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AN EVALUATION OF RESEARCH ON RURAL FINANCIAL MARKETS IN INDIA

The Ohio State University

Ph.D. 1983

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300 N. Zeeb Road, Ann Arbor, MI 48106
AN EVALUATION OF RESEARCH ON RURAL
FINANCIAL MARKETS IN INDIA

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Harpal Singh Grewal, B.Sc., M.Sc.

* * * * *

The Ohio State University
1982

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Advisor
Department of Agricultural Economics & Rural Sociology
Dedicated to my lovely wife Karam, and
sons Jagjit and Rupinderjit.
ACKNOWLEDGEMENTS

I am deeply indebted to my advisor Dr. Dale W Adams for all his help, encouragement, patience and thoughtful assistance throughout my graduate program. I wish to express my deepest appreciation to Drs. Stephen A. Buser, Douglas H. Graham and Warren F. Lee for their valuable comments and suggestions throughout the dissertation effort. Sincerest gratitude is also extended to Drs. Richard L. Meyer, Francis E. Walker and Leroy J. Hushak for their continuous advice and encouragement.

I am very grateful to my and my wife's parents for providing me all types of support during my graduate education. I would also like to express my deep appreciation to the Department of Agricultural Economics and Rural Sociology, The Ohio State University, for providing me financial support in the form of research associateship.

I wish to express warmest gratitude to all of my colleagues for their support and encouragement. I am specially grateful to Adelaida Alicbusan, Agyapong Gyekye, Babiker Babiker, Girmal Abrahim, Steve Pollard, Mike McCullough, Ohene Nyanin, Jeff Kalbus and Young Key Ro.

My wife Karam, and friend Paramjit S. Johar did all the typing and proofreading of the dissertation. Ms. Jill Loar did several drafts of the dissertation on the word processor machine. I express my sincere thanks and appreciation to all of them.
Finally, I owe a largest debt of gratitude to my wife Karam, and sons Soni and Rupi for their patience and understanding in the course of my graduate education. I dedicate this dissertation to them.
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PUBLICATIONS


FIELDS OF STUDY

Major Field: Agricultural Economics


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CHAPTER I
INTRODUCTION

Over the past few years finance has become a major instrument in rural development programs in many low income countries (LICs). Consequently, increasing attention has been paid to rural financial markets (RFMs) in these countries.\(^1\) According to one estimate, the supply of formal agricultural credit in low income countries was about 30 thousand million (billion) U.S. dollars in 1979 [Adams and Graham]. In addition, there have been substantial increases in the number of facilities providing financial services in rural areas. At the same time, significant amounts of resources have been allocated to research on RFMs. The total amount of expenditures on RFM research in LICs is not available, but the substantial expansion in the number of recent publications on this topic indicates that the expenditures have increased significantly.

India has been very active in developing RFMs. During the last three decades, there has been a good deal of emphasis on establishing financial institutions in rural areas. The number of commercial bank branches in the rural sector increased from 540 in 1949 to 14,444 in 1979 [Reserve Bank of India (RBI) (1979); Thingalaya (1980)]. Similarly, the number of Primary Agricultural Cooperative Credit

\(^1\) Rural financial markets are defined to include all financial credit and savings activities that take place in rural areas [Adams (1977)].
Societies increased to 116 thousand in 1978 covering more than 90 percent of total number of villages [RBI (1981)]. In addition, all the large post offices in rural areas accept savings deposits. Recently, Farmer's Service Societies and Regional Rural Banks have been established to serve the needs of economically weak rural households.

As shown in Table 1.1, the amount of rural formal credit in India increased from 307 million U.S. dollars in 1960-61 to 1,813 million U.S. dollars in 1970-71 and further to 6,393 million U.S. dollars in 1978-79.\(^2\) The total deposits of formal rural financial institutions increased from 3,334 million U.S. dollars in 1970-71 to 12,266 million U.S. dollars in 1977-78. The amount of research done on RFMs has also increased significantly during the post-independence period. More than nine hundred research articles on rural finance in India were published in different journals and periodicals during 1950-80.\(^3\) A large number of unpublished theses and papers were also written on this topic.

The Problem

One of the most pressing problems that has limited the results of many rural development programs in India is the unsatisfactory performance of RFMs. Despite policy emphasis on the provision of financial services in rural areas, it is surprising to find that the basic problems as recognized in the All-India Rural Credit Survey (AIRCS) thirty years ago, still persist.

Informal lenders are still dominant suppliers of loans in RFMs, despite the relatively high rates of interest charged by them and

\(^2\) One U.S. dollar is approximately equal to Rs 8.1.

\(^3\) The total number of RPM studies published during 1950-75, and in 1979 were 777 [Table, 1.3].
TABLE 1.1: Nominal Value of Formal Rural Loans and Deposits in India, 1951-79.

<table>
<thead>
<tr>
<th>Year (July-June)</th>
<th>Loans Outstanding (End of June)</th>
<th>Interest Rates (Percent)</th>
<th>Credit-Deposit Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cooperative Banks</td>
<td>Commercial Banks</td>
<td>Total</td>
</tr>
<tr>
<td>1951-52</td>
<td>50</td>
<td>3</td>
<td>53</td>
</tr>
<tr>
<td>1960-61</td>
<td>300</td>
<td>7d</td>
<td>307</td>
</tr>
<tr>
<td>1970-71</td>
<td>1,522</td>
<td>291</td>
<td>1,813</td>
</tr>
<tr>
<td>1971-72</td>
<td>1,959</td>
<td>330</td>
<td>2,289</td>
</tr>
<tr>
<td>1972-73</td>
<td>2,257</td>
<td>422</td>
<td>2,679</td>
</tr>
<tr>
<td>1973-74</td>
<td>2,431</td>
<td>538</td>
<td>2,969</td>
</tr>
<tr>
<td>1974-75</td>
<td>2,667</td>
<td>695</td>
<td>3,362</td>
</tr>
<tr>
<td>1975-76</td>
<td>2,910</td>
<td>975</td>
<td>3,885</td>
</tr>
<tr>
<td>1976-77</td>
<td>3,452</td>
<td>1,273</td>
<td>4,725</td>
</tr>
<tr>
<td>1977-78</td>
<td>3,795</td>
<td>1,654</td>
<td>5,449</td>
</tr>
<tr>
<td>1978-79</td>
<td>4,140p</td>
<td>2,253p</td>
<td>6,393p</td>
</tr>
</tbody>
</table>
Table 1.1 (continued)

Figures of loans outstanding and total deposits are rounded off.

aRural formal credit is defined as end-of-June total outstanding loan balance of agricultural cooperative banks, and agricultural loans outstanding of scheduled commercial banks. Figures for the cooperative banks for years 1951-52, 1960-61 and 1970-71 refer to total loans outstanding of Primary Agricultural Credit Societies and Primary Land Development Banks. For the years 1971-72 to 1973-74, the figures include loans outstanding of the Primary Agricultural Credit Societies, and State Central Land Development Banks. For the rest of the years, the figures include direct short-term and term loans outstanding of cooperative banks at all levels. Figures for loans outstanding of commercial banks include direct agricultural short-term and term credit except for the years 1951-52 and 1961-62 for which amount of direct as well as indirect agricultural loans are included.

Rural deposits include the amount of deposits at state and central cooperative banks, and rural and semi-urban branches of commercial banks. Figures for the year 1951-52 also include deposits at the Primary Agricultural Cooperative Societies. Rural branches of commercial banks include the branch offices in areas with population of less than 10,000. The branch offices in areas with population between 10,000 and 100,000 are categorized as semi-urban branches. Rupee values of loans outstanding and total deposits are converted to US dollars by using the year 1979 average exchange rate (Rs/$ = 8.1).

bRates of interest on loans are the simple average of nominal interest rates charged by cooperative and commercial banks on their short-term and term loans. The interest rate figure for 1951-52 is calculated by taking simple average of the rates charged by Primary Agricultural Cooperative Societies on a majority of their loans. For 1960-61, 1977-78 and 1978-79, the rates of interest were calculated by taking simple averages of maximum rates allowed by the RBI on different types of commercial bank loans.

