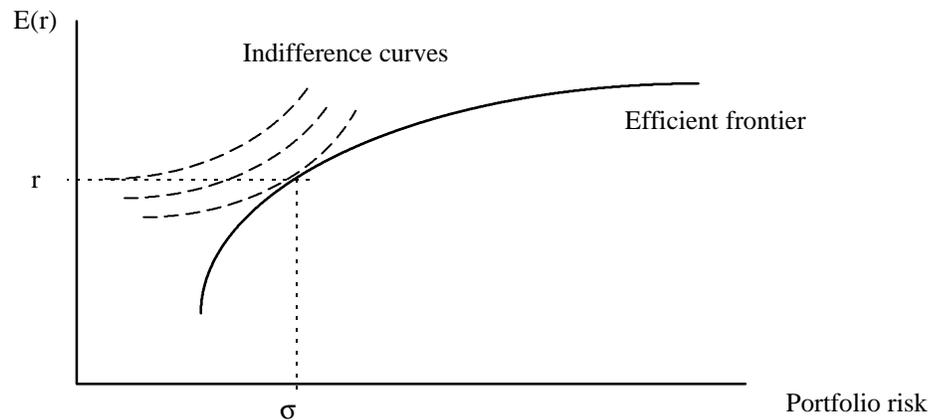
$$\sum_{i=1}^n W_i = 1$$

Where  $E^*$  is a given level of portfolio expected return.

The solution to this minimization problem gives the weights of different investment projects in the best (minimum variance) portfolio with  $E^*$  expected return. The level of the objective function gives the variance of this portfolio.

The shape of the efficient frontier in Figure 3 indicates that the higher the risk, the lesser are the changes in expected return rate for the same change in risk. At the lower portion of the efficient frontier a small increase in the portfolio risk is rewarded with a relatively higher increase in the portfolio expected rate of return.

For lenders in the same market the efficient frontier should be the same. Different lenders have different investment portfolios. The portfolio that they choose to keep is determined by their level of risk-aversity. Graphically each lender's portfolio is located at the tangency point between the efficient frontier and the individual lenders' indifference curves. In the case of Figure 4 the optimal portfolio has an expected rate of return equal to  $r$  and a variance of  $\sigma$ .



**Figure 4. Choosing the lender's optimal portfolio<sup>4</sup>**

Given the nature of the sources of funds used by the commercial banks, the tangency point for commercial lenders is expected to occur at the lower portion of the efficient frontier. Commercial banks use their clients deposits to fund their investment projects. There are numerous laws and regulations restricting the use of this source of funds. The opposite is expected to happen with venture capital. The tangency point for this type of investors is expected to occur at the higher portion of the efficient frontier. They are attracted by high expectations on innovative high technology businesses. However this kind of investment represents also a high risk of loss.

<sup>4</sup> The shape of indifference curves is dictated by the fact that risk is not a "good".

Another example would be the comparison between credit card loans and collateral based bank loans. Credit card loans are not collateral based, as a result they represent higher risk for the lender, so the lender charges higher interest rates compared to bank loans. The tangency point at the efficient frontier for a credit card lender is expected to be higher than the tangency point for the local bank that uses collateral based loans.

The risk represented by each portfolio (the variance of portfolio expected returns,  $\text{Var}(n)$ ) depends on the variance of individual investments expected returns, as well as on the covariance between the expected returns of the investments included in the portfolio. If individual investments display high positive covariance, the portfolio risk is higher. Diversification of lenders' portfolio contributes into minimizing the variance of a portfolio without lowering the expected return. Diversification is aimed at minimizing the covariance of individual investments in a given portfolio. This is why depending on the lender's portfolio, the same loan application may appear more attractive to the lender whose portfolio has a low covariance with the specific business' expected return. If the financial market is segmented and the local lenders find it difficult to diversify their loan portfolio, this can be translated into limited supply of funds for certain businesses, even though funds are available. In other words, the financial market inadequacies translate into financing difficulty for some of the local businesses. In the literature this phenomena is known as a mismatch of funds.

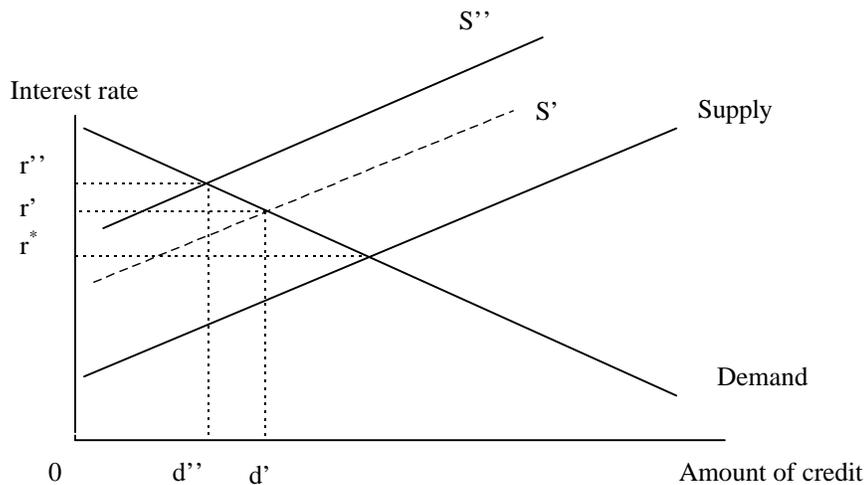
Covariance is a statistical concept that is based on historical data. These kind of data are easier to be found for public corporations, while the market for small business financing is characterized by limited public information on the historical data of individual businesses. In order to obtain an estimate of the covariance between different individual investments, historical data of investment returns in the respective economic sectors can be used.

In addition, banks use "track record" as a very important determinant in the process of loan approval. Track record gives information on the last years' business returns: their stability as well as their covariance with the other portion of the lender's investment portfolio. However, while this appears to be a legitimate action on the side of the bank, start-up businesses are not able to provide this kind of information. Without this kind of information, the bank cannot determine the expected return, as well as the level of risk involved. As a result, frequently, starting businesses have limited access to financing.

In a perfect capital market interest rates are the equilibrating force and default risk is the only reason why securities characterized by the same liquidity and maturity are priced differently. If markets are not functioning adequately, the shift of the supply curve is not the same as the shift caused by the same default risk level in perfect markets. Differences pertain to the size of the parallel shift as well as to the rotation of the new supply curve ( $S'$ ).

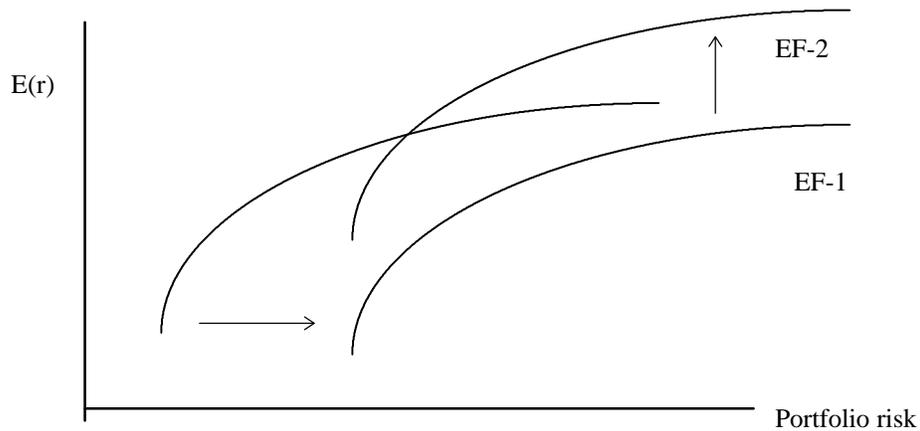
When the shift is parallel (see Figure 5) but higher than expected ( $S''$  instead of  $S'$ ) given the level of default risk, the market is failing to measure return rates in terms of the underlying project risk. Assuming the demand for credit is elastic this is translated into higher interest rates and lower

amounts of capital available for some users of capital. There are many explanations for this higher than expected parallel shift. One explanation is the high risk-aversity of local lenders combined with geographic segmentation of capital markets. In this case the tangency point between the average local lender indifference curve and the efficient frontier (see Figure 4) is located at the lower portion of the efficient frontier. So for the same increase in default risk, the local lenders will require higher rates of return. Further, the geographic market segmentation limits the access of non-local lenders to the local businesses who need financing, and the rates are significantly determined by the high risk-aversity of the local lenders.



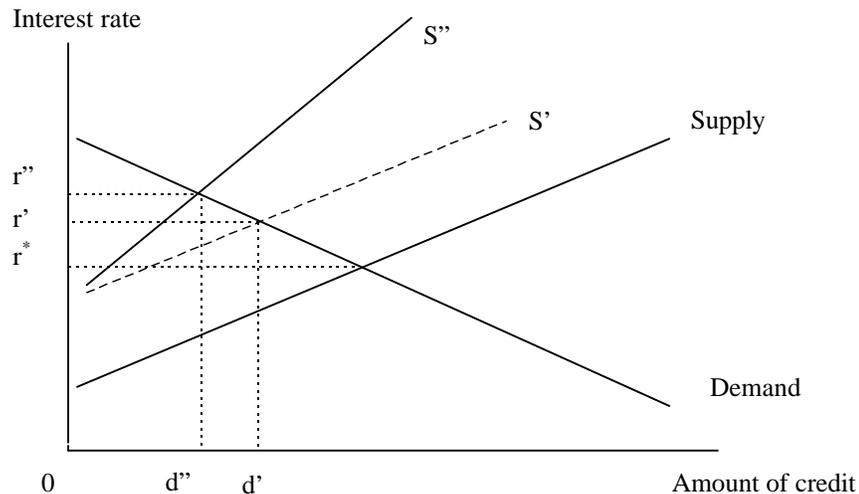
**Figure 5. Effect of market inadequacies on access to capital**

Another effect of local market segmentation is the shift in the efficient frontier itself. Market segmentation brings about lack of diversification of the local lenders. As a result, for the same rate of return higher portfolio risk is present. This brings about a right shift (see Figure 6) in the efficient frontier (EF-1). If market segmentation is combined with high concentration in the local loan market, for the same risk, the lenders will charge higher interest rates. In other words, the efficient frontier will shift upwards (EF-2). All this translates into a higher than expected shift in credit supply when market segmentation and lack of local competition are observed (assuming the demand for credit is price elastic).



**Figure 6. The effect of market segmentation and lack of competition on the efficient frontier**

When the shift in credit supply is associated with a rotation of the supply curve, risk might not be the only determinant of capital supply in the market. If the supply curve becomes more inelastic, the amount of capital that lenders are willing to offer is less affected by the level of interest rates. Again, assuming credit demand is price elastic, this situation is translated into higher interest rates and lower amounts of capital available to the users of capital (see Figure 7).



**Figure 7. Market inadequacies causing a rotation of supply curve**

The general explanation for the above mentioned rotation in the supply curve is that the costs of lending rise rapidly as the amount of credit rises. The question is whether this cost-amount

relationship is influenced by legitimate factors. The following are some cases when the change in this relationship are not determined by risk factors, and as a result can be considered as financial market inadequacies.

If the increase in the amount of credit requires the lenders to extend credit to businesses in sectors they are not familiar with, the cost of processing the loan application might rise, and as a result a rise in interest rates will not stimulate the lenders to increase the amount of credit in the same way as before. So, if the available investments are in businesses unfamiliar to the lender, then the individual lender's capital supply will rotate to the left, contributing to decreased elasticity of market supply.

Another case when non-risk factors determine the elasticity of credit supply is when the available new investments are in businesses organized as corporations. The agency theory suggests that there are additional costs related to lending to corporations given the conflict of interests between the managers and the shareholders. If these costs are high enough to slow down the increase in the amount of credit supply after an increase in interest rates, then the supply curve becomes inelastic. However, there is evidence on the monitoring role of banks. There are bank practices designed to monitor agency problems. These practices include restrictions on dividends, on debt issuance, on net worth, and on working capital. If this monitoring role of the banks is implemented successfully, there is no reason for this factor to cause the credit supply to be inelastic.

And finally another case when non-risk factors determine the elasticity of credit supply. When the demand for credit is mainly from small firms, the amount of loans requested is small. Given the fixed costs related to processing the loan application, banks are not interested to extend credit for very small loans. While this is a legitimate action on the side of the bank, firm size is a non-risk factor, and its influence in determining the in-elasticity of credit supply may be considered as a financial market inadequacy.

Perfect capital markets do not exist. There are numerous aspects of the rural capital markets that do not conform to the theoretical market clearing model. However, this model is useful as a benchmark for understanding and evaluating the performance of capital markets. The assumptions of this model are analyzed in the context of rural capital markets in Virginia, helping to identify testable hypotheses to be used later on in the study.

One major source of market imperfection is the social allocation of capital. When society is not satisfied with the outcomes of capital markets, government involvement helps redirect the flow of savings into socially beneficial uses of capital. Some examples of social allocation of capital are: Ceilings on borrowing costs, government guaranties, interest rate subsidies, government involvement through borrowing and relending, regulations on mortgage financing, and tax exempt financing.

While in the real world it is impossible to eliminate the presence of taxes, brokerage commissions, and government regulations, it is not impossible to have efficient capital markets. This means that even if rural capital markets are not perfect, the cost of market imperfections may be very small, so that the interest rates reflect all available information pertaining to expected return and the risk involved in any investment project. Efficient capital markets combined with the availability of capital in rural areas contribute to the achievement of rural capital market adequacy.

## 1.2 Hypotheses to be tested

Using the financial market clearing model as a benchmark to evaluate rural financial markets' adequacy means accepting the main assumptions of this model. Based on these assumptions and the conditions for rural capital market adequacy the main testable hypotheses to be addressed by this study are:

- 1) There is no association between non-risk characteristics of rural capital markets and access to capital. There is no association between non-risk characteristics of rural businesses and access to capital. Access to capital is determined mainly by risk characteristics of businesses;
- 2) Availability of capital is not an issue in rural capital markets in Virginia; and
- 3) There is complete information available to all users of capital on all sources of financing.

## 1.3 Variables relevant to rural capital market performance

Financing difficulty, as perceived by rural businesses, is considered in this study as the measure of market performance. It is expressed in different forms which might be grouped into two main categories: objective and subjective difficulty. Loan denial experienced by firms as well as firms' search for financing in non-local markets may be considered as objective evidence of financing difficulty. The use of non-local financing as a measure of financing difficulty is based on the assumption that the borrowers are reluctant to seek funds beyond the local market. If there is evidence of excessive borrowing non-locally, this is an indication of inadequate local capital markets.

Opinions expressed by firms on local market adequacy and on fairness of financing terms and conditions may be considered as subjective evidence of financing difficulty. In addition, opinions expressed on financing difficulty by the use of funds (such as working capital, machines, buildings, and so forth) may be considered as subjective financing difficulty as well.

The focus of this study is the analysis of the relationship of rural businesses financing difficulty to risk and non-risk related factors. In an adequately functioning capital market, non-risk related characteristics of businesses or lenders should not be correlated with financing difficulty.

Financing difficulty is the dependent variable, whereas businesses' risk and non-risk characteristics as well as financial institutions' characteristics are the independent variables in this analysis. The analysis of the statistical significance of the relationship between dependent variables and the

independent variables makes it possible to understand whether the financial difficulty experienced by the rural businesses in Virginia is a result of the selection process characteristic of a market economy, or whether it is a result of malfunctioning of the financial markets in rural Virginia. The main index of market inadequacy is the correlation of risk adjusted financial difficulty with non-risk factors (Shaffer et al., 1989).

Different businesses face different levels of financing difficulty. In adequately functioning financial markets, the level of financing difficulty depends only on firm specific risk characteristics. In this study the firm specific risk characteristics, which will be measured by independent variables, are represented by :

Sales Growth: Companies characterized by an increase in sales during the past years, generally are perceived as successful companies and are not expected to experience financing difficulties. Whereas, the opposite might be expected for companies with a decline in sales.

Business development stage: Start-up companies are believed to experience more difficulties in financing their projects. In most cases they lack the track record, the established relationship with the financial institutions, and the required collateral. Companies in the on-going and/or stable stage have better means to prove what they are capable of, and face less resistance from the financial institutions. However, when these companies decide to expand their activity, difficulties might arise. Companies experience difficulty also when in the stage of transition from one owner to another. The experience of the new owner determines the amount and the terms of financing received by the company. Therefore, business stage is an important variable in determining financing difficulty experienced by the firm.

Debt to assets ratio: Different companies choose to use different capital structures. High debt to assets ratios are an indicator of possible troubles given the disadvantages of debt financing. Interest on debt financing is a fixed cost and increases the break-even price for the company. If the business experiences difficult times, interest on debt is a cost that cannot be avoided. Debt is not permanent capital, it must be refinanced or repaid some time. The higher the debt to assets ratio, the more claims creditors have on the firm's assets that might be used as loan collateral. Therefore, in general, it is expected to find a positive relationship is expected between the debt/asset ratio and financing difficulty experienced by firms.

Managers' experience: The longer the experience of the manager and/or owner in the same type of business, the more comfortable the loan officer feels about lending money to the company. A negative relationship between the manager's experience and financing difficulty would be expected.

Firm's sector: Some sectors of the economy are perceived as riskier, considering the high fluctuation in their returns. Some other sectors are characterized by a high rate of failure. Firms in these sectors are expected to have to work harder for their financing, given the assumed risk-aversity of financial institutions.

In a market that is not functioning adequately, in addition to firm specific risk characteristics there are other factors that determine the level of financing difficulty, which will be measured by independent variables in the analysis.

1. Availability of capital: firms may experience financing difficulty when there is not enough capital available.
2. Non-risk business characteristics:

Size of the firm: This variable (by itself) should not affect financial difficulty experienced by firms. In other words, if two firms are in the same business stage, same sector, and so forth, and the only difference is the firm size, they should not experience differences in financing difficulty. Differences in financing difficulty imply local capital market inadequacies, since they might be explained by better access to non-local resources for large firms, high transaction costs for small loans usually requested by small businesses, or imperfect financial market information.

Firm's access to non-local capital markets: Firms operating in other locations except for in the local market may be assumed to have better access to non-local financial markets. If the local capital market is functioning adequately, these firms should not have any advantage from their access to non-local markets. In other words, they should not experience less financing difficulty than the other firms operating only locally. No significant relationship is expected between this variable and the dependent variable; however, if such a relationship is evident this indicates market inadequacies. One might argue that the firms operating in other locations, in addition to the local market, represent a more diversified and less risky investment. However the lender cannot rely only on this type of businesses to attain the desired level of geographic market loan portfolio diversification. Studies show that branch banking has an important impact on geographic market diversification of bank loan portfolio risk.<sup>5</sup> In other words if the lack of non-local locations is to be considered as a risk characteristic of the firm, it represents the diversifiable part of the lender's risk. If the lender is not able to eliminate this part of the risk, then markets are not functioning adequately.

Businesses' form of organization (sole proprietorship, partnership, and corporation): This variable relates to access to financing sources other than bank loans. If the loan market is not functioning adequately, chances are that a partnership would do better than a sole proprietorship given the fact that every owner may contribute his personal savings, or may ask family members and friends to contribute. In essence this translates into more access to other sources of funding for partnerships. For the same reason, corporations are assumed to do better than partnerships and sole proprietorships. However, if the loan market is functioning adequately, the firms' form of organization should not make a difference in financing difficulty.

Another point of interest in considering the form of ownership is agency conflict. Corporations are exposed to credit access constraints imposed by the potential of agency

---

<sup>5</sup> see Cherin and Melicher

conflicts. One might argue that this makes the form of business organization a risk factor. However, the agency conflicts are more important in the case of large corporations, given the small percentage of equity owned by the managers. In this study, the focus is on small businesses, so the effect of agency conflict in the financing difficulty experienced by rural businesses is assumed to be at least smaller than the above mentioned effect of better access to non-debt sources of capital. On the other hand there is evidence on the monitoring role of banks. There are bank practices designed to monitor agency problems. These practices include restrictions on dividends, on debt issuance, on net worth, and on working capital.<sup>6</sup>

Firm's competitors in the local market: The success of a loan request depends on how familiar the bank is with the kind of business. When the firm is engaged in an uncommon economic activity, chances are that the bank might deny the loan request. However, in an adequately functioning loan market this should not happen, given the assumption of perfect information.

The use of long term and short term financing: Commercial banks often limit their lending activity to short term loans that are continuously renewed. However, this is not a good substitute for long term loans since the borrower is exposed to the uncertainty of renewal, and this could hamper productive activity and investments. For a capital market to be adequate, the demand for any kind of financing should be satisfied, and the absence of long term local financing is evidence of problems.

### 3. Non-risk loan market characteristics:

Size of financial institutions present in the local market: When large banks are present in the local market, the amount of capital available for business lending is larger. If only small banks are present in the market they may not be able to satisfy local demand with their existing capital supply. However, in an adequately functioning market, the size of financial institutions should not influence the level of financing difficulty experienced by businesses.

Lender market concentration: When most of the loans in the local market are made by a small number of banks this indicates loan market concentration. In an isolated capital market, high concentration means high cost of capital. The literature reviewed in Chapter 2 indicates that rural capital markets are noncompetitive. Using this variable in the model helps determine if this is significant in determining financing difficulty for small rural businesses.

Lenders' experience in lending to certain types of businesses: Small rural banks are frequently considered to have less expertise in evaluating loan applications from uncommon businesses. Rural branches of large banks may not suffer the same problem, especially now that banks are practicing the process of centralized loan approval. However, analyzing the relationship between the lenders' specialization and the type of business of borrowers is of interest. Particularly, whether businesses that appear to be more familiar to the local lenders are experiencing less

---

<sup>6</sup> see Morgan.

financing difficulty and vice versa is worth investigating. In an adequately functioning capital market, this relationship should be insignificant.

Lenders' degree of risk-aversity: In the literature there are sources that suggest that real estate lending is a good proxy to measure lenders' risk aversity (Shaffer et al). This is based because real estate lending is characterized by highly "visible" assets which represent collateral that is relatively easy to collect. When lenders declare real estate lending as the focus of their lending activity, this might be a sign of high risk aversity. Furthermore, if this variable appears to be related to the degree of financing difficulty in the local market, this signals local market inadequacy.

Lenders' experience and focus on small business financing: Given that small businesses represent the majority of rural businesses, the lender's focus on small business financing is an important factor in rural financial markets.

## **II. Procedures**

The analysis is based on modeling financial difficulty (the dependent variable) as a function of independent variables. As discussed above the independent variables are separated in three groups: 1) Business specific risk factors, which include sales to debt ratio, net worth, business development stage, economic sector of the firm, and experience of the manager; 2) Non-risk related business characteristics which include access to non-local finance, use of loans, and access to non-bank financing; and 3) Non-risk related loan market characteristics, which include institutional constraints such as lender size, lender's business-specific lending experience, market concentration, and operational constraints such as lending focus and lending effort (Shaffer, Pulver, 1989).

In using the financial market clearing model, as a reference point for determining capital market adequacy, it is assumed that the non-risk related variables do not exercise any influence on the dependent variable. If the empirical model indicates these variables to be influential factors, this will be evidence of problems in Virginia's local rural financial markets.

### **II.1 The model**

The nature of the dependent variable (in this study) is the most important consideration in selecting the appropriate model to be used. The dependent variable in our model is financing difficulty. There are three categories of financial difficulty to be used in this study: (1) financing denial, (2) sources of new financing used by businesses, and (3) opinions of businesses on financing availability in the local market. All are qualitative variables and are defined as limited and/or dichotomous. This eliminates the possibility of using regression analysis which assumes that the dependent variable is continuous, and can take any value from negative to positive infinity. It can be proven that if the dependent variable can take on only two values, the homoskedasticity assumption of the regression model cannot be maintained (Aldrich, Nelson).

Most authors believe that non-linear models are more plausible than the linear models in case of limited dependent variables (Kennedy). There are a number of possible nonlinear specifications,

but probit and logit specifications have received more attention in the literature. In this study, both *probit* and *logit* specifications were employed. For a long time the use of *logit* had an advantage compared to other models assuming other distributions because it reduced the calculation time. However, this should not be a consideration when comparing different models, given the progress achieved in the computing industry. As discussed in more detail below, both *probit* and *logit* were used so that their results could be compared.

Probit analysis assumes that there is an underlying theoretical index  $Y^*$  defined by the following regression relationship:

$$Y_i^* = \sum b_k X_{ik} + u_i \quad (1)$$

Where:

- $Y_i^*$  = theoretical index for observation  $i$ ;
- $X_{ik}$  = independent variable  $k$  for observation  $i$ ;
- $b_k$  = unknown model parameter for variable  $k$ ; and
- $u_i$  = error term for observation  $i$ .

In real life,  $Y^*$  is not observable. Instead, what is observed is a dummy variable  $Y$  defined as follows:

$$\begin{aligned} Y &= 1 && \text{if } Y_i^* > 0 \\ Y &= 0 && \text{otherwise} \end{aligned} \quad (2)$$

From equations (1) and (2), it is clear that:

$$P(Y_i = 1) = P(Y_i^* > 0) = P(u_i < \sum b_k X_{ik}) \quad (3)$$

So, to estimate  $P(Y_i = 1)$ , the total (cumulative) probability that  $u_i$  is less than  $\sum b_k X_{ik}$  must be known, and this requires knowledge of the probability distribution of  $u_i$ . If  $u_i$  is a continuous random variable, as seems most reasonable, then equation (3) can be written as:

$$P(u_i < \sum b_k X_{ik}) \equiv P(u_i < Z_i) = F(Z_i) = \int_{-\infty}^{Z_i} f(u) du \quad (4)$$

where  $F(*)$  is the cumulative distribution function and  $f(*)$  is the probability density function of the random variable  $u_i$ . To simplify, define  $Z_i = \sum b_k X_{ik}$ . In the probit model, we assume that the probability distribution of  $u_i$  follows the normal distribution. So the probit model is given by:

$$P(Y = 1|X) = \Phi\left(\sum b_k X_k\right) = \int_{-\infty}^{\sum b_k X_k} \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{u^2}{2}\right) du \quad (5)$$

The unknown parameters for the probit model can be estimated by maximizing the likelihood function. Maximum likelihood estimation picks the parameter estimates that imply the highest probability of having obtained the observed sample value of  $Y$ . The probit likelihood function is given by:

$$L(Y|X, b) = \prod_{i=1}^N [\Phi(\sum b_k X_{ik})]^{Y_i} [1 - \Phi(\sum b_k X_{ik})]^{1-Y_i} \quad (6)$$

Assumptions of the probit model are given by Aldrich and Nelson: (1) The dependent random variable is assumed to be binary, taking on but two values. The outcomes of  $Y$  are assumed to be mutually exclusive and exhaustive. (2) The relationship between the dependent and independent variables is characterized by the normal unit cumulative density function. (3) The observations of the dependent variable are statistically independent of each other. (4) No exact or linear dependencies exist among the independent variables.

The interpretation of the dichotomous probit model is not straightforward, given the nonlinearity assumption. The following basis of interpretation is given by Aldrich and Nelson:

The  $Z$  values are linear functions of the exogenous variables, the variables determined outside the model, and thus change with each  $X_k$  according to the sign and the magnitude of the corresponding  $b_k$ .  $P(Y=1)$  varies directly with  $Z$ , but the rate of change is not constant: it depends on the magnitude of  $Z$ . This determines the relationship between  $P(Y=1)$  and each  $X_k$ . A given  $b_k$  determines the direction of effect, but the magnitude of the effect depends on the magnitude of  $Z$ , and that depends in turn on the magnitude of all the  $X_k$ 's.

The formula for calculating the derivative of  $P(Y=1)$  with respect to  $X_k$  in the probit cases is:

$$\frac{dP(Y = 1)}{dX_k} = \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{Z^2}{2}\right) b_k \equiv \Phi(Z) b_k \quad (7)$$

The term  $b_k$  appears as a multiplicative factor and in fact determines the sign of the effect, since the other factor is necessarily positive. But the effect of  $X_k$  on  $P(Y=1)$  is attenuated by a non-linear function of  $Z$ . Thus we see that the effect of a change in  $X_k$  on the

probability of the response  $Y=1$  is clearly related to, though not completely determined by,  $b_k$ . The sign of  $b_k$  determines the direction of the effect, and the effect tends to be larger the larger is  $b_k$  (p.43-44).

The logit model differs from probit based on the assumption of cumulative distribution. In this model, the individual critical values are distributed as hyperbolic-secant-square ( $\text{sech}^2$ ) distribution. The cumulative distribution in this case is the logistic function. The logistic function is given by:

$$F(Z_i) = \frac{e^{Z_i}}{(1 + e^{Z_i})}$$

It varies from zero to one as  $Z_i$  varies from  $-\infty$  to  $+\infty$  and looks like the cumulative normal distribution. In this case there is a closed form expression for  $F(Z_i)$ , because it does not involve integrals explicitly.

The likelihood function for the logit model is given by:

$$L(Y|X, b) = \prod_i \frac{e^{Z_i}}{(1 + e^{Z_i})} \prod_j \frac{1}{(1 + e^{Z_j})}$$

Where  $i$  and  $j$  refer to the two possible choices in the case of dichotomous dependent variables. Maximizing this likelihood with respect to the vector  $\beta$  produces the Maximum Likelihood Estimator (MLE) for  $\beta$ .

After estimating the probit and logit models, it is possible to investigate the influence of independent variables on financing difficulty experienced by the rural businesses in Virginia. This is possible through determining the significance and the sign of individual coefficients in the multivariate equations. It is of interest to compare the result obtained from both models. Because the cumulative normal distribution and the logistic distribution are very close to each other, the results obtained by these two models are expected to be very similar. However, the parameter estimates are not directly comparable. Different authors recommend different solutions to this problem. Maddala suggests multiplying by  $(30.5/\pi)$  the  $\beta$  estimates obtained from the logit model to make them comparable with the estimates obtained from the probit model. Amemiya suggests multiplying these estimates by 0.625 instead. In this case it really does not make a big difference whether one way or the other is used since the interest is not in the magnitude of these coefficients, but rather in their sign and their statistical significance.

As mentioned above, since these are not linear models, the derivatives are not constant. The influence of a change in the level of independent variables,  $X_k$ , does not depend only on the size of the  $\beta$  estimates, but also on the level of  $X_k$ . To understand the variation in the magnitude of the

derivatives it is necessary to calculate the derivative at different levels of the independent variable. This makes it possible to use the estimated model for sensitivity analysis and investigate which factors have more impact in reducing financing difficulty. However, given the nature of the dependent variable, this sensitivity analysis does not measure the impact on financing difficulty itself, but on the probability that businesses will experience financing difficulty.

Abstracting from the math, the model identifies the factors affecting capital availability in rural Virginia. It is especially important to know what factors become barriers or obstacles. The results are therefore an important base on which to suggest a possible role for the state, if any is apparent.

## II.2 Procedures for obtaining the data

### **II.2.1 Sample selection**

#### **II.2.1.a Selection of sample counties**

Principal components analysis was used to determine which are the most relevant county level growth variables to be used in selecting the sample counties. For budgetary reasons, five counties were to be chosen for the survey. The sample selection process sought to ensure wide variation in characteristics of local capital markets with the minimum sample size.

Two data sources were used:

- 1) 1993 County and City Extra (annual metro, city and county data book)  
Edited by: Courtenay M.Slater and George E.Hall
  
- 2) 1989 ERS County and Typology Codes

Given the direct relation of economic activity with the performance of financial markets, it is of interest to have a wide variety of economic conditions represented in the sample. In this part of the analysis, economic activity was represented by the county level scores in variables indicating the level of development, rate of economic growth, and sectoral mix. Table 3 - 1 gives the variables of interest within each of these groups.

**Table 3 - 1 County Variables of Interest**

VARIABLES	SYMBOL
<u>Variables indicating the level of development:</u>	
1 - Education (% with 12 years or more education)	EDUC
2 - Social Security program beneficiaries (rate per 1,000 resident population)	SSPB
3 - Money income per capita	MIPC
4 - Percentage of household with money income more than \$100,000	PHIM
5 - Percentage of substandard housing units	PSHU
6 - Rate of unemployment (percent of total civilian force)	RU
<u>Variables indicating fast versus slow economic growth:</u>	
1 - Percent change of household money income(1979-89)	PCHI
2 - Percent change in rate of persons below poverty level	PCPL
3 - Percent change in housing units (1980-90)	PCHU
4 - Percent change in private non-farm employment (1988-89)	PCPE
5 - Personal income percent change (1989-90)	PCPI
6 - Percent change of land in farms	PCLF
7 - Percent change of bank deposits (1988-89)	PCBD
<u>Variables indicating the sectoral mix:</u>	
1 - Farm Operators (whose principal occupation is farming)	FO
2 - Employment in manufacturing	EM
3 - Employment in retail trade	ER
4 - Employment in finance, insurance, and real estate	EF
5 - Employment in services	ES
6 - State and Local Government Employment	EG
7 - Earnings in percent by industry:	
• farming	ERFM
• manufacturing	ERM
• retail trade	ERR
• finance, insurance and real estate	ERFN
• services	ERS
• government	ERG
6 - Value of product sold by agricultural farms	VPSF
7 - Value added by manufacturing	VAM
8 - Sales by wholesale trade	SW
9 - Sales by retail trade	SR
10 - Receipts of service industries	RS

With such a large set of variables, it is difficult to determine which are the best counties to represent rural Virginia in this study. Principal Components analysis was used to reduce the dimensionality of the variable set. Through this analysis the original set of variables was transformed into a substantially smaller set of uncorrelated variables that represents most of the information in the original data set.

The variables in the new set are uncorrelated linear combinations of the original variables. The weights of the original variables in these linear combinations are mathematically determined to maximize the variation of the linear composite (principal component), or equivalently to maximize the sum of the squared correlations of the linear composites with the original variables.

The variance of a linear composite  $\sum_{i=1}^p a_i x_i$  is:  $\sum_{i=1}^p \sum_{j=1}^p a_i a_j \sigma_{ij}$

As can be seen from **Appendix C, Table C 1** the original data set is made of variables measured in different units, and is characterized by large differences in variances among the variables. This is the reason why the standardized variables were used. The variance of the standardized variables is represented by the correlation matrix given in **Appendix C, Table C 2**.

The correlation coefficient between employment in retail (ER) and sales in retail (SR), as well as between employment in services (ES) and receipts in services (RS) was one. Since this implies redundancy, ER and ES were dropped from the data set.

Principal Components analysis reduced the variable set into four dimensions. The weights of the original variables in each principal component are shown in **Appendix C, Table C 3**. The chosen Principal Components represent cumulatively 63.12 percent of the total variance across counties. Principal Component I is the most important. It represents 33.64 percent of the total variation.

After calculating the scores of each county for all four principal components (see **Table C 4** in **Appendix C**) the following selection process was conducted. The main objective of this process was to ensure the necessary variability of data.

1. From the complete list of Virginia counties, the Statistical Metropolitan Areas (SMA) were excluded;
2. Counties within 1 standard deviation from the State mean of Principal Component 1 were selected;
3. From these counties the ones within 1 standard deviation from the State mean of Principal Component 2 were selected;
4. From these counties the ones within 1 standard deviation from the state mean of Principal Component 3 were selected;

5. From these counties the ones within 1 standard deviation from the state mean of Principal Component 4 were selected; and
6. As a final result 27 counties were selected (see **Appendix C, Table C 5**).

The mean score in each Principal Component (PC) was calculated for the selected counties (see **Appendix C, Table C 6**).

The selected counties were grouped into 5 groups:

- 1 - Counties with high scores in all PCs:  
Franklin, Mecklenburg
- 2 - Counties with high scores in three out of four PCs:  
Accomack, Alleghany, Appomattox, Louisa, Patrick, Wythe
- 3 - Counties with low scores in three out of four PCs:  
Bland, Brunswick, Nelson, Richmond, Westmore
- 4 - Counties with low scores in PC1 & PC3 and high scores PC2 & PC4:  
Charlotte, Halifax, Northumberland, Rockbridge, Sussex
- 5 - Counties with low scores in PC1 & PC4 and high scores in PC2 & PC3:  
Caroline, Carroll, Essex, Grayson, Greensville, Middlesex, Page

Scores below the sample mean score were considered low, and scores above the mean were considered high.

One representative was picked from each group. In picking the representatives other county characteristics were also taken in consideration, such as: poverty level, economic specialization of the county, presence of urban areas in the county, and being adjacent to Statistical Metropolitan Areas. The counties selected were:

- Group 1: Brunswick County.  
This is a “non-specialized” county. It is a completely rural county (no places with population of 2,500 or more). It is adjacent to a metropolitan area, and more than 20 percent of the total population of this county earns poverty level income.
- Group 2: Patrick County.  
This is a county specialized in manufacturing. It is a completely rural county (no places with population of 2,500 or more). It is not adjacent to any metropolitan area, and it is classified as a commuting county.
- Group 3: Halifax County  
The economic specialization of this county is manufacturing. It has urban areas with population between 2,500 and 19,999 and is adjacent to a metropolitan area.
- Group 4: Mecklenburg County

This county is specialized in manufacturing. It has urban areas with population between 2,500 and 19,999 and is not adjacent to any metropolitan area.

Group 5: Grayson County

The economic specialization of this county is manufacturing. It is a completely rural county (no places with population of 2,500 or more). It is not adjacent to any metropolitan area, and is classified as a commuting county.

The sample counties are a good representation of the economic specialization of Virginia's non-metropolitan counties. Out of all non-metropolitan counties in Virginia 36 percent are classified as counties specialized in manufacturing (with over 30 percent of income from manufacturing) and 32 percent are classified as non-specialized. In the sample four counties are specialized in manufacturing and one is non-specialized. In the sample there are two counties classified as commuting counties. Out of all non-metropolitan counties in Virginia 44 percent are classified as commuting counties, that is counties with 40 percent or more of the county's workers in commuting jobs. Persistent poverty counties are also represented in the sample by Brunswick County.

#### II.2.1.b Selection of Sample Businesses Within the Sample Counties

Three sources of data were used to obtain mailing addresses. First, the Virginia Agricultural Statistics Department provided a random sample of 200 farm addresses for each sample county. Second, the Virginia Employment Commission (VEC) provided the complete list of businesses in those counties registered for unemployment insurance purposes. Since this list included only the businesses which use hired labor, this was not a complete representation of the non-farm sector, given that there are many small businesses that use only family labor. As a result, a third source of business addresses was used to supplement the VEC list: the business phone directory.

The VEC list contained 1,857 private businesses in the sample counties. This list provided information on the number of employees in each establishment. Based on the SBA size standards<sup>7</sup>, only small businesses were selected. Businesses with incomplete addresses were eliminated. Then the list was sorted based on the SIC data and a random sample was selected. The random sample was generated by picking one out of each two businesses. Sorting based on the SIC codes ensured that every SIC was represented proportionately in our sample. As a final result, 773 non-farm businesses were selected.

The phone directory list was used to find businesses addresses for small establishments that do not use hired labor. A list of business which were not on the VEC list was selected as a sample frame. SIC codes related to farming and government sector were eliminated. Then this list was sorted based on the SIC codes and one out of three businesses was selected. The total number of businesses selected in this way was 232.

---

<sup>7</sup> These standards are defined by Standard Industrial Code (SIC). Firms of each SIC can qualify as a SBA small businesses only if their number of employees or the amount of sales is less than these standards.

### II.2.1.c Selection of sample financial institutions

From all the financial institutions with branches located in the five sample counties all the commercial lenders were selected. Then a telephone survey was conducted where lenders were asked whether they provided financing to local businesses. If they did not, they were dropped from the sample.

## **II.2.2 The Survey Instrument**

### II.2.2.a Small business survey

Before mailing the survey, the questionnaire was tested by four small business owners/managers and modifications were made accordingly. A copy of the small businesses survey is in **Appendix D**. The questionnaire was made of two main sections: general information about the company, and information on their experiences in financing their business. The general information about the company was intended to collect data on risk related as well as on non-risk-related characteristics of the surveyed businesses.

Risk related characteristics of businesses:

- (1) Sales growth in percent during the last two years. Interval choices were provided for this question. One of the choices was: "Business too new to compare".
- (2) Debt to assets ratio. Interval choices ranking from zero to 100 percent and more were provided as possible answers to this question.
- (3) Business development stage. Six stages were included in the answer choices: Planning phase, start/phase up, on going, stable, transition one owner to next, and phase down or out.
- (4) Economic sector of the borrower. The two main groups of sectors for this question were Agricultural and Non-agricultural sectors. One of the goals of our study is to understand whether there is any difference in business financing between these two sectors.
- (5) Management experience was measured by the number of years of experience of the owner or the manager in the type of business.

Non-risk related business characteristics:

- (1) The use of non-local financing. Participants were asked to report the proportions of new debt and equity financing based on the location of the source. Local sources were divided into two groups: within 15 miles and 15-50 miles. The purpose of this question was to find out what the geographical boundaries of local financial markets as perceived by the users of capital are. Non-local locations were considered sources beyond 50 miles.
- (2) The use of long term and short term financing. Participants were asked information on the number and the amount of loans of different maturity with the purpose of finding out the predominant loan size and maturity in the local market and how it is related to financing difficulty of small businesses.

- (3) The use of non-bank financing. The survey provided information on sources of financing other than banks.
- (4) Familiarity in the local market. Businesses were asked on the number of competitors in the local market, as well as on the market share of their business.

The users of capital were questioned on their experience in financing their business and their opinions on:

- (1) Financial market adequacy as determined by:

Financing difficulty experienced by firms. This was measured by the reported loan denials and/or underfunding.

Sources of new financing (debt and equity) used by firms. The purpose here was to understand the proportions of local and non-local financing used by firms.

Opinions regarding financial market adequacy. This was measured by ranking the businesses' opinion from very poor to excellent and was based on their general perception derived from their own experience.

Opinions regarding terms of finance. The answers were based on ranking the specific terms such as loan interest rates, fees and other charges, collateral, compensating balance, and so forth, for locally obtained business financing in the last two years. The purpose here was to understand whether the terms are very restrictive, reflecting the market segmentation and the lack of local competition.

- (2) Role of the government in financial markets.
- (3) Existing financing programs and sources of technical assistance.

#### II.2.2.b Financial Institutions Survey

The questionnaire was tested by three bankers before mailing the survey to the financial institutions and their comments were reflected. A copy of this questionnaire is in **Appendix D**.

This part of the survey explores the hypothesis that the local rural financial markets are segmented geographically. It also helps in determining whether supply or demand side limitations are more critical for growth in the local markets. The mail survey was combined with telephone interviews with top management of selected financial institutions and interviews with selected local bank managers in the sample counties.

The providers of capital were questioned on their perception of the characteristics of the local rural capital markets such as: the geographic definition of local capital market, the recent changes in local capital markets, the capital flow across local market boundaries, local loan demand, and major reasons for loan denials.

In addition, the providers were questioned on their experience in financing rural businesses such as: length of working relationship, ease and/or difficulty of financing related to business stage and kind of financing, ownership structure, quality of funding requests, lending limits, use of government Guaranties and other programs, and the debt/equity structure of their financing.

In order to obtain information on non-risk related loan market characteristics, the providers of financial capital were questioned on the institutional lending capacity and the use of this capacity which includes:

- (1) Asset size of the financial institution.
- (2) Lending experience. This was measured by the share of different economic sectors in the loan portfolio of local lenders.
- (3) Amount of local loan portfolio of the financial institution. This information made possible the calculation of lending concentration in the local market, which was measured by the sum of squares of loan market shares of each lender present in the local market.

In addition, information on operational behavior was asked, including self reported investment focus, and lending effort of local lenders.

### **II.2.3 Method of Data Collection**

Businesses in rural areas can be grouped into two major groups, Farm and Non-farm businesses. There are more than 2,000 non-farm businesses and about 4,000 farms in our five selected counties. A mail survey was sent to a random sample of these businesses the second week of October, 1996. Then a post card reminder was mailed the third week of November, and a second survey was mailed later during the second week of December to increase the rate of response.

## Chapter 4. Data Description and Analysis

### *I. Description of survey data*

A mail survey was used to collect information from the users of capital. The total number of responses received was 399 and the rate of response was 22.3 percent (see Table 4 - 1 ). Many questions pertained to sensitive information such as the debt ratio, loan request denial, and sources of financing, thus this response rate was reasonable.

**Table 4 - 1 Mail survey response rates for users of capital, by sources of mailing addresses**

	Farms List <sup>8</sup>	Non-Farm Businesses		Total
		VEC <sup>9</sup>	Phone Directory	
Viable Sample Size	860	750	183	1793
Usable Questionnaires	148	221	30	399
Surveys mailed	1000	773	231	2004
Blanks & Undeliverable	140	23	48	211
Usable Survey Response Rate	17.2 %	29.5 %	16.4 %	22.3 %

If a survey was returned by the post office as “undeliverable” the firm was assumed to be out of business. The reasons for the surveys that were returned blank varied and included the following: the owner was deceased, retired, refused to respond on “proprietary information”, was too old, or was out of business. Most of the blank surveys came from the farmer sample.

#### 1.1 Capital users: general business characteristics of respondents

The survey respondents represent a diverse group of businesses. Non-agricultural businesses represent 60 percent of respondents (see Table 4 - 2). Two major groups within non-agricultural respondents are: professional services (28 percent) and retail (19 percent). The majority of agricultural sector respondents (79 percent) are farmers, followed by farm equipment at only 7 percent.

---

<sup>8</sup> This list was provided by the Virginia Agricultural Statistics Department

<sup>9</sup> Virginia Employment Commission

**Table 4 - 2 Agricultural and non-agricultural survey respondents distributed by the economic sector**

Sector	Respondents	
	Number	Percent
Agricultural	156	100
processing	2	1
input supplier	3	2
farm equipment	11	7
farming	123	79
other...	17	11
Non-Agricultural	241	100
retail	46	19
wholesale	9	4
durable manufacturing	10	4
non-durable manufacturing	6	2
business services	21	9
professional services	68	28
construction	24	10
transportation	7	3
other...	50	21
N/A	2	

The majority of the respondents are small businesses. Forty-three percent of businesses report annual sales less than \$100,000 and only three percent report annual sales greater than \$5 million (see Table 4 - 3). There are 16 percent of respondents who report sales of less than \$10,000 and 78 percent of these were farmers.

**Table 4 - 3 Agricultural and non-agricultural survey respondents distributed by total annual sales category**

Sales interval	Agricultural		Non-Agricultural		Total %
	#	%	#	%	
less than \$10,000	56	36	9	4	16
\$ 10,000 - 100,000	55	35	52	22	27
\$ 100,000 - 5 M	41	26	163	68	52
more than \$ 5 M	2	1	11	5	3
N/A	2	1	6	2	2
Total	156	100	241	100	100

Most of the respondents are strictly locally functioning firms. Only 10 percent of respondents report non-local (15-50 miles) locations in addition to local locations, and only 4 percent of

businesses report non-local locations beyond 50 miles. The average number of locations per business in the local area (within 15 miles) is 1.25 and the number of local locations ranges from 1 to 9 locations.

The majority of agricultural businesses (68 percent) are sole proprietorships, followed by partnerships with 16 percent and corporations with 12 percent. Non-Agricultural businesses are 50 percent corporations, 43 percent sole proprietorships, and three percent partnerships (see Table 4 - 4).

**Table 4 - 4 Agricultural and non-agricultural survey respondents distributed by the form of business organization**

Form of Business Organization	Agricultural		Non-Agricultural	
	#	%	#	%
Sole proprietorship	106	68	104	43
Partnership	25	16	8	3
Corporation	19	12	120	50
Cooperative	2	1	1	0.4
Other	4	3	8	3
Total	156	100	241	100

The current stage of business varies among respondents, however the majority of businesses (81 percent) are in the on-going or stable stage (see Table 4 - 5). Only five percent of respondents are in the start-up or planning phase and 12 percent are phasing down or out. The mix of agricultural sector respondents appears to be slightly more diverse with 71 percent of respondents in the on-going or stable stage, five percent in the start-up or planning phase, and 19 percent phasing down. The mix of non-agricultural sector respondents is more concentrated, with 87 percent of respondents in the on-going and stable stages.

**Table 4 - 5 Agricultural and non-agricultural survey respondents distributed by the stage of business cycle**

Stage	Agricultural		Non-Agricultural		Total %
	#	%	#	%	
Planning Phase	3	2	3	1	2
Start/phase up	4	3	6	2	3
On going	55	35	108	45	41
Stable	56	36	102	42	40
Transition one owner to next	1	1	5	2	2
Phase down or out	30	19	17	7	12
Other	7	4	0	0	2
Total	156	100	241	100	100

Almost two thirds of respondents report stable or increasing annual sales for the last two years, and 25 percent report a decrease in sales (see Table 4 - 6). Some relationship is evident between the size of the business and the percent change of sales during the last two years: the larger the firm the more likely it is to have reported an increase in sales. The majority of firms with sales more than \$100,000 reported an increase in sales during the last two years (see Table 4 - 7).

**Table 4 - 6 Agricultural and non-agricultural survey respondents distributed by the change in sales during the last two years**

Sales Change	Agricultural		Non-Agricultural		Total
	#	%	#	%	%
Increase	55	35	133	55	47
No change	39	25	36	15	19
Decrease	48	31	52	22	25
Business too new to compare	3	2	11	5	4
N/A	11	7	9	4	5
Total	156	100	241	100	100

**Table 4 - 7 Percentage of survey respondents with increase, no change, or decrease in sales during the last two years, by the total annual sales categories**

Total Annual Sales	Change in sales during the last two years					
	Increase	No change	Decrease	Business too new to compare	N/A	Total
	----- percent of respondents -----					
less than \$10,000	15	35	34	6	9	100
\$10,000 - 100,000	38	19	29	7	7	100
\$100,000 - 5 M	62	15	20	1	1	100
more than \$ 5M	69	8	23	0	0	100
N/A	13	13	25	0	50	100
Total	47	19	25	4	5	100

The management of the responding businesses is experienced. The average length of experience is 22.5 years; however a wide range of years of experience is present. There are some managers with only one year of experience and there are some reporting “life” experience (in Table 4 - 8 these respondents are included in “more than 40 group). More than half (53 percent) of respondents report 11-30 years of experience.

**Table 4 - 8 Agricultural and non-agricultural survey respondents distributed by the manager/owner s years of experience**

Experience category (years)	Agricultural		Non-Agricultural		Total %
	#	%	#	%	
less than 10	14	9	38	16	13
11 - 20	23	15	79	33	26
21 - 30	35	22	74	31	27
31 - 40	31	20	27	11	15
more than 40	34	22	18	7	13
N/A	19	12	5	2	7
Total	156	100	241	100	100

No debt is reported by 40 percent of respondents and 33 percent report debt to assets ratios of less than 30 percent. Only five percent of respondents report debt to assets ratios higher than 70 percent. This suggests a conservative behavior towards debt financing (see Table 4 - 9).

**Table 4 - 9 Agricultural and non-agricultural survey respondents distributed by the category of debt to assets ratio**

Debt/Assets Ratio	Agricultural		Non-Agricultural		Total %
	#	%	#	%	
No Debt	67	43	92	38	40
< 10%	34	22	41	17	19
10-29%	23	15	32	13	14
30-49%	12	8	27	11	10
50-69%	7	4	24	10	8
70-89%	6	4	8	3	4
90-99%	1	1	1	0	1
100% or more	0	0	5	2	1
N/A	6	4	11	5	5
Total	156	100	241	100	100

Of all respondents, 66 percent report new debt financing during the last two years, while equity financing during the last two years is reported only by 26 percent of respondents. The majority (86 percent) of new equity financing is reported by businesses in the on-going and stable stages.

In general, the loan market is characterized by limited use of loans as well as small loan sizes. Of all the respondents 57 percent report "No Short-term Loans" and nine percent do not disclose any information about last years' short term loans, which may mean that they did not borrow the last two years. The majority of short term loans reported (71 percent) are loans of less than 50

thousand dollars, and only 13 percent of short term loans are loans of more than 100 thousand dollars.

Of all the respondents 69 percent report "no intermediate term loans" and nine percent do not disclose any information about last years' intermediate term loans. The majority of reported intermediate term loans (80 percent) are loans of less than 50 thousand dollars. Only 8 percent of these loans are loans of more than 100 thousand dollars. Only ten percent of respondents report long term loans. Even these loans are characterized by relatively small sizes. Only 34 percent of reported long term loans are of an amount higher than 100 thousand dollars.

## 1.2 Capital suppliers

Two methods were used to collect the information from the local capital suppliers. First a questionnaire was mailed to all financial institutions (38 including branch offices) located in the sample counties which provided capital to local businesses (see **Appendix D**). Only 50 percent of financial institutions responded to the mail survey, so a telephone survey was used to supplement the written responses. The telephone survey was a reduced version of the mail survey. It only pertained to the questions in the first section of the questionnaire (general information about the institution). All of the remaining financial institutions responded to the telephone survey. In this way the information needed for this analysis was obtained from all institutions.

### 1.2.1 General characteristics of respondents

The financial institutions which supply capital to small businesses in the sample markets are mainly commercial banks and loans are the main source of financing. Large and regional banks are present with at least one branch in all sample counties. In addition there are small local banks active in the market.

Based on the reported data on the local loan portfolio of each bank present in the market a coefficient of local market concentration was calculated as the sum of squares of individual banks' local market shares (see Table 4 - 10). The higher the coefficient, the more concentrated the local loan market. A market concentration coefficient of one is the maximum and is reached when only one lender is present in the market. Grayson, Halifax and Mecklenburg counties appear to have intense competition in place, while in Patrick and Brunswick counties most lending activity is concentrated in a limited number of banks.

**Table 4 - 10 Local loan market concentration by county**

County	Market Concentration Index
Brunswick	0.52
Grayson	0.29
Halifax	0.26
Mecklenburg	0.25
Patrick	0.75

The major lending activity differs from one county to another (see Table 4 - 11). There are lenders which report two major lending activities. Real estate and consumer lending represent the major lending activities for the majority of lenders in Brunswick and Grayson Counties. Halifax, Mecklenburg and Patrick counties appear to have more lenders focused on business lending (farm and non-farm).