Interest rates on deposits are the simple average of rates offered by cooperative and commercial banks on saving and time deposits. Figures for 1951-52 are the average rates paid on saving and time deposits by commercial banks.

dRefers to end March, 1961.

eDeposits of commercial banks refer to end of the year 1951.

fRefers to the year 1950-51.

gEstimated

hRefers to the year 1954.
P = Provisional

In the case of formal financial institutions, the supply of loans has been geographically concentrated. The access to formal credit is also mainly limited to affluent and economically well-to-do households; whereas, a majority of the rural poor still have to rely upon their own funds or moneylenders to meet their capital needs [Choubey; Desai (1978A); Shetty (1978)]. The default and delinquency rates on formal rural loans have increased over time. The continuous decline in rural credit-to-deposit ratio of formal financial institutions during the 1970s, as shown in Table 1.1, shows that a large amount of resources from the rural economy are diverted away by financial markets.

Despite a several-fold expansion in the amount of formal credit supplied and deposits mobilized in rural areas, the increase in "real terms" have been significantly lower than in nominal value particularly during the 1960s and 70s [Table 1.2]. The amount of formal rural credit at current prices, for example, increased at a yearly growth rate of 19 percent during the 1960s and 17 percent during 1970-71 to 1978-79. The real value of formal loans in the rural sector, however, increased only at 12 percent per year during the 1960s and 8 percent per annum during 1970-71 to 1978-79. Similarly, the amount of rural savings mobilized through formal financial institutions from 1970-71 to 1977-78 increased at an annual growth rate of 21 percent in nominal value and only 10 percent in "ream terms." Furthermore, since the supply of informal credit did not expand at the same pace as formal loans, the total amount
<table>
<thead>
<tr>
<th>Year (July-June)</th>
<th>Loans Outstanding (End of June)</th>
<th>Real Rate of Interest(^b) (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cooperative Banks</td>
<td>Commercial Banks</td>
</tr>
<tr>
<td>1951-52</td>
<td>189</td>
<td>11</td>
</tr>
<tr>
<td>1960-61</td>
<td>1,038</td>
<td>24(^c)</td>
</tr>
<tr>
<td>1970-71</td>
<td>2,828</td>
<td>541</td>
</tr>
<tr>
<td>1971-72</td>
<td>3,446</td>
<td>581</td>
</tr>
<tr>
<td>1972-73</td>
<td>3,609</td>
<td>675</td>
</tr>
<tr>
<td>1973-74</td>
<td>3,233</td>
<td>716</td>
</tr>
<tr>
<td>1974-75</td>
<td>2,833</td>
<td>738</td>
</tr>
<tr>
<td>1975-76</td>
<td>3,125</td>
<td>1,047</td>
</tr>
<tr>
<td>1976-77</td>
<td>3,632</td>
<td>1,339</td>
</tr>
<tr>
<td>1977-78</td>
<td>3,795</td>
<td>1,654</td>
</tr>
<tr>
<td>1978-79</td>
<td>4,140(^p)</td>
<td>2,253(^p)</td>
</tr>
</tbody>
</table>
TABLE 1.2 (continued)

Figures of loans outstanding and total deposits are rounded off.

\(^a\) Real values of loans outstanding and total deposits are derived from the nominal values using the wholesale price Index with year 1978-79 as a base.

\(^b\) Real rates of interest on loans and deposits are calculated by subtracting yearly inflation rates based upon wholesale price changes, from the nominal interest rates. The rates of inflation for the years 1951-52 and 1960-61 are derived by taking simple averages of inflation rates in 1951 and 1952, and 1960 and 1961, respectively.

\(^c\) Refers to end March, 1961.
\(^d\) Deposits of commercial banks refer to end of the year 1951.
\(^e\) Refers to the year 1950-51.
\(^f\) Estimated
\(^g\) Refers to the year 1954.
\(^p\) Provisional

Sources: Bhatt (1976); Desai (1978A); Ghosal; Government of India; International Monetary Fund; Nanavati and Anjaria; Rangarajan; RBI (1954A, 1954B, 1962, 1970A, 1972B, 1981); RBI (Annual Report—-).
of rural credit increased at a significantly lower rate than did formal credit during the last three decades.4/

One explanation for the poor performance of RFMs in India is improper policies. The main emphasis of these policies has been to increase the supply of formal rural credit and reduce the preponderance of moneylenders. Relatively few efforts have been directed to mobilizing rural savings through RFMs. The nominal interest rates in RFMs have been quite inflexible and real interest rates have been low. These rates not only discourage the financial institutions from serving the rural sector in general and rural poor in particular, but also cause market fragmentation and discourage rural savings [Adams (1979); Gonzalez-Vega (1979)]. RFMs in India have also been subjected to increasing regulation during the past two decades.

RFM policies in India have been based on the following four assumptions. 1) The rural sector in general, and rural poor in particular, face credit shortages. 2) The moneylenders charge exorbitant interest rates, extract large monopoly profits, and provide inadequate economic

4/ The share of cooperative and commercial banks in the average debt of cultivators in India was approximately 4 percent in 1952, 12 percent in 1961, and 24 percent in 1971 [RBI (1955, 1965B, 1977)]. The total amounts of loans outstanding in these institutions to agriculture at 1978-79 prices were $200 million, $1,062 million and $3,369 million, respectively, in the above years [Table 1.2]. The calculated total supply of agricultural credit was, therefore, $5,000 million in 1952, $8,850 million in 1961, and $14,038 million in 1971. The supply of formal credit, as defined in Table 1.1, increased at an annual growth rate of 20 percent during the 1950s and 12 percent during the 1960s. Whereas, the supply of total credit increased at per year growth rate of less than 7 percent during 1952-1961, and less than 5 percent during the 1960s. Similarly, during 1971-1979 the formal agricultural credit increased at a growth rate of 8 percent per annum. Assuming the share of cooperative and commercial banks in total agricultural credit as 40 percent in 1978-79, the supply of total farm credit expanded at a yearly growth rate of less than 2 percent during the above period.
services; there is a need to regulate moneylenders and increase the supply of low-cost formal rural credit. 3) The rural households are too poor to save and the supply of savings in the rural sector is interest inelastic. And, 4) the performance of RFMs can be improved by closely regulating and controlling these markets through administrative fiat.

These assumption have been rarely empirically tested. The little research done to test some of these assumptions provides inconclusive results. There has also been little investigation done on the effectiveness of different instruments available to pursue RFM policies. Although very few studies have evaluated the quality and reliability of RFM research in India, the available evidence indicates that the research, in general, suffers from serious theoretical and methodological weaknesses [David and Meyer; Desai (1981)]. There is also a need to improve the coordination and interaction among researchers and policymakers in India on this topic [Adams (1977A)].

It appears there is potential for improving the performance of RFMs in India through careful research and by designing RFM policies based upon the findings and recommendations of such studies. The first step in this direction should be the efficient allocation of research resources. Studies on relatively unimportant issues causes a misallocation of resources. This may also force the policymakers to use untested assumptions. The resources, therefore, might be better allocated by establishing research priorities.

Research is a step process. First, the questions or hypotheses treated should be clear. Study of vague questions provides vague
answers. Equally, and perhaps more important is that the study of partial questions give only incomplete and perhaps misleading answers. Clearly defined objectives also facilitate the development of models, the recognition of data requirements, and the proper selection of analytic techniques. Second, those who form research models or conceptual frameworks should recognize the important characteristics of finance and financial markets and their role in rural households. Third, the selection of methodology should consider the explicit as well as implicit assumptions and their relevence to the situation studied. Use of inappropriate conceptual and methodological frameworks reduces the reliability of research findings.

High quality research is necessary but may not be a sufficient condition for improving the performance of RFMs unless the findings and recommendations of studies reach decision makers. A close coordination between rural finance research and policies is very important since these policies affect the economic environment in which RFMs function. The lack of interaction among researchers and policymakers may also lead to the situation where the research emphasis is directed at issues that are of little concern to policy authorities [Adams (1977A)] and hence leads to inefficient use of research resources.

Research on Rural Financial Markets In India

The study of RFMs is not a recent effort in India. A significant amount of research was done on rural finance questions during British rule. Several such studies on the business of rural financial agencies and problems of rural indebtedness are available [Darling; Government of
India (1876); Jain; Ray; Thorburn]. Efforts were also made to study the possibilities and prospects for introducing formal financial institutions in rural area [Dupernex; Eubank; Nicholson]. Similarly, the problems related to RFMs and rural indebtedness were also discussed in literature on the economic life in rural India [Bhalla (1923); Government of India (1928); Jack]. The RBI also appointed a number of expert committees in the 1940s to study various problems related to rural finance.

Research on RFMs intensified after Independence in 1947. The AIRCS was conducted in 1951-52 to make an in-depth study of a wide range of problems involved in both supply and demand of rural finance. Yearly follow-up surveys were conducted from the mid-1950s to the mid-1960s to evaluate the effectiveness of RFM policies. New policies were mainly founded on the recommendations of the AIRCS Committee. In addition, the RBI also set up a number of study groups during the past three decades to do research on various rural finance issues. Along with this, the Department of Economics and Statistics was established by the Government of India to improve the data base for research. Similarly, the scope of the Department of Research and Statistics at the RBI was expanded to collect detailed information on the operations of financial institutions.

To promote rural research, a number of agricultural universities and other research institutions have been established during the post-independence period. The findings from these studies are dispersed through a number of journals and periodicals. In addition, special conferences and seminars have been organized to improve the coordination and interaction among researchers on RFMs. There have also been
significant transformations in research technology due to increased access to computer facilities and improved professional skills in rural finance. Because of these efforts, India at present is a leader among the developing nations with respect to resources being invested in RFM studies, total number of people involved in rural finance research and the amount of research done.

In the discussion that follows, I will argue that RFM research in India has a number of problems associated with it. I will argue that some issues have been over researched while other very important issues have been virtually ignored. A large number of studies, for example, have focused on the estimation of demand for credit and impact of loans on borrowers. At the same time relatively little investigation has been done on important issues such as costs of borrowing, determination of creditworthiness of the borrowers, effectiveness of alternative repayment plans in reducing loan default problems and interest elasticity of demand for different types of loans. Similarly, studies on rural savings have mainly focused on the "ability to save" and few studies have considered "incentives to save."

The evaluation of the performance of different formal financial institutions and policies has received the attention of many researchers. However, few efforts have been made to study the business behavior of these institutions. Similarly, few studies are available on topics of costs of intermediation in rural sector, conduct and performance of different RFM intermediaries and impact of interlocked rural markets on the development of RFMs. Relatively little is known about the informal financial intermediaries. Also, the role of
financial markets in economic development and their impact on income
distribution and resource allocation in the rural sector is little
studied.

A large number of studies on India have focused on a very partial
diagnosis of the rural finance problems. Many of the assumptions used
in these studies were either unproven or faulty. The emphasis of
research also remained on unduly large sample surveys to collect data.
A considerable amount of such data were not closely related to the study
objectives and were little used. Over-emphasis on collection of huge
amounts of information often left little time and resources to do
indepth analysis of the data.

There is a need, therefore, to carefully review and possibly
reorganize RFM research on India. Small amounts of carefully done
research could be more useful to the decision makers than a large number
of poorly designed studies.

Objectives

The present study is based on a review of literature of RFMs in
India. The study has the following specific objectives:

(1) To identify the important characteristics of finance and
financial markets, and to do a theoretical critique of the
research on RFMs in India.

(2) To do a methodological review of the rural finance studies on
India.

(3) To identify the important researchable issues on rural
finance, and, based upon review of literature, to lay out a
resource allocation plan for future RFM research.
(4) To review the past coordination and interaction between RFM research and policies and suggest measures for improvements.

**Design of the Study**

To achieve these objectives, the RFM literature on India was reviewed and arranged into the following categories:

**Sectoral and Microlevel Studies of Rural Borrowers**

These included research studies on issues such as demand for credit, impact of loans, costs of borrowing, and loan repayment problems.

**Sectoral and Microlevel Studies of Rural Household Savings**

These included studies of saving capacity and nature and structure of rural household savings. Similarly, the research on factors determining the saving behavior of rural households was also placed in this category.

**Sectoral and Microlevel Studies of the Financial Institutions and RFM Policies**

This category included the research on issues such as performance of financial institutions serving the rural sector, RFM policies, the process of rural financial intermediation, costs of lending in RFMs, loan repayment problems, and in conduct and performance of different RFM structures.

**Macro and Microlevel Studies of the Relationships Between Financial Variables and Real Variables**

Included in this category were all essays on the role of finance and RFMs in economic development, how finance affects income
distribution in the rural sector, and studies on the impact of policies in product and factor markets on the development of RFMs.

Research on RFM Research on India

Under this category, the studies related to evaluation of research on rural finance in India were included.

The distribution of RFM studies published during 1950-79 in these five categories is presented in Table 1.3. As shown in the table, studies on rural financial institutions and RFM policies dominated the research. This was followed by work on rural borrowers and rural household savings, respectively. Few studies were conducted on issues related to relationships between financial and real economic variables and evaluation of RFM research.

For the theoretical and methodological critique of RFM research, representative studies on different issues were selected from the literature. Literature on the relationship between financial and real economic variables in the rural sector and the review of RFM research was not included in the selection since very few studies were available on these topics. The selected studies were then carefully reviewed to assess whether the important characteristics of finance and financial markets and the socio-economic environment in the rural sector were taken into account in their theoretical frameworks. The methodological critique of the selected studies was done by identifying the commonly used analytical techniques in these studies. The studies were reviewed to assess the appropriateness of these methodologies.
TABLE 1.3: Distribution of Published RFM Studies on India, 1950-79

<table>
<thead>
<tr>
<th>Research Categories</th>
<th>1950-60</th>
<th>1961-70</th>
<th>1971-75</th>
<th>1979</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Borrowers</td>
<td>7</td>
<td>43</td>
<td>62</td>
<td>7</td>
<td>119    (15.3)</td>
</tr>
<tr>
<td>Rural Household Savings</td>
<td>13</td>
<td>52</td>
<td>27</td>
<td>6</td>
<td>98     (12.6)</td>
</tr>
<tr>
<td>Rural Financial Institutions and RFM Policies</td>
<td>103</td>
<td>212</td>
<td>160</td>
<td>40</td>
<td>515    (66.3)</td>
</tr>
<tr>
<td>Relationship Between Financial and Real Economic Variables</td>
<td>10</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>28     (3.6)</td>
</tr>
<tr>
<td>Review of RFM Research</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>17     (2.2)</td>
</tr>
<tr>
<td>Total</td>
<td>139</td>
<td>321</td>
<td>258</td>
<td>59</td>
<td>777    (100)</td>
</tr>
</tbody>
</table>

Figures in parentheses refer to percentage of total.

The distribution of studies is based on the identification from their titles.

Source: Indian Society of Agricultural Economics.
To layout the resource allocation plan for future RFM research, important researchable issues were first identified based upon a review of policy objectives, major problems in RFMs and recent research results on India and other countries. A research plan was developed by putting priorities on important issues on which relatively little research has done. The results of conceptual methodological critiques were taken into account while preparing the plan. The different ways by which researchers have been involved in rural finance policy formulation in the past were reviewed in order to assess the linkages between RFM research and policies in India. I go on to suggest ways to improve the coordination and interaction between RFM professionals and policymakers in the future.