**Table 4 - 11 Percentage of lenders in each county reporting real estate, consumer lending, farms, or business lending as one of their major lending activities**

Major Lending Activity	Percent of lenders by County					Total
	Brunswick	Grayson	Halifax	Mecklenburg	Patrick	
Real estate	67	67	0	9	14	26
Consumer	67	44	25	18	14	29
Farms	33	11	38	45	29	32
Non-farm Small and Commercial Business	0	22	38	36	57	34

Survey participants were asked about the composition of their business financing portfolio. Lending to farmers and to retail businesses is the major specialization of local lenders in the sample counties (see Table 4 - 12). In Brunswick, which is a non-specialized county, the majority of lending (75 percent) is extended to farmers. The Farm Credit System (FCS) is the main provider of capital for farmers in this area. However, commercial banks also have a considerable amount of their loan portfolio invested in farms. While four of the sample counties are classified as manufacturing counties, Patrick County is the only one where a considerable proportion of the local loan portfolio is extended to this sector.

Only five lenders in the sample counties do not report efforts to expand geographically. Two of them are located in Mecklenburg County, two in Patrick country and one in Grayson County. The majority of lenders report that efforts are being made to expand the market geographically. The most popular effort at expanding markets appears to be “increased calling effort by existing personnel”, followed by formal and informal advertising. Expanding cooperative efforts with other lenders was reported by only one bank.

**Table 4 - 12 Lenders' business lending specialization in each economic sector, by county**

Sector	Proportion of aggregate business loan portfolio				
	Brunswick	Grayson	Halifax	Mecklenburg	Patrick
Retail	8	45	41	29	32
Wholesale	8	0	0	8	0
Manufacturing	0	7	16	8	36
Services	0	2	0	4	1
Construction	8	2	10	7	1
Transportation	0	1	0	0	0
Farming	75	42	34	44	30
Farm Equipment	0	2	0	0	0
Total	100	100	100	100	100

In a bank study conducted by the Office of Advocacy, U.S. Small Business Administration<sup>10</sup> an index of small business lending was calculated. This index is an aggregate measure of small business lending activity by state. The five elements of this aggregate measure are: dollar amount invested in small business loans relative to total bank assets, total business loan portfolio and total deposits as well as the total dollar amount and number of small business loans.<sup>11</sup> The national average of this index is 27. In the sample there are three banks scoring more than the national average. Two of these banks (Grayson National Bank and Premier Bank) are located in Grayson County and one (First National Bank of Stuart) in Patrick County (see Table 4 - 13). The national average by size category of banks is also exceeded by these and other banks in the sample. However, there are some banks that score significantly below the national average in their size category.

<sup>10</sup> A Directory of Small Business Lending in the U.S Reported by Commercial Banks June 1995 Edition  
<http://www.sbaonline.sba.gov/SmallBusinessLending1995>

<sup>11</sup> Each element of this index takes on the value 10 if the bank ranks as one of the top ten percent banks of its size, 9 if it ranks as top twenty percent and so on. The minimum is one, corresponding to the bottom ten percent. The sum of the ranks of all five elements gives the aggregate rank of the bank.

**Table 4 - 13 Sample banks ranking by small business lending activity<sup>12</sup>**

Bank Name <sup>13</sup>	Size category of bank	Bank Score	National average score by size category	Virginia average score by size category
First-Citizens Bank & Trust Co.	> \$3B	14	24	21
First Union	< \$100M	25	27	26
Grayson National Bank	\$100M-300M	40	30	30
Signet Bank	> \$3B	23	24	21
Premier Bank	< \$100M	28	27	26
Central Fidelity National Bank	> \$3B	25	24	21
Crestar Bank	> \$3B	25	24	21
Community National Bank	\$100M-300M	21	30	30
Nations Bank	> \$3B	23	24	21
Central Fidelity Bank	< \$100M	3	27	26
First Virginia Bank South Hill	< \$100M	16	27	26
First National Bank Of Stuart	\$100M-300M	31	30	30

### 1.2.2 Lender's perception of the local capital markets

The lenders' perception of recent changes in local financial markets varies. The most common assessments are those related to increased competition in the local financial markets. About 53 percent of respondents believe that their competitors have been offering easier loan terms during the last two years. Some of them (47 percent) think that their competitors are taking more risk recently and 37 percent state that competition has expanded financial product lines.

Local demand for small business financing is considered to be average by 53 percent of respondents, compared to other areas. Only one respondent reports above average demand for small business financing and 42 percent consider the demand to be below average or weak demand.

Financing existing businesses is reported as the most common financing request by 53 percent of respondents. However, two small local banks located in Grayson and Mecklenburg counties, report financing start-ups as the most common requests. Refinancing without expansion and financing expansion are reported as the most common financing request by 26 and 16 percent of respondents respectively.

<sup>12</sup> Source: A Directory of Small Business Lending in the U.S Reported by Commercial Banks June 1995 Edition <http://www.sbaonline.sba.gov/SmallBusinessLending1995/>

<sup>13</sup> Only commercial banks were included in this study. Many of the banks in this table have more than one branch in the sample counties.

The most common size of loan requests reported by all respondents is under 100 thousand dollars. Loan requests between 20 and 50 thousand dollars are reported as the most common loan size by 58 percent of respondents, 26 percent report loan requests between 50 and 100 thousand dollars as the most common size. Small loan requests (less than 20 thousand dollars) are reported as the most common size by 16 percent of respondents.

During the last year, 26 percent of respondents report a decline in their small business loan portfolio. All the respondents reporting a decline are small lenders, with less than 100 million dollars of total assets. However, the majority (69 percent) of responding small lenders report positive or no change in their small business loan portfolios during the last year. All responding large lenders (more than 3 billion dollars total assets) report positive changes in their small business loan portfolio.

The analysis of lenders' responses provided useful information on the details of loan application, and how rural businesses cope with the requirements of the loan application process. The responses demonstrate that rural businesses are not very familiar with the process. The majority of lenders (95 percent) report that less than 10 percent of customers provide a business plan when requesting a loan. Cash flow analysis is provided with the initial loan request by less than 10 percent of customers. Balance sheets appear to be the most familiar document to loan applicants (58 percent of lenders report that a balance sheet is provided by the applicants with the initial loan request). Also accountant records often are not provided, with 63 percent of lenders reporting 25 percent or fewer customers who provide these documents when requesting a loan.

The majority of small business loans reported by the respondents are for facilities and land with a combined average of 55 percent of all small business loans. Another important use of funds is working capital and operating expenses with a combined average of 36 percent of all small business loans. Product development is not one of the main uses of borrowed funds by small businesses, on average it only represents one percent of small business loan portfolios.

### 1.2.3 Sources of financing

Only two respondents from the private sector report having used government sponsored programs as a source of financing. One of them states they do not see any advantage in using them again, given the complicated nature of the process. On the other hand, all Farm Credit System (FCS) respondents report using government guaranties programs issued by Farm Service Agencies and assess them to be advantageous in coping with high risk situations.

### 1.2.4 Local business financing

The proportion of small business financing in the lender's local loan portfolio ranges from 10 to 50 percent. The majority of small business financing consists of businesses in the expanding and maintenance stages. However, start-up businesses represent an important portion of business financing, ranging up to 50 percent of some small banks' business financing portfolios.

Almost all respondents report pre-venture and start-up stages as the most difficult stages to be financed, followed by ownership transition. Expansion and maintenance stages are reported as easier to be financed. While most of respondents appear to agree on the degree of financing difficulty related to the business development stage, conflicting opinions are reported on financing difficulty based on the type of business. However, two distinct groups do emerge: retail, manufacturing, services and agricultural businesses appear to be relatively less difficult to finance compared to wholesale, construction and transportation businesses.

### 1.2.5 Financing procedures

On average local lenders report spending more effort on start-up businesses' loans compared to loans to businesses in other stages of the business cycle. In particular, more time is spent for developing economic and marketing forecasts, for on site visits and counseling, for personal finance and tax planning as well as for arranging outside assistance. However, businesses in the expansion stage appear to demand as much effort as start-ups for business plan reviewing and even more than start-ups when it comes to frequency of performance goals reviews.

In general, terms of financing do not vary widely by stage of development. The only terms of financing sensitive to development stage are the use of collateral and guaranties. The use of collateral appears to be more restrictive for businesses in the start-up and expansion stages. Guaranties are of more importance in the start-up stage only.

The most frequent reasons for loan denials, as reported by local lenders, include the applicants' weak financial statements, too much outstanding debt and/or insufficient equity, as well as poor projected cash flow. The average index<sup>14</sup> for these reasons is respectively 3.8, 3.7, 3.9 and 3.8. It is less likely for a loan application to be denied for reasons such as insufficient funds available and improper timing for the credit supplier. The average index<sup>15</sup> for these reasons is 1.8 and 1.9 respectively.

After denying a loan application, the most common lenders' suggestions to the applicant include exploring other financial alternatives with the same lender, revising plans before reapplying with the same lender, and increasing the equity base.

### 1.2.6 Policy opinion questions

Opinions are divided on most policy opinion questions (see Table 4 - 14). Some bankers (26 percent) were interested in government providing assistance in selling loan participations. A higher response rate was found for the question on government assistance to analyze loan applications from unfamiliar businesses, with 42 percent of respondents reporting that government assistance would be useful.

---

<sup>14</sup> This index equals three when this reason occurs sometimes and four when it occurs frequently.

<sup>15</sup> This index equals two when this reason occurs rarely and one when it never occurs.

**Table 4 - 14 Lenders responses to some of the policy opinion questions**

Question	Percent of respondents		
	Yes	No	N/A
Would you make use of government help to sell loan participations?	26	32	42
Do you see it useful to broaden the Farmer Mac's authority to include other types of rural loans?	26	37	37
Would it help if government provides help for analyzing loan applications in business areas with which you are not familiar?	42	37	21
Do you prefer direct loans more than loans with guaranties?	89	-	11

The respondents feel more strongly about government loan guaranties. All respondents to this question prefer direct loans more than loans backed by government guaranties. One of the respondents suggests that instead of guaranties the government should offer to cover part of the initial costs of business investments in Virginia.

Opinions are divided on the question of government involvement in risk reduction programs. The average rank<sup>16</sup> of responses to this question is 3.1 indicating that the banking community is divided into two groups: one strongly agrees with the idea that the government should get more involved in facilitating credit availability through risk reduction programs, and the other strongly disagrees. Some of the respondents who agree recommend “less restrictions” imposed by the government and reduced paperwork to allow easier access to these programs.

When asked “what types of public programs or state regulations do you see providing positive economic incentives in Virginia ?”, respondents generally failed to provide an answer. This suggests lack of agreement concerning existing public programs.

## **II. The empirical model**

### **II.1 Model construction and Measurement of relevant variables**

As described in Chapter 3, the independent variables in the model are grouped into risk and non-risk variables. In this study Shaffer and Pulver's (1990) definition of market inadequacy is adopted. The main assumption is that there is no financial market inadequacy if the financial difficulty faced by businesses is determined exclusively by business specific risk characteristics.

<sup>16</sup> Respondents were asked to rank their responses from 1 to 5 with one indicating that they strongly agree and 5 indicating that they strongly disagree.

On the contrary, if there is evidence that other non-risk business and market characteristics influence financing difficulty then there is reason to believe that rural financial markets are not functioning adequately. The model can be written as:

$$Y_i = \Phi(X_i\beta)$$

where  $Y_i$  =  $\text{Prob}(Y_i = 1 | X_i)$   
 that is, the conditional probability of firm  $i$  to experience financing difficulty  
 = 0 if firm does not experience financing difficulty  
 = 1 if firm experiences financing difficulty;  
 $\Phi$  = cumulative probability function (normal or logistic distribution);  
 $X_i$  = risk and non risk independent variables; and  
 $\beta$  = model parameters (including the model constant) to be estimated.

### II.1.1 Non-risk independent variables related to the characteristics of responding firms:

Businesses operating in other markets as well as in the local market are identified by the number of non-local locations. This is an indicator of the firm's access to non-local capital markets. In the model "NONLOC" is a dummy variable taking the value one when the business has at least one non-local location, and zero when the business operates only in the local (within 50 miles) market.

Total annual sales of the firm are represented by two dummy variables: "SM1L5" is given the value one when sales are between \$100,000 and \$500,000, and zero otherwise. The other variable, "SM5" is one when sales are more than \$500,000 and zero otherwise. These dummy variables were chosen to represent the firm size even though the survey data provided more detailed information on the amount of annual sales. The reason behind this is that the purpose of this study is not to find the effect a certain increase in sales will have on financing difficulty, rather it is to find out whether the large or small companies are more likely to face financing difficulty. Also, the use of aggregated data for this variable produced a model with a higher significance level. The coefficient of these variables will show whether these particular firm sizes are more likely than small firms (with less than \$100,000 sales) to experience financing difficulty. The breaking point was selected based on the points used by other authors in order to be able to compare the results to their findings.

The business' form of organization is represented by two dummy variables for partnerships and corporations. "FPART" takes the value one when the business form of organization is partnership, and zero otherwise. "FCORP" takes the value one when the form of organization is corporation, and zero otherwise.

Another dummy variable represents the information about the number of competitors in the local market. "COMP" takes the value one if the responding business has less than ten competitors in

the local market and zero otherwise. The reason why a dummy variable was used to represent the number of competitors in the local market is because again it is not the purpose of this research to know how one more competitor in the local market influences the financing difficulty faced by local businesses, rather it is to find out whether businesses which are non-common in the local market face more financing difficulty. The breaking point was chosen based on the descriptive analysis of the data, where it was found that businesses with less than ten competitors in the local market form the majority of the businesses which experience financing difficulty.

Three variables represent all the available information on the amount of debt financing carried by the respondents. “STLOANS”, “MTLOANS”, and “LTLOANS” represent the total initial dollar amount of short term, medium term and long term loans respectively, divided by 100,000.

### II.1.2 Non-risk independent variables related to local loan market characteristics:

In this study, the local loan market is defined geographically within the county limits. The size of financial institutions present in the market influences the lending limits. Total assets of the largest financial institution present in the local market is used as an indicator of maximum lending limits. However, different businesses might be affected differently based on their own size. The ratio of the firm’s total sales to the largest lender’s total assets is used as a measure of the local market’s ability to satisfy individual business’s potential need for financing. This variable is named “FSLA”. The firm’s total annual sales are calculated as the median of the sales interval indicated by the respondents, divided by 1,000. The amount of financial institution’s total assets used to calculate this ratio is divided by 1,000,000.

The lender market concentration is calculated as the sum of squares of market shares of each lender present in the market. All businesses in the same county face the same market concentration, (see Table 4 - 10). The higher this index, the more concentrated the local market is. This variable is named “LMCONC” in the model.

As mentioned in Chapter 3, real estate lending may be considered as an indication of lenders’ degree of risk-aversity. In this study, lenders who report real estate as their major lending activity are considered to be real estate lenders. Aggregate market share of all local real estate lenders in a county is used as an index of the degree of risk-aversity in the local market. This index is the same for all businesses in the same county (see Table 4 - 11) and the variable in the model is named “RELEND”.

The summary index of local lenders’ specialization given in Table 4 - 12 was used to represent the lenders’ experience variable. For each business the index corresponding to their sector and county was chosen. The name of this variable in the model is “LEXPEN”.

The data used to assess lenders' focus on small business financing were taken from a SBA study of small business lending.<sup>17</sup> These data report the banks' ranking in small business lending activity, by state. The variable representing the lenders' focus on small business financing in the model is named "DR" (see column "Bank Score" in Table 4 - 13). DR stands for decile ranking of the most active small business lender in the firms' respective counties.

### II.1.3 Independent risk variables related to the characteristics of responding firms:

Sales growth is represented in the model by three dummy variables. "DSTOONEW" is the variable used to represent firms which are too new to report the change in sales during the last two years. It takes the value one in this case and zero in other cases. "DSM5" takes the value one when the change in sales over the last two years was more than a five percent increase and zero otherwise. "DSL5" takes the value one when sales over the last two years declined more than five percent and zero otherwise. Businesses scoring one in DSL5 and DSTOONEW are more exposed to financing difficulty compared to businesses with sales change between -5 and +5 percent. In the same way businesses scoring one in DSM5 are less likely to face financing difficulty. The survey data provided more detail on sales growth rates. However, the purpose of including this variable in the model is to find out whether the local financial markets distinguish appropriately between stable, growing and declining firms, and whether the financing difficulty faced by firms is determined by this and other risk factors. The breaking points for these variables were chosen based on the points used by other authors<sup>18</sup> in order to be able to compare the results in a later stage.

Business development stage is represented by three other dummy variables. "STAGESU" takes the value one for start-up businesses and zero otherwise. "STAGET" equals one for businesses in the stage of owner transition and zero in all other cases. "STAGEPD" equals one for businesses which are phasing down or out of the business, and zero otherwise.

Debt to asset ratio is calculated as the median of the interval indicated by the responding firms. This variable is named "DA". Managers' experience is calculated as the natural logarithm of the number of years of experience in the type of business reported in surveys. The use of the logarithm of the real data was intended to eliminate the scaling problems. This variable is named "EXPER2".

Firms' sector is represented by five dummy variables: "SECFAR" for farms, "SECRET" for retailers, "SECMANUF" for manufacturing firms, "SECCONS" for construction firms. The SECFAR variable was ultimately excluded from the model, because of the high correlation with lenders' experience.

---

<sup>17</sup> Office of Advocacy, U.S. Small Business Administration "A directory of small business lending in the U.S. reported by commercial banks" June 1995 Edition. (<http://www.sbaonline.sba.gov/SmallBusinessLending1995/>)

<sup>18</sup> see Shaffer and Pulver (1989)

#### II.1.4 Dependent variables:

All the dependent variables are used in the model as dichotomous variables. Loan Denial (DEN) takes the value one when the business has experienced loan denial during the last two years and zero when no denial has been experienced. Non-local financing (NLF) takes the value one if financing from non-local markets (beyond 50 miles radius area) is reported and zero otherwise. Opinion related to “If” statement (IF)<sup>19</sup> takes the value one if the respondents disagree with the statement and zero if they agree. Satisfaction with local market performance (MK) takes the value one when the respondents expect the local financial market to perform poorly in satisfying their need for business financing next year and zero otherwise.

#### II.2 Model selection

Four models of financing difficulty in rural Virginia were estimated using univariate probit and univariate logit specifications. The dependent variables in these models are respectively: loan denial, use of non local financing, feeling about the “If” statement, and opinions on local financial market performance and its ability to satisfy the individual businesses’ need for capital. As discussed in Chapter 3 these variables may be used as proxies of local market adequacy.

As mentioned in the third chapter the use of probit and logit specifications yields similar results. According to Aldrich and Nelson “statistical performance cannot be used as a basis of choice between the models”. The results of this study confirm this statement (see Table 4 - 15). The statistical measures used in this study are goodness of fit and percent of cases predicted correctly. Three statistics are used to calculate the goodness of fit:

1) Likelihood ratio:  $c = -2 \log(L_0 / L_1)$

Where  $L_1$  is the value of the likelihood function when all independent variables are included in the model, and  $L_0$  is the value of this function when all independent variables are assumed to have zero coefficients. This statistic has a Chi-square distribution. The significance levels for the likelihood ratios of each model are reported in Table 4 - 15.

2) McKelvey and Zavoina pseudo- $R^2$  (MZ  $R^2$ ):

$$\text{for Probit: } R^2 = \text{Explained Sum of Squares} / (\text{Explained Sum of Squares} + N)$$

$$\text{for Logit: } R^2 = \text{Explained Sum of Squares} / (\text{Explained Sum of Squares} + 3.29N)$$

where N is the number of observations.

3) Aldrich and Nelson pseudo- $R^2$  (AN  $R^2$ ):

$$\text{pseudo } R^2 = c / (N+c)$$

Where c is the Chi-square statistic for overall fit and N is the total sample size.

---

<sup>19</sup> Based on the survey statement: “If you really need money for business financing, it can be obtained”.

The percent of cases predicted correctly was calculated based on the actual levels of dependent variables compared to the levels predicted by the model.

**Table 4 - 15 Statistical performance of Probit and Logit specifications of the four financing difficulty models**

Model	Probit				Logit			
	Significance Level* (%)	MZ R <sup>2</sup> (%)	AN R <sup>2</sup> (%)	Correct Prediction (%)	Significance Level* (%)	MZ R <sup>2</sup> (%)	AN R <sup>2</sup> (%)	Correct Prediction (%)
Loan Denial	0	52	13	94	0	80	14	94
Non local Financing	0	77	12	94	0	97	12	94
“If” Statement	9	42	11	83	13	61	10	84
Market performance	2	60	11	89	3	90	11	89

\* of the log-likelihood ratio

As a result, only the Probit model was used further on in the analysis. Except for the “If” model, all other models are significant at five percent or above. The “If” model is significant at nine percent level, however this model ranks high with the maximal McKelvey and Zavoina pseudo R<sup>2</sup>. For all the models predicted outcomes have maximal probability (high percentage of outcomes predicted correctly).

### II.3 Joint Hypothesis Tests for subsets of coefficients

These tests are particularly important when a characteristic is represented by a group of dummy variables. Separate variables may appear to be insignificant in explaining the dependent variable, but when considered altogether, their joint effect might be significant. The procedure used to test the significance of groups of coefficients is proposed by Aldrich and Nelson:

$$c = -2 \log (L_2 / L_1)$$

Where

- L<sub>1</sub> - is the fitted likelihood for the whole set of variables used for the overall fit of the model;
- L<sub>2</sub> - is the constrained likelihood, after excluding the group of variables from the model;
- c - follows a Chi-square distribution with degrees of freedom equal to the number of constraints imposed (in this case the number of variables excluded from the model). The

larger the c statistic, the more likely it is that this group of variables has a significant explanatory power.

### **III. Analysis of Market Adequacy**

As mentioned in Chapter 3, the market is functioning adequately if non-risk characteristics of businesses and of the local market do not play a significant role in determining the financing difficulty experienced by local businesses. In addition, financing information should be available and all businesses should have the same access to it. Finally, availability of capital should not be an issue if the markets are performing adequately.

The results of the analysis should be evaluated carefully since they do not represent the opinion of firms which are not in business because of the lack of financing. If it had been possible to survey them, the outcome in this section may have been different. This problem is known as biased sample selection and is frequently encountered when cross sectional data are used for market adequacy studies. As Shaffer and Pulver summarize:

“To the extent that the existing economic structure and business location are historical products of how markets function, cross sectional data may fail to uncover existing financial gaps. (1990, P.40)”

#### **III.1 Non-risk characteristics and financing difficulty**

Several measures of financing difficulty were used in the capital users' survey, including loan denials, sources of new financing, their opinions on terms of finance, and on the functioning of local financial markets. The following is an analysis of the relationship between these measures of financing difficulty and risk and non-risk characteristics of local businesses and of local financial markets. The first part of this analysis is concerned with the simple relationship between variables using cross tabulation method. This part of the analysis is followed by the results of the probit models of financing difficulty. The independent variables included in all four models represent risk and non-risk characteristics of responding businesses as well as local financial market characteristics. The analysis of multicollinearity among the independent variables was used to determine which variables can be incorporated in the model. As a result of the multicollinearity analysis, the dummy variables representing sole proprietorship and farming sector were excluded from the financing difficulty models.

The models obtained in this section are not to be used for forecasting purposes. They are only intended to be used in diagnostic analysis. They can only determine what the reasons for financing difficulty are and whether they are legitimate, that is risk based reasons. Trying to determine the probability of financing difficulty given the risk and non risk characteristics of businesses as well as local financial markets would be inappropriate given the nature of the variables used in the analysis. That is, many independent variables in the model are dummy variables and for each group of them one variable is omitted intending to determine the relative

importance of the remaining dummies compared to the one that is omitted. In addition, an intercept is included in the equation. The result is that the dummy variables' coefficients do not determine the expected probability of financing difficulty, rather they indicate the extent to which the included dummies differ from the one which is excluded.

### III.1.1 Loan denial

Denial in itself does not represent market failure. If the market does not distinguish between a successful business idea and a “dream”, nobody will benefit. Sooner or later, a “dream” business is likely to face failure. As discussed in previous chapters, the purpose of this research is to determine if loan denial is related to business characteristics that are not risk related.

#### III.1.1.a Descriptive analysis

Only seven percent of respondents report loan denials. However, this rate of loan denials is higher than the national rate. A 1993 national survey of small business finances<sup>20</sup> found that loan denials were reported by only five percent of respondents. Businesses which experienced loan denials in the present study represent 10 percent of businesses which use business financing. Out of all businesses which report loan denials, 42 percent had only one loan request denied, 33 percent were denied two loans, eight percent were denied three loans and 13 percent were denied loans on four occasions. Loan denial appears to differ among counties. Halifax County reports relatively more loan denials (13 percent of respondents located in this county) compared to other counties. Patrick County follows with nine percent of respondents.

The most common reason for denial is insufficient cash flow, 68 percent of loans denials were for this reason, among other reasons. Collateral is also another common reason with 54 percent of denials made for this reason, among other reasons. Lack of a “track record” was reported only six times, 21 percent of loan denials, as one of the reasons for denial. Internal bank policy appears to be one of the reasons for denial in eight cases, 29 percent of loan denials, while lenders' funding limits never appear as a reason for loan denial.

An attempt was made to relate the loan denial to the economic conditions of the businesses requesting the loan. Only 25 percent of loan denials are reported by businesses with a decrease in sales, while 46 percent of loan denials were reported by businesses which state they had an increase in annual sales during the last two years.

Only 14 percent of loan denials are reported by businesses which classified themselves as “too new to compare” the annual sales with the past two years. To confirm this result, the stage of business cycle indicated by the businesses which reported loan denial was examined. The majority, 54 percent, of loan denials are reported by those in the “ongoing stage”. This finding

---

<sup>20</sup> this survey was cosponsored by the Federal Reserve Board and the U.S. Small Business Administration (source: Federal Reserve Board, Occasional Staff Studies: <http://www.bog.frb.fed.us/pubs/oss/oss3/nssbf93home.html#nssbf93data> )

suggests that not only starters but also expanding firms find it difficult to obtain funding. Only 38 percent of the responding start-up firms experienced loan denial.

The above findings are also supported by the analysis of loan denials by the size of the business. Sixty one percent of the loan denials are reported by businesses with sales above \$100,000 and 39 percent of the loan denials are reported by businesses with sales less than \$100,000.

Further, an attempt was made to relate the loan denial to the economic sector of the respondents. Most of the loan denials are reported by the non-farm sector, 86 percent. This suggests that agricultural businesses have better access to financing. Or this finding might be related to the fact that farmers tend to be more conservative and use fewer loans than the non-agricultural sector in financing their business.

Within the non-farm sector, firms specialized in professional services appear to suffer more loan denials compared to other firms. While these firms only represent 17 percent of the respondents, they have a disproportionately higher share, 29 percent, of total loan denials. This suggests that this kind of business may not be favored by the existing financial market conditions.

Corporations represent the majority, 57 percent, of loan denials reported, but corporations only represent 35 percent of total respondents. This finding is in contradiction with the general belief that, given the presence of equity in the capital structure of corporations, it is relatively easier for them to obtain financing compared to sole proprietorships.

Sixty eight percent of loan denials are reported by firms with less than 10 business competitors in the local market. The small number of competitors implies that their business is not that common, and that banks may refuse to lend to businesses they are not familiar with. This is a possible sign of market inadequacy. This fact might also be related to the economic sector of the responding firms. The majority of firms with less than ten competitors in the local market, 83 percent, are non-farm businesses.

This section of analysis suggests that there is some sort of market inadequacy because firms that appear to be successful are denied debt financing, because there is disparity between farm and non-farm businesses considering the rate of loan denial, and because businesses that appear to be uncommon for the area are denied debt financing. The probit model of loan denial in the next section will help determine how significant these findings are.