**Organization of the Study**

The study is organized in eight chapters including the introductory chapter. In Chapter II, important RFM policies and policy instruments used in India are discussed. Important characteristics of finance and financial markets and their implications for RFM research are discussed in Chapter III. Chapters IV, V and VI present theoretical and methodological reviews of research on rural borrowers, rural household savings, and rural financial institutions and policies. The resource allocation plan for future RFM research on India is given in Chapter VII and a review of linkages between RFM research and policies is presented. The summary, conclusions and implications of the study are discussed in Chapter VIII.
CHAPTER II
AN OVERVIEW OF RURAL FINANCIAL
MARKET POLICIES IN INDIA

Moneylending was a prosperous business in India even during the Vedic times (2000-1400 B.C.) [Darling]. Unlike the Bible and the Koran, charging of interest was never condemned in the Geeta, the holy book of the Hindus. The importance of the moneylender is well documented in the following Indian aphorism which states that a village is fit to live in only if it has "a moneylender from whom to borrow at need, a Vaid (doctor) to treat illness, a Brahmin priest to minister to the soul, and a stream that does not dry up in summer." In contrast, a proverb in the Punjabi language alludes to the bad name moneylenders have in the society by stating that a crow, a moneylender, and a dog should never be trusted even when they are asleep.¹

Moneylenders in India, despite their importance in economic life and no legal constraints on them, were never very powerful until the British rule. Vigorous village communities and apathy of the State about loan recovery held them under control [Darling]. There were no formal courts. The local executive authority called "Kardar" decided the debt recovery cases and because of community pressure they were generally biased towards the debtor.

¹/ Ḍan, Karar te Kute da, vesah na keeje sute da.
British rule, however, changed the situation. The establishment of civil courts strengthened the legal position of the moneylender. He could now approach the court to recover loans. The influence of the village community on moneylenders was also reduced because of the new British administrative system. The report of the Deccan Riots Commission of 1876 described the situation in the following words: "The facilities for the recovery of debt by our civil courts had called into existence an inferior class of moneylenders dealing at exorbitant rates of interest with the lower strata of the agricultural poor" [Government of India (1876)].

These developments coupled with the deteriorating economic condition of the peasants due to crop failures in different parts of the country multiplied rural debt. The massive transfer of land and other assets from peasants to moneylenders as a result of loan foreclosures generated unrest. Riots broke out in Bombay presidency. The moneylenders were forced to surrender the bonds and other documents held by them as evidences of their claim over the borrowers. These disturbances set the stage for government interventions in RFMs in India. The Deccan Agriculturist Relief Act was passed in 1879 to prohibit the transfer of land and other assets from peasants to moneylenders, and strengthened the legal position of the debtors. The Deccan Agriculturist Relief Act was followed by a series of policy measures that have shaped RFMs policies in India.

2/ For example, the introduction of Royatwari revenue system in South India held an individual cultivator rather than whole village, as in the past, liable to pay land revenue. This weakened the feeling of community among the rural people. Similar administrative changes were also made in other parts of the country.
Rural Financial Market Policies in India

RFMs in India are made up of formal and informal segments. The formal sector consists of financial institutions such as cooperative banks, commercial banks, Regional Rural Banks, and government and postal savings banks. These institutions operate either within the provisions of the Banking Companies Act of 1949, or under direct control of the Government of India. Professional moneylenders, farmers who also lend money, landlords, traders and commission agents, and relatives constitute the informal sector. Some of these informal agencies operate under the control of state governments.

The prime focus of RFM policies in India has historically been to increase the supply of formal credit in rural areas. Consequently, reasonably consistent emphasis has been placed on expanding and strengthening formal financial institutions and increasing the supply of loans through these institutions. At the same time relatively few efforts have been made to mobilize voluntary rural savings. The rates of interest both on deposits and loans of financial institutions serving rural people have been low, particularly in "real terms."

Policies related to informal financial agencies have mainly been based on the assumption that moneylenders exploit rural people. The aim of these policies, therefore, remained to reduce the importance of moneylenders in RFMs.

Recently, the Life Insurance Corporation of India has expanded its business in rural areas. Similarly, schemes like the provident fund or pension schemes are adopted by wage earner rural people. However, savings in the form of life insurance and provident fund constitute a small share of total rural savings.
Major RFM policies in India can be classified as follows: institutional development policies, loan supply policies, saving mobilization policies, and interest rate policies.

**Institutional Development Policies**

RFM institutional development policies in India have been aimed at expanding and strengthening formal financial institution, and reducing the influence of moneylenders.

**Policies Related to Formal Financial Institutions**

**Government Finance**:

Following the recommendation of the Famine Commission of 1880, the Land Improvement loans Act of 1883 and the Agriculturists Loans Act of 1884 were passed to extend government credit called taccavi loans to agriculturists. The Land Improvement Loans Act was intended to provide long term loans to cultivators for purposes such as land development and digging of wells. The maximum period for repayment of such loans was fixed at thirty-five years. The Agriculturist's Loans Act authorized the extension of short-term taccavi loans to cultivators. These loans were advanced to meet current agricultural needs such as purchase of seeds, fertilizer, cattle, and implements. In practice the short-term government loans were also sanctioned to meet consumption needs in the event of financial distress due to floods, draughts, or famines. The repayment period on these loans was fixed at one year. In some states taccavi loans were also advanced to the agriculturists for the repayment of past debts [Nanavati and Anjaria].

Government loans to cultivators were issued both in cash and kind. Interest rates charged were similar to the rates applied to other of
public loans. The collateral accepted was generally land and other immovable assets owned by the borrowers. Short-term loans were also sanctioned against surety of a third party. The government loans under the above two Acts contributed a significant share in the total amount of borrowings of agriculturists from the formal financial institutions during the period until the mid-1950s. However, during the last two decades the provisions of these loans, as recommended by the AIRCS Committee, was limited mainly to helping farmers after natural calamities.

Cooperative Credit Institutions: The cooperative movement was introduced in India in 1904 following the recommendations of the Nicholson's report. The cooperative banks were based upon the Raiffeisen system in Germany. Under the provisions of the Cooperative Credit Societies Act of 1904, any ten or more persons having common interests were allowed to register as a Cooperative Credit Society. The societies funds were raised through the share capital contributions and deposits from the members, and loans from non-members, government and other cooperative societies. The loans were made only to members against personal or real security. The maximum borrowing limit of an individual member was a multiple of his share capital contributions. Each member of cooperative societies had unlimited liabilities.

The financial structure of cooperative credit societies, in the beginning, was based on the principle of self-finance with minimum government support. However, due to the common problem of inadequate capital, government loans to these societies were increased after a few
years. Under the Cooperative Societies Act of 1912, the organization of cooperative banks was changed to the present three-tier system of Provincial (State) Cooperative Banks at the state level, Central Cooperative Banks at the district or taluka level, and primary cooperative credit societies at the village level.\textsuperscript{4/}

The first Land Mortgage Bank was established in 1920 to provide long-term credit through cooperative institutions. These banks advanced loans to members for development purposes. The repayment period was fixed between five and twenty years. The funds for working capital of land mortgage banks came through share capital contributions, entrance fees, reserves, and loans from various sources. The responsibility for administration and control of the cooperative movement was transferred to state governments in 1919.

Efforts to expand and strengthen the cooperative movement were intensified after Independence in 1947. Based upon the recommendations of the AIRCS Committee, several modifications were made in the organization of cooperative banks at all levels. The liabilities of the members were changed from unlimited to limited. Under the Integrated Rural Credit Scheme, emphasis was placed on improving the financial position of cooperative banks. The main features of this scheme, as recommended by the AIRCS Committee, were state partnership with the cooperative credit institutions at various levels, linking credit and non-credit cooperative institutions, and amalgamation of village level small societies to form large cooperative societies. The objective of state participation was to provide financial assistance to cooperative banks

\textsuperscript{4/} See Nanavati and Anjaria for details on the organization and functions of the Provincial and Central Cooperative Banks.
through state government contributions state governments to the share capital of these institutions. The internal administrative structure of cooperative institutions, however, remained independent from government interference. Under the scheme of amalgamation of village level cooperative societies, nearly eight thousand large societies were formed by 1958. However, this decision was reversed in 1958 following the recommendation of the Working Group on Cooperative Credit Policy and the large societies were again fragmented into village level societies.

The Banking Laws (Application to Cooperative Sector) Act was passed in 1965 to extend provisions of various banking laws to cover cooperative banks. The objective of this legislation was to increase the control of the RBI over cooperative credit institutions and also to bring their business in line with general banking principles.

Under the provisions of the above Act, all state cooperative banks were granted status equal to scheduled commercial banks. The central cooperative banks and the primary non-agricultural cooperative banks were considered equivalent to non-scheduled commercial banks. The primary agricultural credit societies and the land development banks were, however, excluded from the legislation. All state and central cooperative banks were required to maintain minimum cash reserves and liquidity ratios of 3 percent and 25 percent, respectively, of their total time and demand liabilities. In addition, these banks were also required to submit yearly balance sheets and profit and loss statements to the RBI. They were also asked to apply for licenses to the RBI for

5/ Scheduled commercial banks are defined as the banks listed under the Banking Companies Act of 1949.
their existing offices and obtain licenses in advance to open new offices.

The latest policy measure instituted for the institutional development of cooperative credit movement in India, was the establishment of Farmers Service Societies in 1973. The objective of this action was to introduce a specialized cooperative agency which provides agricultural credit and related services particularly to the economically weak farmers and agricultural laborers. The membership in Farmers Service Societies includes only those small farmers, agricultural laborers and artisans who are eligible to receive assistance from the Small Farmers Development Agency or the Marginal Farmers and Agricultural Laborers Agency programs. Other farm-households are eligible for associate membership without any voting power. Each society covers 15 to 25 villages or about five thousand holdings with a total area of about 15,000 acres. The total number of these societies was 346 in March, 1977 [D'Mello].

Commercial Banks: Efforts to draw commercial banks into RFMs were originated in the 1950s. During the British period the business of commercial banks was mainly confined to big cities. Out of a total number of 4,263 branches of commercial banks in the country in 1949, for example, only 540 were located in rural areas [Thingalaya (1980)].

Following the recommendation of the AIRCS Committee, the Imperial Bank of India was nationalized in 1955 and converted to a public commercial bank named the State Bank of India. In 1959, ten other state associated commercial banks were nationalized and converted into seven subsidiary banks of the State Bank of India. The role assigned to
the State Bank and its subsidiaries in the rural sector was mainly to provide financial support to cooperative banks. In addition, these banks were also asked to finance direct credit in rural areas where cooperative banks were not yet established.

The policy emphasis, however, remained on the "single agency approach" of expanding and strengthening the cooperative credit movement. It was in the late 1960s when the need for a "multi-agency approach" to the institutionalization of RFMs was first time realized. Due to the capital intensive nature of newer technologies being adopted by farmers during the late 1960s, the credit needs in rural areas increased substantially. It was realized that cooperative banks were inadequate to service rural credit needs, measures were instituted to induce commercial banks to extend their services to rural areas.

The process started with the scheme of social control of selected commercial banks. The Banking Regulation Act of 1949 was amended in 1967, and all the Indian scheduled commercial banks with total liabilities of not less than Rs 250 million were brought under social control in 1968. Under the provisions of the above amendment, statutory powers of the RBI were widened to include the issuing of guidelines to commercial banks to direct them to allocate their funds in conformity with the objective of "maximization of social benefits." The RBI was also empowered to reconstitute the boards of directors of these banks and to appoint experts on rural credit and representatives of the banks staff on boards.

Realizing that the social control measure was not very effective, the Banking Companies (Acquisition and Transfer of Undertaking)
Ordinance was passed in 1969. Under the new Act, fourteen scheduled commercial banks with time and demand liabilities of not less than Rs 500 million were nationalized in July 1969. The main objectives of this decision were to increase the number of branches of commercial banks in rural and semi-urban areas, mobilize rural savings through commercial banks, and increase the deployment of bank credit to the rural sector in general and to the rural poor in particular.

Since 1969 a number of policy measures have been instituted to increase the availability of commercial bank services in rural areas. Under the Lead Bank Scheme introduced in 1969, all the districts in the country except Calcutta, Greater Bombay and Madras, and union territories of Chandigarh, Delhi, Goa, Daman and Diu were allocated among different commercial banks. The objective of this scheme was to spread banking facilities throughout the nation. Each Lead Bank was asked to lead other institutions operating in the district in the matters such as opening of new branch offices and planning for the deployment of credit and other facilities.

In a branch expansion program introduced by the RBI in 1968, all commercial banks were urged to open at least one-third more branches in 1968 than the number of branches they opened during 1966 and 1967. The large regional banks and the banks with branch offices throughout the nation were further directed to open at least 10 percent of their new branches in underdeveloped areas.

In 1970 the RBI introduced a new branch licensing policy for the commercial banks. Under the new system, all commercial banks with 60 percent or more of their branches in rural and semi-urban areas were
required to open at least two offices in rural or semi-urban areas to be able to obtain a license to open one branch office in urban areas. All other commercial banks were required to open at least three branches in rural or semi-urban areas to get a license to open one branch office in urban areas.

Recently, efforts have been directed to narrow the regional disparities in the availability of banking facilities. The RBI introduced a three year program of branch expansion in September, 1980. Under this program, a list of all the districts with population per commercial bank office higher than the national average was prepared and forwarded to all the Commercial Banks. The target was to open at least 6,500 bank offices in the selected districts from 1979 to 1982. Also, six more commercial banks each with total demand and time liabilities over Rs 2,000 million were nationalized in March, 1980.

Regional Rural Banks: In pursuance of an Ordinance of 1975 five Regional Rural Banks covering nine districts were established in October 1975. The decision to set up these banks was taken to support the Twenty-Point Economic Program introduced by the Prime Minister in 1975.

The Regional Rural Banks are a hybrid of cooperative and commercial banks. The idea underlying the organization of these bank was to combine the features of cooperative banks, the local knowledge, spirit of services, and dedication to rural people, with the adequacy of funds, professional personnel and operational efficiency of commercial banks. Each Regional Bank serves, through its branches, a region generally
comprising of one or two contiguous districts depending upon population. The loan operations of these banks are mainly confined to small and marginal farmers, agricultural laborers, artisans and other people with meager resources. The saving facilities, however, are open to all people.

Each Regional Rural Bank was established with Rs 10 million as registered share capital and Rs 1.5 million as issued or paid up capital. The paid up capital is contributed by the Central Government, concerned state government and the sponsoring public sector commercial bank in the proportions of 50:15:35. The banks are required to maintain cash reserves equal to 3 percent of their total time and demand liabilities with the RBI. In addition, banks are also required to maintain minimum liquidity ratios of 25 percent.

Post-office Savings Bank: Postal saving banks were introduced in rural areas in 1882. These banks are owned and by the Government of India. The operations of these banks are exclusively confined to savings mobilization. The banks offer savings as well as time deposits. The total number of Post-office savings banks increased from 6,479 in 1900 to 12,679 in 1935 [RBI (1970B)]. Following the recommendations of the Rural Banking Enquiry Committee of 1949, the number of postal savings banks was further increased in rural areas, particularly where the services of cooperative or commercial banks were not available.

Overall, the policies to expand formal financial institutions in rural areas have been quite successful in India. The number of commercial bank offices in rural areas increased from 540 in 1949 to 14,444 in
1979 [RBI (1979)]. The average population per bank office was also reduced from 65 thousand in 1969 to 18 thousand in 1979 [RBI (1979)]. In June 1979, there were 56 Regional Rural Banks with 1965 branch offices in 17 states of the country. Numerically, the cooperative credit movement also exhibited substantial progress during the post-independence period. In 1977, for example, there were 154 thousand primary agricultural cooperative credit societies covering about 90 percent of all villages, 344 central cooperative banks, and 26 state cooperative banks in India [Choubey]. The state and the central cooperative banks also had 6,102 branches spread throughout the country.