#### III.1.1.b Loan denial model

It is important to note that this model does not include any information on the investment projects that were denied or granted financing. Because this data is not available, two risk related variables, namely the manager's experience and business growth rate, were used as proxies. The underlying assumption here is that experienced managers and successful businesses are more likely to select a viable investment project and are more familiar with the loan application process.

The loan denial model is significant at the 0.0007 level (see Table 4 - 16) and 93 percent of responses are predicted correctly (see Table 4 - 17). Loan denial appears to be significantly determined by the non-risk characteristics of rural businesses. A joint hypothesis for the coefficients of all the variables representing businesses' non-risk characteristics indicated that they are significant determinants of loan denial. Table 4 - 18 gives the Chi-square statistic calculated based on the constrained and fitted log-likelihood values. Column five of Table 4 - 18 gives the significance level of the restricted model, for the corresponding degrees of freedom in the last column. If the non-risk business characteristics are not included in the model, the model becomes insignificant. However, if markets were functioning adequately, these variables should be insignificant in determining loan denial.

**Table 4 - 16 Loan denial model results (Maximum Likelihood Estimates)**

Log-Likelihood	-70.85245
Restricted (Slopes=0) Log-L.	-99.42420
Chi-Squared (26)	55.14351
Significance Level	0.0007269332

Variable	Coefficient	Std.Error	t-ratio	Prob  t  ≥ x	Mean of X	Std.Dev.of X
Constant	-2.39660	0.90130	-2.65900	0.00783		
NONLOC	-0.00099	0.14610	-0.00700	0.99462	0.20912	0.87327
STLOANS	0.00720	0.15520	0.04600	0.96298	0.23648	0.99726
MTLOANS	0.43561	0.29620	1.47100	0.14134	0.11392	0.34171
LTLOANS	0.01953	0.09123	0.21400	0.83048	0.18688	1.20680
SM1L5	0.06831	0.33420	0.20400	0.83804	0.32708	0.46978
SM5	0.22550	0.49580	0.45500	0.64925	0.23056	0.42176
FPART	-0.13372	0.56360	-0.23700	0.81245	0.08847	0.28436
FCORP	0.32032	0.28360	1.12900	0.25875	0.36729	0.48271
COMP	0.02655	0.37080	0.07200	0.94290	0.64611	0.47882
FSLA	-3.10060	1.96300	-1.57900	0.11427	0.06850	0.14160
LMCONC	0.76381	0.70920	1.07700	0.28147	0.37298	0.19428
DR	0.01795	0.02365	0.75900	0.44799	26.84700	7.43980
RELEND	-1.62760	0.76800	-2.11900	0.03407	0.29799	0.20928
LEXP	-1.71760	1.21600	-1.41300	0.15780	0.19118	0.21458
DA	0.98208	0.42910	2.28900	0.02210	0.17815	0.25142
EXPER2	0.06975	0.15240	0.45800	0.64712	2.71980	1.01730
DSTOONEW	0.56624	0.60400	0.93700	0.34855	0.03753	0.19032
DSM5	-0.23789	0.31440	-0.75700	0.44922	0.34853	0.47714
DSL5	0.33118	0.35810	0.92500	0.35511	0.18499	0.38881
STAGESU	1.23630	0.48450	2.55200	0.01072	0.04290	0.20289
STAGET	0.35979	0.78450	0.45900	0.64651	0.01609	0.12597
STAGEPD	-0.59065	0.56000	-1.05500	0.29158	0.10992	0.31321
SECRET	0.66302	0.49120	1.35000	0.17707	0.11260	0.31653
SECSERV	0.23088	0.31080	0.74300	0.45751	0.17694	0.38213
SECMANUF	0.79865	0.51320	1.55600	0.11967	0.04021	0.19673
SECCONS	-0.25041	0.56410	-0.44400	0.65709	0.06434	0.24569

**Table 4 - 17** Frequencies of actual & predicted outcomes for loan denial model

Actual	Predicted		
	0	1	Total
0	342	3	345
1	22	6	28
Total	364	9	373

**Table 4 - 18** Joint hypothesis tests for Loan Denial model

Joint tests for:	Log Likelihood	Restricted model	Chi Squared	Model Significance Level	D.F. <sup>1</sup>
All risk variables	-70.85245	-86.08247	30.46004	0.00	12
All non-risk business' characteristics	-70.85245	-74.43243	7.15996	0.71	9
All non-risk local market characteristics <sup>2</sup>	-70.85245	-78.43469	15.16448	0.01	5
Sales dummy variables <sup>3</sup>	-70.85245	-71.95939	2.21388	0.33	2
Form of ownership dummy variables <sup>4</sup>	-70.85245	-72.60626	3.50762	0.17	2
D/A <sup>5</sup> ratio & manager's experience	-70.85245	-74.46491	7.22492	0.03	2
Growth dummy variables <sup>6</sup>	-70.85245	-73.68931	5.67372	0.13	3
Stage of business dummy variables <sup>7</sup>	-70.85245	-76.29781	10.89072	0.01	3
Business Sector dummy variables <sup>8</sup>	-70.85245	-73.97398	6.24306	0.18	4

<sup>1</sup> Degrees of Freedom.<sup>2</sup> Including FSLA, LMCONC, DR, RELEND, and LEXPER.<sup>3</sup> Including SM1L5 and SM5.<sup>4</sup> Including FPART and FCORP.<sup>5</sup> Debt to assets ratio.<sup>6</sup> Including DSTOONEW, DSM5, and DSL5.<sup>7</sup> Including STAGESU, STAGET, and STAGEPD.<sup>8</sup> Including SECRET, SECSERV, SECMANUF, and SECCONS.

The most important non-risk factors appear to be the number of non-local locations (NONLOC), the amount of short-term loans (STLOANS), and the number of competitors in the local market (COMP). The t test for the coefficient of the number of non-local locations in Table 4 - 16 indicates that it is significant at the 0.01 level. The more non-local locations the firm has the more likely it is not to experience loan denial. This could be explained by a better access to other non-local loan markets for those firms. If the local market was functioning adequately, this factor should not make a difference.

The amount of short term loans carried by businesses is also a significant determinant of business loan denial. The t test for the coefficient of this variable indicated that it is significant at the 0.05 level. The higher the amount of short term loans the firm has the more likely it is for the firm to experience loan denial.

The amount of loans in itself is not an indicator of the risk represented by the individual business. Rather, debt to assets ratio is an indicator of risk, because it shows the ability of the firm to repay the loan. The fact that the amount of short term loans is a significant determinant of loan denial might suggest that not enough competition is in place in the local market, so that the lender's need for diversification brings about financing difficulty for local businesses which already have received financing. Another reason for the amount of short term loans to be significant could be that most of short term loans might be credit card loans, which are unsecured. The presence of credit card debt itself would suggest financing difficulty in the local market, since this is an expensive source of financing. It also suggests possible loan denial from more traditional loan sources.

The number of competitors in the local market is another significant determinant of loan denial. Firms with less than 10 competitors are more likely to be denied financing. The t test on the coefficient of this variable is significant at 0.06 level. In normally functioning markets, this variable should not significantly determine the success of a loan application.

Other joint hypothesis tests were conducted for groups of dummy variables representing non-risk characteristics of businesses. A significance level of 10 percent was used to determine the significance of each group of coefficients (see Table 4 - 18). These tests indicate that companies with sales more than \$100,000 are more likely to experience loan denial relative to small companies with sales less than \$100,000. Normally this variable should not influence the financing difficulty experienced by businesses. This finding could reflect the presence of FCS and other government sponsored programs designed specifically to help financing farms, and farms represent 65 percent of small businesses with less than \$100,000 sales.

The joint hypothesis test for form of ownership variables indicates that they are significant in determining loan denial. Considering the sign of the coefficients in Table 4 - 16, partnerships are less likely to face loan denial relative to sole proprietorships, while corporations are more likely to be denied loan requests. This result is contradictory to what is expected if the market is functioning adequately. Form of ownership should not influence loan denial in adequately functioning markets. Even in the agency conflict scenario, mentioned in Chapter 3, this finding indicates market inadequacy problems, since banks could use their monitoring functions better in order to eliminate the influence of the form of ownership in the process of loan approval.

Other inadequacies of local financial markets include the insignificance of some risk characteristics of local businesses. Debt to assets ratio (DA), managers' experience (EXPER2), and business stage variables (DSTOONEW, DSM5, and DSL5) are not significant determinants of financing difficulty as measured by loan denials. Other risk characteristics such as business sector and

business growth in the past two years are significant determinants of loan denial. It is important to note that retail (SECRET), service (SECSERV), and manufacturing (SECMANUF) sectors are more likely to face loan denial than are farms and agricultural businesses in general. This result is a confirmation of the assumption made above on the relative advantage of the agricultural sector, in terms of capital access. Construction businesses (SECCONS) are less likely than agricultural businesses to be denied loan requests.

Dummy variables representing the business growth rate (DSTOONEW, DSM5, and DSL5) influence loan denials as expected. Businesses with more than five percent sales increase during the last two years are less likely to be denied loan financing compared to businesses with no change in sales or with lower rates of change. Businesses with more than five percent sales decline and businesses which are too new to report sales change during the last two years are more likely to be denied financing.

Finally, loan market characteristics (FSLA, LMCONC, DR, RELEND, and LEXPER) do not appear to play a significant role in determining loan denial. The joint hypothesis test for the local market characteristics (see Table 4 - 18) indicated that the loan denial model is still significant even if these variables are not included. Also, the t tests for the individual coefficients of the variables representing the lenders' characteristics (see Table 4 - 16) indicated that these variables were not significant.

### III.1.2 Sources of new financing

Sources of new financing were used as an indicator of potential problems in the local financial market. Ideally, the debt raising firms would find it easier to finance their business through the local market. If they do not do so, this might indicate some problem of market inadequacy.

#### III.1.2.a Descriptive analysis

Sixty three percent of respondents which report new debt financing use only local financing (within 15 miles) and only 6 percent use only non-local financing (beyond 50 miles). The remainder use both local and non-local financing with the local sources (within 15 miles) providing the majority of funds in most cases. The percentage of borrowers who use non-local financing varies among counties. Grayson and Halifax counties report the highest percentages of non-local borrowers, 18 and 12 percent respectively, while out of all respondents, only eleven percent use non-local financing (beyond 50 miles).

Non-agricultural businesses represent 64 percent of businesses which use non-local (beyond 50 miles) financing. Businesses with less than ten competitors in the local market form 68 percent of these non-locally financed businesses. There is evidence that reasons other than non-local activity determine the presence of non-local financing. Only 14 percent of businesses with non-local locations use non-local financing, and 80 percent of businesses which use non-local financing do not have any non-local locations.

---

Corporations represent only 28 percent of the businesses which use non-local (beyond 50 miles) financing. Successful businesses form the majority of these non-locally financed firms: businesses which report increased or stable sales represent 68 percent and businesses which report to be in the ongoing or stable stage represent 84 percent of non-locally financed businesses.

Commercial banks are the most popular source of new financing. Out of all borrowers, 77 percent report banks as one of their sources of financing, and 66 percent of them report commercial banks as the only source of new financing during the last two years. The second source of financing is loans from family/friends. Eighteen percent of the borrowers report it as one of the sources of financing during the last two years. Another important source of financing is supplier/dealer credit with 11 percent of borrowers reporting it as one of the sources of financing.

#### III.1.2.b Non-local financing model

This model is significant at 0.002 level (see Table 4 - 19) and 94 percent of responses are predicted correctly (see Table 4 - 20). The use of non-local financing suggests possible dissatisfaction with the performance of the local market. The joint hypothesis test (see Table 4 - 21) indicates that non-risk characteristics of local businesses and of financial markets are a significant determinant of non-local financing. Again, this is a signal of local market inadequacy. These characteristics should not influence rural businesses' access to the local capital market.

**Table 4 - 19 Non-local financing model results (Maximum Likelihood Estimates)**

Log-Likelihood	-67.90421
Restricted (Slopes=0) Log-L.	-93.45204
Chi-Squared (26)	51.09567
Significance Level	0.2321016E-02

Variable	Coefficient	Std.Error	t-ratio	Prob  t  ≥ x	Mean of X	Std.Dev.of X
Constant	-2.52320	0.84680	-2.98000	0.00288		
NONLOC	0.26477	0.10410	2.54300	0.01098	0.23810	0.98784
STLOANS	0.03017	0.10610	0.28400	0.77616	0.22232	0.96594
MTLOANS	-1.02740	0.93160	-1.10300	0.27009	0.10650	0.33155
LTLOANS	0.08906	0.11190	0.79600	0.42598	0.17470	1.16770
SM1L5	0.40319	0.35000	1.15200	0.24936	0.31579	0.46541
SM5	0.10604	0.56990	0.18600	0.85239	0.23308	0.42333
FPART	0.09050	0.45250	0.20000	0.84148	0.08271	0.27578
FCORP	-0.63728	0.35210	-1.81000	0.07031	0.35840	0.48013
COMP	-0.41572	0.37240	-1.11600	0.26423	0.64411	0.47938
FSLA	-1.24400	1.35600	-0.91700	0.35892	0.07343	0.15494
LMCONC	0.12119	0.71160	0.17000	0.86476	0.37183	0.19217
DR	0.02643	0.02259	1.17000	0.24203	26.74900	7.53370
RELEND	-0.32519	0.82760	-0.39300	0.69435	0.29830	0.20973
LEXP	-0.10604	0.95160	-0.11100	0.91127	0.19371	0.21730
DA	1.08430	0.47790	2.26900	0.02326	0.16805	0.24702
EXPER2	-0.02101	0.13490	-0.15600	0.87618	2.70330	1.03730
DSTOONEW	0.72410	0.70180	1.03200	0.30215	0.03509	0.18423
DSM5	0.38609	0.30600	1.26200	0.20702	0.34837	0.47705
DSL5	0.45482	0.36640	1.24100	0.21443	0.18546	0.38916
STAGESU	0.81087	0.46470	1.74500	0.08100	0.04010	0.19644
STAGET	-4.36220	124.50000	-0.03500	0.97206	0.01504	0.12186
STAGEPD	-3.78140	47.36000	-0.08000	0.93636	0.11779	0.32277
SECRET	0.36273	0.45430	0.79800	0.42460	0.11529	0.31977
SECSERV	0.21816	0.37160	0.58700	0.55710	0.17043	0.37648
SECMANUF	1.33210	0.45380	2.93600	0.00333	0.04010	0.19644
SECCONS	-3.35400	63.53000	-0.05300	0.95789	0.06015	0.23806

**Table 4 - 20** Frequencies of actual & predicted outcomes for non-local financing model

Actual	Predicted		
	0	1	Total
0	372	2	374
1	21	4	25
Total	393	6	399

**Table 4 - 21** Joint hypothesis tests for Non-local Financing Model

Joint tests for:	Log Likelihood	Restricted model	Chi Squared	Model Significance Level	D.F. <sup>1</sup>
All risk variables	-67.90421	-85.85474	35.90106	0.00	12
All non-risk business' characteristics	-67.90421	-74.74973	13.69104	0.13	9
All non-risk local market characteristics <sup>2</sup>	-67.90421	-69.19721	2.58600	0.76	5
Sales dummy variables <sup>3</sup>	-67.90421	-68.72401	1.63960	0.44	2
Form of ownership dummy variables <sup>4</sup>	-67.90421	-69.74119	3.67396	0.16	2
D/A <sup>5</sup> ratio & manager's experience	-67.90421	-70.42420	5.03998	0.08	2
Growth dummy variables <sup>6</sup>	-67.90421	-69.23707	2.66572	0.45	3
Stage of business dummy variables <sup>7</sup>	-67.90421	-72.91858	10.02874	0.02	3
Business Sector dummy variables <sup>8</sup>	-67.90421	-73.14899	10.48956	0.03	4

<sup>1</sup> Degrees of Freedom.<sup>2</sup> Including FSLA, LMCONC, DR, RELEND, and LEXPER.<sup>3</sup> Including SM1L5 and SM5.<sup>4</sup> Including FPART and FCORP.<sup>5</sup> Debt to assets ratio.<sup>6</sup> Including DSTOONEW, DSM5, and DSL5.<sup>7</sup> Including STAGESU, STAGET, and STAGEPD.<sup>8</sup> Including SECRET, SECSERV, SECMANUF, and SECCONS.

Among the local loan market characteristics, lenders' experience with the industry appears to be the most important factor in determining the search for funds in non-local markets. The t test for the coefficient of this variable in the model shows that it is significant at 0.10 level (see Table 4 - 19). This coefficient has a negative sign meaning that the more the local lenders are specialized in lending to a specific sector, the less likely it is that the firm will need to search for funds in non-local markets.

Non-risk characteristics of local businesses are also significant determinants of non-local financing. The joint hypothesis test for the group of variables representing all non-risk business' characteristics shows that the non-local financing model becomes insignificant if they are not included in the model. Other joint hypothesis tests were conducted for separate groups of dummy variables in this category. The test for sales dummy variables (including SM1L5 and SM5) indicated that the non-local financing model becomes insignificant if these variables are not included in the model. Considering the sign of the coefficients for these variables (see Table 4 - 19) firms with annual sales more than \$100,000 are more likely to search for non-local financing relative to small businesses, with sales less than \$100,000. One explanation for this is the fact that these firms were more likely to experience loan denial in the local market (result of the analysis in the previous section). This result reinforces the finding that local financial markets are not functioning adequately, since non-risk characteristics of businesses such as firm size influence the ability to find financing locally.

The joint hypothesis test for form of ownership variables (FPART and FCORP) indicated that the non-local financing model becomes insignificant if these variables are not included (see Table 4 - 21). Considering the coefficient signs in Table 4 - 19, partnerships are more likely than sole proprietors to search for funding in the non-local markets, while corporations are less likely. This finding supports the results of the loan denial model concerning partnerships. However it is a somewhat puzzling result since it implies that corporations are better off in the local market, while the loan denial model indicated that corporations are more likely to be denied financing. The explanation for this finding might be found in the results of the descriptive analysis in the previous section. Since family and friends are the second most important source of financing might explain why, even with higher chances of loan denial, corporations are more likely to meet their financing needs locally, because it is plausible that the number of family and friends who are potential investors is higher for incorporated businesses.

Number of competitors in the local market (COMP) does not appear to be significant when using the t test. This t test result could be influenced by the lenders' experience variable, whose t test indicates it as a highly significant factor. The more competitors in the local market, the more likely the lender is to have experience in lending to this type of business. It is important to note here the difference between these two variables. Lenders' experience takes into consideration only the sector of the business, without distinguishing among different SIC codes within the sector. On the other hand, the number of competitors in the local market reflects the number as reported by the respondents, and is more specific.

Not all risk characteristics of businesses are significant in determining the financing difficulty as indicated by non-local financing. The joint hypothesis test indicated that only growth variables (DSTOONEW, DSM5, and DSL5) are significant (the model becomes insignificant when these variables are not included). In contrast with the loan denial model this is not a sign of market inadequacy, since all markets should discriminate against risk characteristics the same way.

The analysis of the t tests results for the individual coefficients in this model indicates that business stage variables (STAGESU, STAGET, and STAGEPD) are significant in determining financing difficulty as measured by the non-local financing. The coefficients of the variables representing owner transition and phase down stages are negative and significant at 0.03 and 0.07 respectively. This finding supports the result of the loan denial model. Since local markets do not discriminate against these stages of business, firms in these two stages are less likely to search for financing elsewhere.

In addition, construction businesses (SECCONS) appear to be less likely to search for financing in non-local markets. The coefficient of this variable is negative and significant at the 0.05 level. Again this result is along the same lines as loan denial model results. Since construction businesses suffer less loan denials locally, they might be less inclined to search for non-local financing compared to other businesses.

### III.1.3 Opinions on financial market adequacy

Respondents were asked to express their opinion with regard to the adequacy of financial markets by stating whether they agree with the statement “If you really want money for business financing it can be obtained” (“If” statement). The answers to this question reflect their general opinion and are not only related to their specific experience but also to what they know in general about local capital markets. In the next section there is more information on how they feel about the local market performance in satisfying their specific need for financing.

#### III.1.3.a Descriptive analysis

The respondents reacted positively to the “If” statement: 63 percent agree with the statement and only 13 percent disagree (see Table 4 - 22). Of those who disagree, only 30 percent have experienced loan denials. Of those who experienced loan denials, 57 percent do not agree with the "If" statement, and 32 percent agree.

**Table 4 - 22 Users of capital responses on their feeling about the If statement**

Opinion	Percent of Total number of respondents	Percent of respondents who experienced loan denials
Strongly agree	39	25
Mildly agree	24	7
Not sure	23	11
Mildly disagree	7	21
Strongly disagree	6	36
Total	100	100

Both users and non-users of new debt responded to this question and appear in all groups related to the “if” statement. The users of new debt form the majority in all groups. Sixty three percent of those who respond that money for business financing can be obtained do not expect to need

new debt financing the next year. This suggests that these businesses are not using financing by choice, and thus are not forced to not use financing by the local financial market conditions

Businesses with annual sales between \$100,000 and \$5 million represent 58 percent of respondents who disagree with this statement, and businesses with annual sales less than \$100,000 represent 34 percent. Again, the finding that the majority of respondents who disagree with the “If” statement report annual sales of more than \$100,000 could be related to the fact that agricultural businesses form 68 percent of the businesses with less than \$100,000 annual sales while respondents who do not agree with the statement are mainly (75 percent) non-agricultural businesses.

In Grayson and Halifax counties the number of respondents who disagree with this statement is relatively higher than in other counties. They represent respectively 18 and 20 percent of all respondents in those two counties (13 percent for the whole sample). It is difficult to postulate a relationship between this finding and the local market characteristics since these two counties are not similar regarding most of the local market characteristics.

Sole proprietorships represent 57 percent of those who disagree with the “If” statement, and corporations represent 37 percent. This result seems to contradict the loan denial model results, since corporations are more likely to experience loan denial. However, as discussed in the non-local financing model, corporations may have better access to informal and equity financing, and the “If” statement is not about debt financing only.

Seventy eight percent of respondents who disagree with the “If” statement come from the group with less than 10 business competitors in the local market. Again, this implies that when banks are not very familiar with the kind of business, financing difficulty can be expected.

Among terms and conditions of the locally obtained business financing, collateral requirements are considered as the least satisfactory. These requirements are reported as poor or very poor by 49 percent of the respondents who do not agree with the “If” statement. Loan guaranties and loan interest rates follow with, respectively, 38 and 36 percent of these respondents considering them as poor or very poor terms. None of the terms listed in the questionnaire are classified as poor or very poor by the majority of the respondents not satisfied with the local market. This finding suggests that there might be other reasons for their dissatisfaction which could be related to access to information on financing, availability of capital, type of funds needed, and so forth.

#### III.1.3.b “If” model

This model is significant at the 0.10 level (see Table 4 - 23) and 83 percent of responses are predicted correctly (see Table 4 - 24). The “If” statement is expected to be accepted by businesses which are satisfied with the local financial market conditions. Businesses experiencing financing difficulty are assumed to react negatively to this statement. Non-risk characteristics of

local businesses and of local financial markets appear to significantly determine local business financing difficulty as explained by the opinion about this statement.

**Table 4 - 23 If model results (Maximum Likelihood Estimates)**

Log-Likelihood	-123.3552
Restricted (Slopes=0) Log-L.	-141.2339
Chi-Squared (26)	35.75745
Significance Level	0.9622093E-01

Variable	Coefficient	Std.Error	t-ratio	Prob  t  ≥ x	Mean of X	Std.Dev.of X
Constant	-1.10190	0.67450	-1.63400	0.10234		
NONLOC	-0.02952	0.12850	-0.23000	0.81830	0.23127	0.93686
STLOANS	-0.02652	0.16160	-0.16400	0.86969	0.21832	0.67968
MTLOANS	0.09998	0.31440	0.31800	0.75046	0.11265	0.31989
LTLOANS	-0.03355	0.08823	-0.38000	0.70378	0.21515	1.32430
SM1L5	-0.05171	0.25760	-0.20100	0.84092	0.34202	0.47516
SM5	0.13423	0.39840	0.33700	0.73615	0.25407	0.43605
FPART	-0.22769	0.43740	-0.52100	0.60266	0.07818	0.26889
FCORP	-0.08987	0.22640	-0.39700	0.69140	0.38436	0.48724
COMP	-0.24197	0.27340	-0.88500	0.37607	0.67101	0.47061
FSLA	-1.56290	1.08500	-1.44000	0.14983	0.08010	0.16010
LMCONC	-0.33187	0.58240	-0.57000	0.56879	0.36218	0.18819
DR	0.02884	0.01865	1.54600	0.12201	26.98400	7.44670
RELEND	-0.52353	0.62540	-0.83700	0.40250	0.29717	0.21149
LEXPER	-1.33880	0.81640	-1.64000	0.10102	0.18827	0.21006
DA	0.97315	0.38450	2.53100	0.01137	0.17948	0.24539
EXPER2	-0.09892	0.10440	-0.94700	0.34348	2.75990	0.94467
DSTOONEW	0.05350	0.54490	0.09800	0.92180	0.03257	0.17781
DSM5	-0.01507	0.22810	-0.06600	0.94733	0.37785	0.48564
DSL5	0.21581	0.29440	0.73300	0.46353	0.17264	0.37855
STAGESU	0.32492	0.46950	0.69200	0.48886	0.03909	0.19412
STAGET	0.73080	0.74500	0.98100	0.32660	0.01303	0.11359
STAGEPD	-0.56342	0.45780	-1.23100	0.21839	0.09121	0.28837
SECRET	0.89341	0.35250	2.53500	0.01126	0.12378	0.32987
SECSERV	0.33752	0.26320	1.28300	0.19966	0.19544	0.39719
SECMANUF	0.07700	0.46500	0.16600	0.86849	0.05212	0.22263
SECCONS	-0.10573	0.46290	-0.22800	0.81932	0.06189	0.24135

**Table 4 - 24** Frequencies of actual & predicted outcomes for If model

Actual	Predicted		
	0	1	Total
0	251	3	254
1	49	4	53
Total	300	7	307

The joint hypothesis test (see Table 4 - 25) for businesses' non-risk characteristics indicates that they are a significant determinant of financing difficulty experienced by local businesses. Other joint hypothesis tests were conducted for groups of dummy variables representing non-risk characteristics of businesses. The joint hypothesis test for sales dummy variables (see Table 4 - 25) indicates that they are significant determinants of financing difficulty since the model becomes insignificant if they are not included. Considering the coefficient signs in Table 4 - 23, companies with sales of more than \$500,000 appear to be more likely to experience financing difficulty compared to small firms with less than \$100,000 annual sales. Companies with sales between \$100,000 and \$500,000 are less likely to experience financing difficulty. This is not what the analysis of loan denial model indicated. There, all companies with more than \$100,000 annual sales are more likely to experience loan denials. However, no matter what the sign is, these variables should not be significant in determining financing difficulty as they are non-risk characteristics.

**Table 4 - 25 Joint hypothesis tests for IF Model**

Joint tests for:	Log Likelihood	Restricted model	Chi Squared	Model Significance Level	D.F. <sup>1</sup>
All risk variables	-123.3552	-134.8043	22.8982	0.03	12
All non-risk business' characteristics	-123.3552	-124.3219	1.9334	0.99	9
All non-risk local market characteristics <sup>2</sup>	-123.3552	-127.7177	8.7250	0.12	5
Sales dummy variables <sup>3</sup>	-123.3552	-123.5264	0.3424	0.84	2
Form of ownership dummy variables <sup>4</sup>	-123.3552	-123.5568	0.4032	0.82	2
No. of Competitors variable	-123.3552	-123.7466	0.7828	0.38	1
D/A <sup>5</sup> ratio & manager's experience	-123.3552	-127.0577	7.4050	0.02	2
Growth dummy variables <sup>6</sup>	-123.3552	-123.6854	0.6604	0.88	3
Stage of business dummy variables <sup>7</sup>	-123.3552	-124.9841	3.2578	0.35	3
Business Sector dummy variables <sup>8</sup>	-123.3552	-127.4493	8.1882	0.08	4

<sup>1</sup> Degrees of Freedom.

<sup>2</sup> Including FSLA, LMCONC, DR, RELEND, and LEXPER.

<sup>3</sup> Including SM1L5 and SM5.

<sup>4</sup> Including FPART and FCORP.

<sup>5</sup> Debt to assets ratio.

<sup>6</sup> Including DSTOONEW, DSM5, and DSL5.

<sup>7</sup> Including STAGESU, STAGET, and STAGEPD.

<sup>8</sup> Including SECRET, SECSERV, SECMANUF, and SECCONS.

The joint hypothesis test for form of ownership variables (FPART and FCORP) indicated that these are an important factor in determining the financing difficulty experienced by local businesses. The model becomes insignificant if these variables are not included in the model (see Table 4 - 25). Considering the coefficient signs in Table 4 - 23, partnerships and corporations are more satisfied with the performance of local financial markets compared to sole proprietorships. This can be explained with the use of informal sources of financing, mainly equity, which is less easily accessed by sole proprietors. However, this is an indicator of financial market inadequacy, because form of ownership should not determine businesses' financing difficulty.

Non-risk financial market characteristics (FSLA, LMCONC, DR, RELEND, and LEXPER) are also a significant determinant of financing difficulty in this model. The joint hypothesis test for these variables indicated that the "IF" model becomes insignificant if these variables are not included. However, the t test for the individual coefficients of these variables (see Table 4 - 23) did not show any of them to be significant at the 0.10 level. Normally these variables should not influence the businesses' financing difficulty.

### III.1.4 Satisfaction with local market performance

#### III.1.4.a Descriptive analysis

When asked how they expect local financial sources to meet their needs for additional business financing in the next year, only ten percent of respondents think that the local market will be unable to meet their needs (see Table 4 - 26). However, what is significant here is that 75 percent of the respondents who are not satisfied with the local financial market expect to need new financing next year<sup>21</sup>.

Only 35 percent of the respondents expect to need additional financing during the next year. Of those respondents 21 percent do not expect the local financial market to meet their needs for financing. It is these firms that need to be examined from the perspective of market adequacy. That is: are they high risk businesses, or is the market not functioning adequately? Sixty two percent of those who respond in favor of the local market do not expect to need new debt financing the next year.

Patrick County businesses report a relatively higher percentage (18 percent) of respondents not satisfied with the local market performance, compared with the other sample counties. One characteristic of the financial market in this county is the high index of concentration of financial institutions as discussed at the beginning of this chapter. However, lending to small businesses is one of the major activities for 57 percent of financial institutions present in the market, and one of the major banks in this county is ranked above the national average in small business lending.

**Table 4 - 26 Expectations of survey respondents on satisfaction of business financing needs next year**

Opinion on satisfaction from local market	Percent of total number of respondents	Percent of Respondents per each opinion-group who:	
		need financing next year	do not need financing next year
Very well	44	31	66
Quite well	10	29	63
Adequate	25	43	55
Quite poorly	6	80	20
Very poorly	4	60	40
N/A	12	6	63
Total	100		

<sup>21</sup> Even though the question on satisfaction with the local market performance asked specifically about how they expect the local market to meet their needs for financing in the next year, firms which do not expect to need financing next year also responded to this question.

The majority (72 percent) of respondents who do not expect the local financial market to satisfy their need for financing come from the group with less than 10 competitors in the local market. Only 27 percent of respondents who are not satisfied with the local market report a decrease in annual sales during the last two years. Non-agricultural businesses represent 73 percent of respondents who are not satisfied with the local market performance.

Among terms and conditions of the locally obtained business financing, collateral requirements are considered as the least satisfactory. These requirements are reported as poor or very poor by 65 percent of the respondents who are not satisfied with the local market performance. Loan interest rates follow with 48 percent of these respondents considering them as poor or very poor terms.

There is no indication of any relationship between the size of the business and the satisfaction with the local market performance. Small businesses with less than \$100,000 annual sales represent 43 percent of the respondents who are not satisfied with the local market performance, while businesses with more than \$100,000 annual sales represent 50 percent. In addition, the respondents who are not satisfied with the local market represent ten percent of each of those two groups.

Summarizing the results of this section, generally there is not overall dissatisfaction with the conditions and/or performance of local financial markets. However, there are some particular segments of local markets that demand further attention.

#### III.1.4.b Local market performance model

The log likelihood ratio for this model is significant at 0.02 level (see Table 4 - 27) and 89 percent of responses are predicted correctly (see Table 4 - 28). Satisfaction with local market performance is in large part determined by non-risk factors. The joint hypothesis test (see Table 4 - 29) for all non-risk local businesses' characteristics variables indicated that they are significant.

**Table 4 - 27 Market performance model results (Maximum Likelihood Estimates)**

Log-Likelihood -102.9152  
 Restricted (Slopes=0) Log-L. -124.3840  
 Chi-Squared (26) 42.93756  
 Significance Level 0.1960840E-01

Variable	Coefficient	Std.Error	t-ratio	Prob  t  ≥ x	Mean of X	Std.Dev.of X
Constant	-1.84870	0.67230	-2.75000	0.00596		
NONLOC	0.07536	0.09804	0.76900	0.44205	0.20857	0.89214
STLOANS	0.05879	0.15440	0.38100	0.70340	0.20953	0.65696
MTLOANS	0.47170	0.27790	1.69800	0.08958	0.11590	0.34378
LTLOANS	0.06086	0.10280	0.59200	0.55397	0.19074	1.24200
SM1L5	-0.34945	0.28750	-1.21600	0.22417	0.32571	0.46931
SM5	-0.28399	0.41090	-0.69100	0.48943	0.23429	0.42416
FPART	-0.54720	0.52320	-1.04600	0.29562	0.08857	0.28453
FCORP	-0.00910	0.24760	-0.03700	0.97070	0.36571	0.48232
COMP	-0.18079	0.30340	-0.59600	0.55121	0.64571	0.47898
FSLA	-0.02418	0.95420	-0.02500	0.97978	0.07157	0.15004
LMCONC	1.21380	0.55340	2.19300	0.02829	0.36731	0.18877
DR	0.01863	0.01727	1.07900	0.28071	26.62900	7.52680
RELEND	-0.23574	0.63270	-0.37300	0.70943	0.29500	0.20987
LEXP	-1.55460	0.82340	-1.88800	0.05901	0.19891	0.21886
DA	0.69042	0.39410	1.75200	0.07978	0.17929	0.25089
EXPER2	0.02471	0.10970	0.22500	0.82176	2.69200	1.04750
DSTOONEW	0.04327	0.52910	0.08200	0.93483	0.04000	0.19624
DSM5	-0.19333	0.25260	-0.76500	0.44408	0.35429	0.47898
DSL5	-0.06659	0.30510	-0.21800	0.82722	0.18286	0.38710
STAGESU	0.85540	0.41490	2.06200	0.03924	0.04286	0.20282
STAGET	0.18190	0.76110	0.23900	0.81112	0.01714	0.12999
STAGEPD	-0.36852	0.42040	-0.87700	0.38067	0.11143	0.31511
SECRET	0.65807	0.36370	1.80900	0.07040	0.11714	0.32205
SECSERV	-0.01111	0.27390	-0.04100	0.96765	0.18000	0.38474
SECMANUF	0.27978	0.43810	0.63900	0.52303	0.04571	0.20916
SECCONS	-4.19370	42.94000	-0.09800	0.92219	0.06000	0.23783

**Table 4 - 28** Frequencies of actual & predicted outcomes for market performance model

Actual	Predicted		
	0	1	Total
0	307	3	310
1	37	3	40
Total	344	6	350

**Table 4 - 29** Joint hypothesis tests for Market Performance Model

Joint tests for:	Log Likelihood	Restricted model	Chi Squared	Model Significance Level	D.F. <sup>1</sup>
All risk variables	-102.9152	-115.3899	24.9494	0.02	12
All non-risk business' characteristics	-102.9152	-105.8836	5.9368	0.75	9
All non-risk local market characteristics <sup>2</sup>	-102.9152	-108.6142	11.3980	0.04	5
Sales dummy variables <sup>3</sup>	-102.9152	-103.6643	1.4982	0.47	2
Form of ownership dummy variables <sup>4</sup>	-102.9152	-103.5574	1.2844	0.53	2
No. of Competitors variable	-102.9152	-103.0917	0.3530	0.55	1
D/A <sup>5</sup> ratio & manager's experience	-102.9152	-104.4276	3.0248	0.22	2
Growth dummy variables <sup>6</sup>	-102.9152	-103.2500	0.6696	0.88	3
Stage of business dummy variables <sup>7</sup>	-102.9152	-105.7126	5.5948	0.13	3
Business Sector dummy variables <sup>8</sup>	-102.9152	-107.8350	9.8396	0.04	4

<sup>1</sup> Degrees of Freedom.<sup>2</sup> Including FSLA, LMCONC, DR, RELEND, and LEXPER.<sup>3</sup> Including SM1L5 and SM5.<sup>4</sup> Including FPART and FCORP.<sup>5</sup> Debt to assets ratio.<sup>6</sup> Including DSTOONEW, DSM5, and DSL5.<sup>7</sup> Including STAGESU, STAGET, and STAGEPD.<sup>8</sup> Including SECRET, SECSERV, SECMANUF, and SECCONS.

Other joint hypothesis tests were conducted for groups of non-risk dummy variables. The joint test for the firm size variables (SM1L5 and SM5) indicated that they are a significant determinant of businesses' satisfaction with the local financial market performance. The market performance model becomes insignificant if these variables are not included. The coefficient signs for these variables (see Table 4 - 27) are negative, meaning that firms with more than \$100,000 annual sales are more likely to be satisfied with the local market conditions compared to small firms with sales of less than \$100,000. This result conflicts with the results from the loan denial model and the

non-local financing model. In those two models the large companies faced more loan denials and used more non-local financing, which may be translated into more financing difficulty for these firms in the local markets.

However, the financial difficulty being analyzed in this model is of a different nature. It might be considered as subjective difficulty and reflects the general perception of respondents on local financial markets' performance. More importantly, this model does not distinguish between the equity and loan markets, so large firms' overall satisfaction with the local markets might be determined by the relatively better access to equity sources which is characteristic of large companies.

Similarly, considering the coefficient signs of FCORP and FPART variables, corporations and partnerships are more likely than sole proprietorships to consider the local market performance as adequate. The individual coefficient for corporations is negative and significant at 0.03 level, while the coefficient for partnerships is still negative but not significant. Also, the joint hypothesis test for these two dummy variables indicated that they are significant variables in determining the local businesses' satisfaction with local financial market performance.

Among the financial market characteristics, size of lender appears to be a significant determinant of businesses' satisfaction with the market performance. The variable FS/LA which measures the ratio of firms' annual sales to largest lender assets, has a negative significant coefficient in this model, indicating that the smaller the firm is relative to the largest lender present in the local market, the more likely it is that the business is satisfied with the local market performance. This is explained with broader lending limits and more available capital when large banks are present in the local market, but it still represents a market inadequacy.

The joint hypothesis test for two risk factors indicated that the debt to assets ratio (DA) and manager's experience (EXPER2) are significant in determining the local businesses' financing difficulty as explained by their satisfaction with the local market performance. The debt to assets ratio coefficient has the negative sign, as expected. The higher the debt ratio the more risky the investment is and the more financing difficulty the firm will face. However, the managers' experience coefficient does not have the expected sign. More experienced managers appear to face more financing difficulty in the local market. This is a sign of market inadequacy, suggesting inability of the local market to capitalize on intangible assets such as the manager's experience. Manager's experience should be an important factor in determining the credit worthiness of a company.

### III.1.5 Marginal effect of significant variables

As mentioned in Chapter 3, the effect of independent variables on financing difficulty does not depend only on the size and sign of the corresponding coefficients. The partial derivative of the probability to face financing difficulty with respect to a given variable is a function of the coefficient corresponding to this variable. However, given the non-linearity of the model the

effect will also depend on the level of all the independent variables. Table 4 - 30 gives the  $Z$  values (which is a linear function of independent variables at the county average level), as well as the attenuation factor,  $\Phi(Z)$ , at the county mean of all significant variables.

Based on the information in this table, the marginal effect of independent factors on loan denials is not likely to differ across the sample counties because the attenuation factor is almost the same for data at the mean county level. However, the marginal effect of independent variables on non-local financing is expected to vary largely among counties. These effects are expected to be higher in Grayson County given the relatively high  $\Phi(Z)$  in this county. The same happens to the marginal effect of independent variables on the opinion about the "If" statement. These effects are expected to be lower in Brunswick County given the low value of  $\Phi(Z)$  for this county. The marginal effects in the market performance model do not appear to differ among counties.

**Table 4 - 30 Attenuation factor for each model by county (at county mean levels for each independent variable)**

	Loan Denial		Non-Local Financing		"If" Model		Market Performance	
	$Z$	$\Phi(Z)$	$Z$	$\Phi(Z)$	$Z$	$\Phi(Z)$	$Z$	$\Phi(Z)$
Brunswick	-2.0232	0.052	-3.2952	0.002	-1.8739	0.069	-1.9650	0.058
Grayson	-2.0363	0.050	-2.2350	0.033	-0.9815	0.246	-1.9441	0.060
Halifax	-2.0225	0.052	-2.6247	0.013	-0.9413	0.256	-1.9857	0.056
Mecklenburg	-1.9848	0.056	-3.0636	0.004	-1.3051	0.170	-2.0449	0.049
Patrick	-2.0527	0.049	-2.8989	0.006	-1.1203	0.213	-1.9982	0.054
All counties	-2.0193	0.052	-2.8094	0.008	-1.1913	0.196	-1.9954	0.054

## III.2 Information

### III.2.1 Opinions on terms of finance

Participants were asked to assess the terms and conditions of locally obtained financing by ranking them from excellent to very poor. Many respondents do not use external financing so the rate of response to this question was low. The best response rate was received on interest rates (56 percent), collateral (51 percent), and repayment schedule (52 percent). For every question the respondents who think the terms are "good" form the largest group. There are many who think that the terms and conditions are "poor" or "very poor" (see Table 4 - 31).

**Table 4 - 31 Survey respondents opinions on local market s terms and conditions of financing**

Terms & Conditions	Percent of respondents assessing the term as:					
	Excellent	Very good	Good	Poor	Very poor	N/A
Loan interest rate	5	11	28	10	3	44
Loan collateral requirement	6	10	21	9	6	49
Loan repayment schedule	7	15	25	3	1	48

Who is not responding to these questions? In the case of the Interest Rate question, 74 percent of non-respondents did not obtain debt financing during the last two years, and it is reasonable that they did not have an opinion about this. However, there are 26 percent of non-respondents who did borrow during the last two years and still failed to give an opinion about the interest rates. The same thing happens in responses to the Collateral question: 34 percent of non-respondents did borrow the last two years and still do not offer an opinion on the collateral issue. Is this because of a lack of information? Maybe they do not know what they should compare the terms they got from their banks to.

### III.2.2 Familiarity with state programs

The majority of the respondents are not familiar with the Government Programs listed in the survey instrument (see Table 4 - 32). This might explain the fact that most loans were made by local commercial banks, and might justify the need for some intervention in terms of creating and supporting an information clearinghouse for those interested in raising debt financing.

Most businesses that are familiar with the Programs are not highly leveraged, and for each program the highest percentage among respondents "very familiar with" can be found in the "no debt" group and in the "under 10 percent debt-assets ratio" group. This finding might suggest that the low-debt businesses are not carrying much debt because they do not have another choice. They are looking for sources of debt financing, but there are no sources which can satisfy their specific needs, or they do not qualify for debt financing under the existing local market conditions.

**Table 4 - 32 Capital users responses to questions on familiarity with government sponsored programs**

Program	Percentage of Respondents	
	Unfamiliar with program	Very Familiar with program
Private Activity Tax Exempt Bond Program	87	5
The Virginia Small Business Financing Authority Industrial Develop. Bond Program	78	5
The Virginia Small Business Financing Authority Umbrella Bond Program	84	5
The Virginia Economic Development Revolving Loan Fund	81	4
The Loan Guaranty Program	83	5
The Export Financing Assistance Program	89	5

### III.2.3 Sources of Financing Information

There was a question in the survey about the sources of information on financing issues. Responses indicate that 86% of the respondents go to the local bank for information on financing. It appears that their information on other ways of obtaining financing may be dictated by the knowledge and opinions of bank employees about the other sources. Only one percent of respondents report Small Business Development Centers as a source of information. Chambers of Commerce are not seen as a source of information on business financing by the respondents.

### III.3 Availability of capital

As mentioned above, when asked about the reasons why they were denied financing the survey respondents never mention lenders' fund availability. Other reasons are more common such as insufficient cash flow, collateral requirement, bank policy and business track record. In other words, in this section there is no support for lack of credit availability hypothesis.

On the other hand, FSLA is the variable which represents the information on the size of financial institutions in the financing difficulty models. Lenders' size is not a significant determinant of loan denials and non-local financing but it is significant in determining satisfaction with the local financial market performance. The larger the financial institutions present in the local market, the more likely it is that the local businesses are satisfied with the performance of the local financial market.

So evidence is mixed whether there is enough capital available in the local market.

### III.4 Opinions on the role of Government

Respondents were asked about the effectiveness of government programs and the need for an expanded government role in ensuring capital in rural communities. Only 11 percent of respondents have used state or federal sources of financing. In this small group 67 percent think that it is not easier to obtain financing when the lender uses state or federal programs. There was a very high percentage of non-respondents (54 percent) on the question about the ease of financing when the State or Federal programs are being used. This could be because of the lack of knowledge documented earlier through the question on familiarity with selected programs. The results show that 81 percent of those who think it is not easier when State or Federal programs are used, have never used them. The question is: were they misinformed? Would information help increase the use of these programs? Who provides the information currently, and which is the most popular source of information?

There is a better response rate on the question about the role of the government in financial markets. Most respondents are in favor of government involvement in capital markets: 60 percent of those who have an opinion about this issue favor government involvement. However, 48 percent of the respondents who used state or federal sources do not believe that the State should become active in ensuring adequate access to capital for businesses in Virginia.

### III.5 Technical assistance

The survey included two questions on the need for and sources of technical assistance. There is a high rate of non respondents on these two questions (42 and 38 percent respectively). This partially confirms the opinion of one of the respondents who happened to be a business consultant: "Small businesses do not know what technical assistance means."

Projecting the future market for the business is reported by 53 percent of respondents as one of the most difficult types of technical assistance to get. From a telephone interview with some Small Business Development Centers, it was learned that they do not have enough personnel to provide this service to small businesses. Legal issues are reported by 42 percent of respondents as one of the most difficult types of technical assistance to obtain followed by the technical assistance to project cash flow in the future with 35 percent of respondents.

The sources of technical assistance appear to be very different in helping the small businesses. Virginia Cooperative Extension appears to be the best source of technical assistance. It was ranked high as a source of technical assistance. Only 7 percent of respondents report SBDCs as source of technical assistance (see Table 4 - 33). This could be considered a low ranking, knowing that SBDCs are designed mostly to help non-farm businesses and given that 60 percent of respondents are non-farm businesses. In addition, the non-agricultural businesses which use Extension Service (10 percent) are more than those which use SBDC (7 percent) as a source of technical assistance.

**Table 4 - 33 Sources of technical assistance used by agricultural and non-agricultural respondents**

Source of Technical Assistance	Sector (percent)		
	Agricultural	Non-Agricultural	Total
SBDC	4	7	7
SCORE <sup>22</sup>	0	2	1
VA Cooperative Extension	53	10	27
Other	12	38	28
N/A	30	43	38
Total	100	100	100

The respondents provide a wide range of other sources of technical assistance that they use (see **Appendix E**). Among others, banks are sometimes included as source of technical assistance.

### III.6 Summary of the results of hypothesis testing

The results of the analysis provide the necessary information for testing the initial hypotheses on the adequacy of local financial markets:

1. There is evidence that the access to capital is determined by non-risk local businesses' characteristics and local financial market characteristics.
2. There is evidence that information is not complete, and that the sources of information are limited.
3. The evidence on availability of capital is mixed and it is not sufficient to conclude that this is an issue in rural Virginia.

---

<sup>22</sup> Service Corps Of Retired Executives

## **Chapter 5. Summary and Conclusions**

The primary objective of this study was to determine how well the rural capital market is functioning in Virginia. It's focus was to find out whether there are inadequacies in the rural financial market of Virginia.

The specific issues addressed in this study are to determine:

- 1) Whether firms in rural areas are able to acquire sufficient funds on a timely basis.
- 2) Whether there are difficulties in financing rural businesses and whether these difficulties are related to lack of capital, lack of knowledge of available resources, lack of preparation by people seeking financing, or a mismatch between the type of financing requests and available financing.
- 3) Mechanisms to increase the availability of cost efficient capital for new and small businesses in rural areas in Virginia.
- 4) Whether there is a need for a governmental presence in providing or facilitating access to capital.

In general, rural financial market conditions in Virginia do not reveal widespread inadequacies. Businesses which have experienced loan denials do not represent the majority of the respondents, but the rate of loan denials is higher than the national rate. Also, businesses which use non-local financing, or businesses which are not satisfied with the local financial market performance do not represent the majority of the respondents. However, knowing that the survey data do not represent the opinions of businesses which were not able to start up or which went out of business because of lack of financing, the findings must be interpreted with caution. In addition, it is important to emphasize that the majority of respondents who are not satisfied with the current market conditions expect to need financing during the next year.

The analysis conducted in this study revealed that the reasons why some rural businesses in Virginia experience financing difficulty are not always related to risk factors. Non-agricultural businesses appear to be in disadvantage given the presence of side effects of government sponsored programs and government policies designed to help agricultural businesses. Some other disadvantages are related to the inability of local markets to appropriately serve some types of businesses. For these firms the market is not functioning adequately and the question is whether the state should intervene to improve the market conditions.

### ***I. Summary of findings***

#### **I.1 Sources of Financing**

The financial institutions which supply capital to small businesses in the sample markets are mainly commercial banks and loans are the main source of financing. The second source of financing is loans from family/friends.

In the study's sample there are three banks scoring more than the national average in small business lending activity. Two of these banks are located in Grayson county and one in Patrick county. However, there are some banks that score significantly below the national average in their size category. The lenders' perception of recent changes in local financial markets indicates increased competition in the local financial markets. Lenders have expanded financial product lines, have offered easier terms, and have been taking more risk during the last two years. All responding large lenders (more than 3 billion dollars total assets) report an increase in their small business loan portfolio.

Product development is not one of the main uses of borrowed funds by small businesses, on average it only represents one percent of small business loan portfolios. Almost all responding local lenders report pre-venture and start-up stages as the most difficult stages to be financed, followed by ownership transition. On average, local lenders report spending more efforts on start-up businesses' loans compared to loans to businesses in other stages of the business cycle. In particular more time is spent on developing economic and marketing forecasts, for onsite visits and counseling, for personal finance and tax planning as well as for arranging outside assistance.

The responses of the local lenders on the terms of financing show that guaranties are of more importance in the start-up stage compared to other stages. The responding local lenders feel more strongly about government loan guaranties. All respondents to this question prefer direct loans more than loans backed by government guaranties. The banking community is divided into two groups: one strongly agrees with the idea that the government should get more involved in facilitating credit availability through risk reduction programs, and the other strongly disagrees. Local banks are the source of information on financing issues for 86 percent of respondents.

## 1.2 Debt and equity financing

Of all respondents, 66 percent report new debt financing during the last two years, while equity financing during the last two years is reported only by 26 percent of respondents. The majority (86 percent) of new equity financing is reported by businesses in the on-going and stable stages.

In general, the loan market is characterized by limited use of loans as well as small loan sizes (less than \$100,000). The results of the survey indicate that rural businesses in Virginia tend to be very conservative in using debt financing.

## 1.3 Loan denial

Only seven percent of rural business respondents report loan denials. Businesses which experienced loan denials represent 10 percent of businesses which use business financing. Loan denial appears to differ among counties. Halifax county reports relatively more loan denials (13 percent of respondents located in this county) compared to other counties. Patrick county follows with 9 percent of respondents. The most common reasons for loan denial are cash flow and collateral requirements.

Three of the non-risk characteristics of small businesses are significant determinants of loan denials: the number of non-local locations, the amount of short term loans, the number of competitors in the local market. The more non-local locations the firm has the more likely it is not to experience loan denial in the local market. The larger the amount short term loans the firm has the more likely it is for the firm to experience loan denial. Firms with less than 10 competitors are more likely to be denied financing. Companies with sales more than \$100,000 are more likely to experience loan denial (relative to small companies with sales less than \$100,000) in the local market. Also firms with annual sales more than \$100,000 are more likely to search for non-local financing relative to small businesses.

Partnerships are less likely to face loan denial relative to sole proprietorships, while corporations are more likely to be denied loan requests and less likely than sole proprietors to search for funding in the non-local markets. Retail, service and manufacturing sectors are more likely to face loan denial than are farms and agricultural businesses in general. Construction businesses appear to suffer fewer loan denials than agricultural businesses locally. In addition construction businesses are less likely to search for financing in non-local markets compared to agricultural businesses.

Businesses with more than five percent sales increase during the last two years are less likely to be denied loan financing compared to businesses with no change in sales or with lower rates of change. Businesses with more than five percent sales decline and businesses which are too new to report sales change during the last two years are more likely to be denied financing.

#### 1.4 Non-local financing

Sixty three percent of respondents which report new debt financing use only local financing (within 15 miles) and only 6 percent use only non-local financing (beyond 50 miles). Lenders' experience with the industry appears to be an important factor in determining the search for funds in non-local markets. The more the local lenders are specialized in lending to a specific sector, the less likely it is for the firm to need to search for funds in non-local markets.

The marginal effect of independent variables on non-local financing is expected to vary largely among counties. These effects are expected to be higher in Grayson County.

#### 1.5 Satisfaction with the local market

Partnerships and corporations are more likely to be satisfied with the performance of local financial markets compared to sole proprietorships. Firms with more than \$100,000 annual sales are more likely to be satisfied with the local market conditions compared to small firms with sales of less than \$100,000. Large firms' overall satisfaction with the local markets might be determined by the relatively better access to equity sources which is characteristic of large companies.

Lenders' size appears to be a significant determinant of businesses' satisfaction with the market performance. The majority of the respondents who are not satisfied with the market performance come from the group with less than 10 business competitors in the local market. This implies that when banks are not very familiar with the kind of business, financing difficulty can be expected.

Patrick county businesses report a relatively higher percentage (18 percent) of respondents not satisfied with the local market performance, compared with the other sample counties.