Policies for the Informal Financial Agencies

As mentioned earlier, RFM policies in India have historically been directed at reducing the importance of moneylenders. Following the Deccan Agriculturist's Relief Act of 1879, several state governments passed Land Alienation Acts. These regulations prohibited the transfer of land and other assets from debtors to moneylenders. The Deccan Agriculturist's Relief Act, for example, protected the debtors from forced sale of land to moneylenders unless it was pledged [Nanavati and Anjaria]. It also made provisions to allow the agriculturists to apply for insolvency if the amount of debt exceeded Rs 50. Similarly, the Land Alienation Acts stated that land mortgages to members of the non-agricultural classes could remain in effect only for limited periods. Under the Usurious Loans Act passed in 1918, special powers were also granted to the civil courts to reopen old cases of peasant's debts and resettle the terms equitably.
The Debt Conciliation Acts were passed in a number of states during the Great Depression years. These Acts allowed rescheduling of the repayments of loans taken by rural households into a reasonable number of installments. In some states the amount of debt owed by rural households was also scaled down.

Based upon the recommendations of the Royal Commission on Agriculture, legislation was introduced in almost all states to regulate informal lenders. These Acts required the moneylenders to maintain a separate account for each borrower. They were also required to furnish the debtors at the time loans were advanced, with description of terms and conditions of loans including nature of security, if any, and the rate of interest charged. In addition, moneylenders were also required to provide their clients a receipt for repayment of loans and periodical statements of accounts stating outstanding principal, interest, and they were also required to register with the government to conduct their business.

After Independence, when efforts to expand and strengthen the formal rural financial institutions were multiplied, the attitude of the State did not turn in favor of informal lenders. The Land Alienation laws and other Acts passed during the British rule to regulate moneylenders were kept in effect. The AIRCS Committee, whose recommendations formed the basis for the post-independence RFM policies, also showed no sympathy with moneylenders. There was no role assigned to informal financial agencies in the Integrated Rural Credit Scheme recommended by the Committee. In fact, the Committee recommended that moneylenders be prevented from using cooperative credit institutions.
Based upon the recommendations of the AIRCS Committee, a number of measures were taken in different states to supervise and control informal lenders. In addition, legislation was passed in different states to relieve the rural households from informal debt. For example, under the Twenty-Point Economic Program introduced in 1975, special legislation was enacted in almost all states to exempt the rural people from repayments of old moneylender debts. In some states special moratoriums were also granted from time to time to help peasants survive economic distresses caused by crop failures.

The absolute amount of formal as well as informal credit to the rural sector has increased over time. However, due to the regulatory pressure and increasing competition from formal financial institutions, the relative share of moneylenders in total rural debt decreased during the last three decades. The percentage of borrowings of cultivators from the informal credit sources into their average total borrowings, for example, fell from 92.7 in 1952-53 to 80.6 in June 1961 and further to 68.3 in June 1971 [RBI (1955, 1965B, 1977)]. At present the share of informal agencies in total debt of rural households is estimated to be about 50 percent.

Loan Supply Policies

Policies for the Supply of Formal Credit

During the British period two main instruments were used to pursue the policies of increasing the supply of formal credit in RFMs: the expansion in government loans to cultivators, and the provision of financial support to cooperative banks through government loans. Direct
loans from the government to agriculturists were advanced under the provisions of the Land Improvement Act of 1883 and the Agriculturist's Loans Act of 1884. The purposes, procedures and conditions of such loans were discussed earlier.

Prior to the establishment of the RBI, financial support for cooperative banks was provided mainly through government loans to these institutions. A separate Agricultural Credit Department was set up in the RBI in 1935. This department's responsibilities were to study the problems of farm credit, provide advice to district and provincial cooperative banks, central and state governments and other banking organizations, and coordinate the operations of the Bank with agencies providing agricultural credit.

Financial support to the provincial cooperative banks, and through them to the central cooperative banks, was offered for the first time by the RBI in 1938. The loans to these banks were advanced for financing seasonal agricultural operations and marketing of crops. These loans were charged at the Bank rate and the maximum period of repayment was fixed at ninety days. The collateral accepted was government securities or other approved papers owned by the banks. The participating provincial cooperative banks were required to maintain at least 2.5 percent of their demand deposits and one percent of time deposits in the form of cash reserves with the RBI. These banks were also asked to prepare their balance sheets and other reports in prescribed form and submit these to the RBI. This attempt by the RBI, however, was met with poor response by cooperative banks. Consequently, in 1942 the RBI relaxed some terms and conditions of its loans. For example, the rate of
interest was reduced to one percent below the Bank rate. Other conditions such as the loan repayment period and collateral requirements remained unchanged.

After Independence, the main emphasis of RFM policies was on increasing the supply of formal rural credit, and further relaxations were made in terms and conditions of the RBI's loans to cooperative banks. The repayment period of such loans was increased to nine months in 1950 and further to fifteen months in 1951. The concession on the rates of interest was also augmented to 2 percent below the Bank rate in 1953. The RBI also started providing loans to cooperative banks for financing cottage and small scale industries, livestock breeding, and processing of agricultural products. To provide financial support to the Land Mortgage Banks, the RBI and the Government of India decided to finance, collectively, at least 40 percent of the newly issued bonds and debentures of these banks.

Following the recommendations of the AIRCS Committee, the National Agricultural Credit (Long-term Operations) Fund and the National agricultural Credit (Stabilization) Fund were established in the RBI in 1956. The purpose of the National Agricultural Credit (Long-term Operations) Fund was to facilitate implementation of the policy of state participation in cooperative credit movement. This fund has been utilized to advance long-term credit to the state governments for their contribution to the share capital of cooperative banks. The loans from this fund are also made to small and medium cultivators to enable them to acquire shares of cooperative banks. The National Agricultural Credit (Stabilization) Fund has been used to provide medium-term loans
to the state cooperative banks. This enables them to convert their short-term loans from the RBI to medium-term in the situation when these banks cannot repay the former because of uncontrollable circumstances.

Refinancing facilities from the RBI were also provided to all the scheduled commercial banks against their loans and advances extended to agriculture. These loans were generally charged at the Bank rate. Under the "multi agency approach" initiated in the late 1960s, the terms and conditions of the RBI refinance to commercial banks were liberalized. For example, all scheduled commercial banks were allowed in 1970 to borrow from the RBI at below Bank rates, equal to the amount of their loans and advances extended to priority sectors [RBI (1970A)]. In recent years the amount of RBI concessionary loans to these banks has mainly been restricted equal to their credit advanced under the Differential Interest Rate Scheme, and loans granted to the Farmer's Service Societies for approved purposes.

The refinancing scheme for Regional Rural Banks was introduced by the RBI in 1976. The maximum limit on the Bank's loans available to each Rural Bank is fixed on the basis of a prescribed formula of 15:50:35 indicating the proportions of the Regional Rural Bank's deposits, the RBI finances, and the sponsor bank's advances, respectively [D'Mello].

The Agricultural Refinance Corporation was established in 1963 to augment the resources of formal financial institutions engaged in granting medium and long-term credit for agricultural development.6/ 

6/ The name of the Agricultural Refinance Corporation has recently been changed to the Agricultural Refinance And Development Corporation. For more detail on the organization and workings of the Corporation see Choubey, pp. 246-247.
The Corporation provides medium and long-term credit by way of refi-
nancing under approved schemes to State Cooperative Banks, Central Land 
Development Banks, Scheduled Commercial Banks, Regional Rural Banks, and 
approved Cooperative Credit Societies.