More experienced managers appear to face more financing difficulty in the local market. This is a sign of market inadequacy, suggesting inability of the local market to capitalize on intangible assets such as the manager's experience. Manager's experience should be an important factor in determining the credit worthiness of a company. Another way of looking at this finding is that maybe the experienced managers do not face more difficulties compared to younger managers: they just have experienced better times in the past, so they might be dissatisfied with the present market conditions. Either way this finding indicates present market inadequacies.

## **II. Government involvement**

The government is already present in the market. The question is whether the government presence is fulfilling the mission it was designed for, and whether there are side effects of its presence in the market. Many government programs are already available to rural businesses. However, there appear to be problems related to their effective use.

First, only a small percentage of rural businesses report using government programs. The study shows there is reluctance in using the state or federal programs. The majority of respondents who do not think that it is easier to obtain financing through these programs have never used them. The question is whether they were misinformed and whether information would help to increase the use of these programs.

Second, people have limited knowledge about the existing programs. It is surprising to find that the overwhelming majority of respondents do not know about the state programs in place. If these programs are set up to help the small businesses, the business public should be more aware, so that everyone interested could be able to use the advantages that they offer. This would involve creating new centers of information, or giving the information functions to the existing governmental institutions. However, there might be another less expensive way to divulge this kind of information. For example, banks could be motivated to use these programs. In this way, it would be possible to use the natural function of banks, providing information on financing sources. Motivating banks to use these programs more involves not only setting up attractive programs, but also making sure that what was promised to the bank will be given in time and with minimal paper work.

Third, most of respondents who use these programs do not see any advantage compared to direct private financing. Also, most of the respondents who did use these programs are not in favor of

government involvement. The policy issue here is whether these programs are designed correctly. If the end user does not perceive a difference between the use of these programs and direct bank financing, what is the reason for having these programs in place?

Fourth, some of the government supported institutions designed to provide assistance to rural businesses are recognized as a major source of information and technical support, but some others are not. The question is how to make their presence known in the rural areas and how assure that they assist rural businesses in overcoming the difficulties imposed by apparent market inadequacies.

In addition to these four points, it is important to mention that government involvement is a very sensitive issue. While there are many respondents who think that there is a need for government involvement, there are many others who almost become aggressive in their responses, expressing their opposition to the idea that the government can do anything to improve the functioning of rural capital markets. Most of them accompany the answer with a statement against the tax system. They believe that the “only” thing that the government can do is to reduce taxes, so that the small businesses could be more motivated to produce, expand, and create more jobs. They are against the establishment of new governmental institutions which will “only drain the taxpayers money”.

### ***III. Policy issues and recommendations***

Several policy issues emerge from the findings of this survey. First, there are deep differences in the way financing needs are met in different economic sectors in rural areas. Non-agricultural businesses seem to face more financing difficulty than agricultural businesses. Agricultural businesses are less likely to be denied financing. They are more likely to find financing in the local market and do not need to search for non-local financing. Agricultural businesses are more likely to be satisfied with local market performance. In other words, this study confirms the suggestions of other authors, who believe that financing rural small businesses could be facilitated if methods similar to those used to finance agricultural businesses were adopted.

It seems that access to capital is easier for farmers, because of Farm Credit System (FCS) and other institutions dedicated to the farming sector, but rural development and economic well-being depend crucially on the success of non-farm businesses as well. There is the need to evaluate existing government programs, and see what their direct and indirect effects in supporting rural development are. This is especially important now that many tobacco farmers may seek to diversify into non-farm businesses, and/or find employment with such businesses. The issue here is whether the same kind of assistance and services offered to agricultural producers should be offered to non-agricultural rural businesses as well. However, doing so would interfere with the level of competition in rural financial markets. The way it is now, banks see the presence of FCS as a threat to their market share.

Given the relative satisfaction of agricultural businesses with the current situation of capital access, experience from agricultural financial markets could be used to develop government sponsored programs for non-agricultural rural businesses. In addition, banks could be encouraged to use existing state and federal programs by reducing paperwork and by ensuring timely collection of guaranties.

Collateral requirements and cash flow are the most common reasons for loan denial. The question is whether the government should intervene and alleviate the restrictions posed by these loan conditions. Collateral requirements are especially restrictive for businesses which need capital investments that have a low or non-existent collateral value. For instance high technology equipment, equipment that could be obsolete in a short time and equipment with no broad market are difficult to be used as collateral. Action is required to satisfy the need for alternatives to collateral based loans. Given that it is normal for a start-up to lack the necessary collateral, it may be very important to provide assistance to these businesses and offer to cover part of their initial costs. Economic development grants could be considered for this purpose. If this kind of assistance is accompanied by rigorous analysis of the business plan and the loan application, it is possible to encourage these small businesses without interfering with the normal functioning of financial markets.

The cash flow issue may be addressed in a different way. Accurate cash flow projections are difficult to compile by new and small businesses. This study shows that market projection is the area where respondents need more technical assistance. There could be a benefit if the government becomes involved in providing or facilitating this kind of technical assistance, and this would not interfere with existing financial markets.

The majority of new financing is provided locally. For the study period this means that the local financial markets are well functioning, but it poses a problem for the future. It is known that the banking industry is undergoing a trend of consolidation. What will happen with these small businesses which currently raise most of the debt capital through the local banks? Will the large banks be interested and able to evaluate the loan applications of this kind, and if not, what will these small rural businesses do?

In all four models used in this study, form of ownership is an important factor in determining financing difficulty. Corporations are more likely to be satisfied with the local market conditions compared to sole proprietorships. This might be explained with their better access to equity financing. Equity financing is reported by only a small number of rural businesses and is obtained mostly through informal markets. Banks, which are the major source of financing in rural areas, do not provide equity financing and have only limited access to long term sources of financing. Equity capital is not available for starting small businesses. Most equity investing is made available to finance the expansion of on-going businesses. Small Business Development Centers (SBDC) report many cases when they have been looking for investors, but investors were not interested. The presence of mechanisms which provide equity financing would be beneficial to many rural small businesses.

The study suggests there is some sort of market inadequacy since what appear to be successful firms are sometimes denied debt financing. Not only start-up businesses experience difficulties when they need financing, but so do well established firms which desire to finance their expansion. This might suggest that there is a void in the local markets. There could be a mismatch between the type of financing requests and the available financing. Filling this void could be considered as correcting a market inadequacy.

Low debt to assets ratios are characteristic for the majority of respondents. This suggests that rural businesses are conservative. However, it is interesting to note that among the respondents who know more about the state programs the respondents with “no-debt” and “less than 10% debt” form the majority. The question is how to explain their interest in these financing programs. The natural suggestion is that they are seeking financing but for some reason they are not able to get it. This could be further evidence of the above mentioned mismatch of funds. In addition, the average size of loans reported by the respondents is very small. Small businesses need small loans starting from \$5,000 to \$20,000. Banks generally are not interested in this size of loan since there are fixed costs related to the process of evaluation of every loan application. Aside from capital investment, operating capital is needed for new businesses which are not likely to obtain this type of capital from the private local market. If the government is to provide debt capital, it could be designed to provide small loans to meet the needs of small rural businesses. Further, since equity financing also appears to be needed in the rural areas, a small pool of start-up and expansion capital for small loans or equity capital may be created.

The amount of short term loans carried by the business significantly determines the financing difficulty as indicated by loan denials. As mentioned in Chapter 4 this might be related to the need of local lenders to diversify their loan portfolio. Capital users should not be penalized for reasons other than the risk that they represent to the lender. The issue here is how to assist banks to be more active in selling loan participations and be able to accept all viable loan applications. Risk pooling mechanisms may also be considered with regard to this problem.

Another sign of market inadequacy is the fact that firms involved in economic activities unfamiliar to the area face major difficulties in the loan market. This suggests that the experience of local banks in a certain business sector determines the chances of loan approval. When the local bank is not familiar with the type of business activity, loans appear difficult to get. Lenders' experience is a significant factor in explaining capital users search for funds in non-local markets and in addition, the firms with non-traditional business activity form the majority of the respondents who do not believe the local market will meet their needs. This might suggest that a mismatch exists between the type of financing requests and the available financing. Banks could be encouraged to cooperate with other non-local banks with expertise in these types of business, or the government could offer help in analyzing the non-common types of loan applications. Clearly, the area needs attention if diversification is an objective.

A market is not complete if information is not available. The fact that some of the respondents who borrowed money during the last year, do not offer any opinion on the interest rates and other loan conditions in the local market, might suggest lack of information. This finding is supported by the fact that banks are the only source of information on financing sources for the majority of the respondents with little awareness of competitive programs. All this indicates that there is the need for an information clearing house on financing issues, however any effort in this direction should keep in mind that the public is very sensitive to government spending.

#### ***IV. Limitations of the Study and Suggestions for future research***

The main limitation of this study is the survivor bias. The surveyed businesses are all businesses that have survived the current conditions of rural financial markets. The study would be more complete if the opinions of those firms that could not begin a business or went out of business because of the lack of financing could be assessed.

In the second chapter there is information on the importance of efficient capital markets for rural development in Virginia. It would be of interest to find out how the financial market inadequacies discovered in this study undermine rural development.

Future research could be directed to the analysis and evaluation of existing government programs, with the purpose of determining what their direct and indirect effects in supporting rural development are. Some of these programs were designed long time ago and the recent changes in financial markets require new attention.

## Bibliography

- Aldrich, John H. and Forrest D. Nelson, *Linear Probability, Logit, and Probit Models*. SAGE Publications, Beverly Hills, 1984.
- Barkley, David L. and Peter E. Helander *The Role of Commercial Bank Loans in Nonmetropolitan Economic Development* The University of Arizona, Tucson, Arizona 1985.
- Bauer, Paul W.; Cromwell, Brian A. "Local Banking Markets and Firm Location" *Federal Reserve Bank of Cleveland Working Paper: 9114*, October 1991.
- Belongia, M.T. and R.A. Gilbert "The Effects of Federal Credit Programs on Farm Output" *American Journal of Agricultural Economics*, (August 1990), 769-73.
- Bernanke, Ben S. and Cara S. Lown "The Credit Crunch" *Brookings Papers on Economic Activity*, No.2, 1991.
- Birch, David L. *The Job Generation Process*, M.I.T. Program on Neighborhood and Regional Change, Cambridge, MA., 1979.
- Birch, David L. *Job Creation in America: How our smallest companies put the most people to work*, MacMillan, 1987.
- Blue Ridge Region Development Bank Feasibility Study*. Prepared by the Fifth Planning District Commission in conjunction with the Blue Ridge Region Economic Development Commission. April 1993.
- Bosworth, B.P.; Andrew S. Carron and Elisabeth H. Rhyne, *The economics of Federal Credit Programs*. The Brookings Institution, 1987.
- Brophy, D.J. *Finance, Entrepreneurship, and Economic Development*. Industrial Development Division, Institute of Science and Technology, The University of Michigan, 1974.
- "Capital Flows in Rural Areas: an analysis of the impact of banking centralization on lending policies" *Social Science Quarterly*, No.67, 1986.
- Cherin, Antony C. and Melicher, Ronald W. "Impact of branch banking on bank firm risk via geographic market diversification" *Quarterly Journal of Business and Economics*; v27, n2, Spring 1988, 73-95.
- Chhikara, R.K. "The State of the Art in Credit Evaluation" *American Journal of Agricultural Economics*, (December 1989), 1137-44.

- 
- Collender, Robert “Can Federal Action Improve Efficiency in the Market for Farm Loans?” *Issues in Agriculture and Rural Finance*, Economic Research Service/USDA, Agriculture Information Bulletin No. 724-01, March 1996.
- “Credit and Agriculture: some consequences of the centralization of the banking system” *Rural Sociology*, No.49, 1984.
- Cromwell, B.A. “Financial Restructuring and Economic Activity” *Federal Reserve Bank of Cleveland Economic Review*, Quarter 3, 1990.
- Daniels, Be-Ilden Hull and Michael Kieschnick, *Development finance : a primer for policymakers*. The National Rural Center, 1979.
- Denis, William J.; Phillips, Bruce D; Starr, Edward “Small Business Job Creation” *Business Economics*, v29, No.3, July 1994.
- Dodson, Charles “Is more Credit the Best Way to Assist Beginning Low-Equity Farmers?” *Issues in Agriculture and Rural Finance*, Economic Research Service/USDA, Agriculture Information Bulletin No. 724-04, August 1996.
- Drabenstott, Mark, *New Approaches to rural capital markets: Testimony before the subcommittee on Capital markets, securities, and government sponsored enterprises*. Feb 29, 1996.
- Ellinger, P.N. “Potential Gains from Efficiency Analysis of Agricultural Banks” *American Journal of Agricultural Economics*, 76 (August 1994), 652-54.
- Ethridge, Don *Research Methodology in Applied Economics: organizing, planning and conducting economic research* Iowa State University Press / Ames, 1995.
- Featherstone, A.M. and Charles B.Moss, “Measuring Economies of Scale and scope in Agricultural banking” *American Journal of Agricultural Economics*, 76 (August 1994), 655-61.
- Freshwater, David “The Federal Role in Financing Rural America” *Financial Market Intervention as a Rural Development Strategy* United States Department of Agriculture, Rural Economy division and Economic Research Service. 1990
- Gajewski, Gregory “Rural Bank Failures not a big problem - so far”. *Rural Development Perspectives*. No.2 June, 1986.
- Green, Gary P. *Finance capital and Uneven Development*. Westview Press 1987.

- 
- Greenwald, Bruce C., Alec Levinson, and Joseph E. Stiglitz. "Capital market imperfections and regional economic development." *Finance and development: issues and experience*. Cambridge University Press, 1993.
- Gurley, John G.; E.S. Shaw "Financial Aspects of Economic Development" Cameron, Rondo, ed. *Financing Industrialization*. Vol. 2, Ashgate, Brookfield, Vt., 1992.
- Gustafson, C.R. "Credit evaluation: Monitoring the Financial Health of Agriculture" *American Journal of Agricultural Economics*, (December 1989), 1145-51.
- Innes, R.D. "Imperfect Information and the Theory of Government Intervention in Farm Credit markets" *American Journal of Agricultural Economics*, (August 1990), 761-67.
- LaDue, E.L. "Moral Hazard in Federal Farm Lending" *American Journal of Agricultural Economics*, (August 1990), 774-79.
- Larson, Paul et al., *The Virginia Entrepreneur s Guide: how to start and manage a business in Virginia* University Press, 1994.
- Litvak, L. and Belden Daniels, *Innovations in Development Finance*. Council of State Planning Agencies, 1979.
- Luke, Jeffrey S., Curtis Ventriess, B.J.Reed, Christine M.Reed *Managing Economic Development: a guide to State and Local Leadership Strategies*. 1988.
- Ma, Chien-Hui; Bruce D. Smith "Credit Market Imperfections and Economic Development: Theory and Evidence", *Journal of Development Economics*, v48, No.2, March 1996.
- Maddala, G.S. *Econometric Methods and Applications*, Edward Elgar Publishing Limited, 1994.
- Maddala, G.S. *Limited Dependent and Qualitative Variables in Econometrics* Cambridge University Press, 1983.
- Maddala, G.S. "A Perspective on the Use of Limited-Dependent and Qualitative Variables Models in Accounting Research", *The Accounting Review*, Vol. 66, No.4, October 1991, pp 788-807.
- Markley, Deborah. "Availability of Capital in Rural America: Problems and Options", *New aliances for Rural America*. Washington, DC: National Governor's Association, 1988.
- McKinnon, Ronald *Money and Capital in Economic Development*, Brookings, 1973.
- Meekhof, Ronald *Farm Credit Programs for Agriculture*. Agriculture Information Buletin No. 483, Washington, D.C.: Economic Research Service, U.S. Department of Agriculture, 1984.

- Milkove, Daniel "The changing nature of the rural financial system" *Financial Market Intervention as a Rural Development Strategy* United States Department of Agriculture, Rural Economy division and Economic Research Service, 1990.
- Milkove, Daniel "Interstate Banking and Rural America" *Rural Conditions and Trends*, Vol. 7, No.1, 1996.
- Milkove, Daniel; Patrick J. Sullivan, and James J. Mikesell "Deteriorating farm finances affect rural banks and communities" *Rural Development Perspectives*. No.2 (June), 1986.
- Milkove Daniel and David B. Weisblat. "The effects of the Competitive Structure of financial Institutions on Rural Bank Performance." *ERS Staff Report* No. AGES820226. Washington D.C.: U.S. Department of Agriculture, Economic Research Service, 1982.
- Morgan, Donald P. "Bank monitoring mitigates agency problems: new evidence using the financial covenants in bank loan commitments" *Columbia University, PaineWebber Working Paper Series in Money, Economics, and Finance: PW/95/12 December 1994*
- Morsman, Edgar M. *Commercial Loan Portfolio Management*, Robert Morris Associates, 1993.
- Neff D.L.; Bruce L. Dixon, and Suzhen Zhu "Measuring the Efficiency of Agricultural Banks." *American Journal of Agricultural Economics*, 76 (August 1994), 662-68.
- Nejzchleb, Lynn A. "Declining Profitability at small Commercial Banks: a temporary development or a secular trend?" *Banking and Economic Review* (June), 1986.
- Opler, Tim *Changing Patterns of Business Financing* Ohio State University, Fisher College of Business, Working Paper ([http://www.cob.ohio-state.edu/dept/fin/resources\\_education/credit.htm](http://www.cob.ohio-state.edu/dept/fin/resources_education/credit.htm)), 1995.
- Otto, Daniel "An Analysis of the Farmers Leaving Agriculture for Financial Reasons: a summary of survey results from 1984." *New Dimensions in Rural Policy: Building Upon our Heritage*. Washington, D.C.: Joint Economic Comitee, U.S. Congress, 1986.
- Pederson, G.D. "Agricultural Bank Portfolio Adjustment to Risk" *American Journal of Agricultural Economics*, (August 1992), 672-81.
- Recommendations to the Joint Legislative Sub-Committee Studying Alternative Strategies for Tobacco Growers*, 1995.
- Samolyk, Katherine A. "A Regional Prespective on the Credit View" *Federal Reserve Bank of Cleveland Economic Review*, Quarter 2, 1991.

- 
- Samolyk, Katherine A. "Banking Conditions and Regional Economic Performance: evidence of a regional credit channel" *Journal of Monetary Economics*, v34, No.2, October 1994.
- Shaffer, Ron and Glen C. Pulver, "Rural nonfarm Businesses' Access to Debt and Equity Capital." *Financial Market Intervention as a Rural Development Strategy* United States Department of Agriculture, Rural Economy division and Economic Research Service, 1990.
- Shaffer, Ron; Glen Pulver; Glen Rogers; Tim Wojan and Dan Gerland, *Rural Nonfarm Businesses Access to Debt and Equity Capital* University of Wisconsin, 1989.
- Shaw, E., *Financial Deepening in Economic Development*, Oxford, 1973.
- Sullivan, Patrick J. "Financial Market intervention as a rural Development Strategy: an overview" *Financial Market Intervention as a Rural Development Strategy* United States Department of Agriculture, Rural Economy division and Economic Research Service, 1990.
- Sorenson, D.J. and Andrew M. Isserman *Commercial lending and economic development* Research paper, Regional Research Institute, West Virginia University, 1987.
- Stam, Jerome "Are Farmer Bankruptcies a Good Indicator of Rural Financial Stress?" *Issues in Agriculture and Rural Finance*, Economic Research Service/USDA, Agriculture Information Bulletin No. 724-06, December 1996.
- Verbrugge, James A. "Financing Rural Development" Paper presented to the Task Force on Southern Rural Development, Atlanta Georgia, 1975.
- Yaron, J. "Successful Rural Finance Institutions" *Finance and Development*, March 1994, Vol.31, No.1, 32-36.
- Zey-Ferrell, Mary and William Alex McIntosh "Agricultural Lending Policies of Commercial Banks: consequences of bank dominance and dependency." *Rural Sociology* No. 52, 1987.

## Appendixes

### I. Appendix A

#### I.1.1 Top Ten Lenders to Small Businesses in Virginia

In “1995 Small Business Profile” compiled by the SBA's Office of Advocacy are listed the Virginia's top ten lenders to small businesses as follows:

1. Virginia Heartland Bank
2. First Bankers and Trust Corporation
3. Citizens Bankers and Trust Corporation
4. Bank of Essex
5. Chesapeake Bank
6. Virginia Community Bank
7. Powell Valley National Bank
8. Resource Bank
9. Benchmark Community Bank
10. Peoples Bank of Montross

#### I.1.2 SBA's Certified Lender And Preferred Lender Program

The most active and expert lenders qualify for the SBA's streamlined lending programs. Under these programs, lenders are delegated partial or full authority to approve loans, which results in faster service from SBA. Certified lenders are those who have been heavily involved in regular SBA loan-guaranty processing and have met certain other criteria. They receive a partial delegation of authority and are given a three-day turnaround by the SBA on their applications (they may also use regular SBA loan processing). Certified lenders account for nearly a third of all SBA business loan guaranties. Preferred lenders are chosen from among the SBA's best lenders and enjoy full delegation of lending authority in exchange for a lower rate of guaranty. This lending authority must be renewed at least every two years, and the lender's portfolio is examined by the SBA periodically. Preferred loans account for more than 10 percent of SBA loans.

#### Virginia SBA Certified and Preferred Lenders as of June 1996

Fairfax	The George Mason Bank
McLean	Suburban Bank of Virginia
Richmond	Central Fidelity Bank
Richmond	Commonwealth Bank*
Richmond	Crestar
Richmond	The Money Store Investment Corporation
Richmond	NationsBank of Virginia, NA
Richmond	Signet Bank/VA*
Vienna	Business Bank
Vienna	Patriot National Bank*
Virginia Beach	Commerce Bank*
New York, NY	The Business Loan Center
Washington, D.C.	Allied Lending Corporation

---

\* Indicates Preferred Lender Program Participant

## **II. Appendix B**

### II.1 Case study

#### II.1.1 Case A

Where: Giles County

Business: Body shop

Had worked before for an auto dealer. Now wanted to start his own business (body shop).

Needed financing to buy the building. Two loan applications.

Did not succeed.

Reason: too much debt, no personal investment, not enough cash flow.

Result: now still renting the building.

#### II.1.2 Case B

Where: Giles County

Business: service station

Owners: Father and two brothers

Money needed for:

- Buying an adjacent property to keep a convenient store
- fixing a leak in the ground

There was a loan fund that would help but they changed their mind.

Reason:

- their other business (hardware) store lost money.
- they lived in a rural area, the loan fund was somewhere in North Virginia, so they did not have the right connections to know and to be sure of who they were giving the loan.

They still need the money.

#### II.1.3 Case C

Where: New River Valley

Business: existing restaurant

Money needed for: restoring a building he had inherited from his in-laws.

His in-laws had a motel+restaurant which had gotten in fire, and had gone out of business. What had remained was the shell of the building

He could not find financing and did not pursue the idea.

Reason: Bank did not think the motel&restaurant would be profitable.

#### II.1.4 Case D

Where: Floyd

Business: start-up. Wanted to produce emergency lighting fixtures.  
Could not start.  
Reason: no existing cash flow.

### II.1.5 Case E

Where: New River Valley  
Business: Invention (metal parts of the machineries used in textile industry)  
Amount: \$1,000,000. This was considered too much.  
No funding.  
Reason: this is not a bankable deal, it is too risky.

### II.1.6 Case F

Where: came from California, with experience in furniture production.  
Business: start-up. Children furniture.  
Why pick this area: near furniture market  
Amount: \$1.5 M  
Could not get the money.  
Reason:

- this was considered too much for a start-up
- the person was new in the area

### II.1.7 Case G

Where: New River Valley  
Business: Retail sale. (books, etc.)  
Thought will get some investors' money. Could not.  
The bank did not give the loan when the investors declined.

### II.1.8 Case H

Wanted to establish a trucking business. It was a decent project but he had insufficient collateral, because to start the business he needed money for:  
capital investment - buy the truck(s)  
non-capital investment  
Capital investment is the only possible collateral, but this is only a fraction of the expenses.  
There are little chances to get operating capital for starters.

### II.1.9 Case I

Restaurants.

Many do like this business, but it is very risky, and the failure rate is high. There is a bank in the Roanoke & New river Valley area (large bank, more than regional) whose policy is “No Financing for restaurants start-ups”.

#### II.1.10 Case J

The owner of a gas station wanted to get financing to buy a convenient store (expansion money). However, they were never profitable.  
Result: no expansion money.

#### II.1.11 Case K

Business on some kind of installation for homes (could not give details - proprietary information). They were very qualified and were doing very good. They had lots of orders and thought about increasing stock and adding personnel. Loan application was rejected.  
Reason: They had written a loan on themselves, and the balance showed high percentage of liabilities.  
Small businesses frequently get incompetent advice. An accountant had advised them to write the loan to themselves in order to save taxes on the interest paid. Legally they were right, but it was a lousy advice thinking in the long-term.  
There are also many lawyers that do not advice them to incorporate.

Solution: they used family money, issued stock, and bought their own debt....

#### II.1.12 Case L

Client who had a good business plan. He went to the bank to get financing. The loan officer told him: “We do not do SBA loans”.  
Banks had hard time dealing with the government because of the paper work and the collection of the guaranteed funds in case of failure.

#### II.1.13 Case M

Young lady, wanted to establish a riding stable.

Turned down from the bank.

Reason:

-did not know how to approach the bank. Local banks are very linear in their organization form. If you do not go to the right place you get turned down.

- not experienced
- the bank does character lending (she was new in the area)

Got help from the SBDC

Back to the bank: got financing to buy the horses. Now she is in business.

#### II.1.14 Case N

Had received federal benefits from disability for many years.  
Wanted to start a retail ice-cream store. There was big need in town.  
As far as the business plan and the market projection, everything was fine.  
Could not get financing.  
Reason: no credit history.  
Result: could not start the business.

#### II.1.15 Case O

New restaurant.  
With the assistance of the SBDC started the projection of the future cash flow.  
Finding out the expenses was easy.  
Revenues were the problem: just to break-even they needed to “bring people out of the hospitals” to eat in their restaurant.  
In this case the borrower was lucky to be turned down by the bank. Otherwise the failure would hurt much more.

#### II.1.16 Case P

Where: Roanoke area  
Farmer loan application:  
A farmer made a loan application to buy 60 cows.  
He had three loans with this bank. For each of these loans he was 8-10 times late in making the loan payment.  
Result: turned down.

#### II.1.17 Case Q

Where: New River Valley  
Business: retail bakery + restaurant  
Situation: change in operation : drop the restaurant and add wholesale bakery  
1 - Loan application to local small bank.  
Even though he was an old client, the bank did not take the risk of financing the change.  
They asked for a SBA loan guarantee. This involved a lot of paper work. It was not easy to apply. The process took too long (about 3 months).  
Result: guarantee not granted.  
Reason: too much of a change, no proven track record, difficult period for the SBA since there was a high percentage of loan default during that time (1992).

The process: All black and white numbers. No consideration of the personal characteristics, vision of the borrower, etc. SBA does not use personal contacts with borrowers.

2 - The business owner tried with alternative source of funding (long term loan from relatives. They succeeded. Now the bank loans are more easy to get. They have established a good relationship, based on the trust and proven track record.

III. Appendix C

Table C 1 County Data on Original Variables used in Principal Components Analysis

	EDUC	SSPB	MIPC	PHIM	PSHU	RU	PCHI	PCPL	PCHU	PCPE	PCPI	PCLF	PCBD	FO	EM	ER	EF	ES	EG	ERFM	ERM	ERR	ERFN	ERS	ERG	VPSF	VAM	SW	SR	RS	
Accomack	59.5	231.2	10506	1.2	9.8	7.6	12.1	-6.9	14.7	-1.4	7.2	-14.7	5.2	64.4	3065	1965	337	1629	1604	5.6	21.4	9.8	2.3	18.2	22	50	61.8	73	148.5	39.5	
Albemarle	81.5	128.4	17448	7.3	3.7	3.6	23.6	-22.8	27.5	-5.4	6.4	-7.4	4.9	43	2415	2191	147	2747	20031	0.9	12.6	10.4	6	22.8	32.4	19	140	192.4	64.8		
Alleghany	67.4	207.1	11606	0.9	6	10	-0.8	-2.6	0.9	-9.9	4.6	-16.8	6.6	38	53	271	748	1467	0.5	38.9	8.8	1.7	17.8	11.6	2	9.7	10	6	10.6		
Amelia	56.3	165	11605	1.4	8.9	7.1	11.4	-11.6	14	4.5	6.5	-21.5	9.2	50.9	348	235	30	130	418	11.5	20	9.7	1	11.2	17.9	34	14.3	28	18.4	4.2	
Amherst	58.9	164.1	11185	0.8	4.9	6.2	-0.1	-2.3	9.6	64.2	5.3	-1.1	3	40.4	1191	1322	192	3643	3458	1.9	18.3	11.7	1.5	17	31.6	4	30.3	32.5	106.7	19	
Appomattox	61.1	176.5	10795	1.1	5.2	6.1	-6.4	21.7	9	6.8	5.7	-9.6	13.5	37.7	607	107	233	678	3.6	34.7	10.6	2.4	10.6	18.2	5	49.5	4.3	42.3	34.8		
Arlington	87.5	101.9	25633	10.7	5.4	3.6	22.6	-3.5	12.9	4.3	2.8		1.6	100	4964	13168	6578	48391	7932	0	2.4	4.8	3.5	33.6	40.3	5	269.5	1031.7	1168.5	2027.8	
Augusta	69	184	12751	1.9	4.5	7.7	9.7	-28.2	8.1	2.8	5.6	-6.6	23.8	45.9	5030	1709	249	1291	7881	2.4	31.8	9.4	2.4	17.7	16	83	294.3	87.4	186.6	32.5	
Bath	67.3	226.1	11369	1.7	7	13.8	8.6	12.2	2.3	9.3	4.2	-10.5	-7.2	37.8	158	35	290	3	7.5	4.6	1.1	44.9	12.5	2	3.3	14.1					
Bedford	68.8	177.5	14305	2.8	3.6	5.8	13.5	-25	41.4	-1.5	7.4	-6.6	-2.4	39.8	1345	352	125	535	1851	4	29.4	8.8	2	20	14	19	80.2	257.2	33.8	9.7	
Bland	62.6	194.2	9765	0.9	6.5	5.4	1.5	-20.7	19.5	-26.6	8.2	-7.3	2.8	45.6	97	74	539	6.7	32.7	4.4	2.2	7.3	28.9	5	35.2			16.4	3.6		
Botetourt	72.9	142	13810	2.3	4.1	5.2	15.1	-19.4	12.3	11.7	6.3	-0.3	5	40.4	804	779	100	748	823	3.5	15.8	10.9	1.9	15.9	14	12	86.3	69.7	10.3		
Brunswick	50.5	196.7	8872	1.2	11.6	9.8	5.8	1.5	4.2	-2	7.6	-17.5	6.1	52.2	1290	501	92	429	1143	6.1	26.8	7.5	2.1	14.7	23.8	14	28.5	23.5	41.2	7.2	
Buchanan	42.5	223.6	9621	1.7	6.6	12.5	-23.3	16.2	-4.3	1	8	-7.3	7.9	38.1	250	1208	265	1114	1549	0.1	2.2	6.2	1.4	10.1	8.1	0	17.5	138.3	119.7	26.9	
Buckingham	53.6	166.2	9165	0.9	11.7	7.7	18	-1.6	10.4	0.8	5.8	-7.7	3.8	41.9	882	296	30	271	920	10.9	11.2	7.3	1.3	17.1	32.1	10	30.6	10.3	29.2	6.6	
Campbell	66.1	194.7	12061	1.7	4.2	5.9	-2.9	6.3	16.3	4.2	5.3	-6.3	9.3	44.3	5819	1884	211	871	5988	0.4	39.1	9.3	6	22.5	8.3	14	442.2	91.7	169	19.5	
Caroline	58.8	150.6	11837	2.7	11.8	10.5	19.2	-29	11.7	-2.9	4.1	-19.3	11.8	5.4	746	640	153	335	883	2.9	14.1	9.4	2.7	12.8	27.4	5	30.6	15.3	44.2	10.4	
Carroll	49.7	232.8	9693	0.7	6.4	8.4	6.4	-12.3	4.5	0.8	5.9	-4.2	6.8	38	1507	551	75	334	1902	3.1	40.6	11.2	1.7	19.8	14.4	16	32.2	63.4	10.3		
Charles City County	56.4	129.7	11384	1.7	9.6	7.8	3	23.5	6.5	11.7	2.9	0.7	61.7	87	63	46	298	11.5	17.9	6.8		14.1	28.4	2	4.8						
Charlotte	52.1	246.8	9008	1.2	11.4	8.6	10.4	-23.2	8.5	3.5	4.8	-9.8	9	51.7	1164	235	71	274	592	10	36.1	6.8	2.5	12.7	17.5	12	28.4	31.6	22.9	4.7	
Chesterfield	84.2	64.8	17423	5.7	1.3	4.6	8.7	-5.7	58.2	2.6	7	-13.6	15.3	37.9	11786	15892	3093	11620	12776	0.1	22.8	11.1	5	16.9	18.6	5	614.4	2279.3	1282.3	343.2	
Clarke	75	143	15657	6	5.7	6.8	24.1	-11	14.4	1.8	4.9	-15.4	9.9	47	604	348	96	717	391	8.4	30.6	7	1.6	21	11.9	14			22.6	7.9	
Craig	68.4	159	11186	1.4	5.8	7.8	10.5	-3.7	6.4	-4.6	3.4	-10.6	2.4	45.2	34	34	24	143	19.2	11.2	4.7	3.1	10.8	25	2	1.3	4.2	0.9			
Culpeper	66.7	166.1	14122	4.3	5.4	8.7	28.7	-43.8	26.6	2.3	5.5	-15.5	8.1	48	1575	1991	540	2138	1889	5.6	16.5	10.7	4.6	22.7	16.9	18	122.1	70.7	145	53.9	
Cumberland	57.6	154	10295	2.3	13.1	7.4	15.8	-36.2	3.6	2.9	5.5	-8.8	9.1	41.9	75	271	23	683	305	26.1	4.2	8	1	19.7	21.3	22	3.4	4.9	24.7	3.5	
Dickenson	47.1	232.4	8067	1.2	8	17.1	-28.2	47.9	3	-3.1	11.8	-20	6.9	29.2	227	584	103	393	779	0.5	1.3	6.5	1.6	8.4	12.5	4	4.7	6.5	56	12.9	
Dinwiddie	59.2	204.7	12212	1.8	5.5	8.2	5.4	-15.4	17.3	15.2	6	-9.6	5.8	52	539	273	113	191	8308	1	11.6	15.9	4.1	22.4	29	14	15.5		22.6	5.9	
Essex	64.7	223.8	11529	1.6	8.2	7.6	10.7	-15.7	-0.2	-0.4	6.4	-15.4	-2.7	59.9	902	1114	181	579	412	4.7	25.6	17.5	3.4	23.4	11.6	7	18.2	24.4	81.5	10.2	
Fairfax	91.4	48.1	24833	16.4	3.4	3.2	17.9	-10	42.7	4.7	6.3	-28.4	7	34.3	16839	69010	26719	129672	44073	0	5	9	7.5	37.2	17.7	6	821.5	9177.2	5874.2	5712.4	
Fauquier	78.9	109.6	19195	8.9	3.5	5.1	39.6	-60.7	41	9.9	5.6	-2.9	3.6	44.3	1038	2658	928	2898	2117	5.3	4.8	10.4	4.2	23.6	26.9	31	34.3	130.7	240.4	84.4	
Floyd	60.2	194.1	10532	0.8	7.5	11.1	12.1	-8.8	12	1.1	5	-10.3	5	40.4	704	281		176	349	17.3	25	10.2	2.4	10.6	15.8	15	43	2.6	34.5	4.2	
Fluvanna	68.5	176.2	12977	2.9	6.8	5.9	41	-45	31.5	3.5	7.6	-4.2	18.3	48.3	137	220	77	332	452	6.4	8.8	5.6	1	20.6	16.9	5			16.9	5.2	
Franklin	59.9	159.3	11936	2	5	8.2	5.6	8.2	29.7	3.8	7.4	-6.8	6.2	49.1	4729	1453	248	1417	1226	4.1	39.9	8.9	2.3	17	11.4	34	159.2	32.5	123.2	19.8	
Frederick	70.1	147	13671	2.4	5.6	7.5	14.4	-27.9	40	-3	5	-11.9	14.7	44.1	1986	1223	167	1171	3179	0.8	29.7	12.5	3.1	22.9	9	18	104.9	124.9	120.5	40.8	
Giles	64.5	232.5	11462	1.1	4.8	12.9	5.9	-2.5	5.4	3	5.6	-8.6	16.3	37.9	2630	763	100	712	644	2.4	53.4	7.6	2.4	12	9.3	4	26.4	84.5	10.9		
Gloucester	74	138.6	13122	2.3	4	4.4	16.9	-27.2	49.8	1.6	6.6	-21.5	-0.2	44.6	328	1573	231	1552	1828	2.1	3.4	12.8	3.8	26.3	26	4	40	135.7	32.4		
Goochland	66.7	116.5	18312	9.3	5.8	5.4	19.2	-43.2	29.1	2.7	6	-3.8	7.6	38.3	79	427	72	471	961	4.3	1.3	9.4	1.5	20.7	24.1	5	3.1	66.9	41.3	8.2	
Grayson	51.1	206.1	8966	0.2	7.1	8.6	-1.7	9.5	10.9	-13.5	6.5	-2	4.7	42	1060	213	67	191	492	10.8	44.9	6.1	1.8	12.5	15.6	14	47.5	3	20.8	4.5	
Greene	63.5	130.6	12268	1.7	7.4	9.3	9.1	0.9	35.8	44.3	11	-3.8	7.4	43.1		263	299	551	374	8.1	20.4	10.5	1.3	14.5	19.6	4			20.4	3.1	
Greensville	50	220.4	9504	0.9	11.4	8	13.2	-27.4	-10.5	0	8.3	-11.6	11.2	57.7	278	92		79	974	3.5	37	10.3	2	13.6	13		5.6	5.8	1.5		
Halifax	51.6	223.1	9568	0.7	12.9	8.1	9.2	-13.2	3.9	33.3	5.4	-5.5	6.2	58.9	1426	588	51	358	1679	4.4	41	9	1.5	18.8	12.2	22	65.5	26.9	49.5	9.6	
Hanover	77.5	134.3	16463	4.3	2.6	4.3	13.7	-45.5	37.3	5.9	5.4	-13.6	9.6	41.9	2348	4638	740	5045	2732	1.3	12.6	10.4	2.3	18.9	8.9	19	149.6	1558.2	342.7	139.4	
Henrico	81.3	107.4	18019	4.7	1.5	4	5.7	-13.6	34.2	3.2	5.9	-9.8	8.8	41.1	8857	22118	9815	24336	10091	0.1	16	12.9	14.2	24.5	8.2	6	480.2	2583.8	1610.2	701.4	
Henry	53.9	211.1	11491	1.2	4.4	9	-3	-4.9	10.5	-1.7	4.2	-14.9	5.1	35.1	13353	1915	397	1007	3157	0.4	56.4	8.1	2.4	13.1	8.2	3	501.5	103.9	185.3	34	
Highland	61.8	241	10828	1.3	9	9.2	-8.1	-10	20.2	6.5	6.1	-8.3	6.6	54.8	99	54		181	122	27	14.7	5	2.4	19.9	14.9	7	1.8		6.2		
Isle of Wight	65.4	145.9	12274	1.3	5.4	7.1	3.2	-18.3	26.6	-8.6	4.5	-16.4	13.1	73.9		906	170	735	847	4.2	58.1	5.3	4.2	6.9	7.9						

Lee	48	241.7	7837	0.9	10.4	10.3	-16.4	10.9	6.3	4.5	7.6	-11	6.8	42.9	946	686	159	650	1128	8.8	13.5	9.5	3.4	17	23.7	11	31.8	26.3	77.3	10.2
Loudoun	86.6	71.2	20757	9.3	2	3.8	27.1	-53.4	66.8	17.8	9.1	1.5	14.7	38.7	3598	6095	1124	8863	5160	1.6	7.4	8.2	3	21.9	18.1	28	135.4	574.1	556	295.3
Louisa	59.8	179.6	12390	2.6	8.8	7.6	12.6	-24.1	28.6	2	3.7	-5.5	10	41.6	890	492	181	346	884	3.3	15.7	4.6	2.6	10	10.2	8	19.2	10	39.8	8.6
Lunenburg	52.2	197.9	9158	0.8	9	17.7	-0.2	2.6	5.3	-3.2	6.2	-18.9	9.8	54.2	1653	426	61	118	494	8.9	32.9	9.4	1.9	10	14.2	9	41.5	13.9	35.8	3.9
Madison	62.7	157.8	11145	2.3	11.3	5.6	19.9	-22.1	13.8	5.3	5.3	-2.9	8.8	47.6	510	339	32	509	377	18.1	13.4	7.4	1.1	23.4	15.4	16	11.7	18.8	34.2	5.4
Mathews	70	259.9	13671	1.5	7.5	3.7	8.7	7.8	11.8	4.6	7.7	-13.6	15.1	40.3	200	249	51	208	292	7.1	9.6	13.7	1.8	20.4	18.7	3	4.2	9	21.5	4.6
Mecklenburg	58.1	234.6	10508	1.1	10.3	8.5	-0.7	-20.2	11.9	2.4	4.7	-4.1	3.2	56	5251	2586	221	1389	1959	3.7	35	12.6	2.5	15.6	15.3	24	201.8	70.5	158.6	21.1
Middlesex	66.6	267	14834	3.8	6.2	5.1	23.4	-29.3	11.1	8	3.5	-2.1	10.7	50.6	366	436	70	354	631	6.9	10.3	11.1	3.1	19.9	22.4	3	9.9	27.2	34	7.7
Montgomery	73.6	113.6	10979	1.9	3.1	8.9	4.7	12.2	24.1	2.8	5.4	-4.4	6.2	37.5	8028	6830	1092	3739	13952	0.8	28.1	10	2.5	15.5	35.2	14	408.2	68.1	452.8	88.4
Nelson	57	210.1	11419	2.8	11.8	7.6	15.8	-18.1	28.4	-3.5	6.8	-8.8	21.3	38.1	576	449	173	1273	471	8.3	8.9	7	7	26.1	14.5	5	61.8	20.7	55.7	13.7
New Kent	72.8	144.1	14993	3.3	3.8	4.5	23	-46.9	21.9	8.3	6		10.1	52.8	248	294	8	405	413	3.5	10.5	7.9	1	30.3	21.9	2	5.2	8.3	24.4	14.2
Northampton	57.3	245.8	10176	2.5	15.2	9.4	8.9	-0.5	0.8	13.6	6.5	-18.9	9	69.4	714	721	86	1028	991	8.5	10.4	12.5	1.4	27.5	21.9	20	27.7	23	52.2	14.1
Northumberland	63.9	266.5	13712	3.4	8.1	11.1	1.3	17.7	22.5	12.9	5	2	9	59.7	508	323	113	237	323	8.3	23.6	7.8	3.8	18	11.9	5	30.1	20	32.4	6.1
Nottoway	53.2	211.1	10036	1.5	6.8	7.2	-3.2	-1.9	2	-2	7.4	2.3	5.2	47.4	851	849	123	634	1416	4.5	16.7	8.2	2	12.3	33.7	16	22.2	60.3	75.2	18
Orange	65.9	216.8	13545	3	4.4	8.7	38.2	-51.5	22.8	1.3	6.4	-4.6	9.3	51.2	2469	1359	122	800	1270	4.3	27.9	12	3.7	16.5	15	16	84.5		91.2	14
Page	55.4	184.6	11304	1.7	6.5	12.9	17.8	-20.9	7.4	3	3.4	-4.3	9.8	50.7	1823	1065	170	1279	836	7.6	24.1	9.5	2.6	20.2	15.8	45	96.6	10	131.2	29.7
Patrick	54.1	182	10411	1.1	4.7	7.1	2.2	3.9	15.2	12.6	7	-17.3	4.6	44.3	2675	505	114	699	628	5.7	42.4	8	1.6	17.2	11.1	10	83.2	42.7	51.3	12.5
Pittsylvania	56.1	211.1	11196	1.3	7.7	8.8	7.7	-19	-5.7	0.5	3.1	-9	5.8	54.5	4665	1168	116	935	5111	2	38.7	9.9	3.2	19.9	12.4	40	262.4	79.9	101	18.3
Powhatan	66.3	104.4	15683	4.6	3.7	5.9	14.4	-46.9	27.9	13.6	8.5	0.7	7.8	46.7	168	307	81	161	1591	6.8	4.4	6.4	3.2	11	38.4	11	4	36.5	30.5	4.6
Prince Edward	60.5	207.3	9031	1.1	7.8	10.5	3.8	0.7	9.5	14.6	8.7	-13.8	1.4	48.7	1247	1784	183	2076	1520	2.2	11.7	16.9	2.9	26.9	23.1	10	22.5	57.7	117.2	20.8
Prince George	77.9	118.7	12714	1.8	5.4	7.4	19.1	-50.3	24.4	57.4	7.8	-12.4	11.9	47.9	476	1209	128	1352	2703	0.4	22.1	6.7	1	9.2	49.6	5	8.8	9.5	35.3	24.5
Prince William	87.8	46.1	17833	6.5	2.4	4.3	15.8	-33.8	60.8	6.6	6.3	-27.8	11.3	37.1	4024	14693	1330	12420	11206	0.2	13.8	13.6	3	18.5	26.7	6	164.3	515.3	1268	296.7
Pulaski	59.6	187	11074	1.1	3.9	10.7	-3.9	21.4	7.3	0.1	4.2	1.5	6.3	35.6	6036	1438	203	1496	1883	1.4	44.7	6.9	2	16.5	12.4	12	225.4	62.9	136.6	38.5
Rappahannock	67.2	175.9	17260	5.8	10	9.6	32.5	-24.4	9.6	7.3	7	-11.8	4.6	43.1		183	24	168	239	11.8	10.5	14	1.3	22.6	16.6	5	7.3	17.5	13	4.4
Richmond	56.8	233.7	11036	2.2	10.8	6.8	5.2	2.4	5.7	5.3	5.9	-9.8	3.6	53.4	552	383	97	341	540	5.6	12.1	8.8	3.2	14	17.7	6	29.2	30	47.6	7.5
Roanoke	79.4	111.3	16627	4.4	1.1	3.8	7.6	-29.2	18.2	11.4	6	-11.1	2.9	39.1	2458	3663	3229	7284	5618	0.2	23.4	9.7	7.7	24	14.4	16		501.3	328.1	95.3
Rockbridge	62.1	196	11287	1.4	6.8	6.8	10.1	-7.6	11.9	-3.3	7.4	-7.4	7.8	43.7	2118	650	66	440	2160	2.8	29.5	10.9	1.7	24.2	19	12	151.5	264.8	68.5	13.3
Rockingham	64.7	155	12647	2.1	5.3	6.6	14	-35.4	8.4	-1	6.2	-7.4	6.4	56.2	6691	1560	317	2248	5789	3	28.1	9.8	2.8	22.5	13.6	277	553.8	74.9	129.1	31.5
Russell	50.6	206.9	8753	1	6.3	11.5	-22.7	52	0.3	13.9	7.2	-8.9	7.2	44.5	1641	909	179	925	1232	6	10.8	8.1	2.5	14.1	15.2	14	43.2	31.4	93.3	23.9
Scott	51.2	237	9100	0.4	9.9	7	0.9	-5.9	2.3	5.8	8.5	-4.5	7	37.1	1087	914	137	528	981	8.9	27.4	12.6	4.3	12.8	20.8	10	31.4	26.5	93.3	12.3
Shenandoah	65.2	205.3	12686	1.7	5.8	6.2	17.4	-10.7	26.3	9.2	3.8	-0.5	7.9	46.3	5192	2015	373	1963	1248	3.7	41.6	9.9	2.4	15.4	10.2	45	209.8	80.9	162.4	36.1
Smyth	53.3	215.9	9613	0.8	4.8	8.4	-0.8	22	6.7	5.4	9	-0.1	6.9	41.6	5546	1883	200	1578	2078	2.8	45.2	8	1.8	15	15.5	16	208.9	36.3	151.5	32.2
Southampton	58.4	196.7	10948	1.4	12.3	5.9	13.3	-26.2	4.9	3.3	6.1	-4.9	15.4	69.5	2862	355		271	2113	9.7	12.1	10.1	2.6	21.1	26.5	39	27	35.3	4.8	
Spotsylvania	76.6	124.7	15192	4	3.4	8.8	28.3	-50.1	72.9	-0.7	6	-4.3	23.9	47.9	373	1511	165	475	4557	0.3	11.9	18.7	5	26.1	15.1	6	12.5	18	203.6	20.6
Stafford	80.9	64.6	15917	5.2	2.6	5.3	23	-38.4	54.7	13.2	8.1	-2.2	12.5	38.1	931	2782	322	1971	2341	0.7	3.1	19.7	2.3	17.4	18.2	2	40.9		241.4	59.5
Surry	58	178.2	11495	1.4	8.8	9.5	11.7	-39.1	9.5	-5.5	3.3	-17.2	-3.1	63.5	210	200	21	84	389	4	1.4	1.9	0.4	9.8	7.5	10	10.6	7.8	10.3	1.8
Sussex	54.2	228.3	9856	1.7	10.2	8.1	-3.2	1	7.4	5.8	5.3	-17.3	5.9	73	783	561	77	284	534	6.5	26.6	14	2.6	11.2	19.2	14	45.4	59.6	47.9	3.9
Taxewell	57.3	239.2	9995	1.4	4.5	9.7	-20	33	3.4	5.3	7.8	-3.5	8.1	35.2	1616	3071	553	2778	2944	2	12.3	13.9	3.6	25.9	17.2	11	66.3	212.4	341.2	123.7
Warren	64.6	159.7	13580	1.8	3	11.5	24.2	-28.3	17.9	4.6	1.1	-9.9	8.9	37.2	2415	1801	311	1669	1108	1.1	14.8	14.4	3.8	26	15.7	3	208.3	18.4	145.2	32.2
Washington	60.4	208.8	11057	2.3	4.7	5.9	0.7	0.3	7.3	7.4	5.9	-5.9	9.5	38.4	1731	2078	301	2372	3729	3	31.7	11	5.5	16.8	13.9	39	91.3	172.3	152.4	41
Westmoreland	59	228.7	12268	1.7	9.4	10.8	10.1	-32.7	12.1	-1	6.4	2.5	3.9	60.2	845	519	161	443	571	8.9	19	12.3	2.2	19.8	17.9	11	19.6	16.6	51	7.5
Wise	52.1	247.3	9392	1.2	5.8	11.1	-21.1	40.3	1.7	0.4	7	14.6	3.1	30.8	515	2253	395	1761	2896	0.2	2.9	9.2	2.2	20.3	15.3	1	12.5	198.9	223.9	39.5
Wythe	61.8	228.5	10404	0.7	5.1	8.4	-4.8	26.6	8.4	4.9	3.6	-11.7	4.6	46.2	2344	1977	277	1616	1624	4.9	21.7	13.7	2.8	20.4	19.3	23	88.4	55.7	140.1	30.5
York	88.3	78.3	15742	4.2	2.3	4.3	15.1	-27.8	33.8	1.9	6.6	4.1	4.5	39.4	583	2182	227	1288	2257	1.1	7.4	7.8	1.5	17.1	40.8	3	87.8	125.8	84.6	
MEAN	64.1	179.3	12667.0	2.7	6.6	7.8	9.8	-13.1	17.9	5.4	6.0	-8.9	7.9	47.2	2214.1	2495.7	787.2	3531.3	2825.1	5.2	21.2	9.6	2.9	18.8	19.1	16.4	108.3	271.6	209.2	122.4



**Table C 3 Variable Weights in Principal Components and Percentage of Variation Explained**

	Principal Component I	Principal Component II	Principal Component III	Principal Component IV
EDUC	0.265	-0.225	0.092	0.03
SSPB	-0.222	0.194	-0.094	0.064
MIPC	0.28	-0.187	-0.039	0.057
PHIM	0.281	-0.115	-0.141	-0.031
PSHU	-0.188	0.08	-0.413	0.084
RU	-0.185	0.202	-0.048	-0.1
PCHI	0.13	-0.34	-0.105	0.28
PCPL	-0.107	0.362	0.008	-0.25
PCHU	0.207	-0.261	0.21	-0.057
PCPE	0.019	-0.142	0.016	-0.271
PCPI	-0.003	-0.038	0.142	-0.444
PCLF	-0.085	-0.066	0.152	-0.071
PCBD	0.059	-0.148	0.221	0.023
FO	-0.036	-0.056	-0.31	0.368
EM	0.214	0.28	0.162	0.15
EF	0.276	0.215	-0.198	-0.059
EG	0.283	0.173	-0.039	-0.067
ERFM	-0.132	-0.028	-0.362	0.091
ERM	-0.077	0.202	0.301	0.339
ERR	0.049	-0.065	0.197	-0.031
ERFN	0.18	0.093	0.097	0.091
ERS	0.16	-0.044	-0.152	0.042
ERG	0.041	-0.229	-0.148	-0.263
VPSF	0.006	0.048	0.114	0.358
VAM	0.234	0.234	0.184	0.197
SW	0.28	0.213	-0.158	-0.08
SR	0.284	0.208	-0.146	-0.085
RS	0.263	0.202	-0.264	-0.063
Latent Root (Variance)	9.084	3.796	2.217	1.946
Percent Variance Explained Individually	33.64%	14.06%	8.21%	7.21%
Explained Cumulatively	33.64%	47.70%	55.91%	63.12%