During the last two decades a number of discretionary measures have 
been instituted to increase the supply of formal rural credit. The 
Credit Authorization Scheme was introduced by the RBI in 1965. This 
action was taken to prohibit the financial institutions from making 
large loans to a few customers. The cooperative and the commercial 
banks are required to obtain authorization from the RBI to make loans of 
specified amounts for prescribed purposes. Since the early 1970s, the 
RBI fixed separate maximum limits on its kharif and rabi season loans 
available to state and central cooperative banks. Such limits were, 
however, adjusted from time to time in order to match the supply of 
credit with loan requirements of the rural sector.

Under the portfolio assignment policy introduced in 1978, all the 
public sector commercial banks are required to invest at least one-third 
of their loan portfolios in loans and advances to priority sectors [RBI 
(1979)]. To prevent the exodus of financial claims from rural and 
semi-urban areas, these banks are also required to maintain minimum 
credit-deposit ratios of not less than 0.60 in these areas.

7/ The maximum limits and the purposes of loans for which the prior 
permission of the RBI is required have been changed from time to 
time.

8/ The priority sectors include agriculture, export products, small 
scale industries, road transport operators, the retail trade and 
small business, professionals and self employed persons and 
education. Recently the export sector was dropped as a priority 
sector.
A number of special schemes have also been introduced by several commercial banks under the guidelines of the RBI to increase the supply of rural credit. Notable among these are the Lead Bank Scheme, the Area Approach Scheme, the Village Adoption Scheme, and the program of financing primary agricultural cooperative credit societies by commercial banks. The Lead Bank Scheme was, as previously discussed, to improve the coordination among financial institutions serving the rural sector. Under the Area Approach Scheme participating commercial banks select rural areas comprising a cluster of villages and provide credit and other services for all the viable and potentially viable farming and farm related activities in these areas. Similarly, under the Village Adoption Scheme introduced in 1970, branches of commercial banks select villages in which to provide credit and other services. The program of financing primary agricultural credit societies by commercial banks was started in 1970. This scheme has dual objectives of increasing the supply of commercial bank's credit to rural households and at the same time, providing financial support to cooperative societies. In December, 1978 there were 2,894 cooperative credit societies financed by commercial banks through this program [RBI (1979].

Since Independence, a number of special measures have also been instituted to provide more credit to the rural poor. Based upon the recommendation of the AIRCS Committee the "crop-loan system" was introduced in 1955 to replace the security oriented loan appraisal procedure previously used by cooperative banks. Under the new system, all cooperative credit institutions were asked to determine maximum short-term loan limits using the criterion of estimated additional income
generated by the use of loans, and resultant repaying capability of the borrowers. The main purpose of this program was to extend cooperative credit to the economically weak rural households with potential to increase their income.

Following the recommendation of the All-India Rural Credit Review Committee (1969), the Small Farmers Development Agencies and Marginal Farmers and Agricultural Laborers Agencies were established in selected districts in 1969.  These agencies serve small and marginal farmers and agricultural laborers. The main functions of these agencies are to identify eligible small holders and landless laborers, formulate suitable economic programs to enhance their income, and to arrange for credit facilities from institutional sources.

In addition, the Small Farmer Development Agencies also provide subsidies of up to 25 percent of total investment costs to the participating small farmers, and up to 33.3 percent to marginal farmers and agricultural laborers. In the case of group projects, the amount of subsidy is increased to 50 percent of total project costs.

In 1977 the RBI introduced a scheme called the Small Farmers Window. The purpose of this program was to encourage the commercial banks to increase their loans to small sized farmers. Under this scheme, all scheduled commercial banks were allowed to obtain loans from the RBI at a 9 percent per annum interest rate. The maximum amount of such loans to a bank was fixed equal to 50 percent of the total amount of its loans with per loan amounts of Rs 2,500, or less, advanced to the small farmers. This scheme was discontinued in July, 1980.

9/ The Small Farmers Development Agencies and Marginal Farmers and Agricultural Laborers Agencies were amalgamated in the early 1970s.
In order to overcome the problem of lack of tangible security, a number of commercial banks have taken up the Group Guarantee Scheme under the guidelines of the RBI. These banks advance loans to groups of 3 to 5 individuals. Each individual in the group has a separate loan account. However, the loan of each person is guaranteed by all members in the group.

Recently the RBI has taken up several discretionary measures to increase the supply of loans to the rural poor. For example, all the central cooperative banks have been required, since 1971, to advance at least 10 percent of their borrowing from the Apex banks to small sized farmers with land holdings of less than three acres. This limit was further increased to 20 percent in 1972. Similarly, to reduce lending of cooperative credit to large farmers, the cooperative banks have also been directed to fix ceilings on individual crop-loans between Rs 5,000 and Rs 10,000 in unirrigated areas, and Rs 20,000 in irrigated areas [D'Mello]. Under the portfolio assignment policy all the public sector commercial banks were asked to increase their loans and advances to the small and marginal farmers by 1983 to the level of at least 50 percent of their loan portfolios invested in agricultural credit [RBI (1979B)].

Informal Credit Supply Policies

Credit supply policies related to informal financial agencies in India have been mainly oriented to reducing the importance of money-lenders. In 1938 the RBI made an unsuccessful effort to link informal financial agencies with the Bank through commercial banks. The main objective of this action was to make credit more available to the
agriculturists at low rates of interest. A tentative plan was issued by the Bank to all commercial banks in 1938. Under this scheme, the commercial banks were allowed to discount the bills of exchange or promissory notes of approved moneylenders drawn for the purpose of financing the marketing of crops and maturing within nine months. As an inducement the RBI also offered a special rebate of one percent on the rates of interest in areas where interest rates were unduly high. This plan was, however, not implemented because of the poor response by commercial banks. During the post-independence period, policy emphasis was mainly directed to increasing the supply of formal rural credit. No efforts have been made to encourage informal agencies to increase loans to rural households.

Savings Mobilization Policies

One of the main assumptions on which RFM policies in India have been designed is that rural households are too poor to save. Also, these policies have been based on the assumption that the existing technological slack in the rural sector required use of internal as well as externally supplied funds. Consequently, relatively few efforts have been made to mobilize rural savings through RFMs.

During the Colonial period efforts to mobilize rural surpluses were mainly made by establishing postal savings banks and cooperative banks in rural areas. However, few measures were enacted to encourage these institutions to increase their deposits. The availability of loans from the government (and later from the RBI also) to cooperative banks at relatively low cost discouraged these institutions from mobilizing savings.
Some efforts have been made during the past three decades to mobilizing rural savings through RFMs. The substantial increase in the number of postal savings banks, cooperative banks, and recently, Regional Rural Banks and branches of commercial banks in rural areas provide more deposit facilities to rural households. The Deposit Insurance Corporation was established by the Government of India in 1960. The Corporation introduced the Deposit Insurance Scheme to insure small deposits at approved formal financial institutions. In the beginning only scheduled commercial banks were registered as members of the Corporation. However, during the past decade the provisions of the Scheme were extended to cover eligible deposit accounts at the Regional Rural Banks and selected cooperative credit institutions. The maximum limit on the amount of deposits insured under the scheme was also increased from Rs 1,500 to Rs 10,000 in 1971 and further to Rs 20,000 in 1976.

Under the RBI guidelines many commercial banks have introduced a number of savings plans such as lottery schemes linked with deposits plans, insurance linked with deposit schemes, loans linked with deposit plans and pigmy deposit schemes. Some of such schemes were also introduced by postal savings banks, cooperatives and Regional Rural Banks. Some commercial banks have started mobile banks or satellite bank offices in rural areas. This approach has been extended into rural areas where too little banking potential exists to justify opening full fledged bank offices.

Several discretionary measures were instituted during the 1970s to induce financial institutions to mobilize rural savings. In 1973 the
RBI introduced a new refinancing policy for cooperative banks. Under this system, maximum limits on RBI concessionary loans to the central cooperative banks with total loan business of Rs 10 million or more, were linked to the amount of their owned funds [RBI (1973)]. Similarly, the RBI fixed ceilings from time to time on its loans to commercial banks under the automatic refinancing facilities. The discount rate has been increased significantly during the past decade in order to discourage financial institutions from relying on RBI loans.