**Table C 4 County Scores in Each Principal Component**

County	Princ. Component I	Princ. Component II	Princ. Component III	Princ. Component IV
Accomack	-1.217	0.525	-0.986	0.629
Albemarle	3.656	-1.658	0.524	0.589
Alleghany	-1.513	1.178	0.571	0.147
Amelia	-1.534	-0.283	-0.916	0.142
Amherst	-0.807	-0.779	0.543	-2.870
Appomattox	-1.404	0.736	1.359	-1.214
Arlington	6.161	-1.027	-4.230	3.549
Augusta	0.769	0.372	2.002	1.736
Bath	-1.413	0.887	-1.887	-0.976
Bedford	0.405	-0.822	0.985	0.209
Bland	-1.655	0.134	0.100	-0.621
Botetourt	-0.011	-1.345	0.829	-0.412
Brunswick	-2.315	1.140	-1.206	-0.852
Buchanan	-2.847	2.430	0.062	-3.020
Buckingham	-1.943	-0.177	-1.757	-1.160
Campbell	0.971	2.019	2.229	0.940
Caroline	-0.970	-0.672	-1.373	0.556
Carroll	-1.911	1.104	0.794	-0.315
Charles City Co.	-2.234	0.093	-2.090	-0.369
Charlotte	-2.454	0.747	-1.113	0.558
Chesterfield	6.361	0.905	2.812	0.539
Clarke	0.386	-1.297	-0.435	1.492
Craig	-1.501	-0.291	-1.746	0.019
Culpeper	0.999	-1.363	-0.110	1.244
Cumberland	-1.973	-1.016	-2.988	-0.074
Dickenson	-3.440	3.286	0.250	-4.999
Dinwiddie	-0.115	-0.497	0.127	-1.001
Essex	-1.099	0.387	-0.719	0.616
Fairfax	19.575	7.795	-5.147	0.081
Fauquier	3.052	-3.961	-0.184	1.406
Floyd	-2.054	0.460	-0.700	-0.048
Fluvanna	0.068	-2.887	-0.273	0.245
Franklin	-0.367	0.937	1.439	0.251
Frederick	0.907	-0.846	1.505	1.164
Giles	-1.705	1.374	1.650	0.137
Gloucester	1.371	-2.212	0.129	-0.680
Goochland	1.459	-3.009	-0.418	0.095
Grayson	-2.677	1.752	0.236	-0.376
Greene	-0.955	-1.350	0.615	-3.069
Greensville	-2.788	0.698	-0.256	0.067
Halifax	-2.286	0.777	-0.832	0.234
Hanover	2.515	-1.482	1.036	0.945
Henrico	7.162	2.241	1.563	1.224
Henry	0.176	3.734	2.581	1.572
Highland	-2.416	0.328	-2.429	-0.306
Isle of Wight	-0.901	0.254	0.666	2.662
James City Co.	3.873	-4.246	1.909	0.548
King and Queen	-2.033	-0.644	-2.225	0.955
King George	1.050	-4.138	-0.533	-1.940
King William	-0.705	-0.582	0.807	2.090
Lancaster	0.441	-0.275	-1.357	1.619
Lee	-2.687	1.802	-0.856	-2.405
Loudoun	4.703	-3.898	1.780	0.261
Louisa	-1.141	-0.376	0.131	0.388
Lunenburg	-2.911	2.028	-0.639	-0.433
Madison	-1.275	-1.119	-1.925	0.377
Mathews	-0.745	-0.744	0.041	-0.922
Mecklenburg	-1.260	1.532	0.135	1.042
Middlesex	-0.061	-1.435	-1.162	1.235
Montgomery	1.835	1.329	1.921	-0.949
Nelson	-0.404	-0.503	-0.453	-0.186

New Kent	0.742	-2.879	-0.159	0.428
Northampton	-1.992	0.271	-2.877	-0.090
Northumberland	-1.530	0.587	-0.637	0.224
Nottoway	-1.941	0.440	-0.220	-1.717
Orange	0.229	-1.435	0.726	1.520
Page	-1.281	0.373	-0.321	1.225
Patrick	-1.265	1.106	0.761	-0.498
Pittsylvania	-0.728	1.843	0.224	2.137
Powhatan	0.656	-2.973	0.075	-1.214
Prince Edward	-1.176	0.376	-0.211	-2.253
Prince George	0.369	-3.363	0.427	-2.324
Prince William	4.991	-2.166	1.334	-0.058
Pulaski	-1.018	2.494	1.860	0.004
Rappahannock	-0.162	-1.775	-1.582	0.558
Richmond	-1.773	0.551	-1.308	-0.453
Roanoke	2.833	-0.816	1.213	0.440
Rockbridge	-0.545	0.337	0.574	-0.293
Rockingham	1.256	1.226	1.976	4.898
Russell	-2.590	2.580	-0.022	-2.922
Scott	-2.193	0.997	0.168	-1.630
Shennandoah	-0.040	0.445	1.471	1.872
Smyth	-1.441	2.268	1.800	-1.207
Southampton	-1.244	-0.705	-1.698	0.892
Spotsylvania	2.446	-3.469	2.234	0.594
Stafford	2.472	-3.693	2.272	-1.115
Surry	-1.849	0.016	-2.293	1.185
Sussex	-2.124	0.950	-1.190	0.353
Taxewell	-1.142	2.061	0.947	-2.822
Warren	0.665	-0.499	0.874	1.227
Washington	-0.359	0.970	1.399	-0.171
Westmoreland	-1.724	-0.216	-1.057	0.412
Wise	-2.375	2.308	0.581	-3.546
Wythe	-1.206	1.485	0.258	-0.401
York	1.697	-3.232	0.811	-1.183
MEAN	-0.075	-0.058	-0.013	-0.037
STANDART DEV.	2.958	1.937	1.470	1.500

**Table C 5 Selecting 27 Counties**

Principal Component I		Principal Component II		Principal Component III		Principal Component IV	
Accomack	-1.217	Accomack	0.525	Accomack	-0.986	Accomack	0.629
Alleghany	-1.513	Alleghany	1.178	Alleghany	0.571	Alleghany	0.147
Amelia	-1.534	Amelia	-0.283	Amelia	-0.916	Amelia	0.142
Appomattox	-1.404	Appomattox	0.736	Appomattox	1.359	Appomattox	-1.214
Augusta	0.769	Augusta	0.372				
Bath	-1.413	Bath	0.887				
Bland	-1.655	Bland	0.134	Bland	0.100	Bland	-0.621
Brunswick	-2.315	Brunswick	1.140	Brunswick	-1.206	Brunswick	-0.852
Buchanan	-2.847						
Buckingham	-1.943	Buckingham	-0.177				
Caroline	-0.970	Caroline	-0.672	Caroline	-1.373	Caroline	0.556
Carroll	-1.911	Carroll	1.104	Carroll	0.794	Carroll	-0.315
Charlotte	-2.454	Charlotte	0.747	Charlotte	-1.113	Charlotte	0.558
Craig	-1.501	Craig	-0.291				
Cumberland	-1.973	Cumberland	-1.016				
Essex	-1.099	Essex	0.387	Essex	-0.719	Essex	0.616
Floyd	-2.054	Floyd	0.460	Floyd	-0.700	Floyd	-0.048
Franklin	-0.367	Franklin	0.937	Franklin	1.439	Franklin	0.251
Frederick	0.907	Frederick	-0.846				
Giles	-1.705	Giles	1.374				
Grayson	-2.677	Grayson	1.752	Grayson	0.236	Grayson	-0.376
Greensville	-2.788	Greensville	0.698	Greensville	-0.256	Greensville	0.067
Halifax	-2.286	Halifax	0.777	Halifax	-0.832	Halifax	0.234
Henry	0.176						
Highland	-2.416						
King and Queen	-2.033	King and Queen	-0.644				
King William	-0.705	King William	-0.582	King William	0.807		
Lancaster	0.441	Lancaster	-0.275	Lancaster	-1.357		
Lee	-2.687	Lee	1.802	Lee	-0.856		
Louisa	-1.141	Louisa	-0.376	Louisa	0.131	Louisa	0.388
Lunenburg	-2.911						
Madison	-1.275	Madison	-1.119				
Mecklenburg	-1.260	Mecklenburg	1.532	Mecklenburg	0.135	Mecklenburg	1.042
Middlesex	-0.061	Middlesex	-1.435	Middlesex	-1.162	Middlesex	1.235
Montgomery	1.835	Montgomery	1.329				
Nelson	-0.404	Nelson	-0.503	Nelson	-0.453	Nelson	-0.186
Northampton	-1.992	Northampton	0.271				
Northumberland	-1.530	Northumberland	0.587	Northumberland	-0.637	Northumberland	0.224
Nottoway	-1.941	Nottoway	0.440	Nottoway	-0.220		
Orange	0.229	Orange	-1.435	Orange	0.726		
Page	-1.281	Page	0.373	Page	-0.321	Page	1.225
Patrick	-1.265	Patrick	1.106	Patrick	0.761	Patrick	-0.498
Prince Edward	-1.176	Prince Edward	0.376	Prince Edward	-0.211		
Pulaski	-1.018						
Rappahannock	-0.162	Rappahannock	-1.775				
Richmond	-1.773	Richmond	0.551	Richmond	-1.308	Richmond	-0.453
Rockbridge	-0.545	Rockbridge	0.337	Rockbridge	0.574	Rockbridge	-0.293
Rockingham	1.256	Rockingham	1.226				
Russell	-2.590						
Shennandoah	-0.040						
Smyth	-1.441	Smyth	-0.705				
Southampton	-1.244	Southampton	0.997	Southampton	0.168		
Surry	-1.849	Surry	0.016				
Sussex	-2.124	Sussex	0.950	Sussex	-1.190	Sussex	0.353
Taxewell	-1.142						
Westmoreland	-1.724	Westmoreland	-0.216	Westmoreland	-1.057	Westmoreland	0.412
Wise	-2.375						
Wythe	-1.206	Wythe	1.485	Wythe	0.258	Wythe	-0.401

**Table C 6 Sample Mean Scores**

Principal Component I		Principal Component II		Principal Component II		Principal Component IV	
Middlesex	-0.061	Grayson	1.752	Franklin	1.439	Middlesex	1.235
Franklin	-0.367	Mecklenburg	1.532	Appomattox	1.359	Page	1.225
Nelson	-0.404	Wythe	1.485	Carroll	0.794	Mecklenburg	1.042
Rockbridge	-0.545	Alleghany	1.178	Patrick	0.761	Accomack	0.629
Caroline	-0.970	Brunswick	1.140	Rockbridge	0.574	Essex	0.616
Essex	-1.099	Patrick	1.106	Alleghany	0.571	Charlotte	0.558
Louisa	-1.141	Carroll	1.104	Wythe	0.258	Caroline	0.556
Wythe	-1.206	Sussex	0.950	Grayson	0.236	Westmoreland	0.412
Accomack	-1.217	Franklin	0.937	Mecklenburg	0.135	Louisa	0.388
Mecklenburg	-1.260	Halifax	0.777	Louisa	0.131	Sussex	0.353
Patrick	-1.265	Charlotte	0.747	Bland	0.100	Franklin	0.251
Page	-1.281	Appomattox	0.736	Greensville	-0.256	Halifax	0.234
Appomattox	-1.404	Greensville	0.698	Page	-0.321	Northumberland	0.224
Alleghany	-1.513	Northumberland	0.587	Nelson	-0.453	Alleghany	0.147
Northumberland	-1.530	Richmond	0.551	Northumberland	-0.637	Amelia	0.142
Amelia	-1.534	Accomack	0.525	Floyd	-0.700	Greensville	0.067
Bland	-1.655	Floyd	0.460	Essex	-0.719	Floyd	-0.048
Westmoreland	-1.724	Essex	0.387	Halifax	-0.832	Nelson	-0.186
Richmond	-1.773	Page	0.373	Amelia	-0.916	Rockbridge	-0.293
Carroll	-1.911	Rockbridge	0.337	Accomack	-0.986	Carroll	-0.315
Floyd	-2.054	Bland	0.134	Westmoreland	-1.057	Grayson	-0.376
Sussex	-2.124	Westmoreland	-0.216	Charlotte	-1.113	Wythe	-0.401
Halifax	-2.286	Amelia	-0.283	Middlesex	-1.162	Richmond	-0.453
Brunswick	-2.315	Louisa	-0.376	Sussex	-1.190	Patrick	-0.498
Charlotte	-2.454	Nelson	-0.503	Brunswick	-1.206	Bland	-0.621
Grayson	-2.677	Caroline	-0.672	Richmond	-1.308	Brunswick	-0.852
Greensville	-2.788	Middlesex	-1.435	Caroline	-1.373	Appomattox	-1.214
Sample MEAN	-1.502		0.519		-0.292		0.105

## IV. Appendix D

### IV.1 Small Business Survey

Questionnaire # \_\_\_\_\_

Copy of the results requested:

- yes

- no

Please check the most appropriate answer.

#### I. General Information about the company

I.1. Total annual sales of your firm in 1995. Please circle one:

- |                         |                         |
|-------------------------|-------------------------|
| 1 - less than \$10,000  | 6 - \$200,000 - 499,999 |
| 2 - \$10,000 - 19,999   | 7 - \$500,000 - 999,999 |
| 3 - \$20,000 - 49,999   | 8 - \$1M - 4.99 M       |
| 4 - \$50,000 - 99,999   | 9 - \$5M - 10M          |
| 5 - \$100,000 - 199,999 | 10 - \$10M and over     |

I.2. Number of locations that your business has in the following areas:

- local locations (within 15 miles) \_\_\_\_\_ #
- local locations (15-50 miles) \_\_\_\_\_ #
- non-local locations (beyond 50 miles) \_\_\_\_\_ #

I.3. The form of business organization (circle one)

- 1 - sole proprietorship
- 2 - partnership
- 3 - corporation
- 4 - cooperative
- 5 - other (please specify) \_\_\_\_\_

I.4. Number and initial amount of the last two years business loans:

<u>Maturity</u>	<u>Number of Loans</u>	<u>Total of Initial amounts</u>
12 months or less	_____ #	\$ _____
13 to 60 months	_____ #	\$ _____
61 months or longer	_____ #	\$ _____

I.5. Local market share

- a) How many competitors do you have in the local market? \_\_\_\_\_ #
- b) What share of the local market does your firm represent? \_\_\_\_\_ %

I.6. Change in average annual sales of the firm from two years ago (circle one only):

- |                              |                                  |
|------------------------------|----------------------------------|
| 1 - increased more than 100% | 7 - decreased 1-5%               |
| 2 - increased 20-100%        | 8 - decreased 6-10%              |
| 3 - increased 11-20%         | 9 - decreased 11-20%             |
| 4 - increased 6-10%          | 10 - decreased more than 20%     |
| 5 - increased 1-5%           | 11 - business too new to compare |
| 6 - no change                |                                  |

- I.7. Current stage of business (circle one):
- |                    |                                  |
|--------------------|----------------------------------|
| 1 - planning phase | 4 - stable                       |
| 2 - start/phase up | 5 - transition one owner to next |
| 3 - on going       | 6 - phase down or out            |

- I.8. Amount of business' total debt as a percent of total assets in 1995 (circle one)
- |               |                  |
|---------------|------------------|
| 1 - no debt   | 5 - 50-69%       |
| 2 - under 10% | 6 - 70-89%       |
| 3 - 10-29%    | 7 - 90-99%       |
| 4 - 30-49%    | 8 - 100% or more |

- I.9. Owner's / Manager's experience:  
Number of years experience the owner/manager has in this type of business \_\_\_\_\_

- I.10. Sector of Business (circle one)
- |                     |                               |                           |
|---------------------|-------------------------------|---------------------------|
| <u>Agricultural</u> | <u>Non-Agricultural</u>       |                           |
| 1 - processing      | 1 - retail                    | 6 - professional services |
| 2 - input supplier  | 2 - wholesale                 | 7 - construction          |
| 3 - farm equipment  | 3 - durable manufacturing     | 8 - transportation        |
| 4 - farming         | 4 - non-durable manufacturing | 9 - other _____           |
| 5 - other _____     | 5 - business services         |                           |

## II. Experience in financing your business

- II.1. Sources of additional debt financing during the last two years in %:

	<u>Proportion in %</u>	
1 - commercial bank	___ %	7 - insurance company _____ %
2 - government guaranteed loan from commercial or other bank	___ %	8 - supplier/dealer credit _____ %
3 - savings and loan	___ %	9 - government program (do not include Gov. guarantee) _____ %
4 - finance company	___ %	10 - loans from family/friends _____ %
5 - credit union	___ %	11 - loans from venture capital firm _____ %
6 - venture capital	___ %	12 - other source, please specify: _____ %
		Total <u>100 %</u>

- II.2. Proportions of new debt financing based on the location of the source:

- |                                  |       |
|----------------------------------|-------|
| a) locally (within 15 miles)     | ___ % |
| b) locally (15-50 miles)         | ___ % |
| c) non-locally (beyond 50 miles) | ___ % |

- II.3. Over the last two years, have you had loan requests denied?

- |        |         |
|--------|---------|
| 1 - no | 2 - yes |
|--------|---------|

If yes how many? \_\_\_\_\_ #

If no, what percentage of the amount requested did you receive? (Please circle one)

- |               |             |
|---------------|-------------|
| 1 - under 10% | 3 - 50-74%  |
| 2 - 10-49%    | 4 - 75-100% |

- II.4. What was the reason for the denial or underfunding?  
 (Please circle all that apply and put an \* by the one most important if it was clearly the problem)  
 1 - lender did not have funds available    4 - lack of history/track record  
 2 - collateral    5 - internal bank policy  
 3 - cash flow    6 - other, please specify \_\_\_\_\_
- II.5. Proportions of new financing from equity (ownership) investors, based on the location of the source:  
 a) locally (within 15 miles)    \_\_\_\_\_ %  
 b) locally (15-50 miles)    \_\_\_\_\_  
 c) non-locally (beyond 50 miles)    \_\_\_\_\_ %
- II.6. Do you expect to need additional business financing in the next year?  
 1 - yes    2 - no
- II.7. How do you feel about this statement: "If you really want money for business financing it can be obtained" (circle one)  
 1 - strongly agree    4 - mildly disagree  
 2 - mildly agree    5 - strongly disagree  
 3 - neither agree nor disagree
- II.8. How do you expect local (within 50 miles) financing sources to meet your needs for additional business financing in the next year (circle one only):  
 1 - very well    4 - quite poorly  
 2 - quite well    5 - very poorly  
 3 - adequate
- II.9. Based on your experience, how difficult has it been in the last two years to put together debt and equity (ownership capital) locally for the following situations. Please leave blank for the situations that do not apply, and use the following codes for those that do apply:  
 1 - very easy    4 - somewhat difficult  
 2 - somewhat easy    5 - very difficult or impossible  
 3 - neither easy nor difficult

<u>Situation</u>	<u>Code</u>		<u>Situation</u>	<u>Code</u>	
	<u>Debt</u>	<u>Equity</u>		<u>Debt</u>	<u>Equity</u>
Starting a business	___	___	Expanding a business overall		
Buying a business	___	___	working capital/operating needs	___	___
Operating a business overall			permanent working capital	___	___
working capital/operating needs	___	___	machinery, equipment	___	___
permanent working capital	___	___	technology/human resource	___	___
machinery, equipment	___	___	building and land	___	___
technology/human resource	___	___			
building and land	___	___			

- II.10. Assess the terms and conditions of the locally obtained business financing in the last two years. Please use the following codes:
- |   |           |    |                           |
|---|-----------|----|---------------------------|
| 1 | excellent | 4  | poor                      |
| 2 | very good | 5  | very poor                 |
| 3 | good      | NA | not applicable/don't know |



- 1 - Technical assistance to project future market for the business
- 2 - Technical assistance to project the cash flow in the future
- 3 - Technical assistance to compile a business plan
- 4 - Technical assistance in legal issues
- 5 - Other, please specify \_\_\_\_\_

II.18. When you need technical assistance, where do you look for it? (Circle all that apply)

- 1 - Small Business Development Center
- 2 - Service Corps Of Retired Executives
- 3 - Extension
- 4 - Other, please specify \_\_\_\_\_

THANK YOU

---

---

IV.2 Financial Institutions Survey

=====

Questionnaire # \_\_\_\_\_

Copy of the results requested:

- yes
- no

Please answer and/or check the most appropriate answer.

**I. General Information about the institution.**

I.1. Size of the financial institution as indicated by total assets in January 1996  
\$ \_\_\_\_\_

I.2. Total dollar amount of local loan/investment portfolio \$ \_\_\_\_\_  
Total dollar amount of local loan/investment portfolio originated last year \$ \_\_\_\_\_

I.3. Major local lending/investment activity of the lender (select one)

1 - farms/farming	5 - rental property
2 - nonfarm small business	6 - residential real estate development
3 - commercial real estate development	7 - other, please specify _____
4 - nonfarm commercial business	_____

I.4. Lender's proportion of business financing during the last year for each type of business:

<u>Type of business</u>	<u># of firms</u>	<u>Dollar volume</u>
1. Non-Agricultural		
Retail	_____ %	_____ %
Wholesale	_____ %	_____ %
Manufacturing	_____ %	_____ %
Services	_____ %	_____ %
Construction	_____ %	_____ %
Transportation	_____ %	_____ %
2. Agricultural		
Farming	_____ %	_____ %
Processing	_____ %	_____ %
Input supplier	_____ %	_____ %
Farm equipment	_____ %	_____ %
	<u>100%</u>	<u>100%</u>

I.5. What efforts has made your institution over the last year to expand its market area geographically? Please circle all that apply:

- |                                         |                                                     |
|-----------------------------------------|-----------------------------------------------------|
| 0 - N/A                                 | 5 - Opened new non-local offices                    |
| 1 - Formal advertising                  | 6 - Expanded cooperative efforts with other lenders |
| 2 - Informal advertising                | 7 - Increase calling efforts by existing personnel  |
| 3 - Hired more people                   | 8 - Other, please specify _____                     |
| 4 - Made calls beyond local market area | _____                                               |

I.6. What was the range of Loan-Deposit ratio of your financial institution at the end of 1995? Please circle one.

- |            |              |
|------------|--------------|
| 1 - 30-40% | 4 - 60-70%   |
| 2 - 40-50% | 5 - 70-80%   |
| 3 - 50-60% | 6 - over 80% |

## II. Lender s perception of the local capital markets

II.1. How do you define geographically your local market for business financing?

---

II.2. What are the changes in business financing that have taken place locally over the last two years? Please circle the number(s) that apply:

- 1 - more traditional financial intermediaries
- 2 - other traditional financial intermediaries not physically present, but providing business financing locally
- 3 - more non-traditional financial intermediaries in market
- 4 - competition has expanded financial product lines
- 5 - competition is taking more risks
- 6 - competition is offering easier terms
- 7 - competitions is taking narrower margins
- 8 - other (please specify) \_\_\_\_\_

II.3. How do you characterize the local demand for small business financing? Please circle one.

- 1 - weak
- 2 - below average
- 3 - average
- 4 - above average
- 5 - vigorous

II.4. What are the most common requests? Please circle one.

- |                                   |                                 |
|-----------------------------------|---------------------------------|
| 1 - financing existing businesses | 4 - refinancing, (no expansion) |
| 2 - financing start-ups           | 5 - government backed loans     |
| 3 - financing expansion           |                                 |

II.5. What is the most common size of loan requests. Please circle one.

- |                       |                        |
|-----------------------|------------------------|
| a) less than \$20,000 | d) \$100,000 - 500,000 |
| b) \$20,000 - 50,000  | e) more than \$500,000 |
| c) \$50,000 - 100,000 |                        |

II.6. Change in the small business loan/investment portfolio. Please mark if positive or negative.

- over the last year \_\_\_\_\_ %  
 over the last two years \_\_\_\_\_ %

II.7. What percent of your small business customers provide in their initial request:

	<u>Percent</u>		<u>Percent</u>
complete business plan	_____	tax return	_____
cash flow analysis	_____	accountant records	_____
balance sheet	_____		

II.8. What percent of small business loan requests are for:

	<u>Percent</u>		<u>Percent</u>
1 - operating expenses	_____	4 - land	_____
2 - working capital	_____	5 - product development	_____
3 - permanent working capital	_____	6- facilities	_____

**III. Sources of financing**

III.1. What are the government sponsored business financing programs or government agency guaranties that you have used in funding businesses in your local area.

<u>Program</u>	<u># of businesses financed</u>	<u>Percent of total Loan volume</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

III.2. In what situations have you used government guarantees? (stage of business, local or non- local)

\_\_\_\_\_

\_\_\_\_\_

III.3. Would you use government guaranties again?

1 - no. Why? \_\_\_\_\_

2 - yes. Why? \_\_\_\_\_

**IV. Local Business Financing**

IV.1. Small business financing represents \_\_\_\_\_ % of your total assets  
 Small business financing represents \_\_\_\_\_ % of your loan/investment portfolio.

IV.2. Proportion of local business financing during the last year for each of the following development stages:

<u>Development stage</u>	<u>Proportion (percent of \$ volume)</u>
Preventure (research & development)	_____ %
Start-up	_____ %
Expansion	_____ %
Maintenance	_____ %
Ownership transition	_____ %
	<u>100 %</u>

IV.3. Businesses most difficult to be financed. Please rank from one to five (one most difficult).

a) by stage	b) by type
_____ pre-venture	_____ Retail

- |                                               |                                         |
|-----------------------------------------------|-----------------------------------------|
| <input type="checkbox"/> start-up             | <input type="checkbox"/> Wholesale      |
| <input type="checkbox"/> expansion            | <input type="checkbox"/> Manufacturing  |
| <input type="checkbox"/> maintenance          | <input type="checkbox"/> Services       |
| <input type="checkbox"/> ownership transition | <input type="checkbox"/> Construction   |
|                                               | <input type="checkbox"/> Transportation |
|                                               | <input type="checkbox"/> Agriculture    |

## V. Financing Procedures

V.1. How do you adjust your business loan limits for various types of businesses?

---

V.2. In managing your portfolio, how do your efforts differ between the following business stages? Please use the code below in responding:

<u>Code</u>	<u>Meaning</u>	<u>Code</u>	<u>Meaning</u>
0	Not applicable	2	Same
1	Less	3	More

SITUATION	Start-up	Expansion	Maintenance
Review of business plans			
Development of economic forecasts, business projections			
Development of marketing forecasts/pricing strategies			
Frequency of review of performance goals			
Number of onsite visits to business			
Amount of cash management provided			
Amount of business counseling provided			
Amount of personal financial and tax planning provided			
Amount of outside assistance arranged			
Other, please specify			

V.3. How do your terms of financing differ between the following business stages? Please use the following code in responding:

<u>Code</u>	<u>Meaning</u>	<u>Code</u>	<u>Meaning</u>
0	Not applicable	2	Same
1	Less	3	More

TERMS	Start-up	Expansion	Maintenance
Length of investment/maturity			
Interest rate charged/rate of return required			
Use of compensating balances			
Use of collateral			





**V. Appendix E**

Other sources of technical assistance
Personal research (books, Internet, trade publications)
Accounting services
Private consultants
Private attorneys
Banks
Marketing groups
Suppliers
Equipment dealers
Other similar business owners/managers
Acquaintances, friends and colleagues
Chamber of commerce
County Economic Development Coordination

## VITA

Zana Kruja, the daughter of Pertef and Shpresa Kruja, was born on November 25, 1960, in Durrës, Albania. After graduating from the Agricultural University of Tirana (AUT) in 1983 she worked as assistant professor at the department of Agricultural Economics, AUT for nine years. In 1991 she received the “Candidate of Sciences” Degree (a Ph.D. equivalent) in agricultural Economics from AUT.

In 1992 she received a Fullbright fellowship and came in the United States as a visiting scholar. In 1993 she enrolled at Virginia Polytechnic Institute and State University to pursue the degree of Doctor of Philosophy in Agricultural and Applied Economics. In 1995 she enrolled simultaneously in a second degree program to pursue the degree of Master of Science in Business-Administration (Finance) which she completed successfully in December 1995. She completed her doctorate in July 1997.

Zana is married to Hiqmet Çelhyka. They live in Blacksburg with their children Ardita and Bled.