The amount of rural deposits in formal financial institutions increased significantly during the last two decades. The total amount of savings mobilized by the rural and semi-urban branches of commercial banks, and state and central cooperative banks, for example, increased from Rs 12,038 million in 1967-68 to Rs 58,005 million in 1975-76 [Desai (1978A)]. Similarly, the amount of deposits in Regional Rural Banks also increased to more than Rs 800 million in 1979 [RBI (1979B)].

**Interest Rate Policies**

Interest rate policies in rural India have mainly been directed at keeping the costs of loans low to borrowers. Prior to the advent of British rule, the common rate of interest charged in rural area was 25 percent per annum on cash loans and 50 percent per annum on grain loans [Darling]. However, a number of measures have been instituted during the last century to lower the rates of interest both on formal and informal loans.
Interest Rate Policies Related to Formal Financial Institutions

There have been two types of interest rate instruments used. These are, prescribing limits on the rates of interest on loans as well as on deposits of financial institutions, and compensation provided to formal financial institutions to cover part of their costs of intermediation.

The interest rates charged on government loans to the cultivators have generally been fixed at parity with the rates on other types of public loans. In 1951-52 the nominal interest rates on different types of government agricultural loans varied between 5 percent and 7 13/16 percent per annum [RBI (1955)]. In the 1950s the average annual rate charged on such loans was about 6.25 percent [Nanavati and Anjaria].

The interest paid on saving deposits at the postal savings banks was 4 1/6 percent per annum before 1905. This was reduced to 3 percent per year in 1905 and further to 2.5 percent per year in 1933 [RBI (1970B)]. These rates have frequently been revised during the post-independence period. At present, these rates are fixed at par with the rates paid on similar deposits by cooperative banks. In 1980 the annual interest rate paid on saving deposits at the postal savings banks was 5.5 percent per annum [Thingalaya (1980)]. The rates on time deposits varied from 8.0 percent to 10.5 percent per annum depending upon the maturity period. The interest income from deposits at postal savings banks is generally exempted from income tax.

The interest rate limits on deposits at the other formal financial institutions are determined by the RBI. In general, cooperative banks and Regional Rural Banks are allowed to pay slightly higher interest rates than commercial banks. For example, in 1978 Regional Rural Banks
and state and central cooperative banks were allowed to pay 0.5 percent per annum more interest on deposits than commercial banks with total demand and time liabilities of Rs 250 million or over [RBI (1978)]. The primary cooperative banks were permitted to pay one percent per year more interest rate than the limits fixed for large commercial banks.

Interest rates on cooperative bank loans vary from state to state. These rates are determined by the RBI through prescribing the maximum margins on interest rates the cooperative banks pay on loans borrowed from the Bank. The rates of interest on short and medium-term loans varied from 10 percent to 13.5 percent per annum in different states during 1978-79 [RBI (1979B)]. The RBI also prescribes ceilings on interest rates charged on different types of loans advanced by the commercial banks and the Regional Rural Banks. These limits have been revised from time to time. The average rates of interest on rural loans of the commercial banks and the Regional Rural Banks varied from 9 percent to 16 percent per annum in 1976-77 [RBI (1977B)].

During the past few years special efforts have been made to provide low cost formal credit to the rural poor. A differential interest rates scheme was introduced in 1972. Under this program, all public sector commercial banks were required to charge four percent per annum, or two percent below the Bank interest rates, on loans advanced to the prescribed classes of rural households. The people belonging to scheduled castes and scheduled tribes, or the people who do elementary processing of forest products, or who are physically engaged in a moderate scale in cottage and rural industries, or the handicapped persons pursuing gainful occupations are eligible to borrow under the above scheme. In the
beginning, the public sector commercial banks were required to lend at least 0.5 percent of their total loan portfolios under the differential interest rates program. This limit was increased to one percent in 1979 [RBI (1979B)]. In the past decade the RBI also prescribed lower interest rates on loans to economically weak rural households.

The formal financial institutions in India are compensated in a number of ways in order to reduce their costs of serving rural areas. The loans from the RBI at below Bank rate have been available to all cooperative banks since 1942. During the last decade all commercial banks and Regional Rural Banks were also granted concessionary refinance from the RBI against their loans extended to rural borrowers for approved purposes. In addition, financial institutions are also provided low cost refinancing facilities from the Agricultural Refinance Corporation.

The Credit Guarantee Corporation was established in 1960. Its objective was to reduce default-risk cost of loans advanced for approved purposes by allowing the eligible financial institutions to insure such loans with the Corporation. The Corporation introduced the small-scale industries credit guarantee scheme in 1960 and a small loans guarantee scheme and a program to insure loans advanced to cooperative service societies were introduced in 1971. All scheduled commercial banks and cooperative banks are eligible to insure loans advanced for approved purposes under these schemes.

Some of the formal rural financial institutions have also been granted special exemptions. For example, the cooperative banks are exempted from payments of income tax, stamp duty and registration fees.
These banks and the Regional Rural Banks have been allowed to maintain lower cash reserve and liquidity ratios than commercial banks. The cooperative banks are also permitted to exclude the amount of loans borrowed by them from the higher financing agencies or the RBI when computing their net liquidity ratios. Similarly, the commercial banks have also been permitted from time to time to exclude the amount of their loans advanced for approved purposes, when computing their net liquidity ratios for the purpose of borrowing funds from the RBI.

Interest Rate Policies Related to Informal Agencies

Ceilings on interest rates charged by moneylenders are published by the state governments. The maximum informal rates allowed in a number of states during the 1930s and the 1940s are given in Table 2.1. These limits varied from state to state and ranged between 4 percent and 12 percent per year on secured loans and 6 percent and 18 percent per annum on unsecured loans.

After Independence the interest rate limits on loans advanced by moneylenders were revised in many states in order to bring these in line with the rates charged by formal financial institutions. However, there has been no measures instituted to provide compensatory assistance to the informal agencies. The interest rate regulations have not been very effective in reducing the costs of borrowing from informal financial agencies. Some evidence suggests that the actual rates charged on informal loans have been frequently above the prescribed ceilings.
### TABLE 2.1: Maximum Moneylenders Interest Rate Limits Allowed By Regulations in Different States in India Prior to 1947

<table>
<thead>
<tr>
<th>State</th>
<th>Simple Interest, Percent Per Annum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Secured Loans</td>
</tr>
<tr>
<td>Assam</td>
<td>9 3/8</td>
</tr>
<tr>
<td>Bihar</td>
<td>9</td>
</tr>
<tr>
<td>Bombay</td>
<td>9</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>12</td>
</tr>
<tr>
<td>Madras</td>
<td>6 1/4</td>
</tr>
<tr>
<td>Orissa</td>
<td>9</td>
</tr>
<tr>
<td>Punjab</td>
<td>7 1/2 or 2 Percent above Bank rate, whichever is higher</td>
</tr>
<tr>
<td>U.P.</td>
<td>4 1/2</td>
</tr>
<tr>
<td>West Bengal</td>
<td>8</td>
</tr>
<tr>
<td>Pepsu</td>
<td>7 1/4 or 2 Percent above the Bank rate, whichever is higher</td>
</tr>
<tr>
<td>Hyderabad</td>
<td>6</td>
</tr>
<tr>
<td>Mysore</td>
<td>9</td>
</tr>
<tr>
<td>Travancore-Cochin</td>
<td>12</td>
</tr>
<tr>
<td>Ajmer</td>
<td>9</td>
</tr>
<tr>
<td>Coorg</td>
<td>7 1/2</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Government of India (1956).
CHAPTER III
FINANCE AND FINANCIAL MARKETS

Claims to wealth by economic units may be held in the form of real assets or financial assets. Ownership of land, buildings, machinery, inventory and precious metals constitutes real assets. Financial assets or claims include currency, demand and time deposits with financial institutions, direct loans to others, stocks, bonds, securities, insurance and provident fund. The loans taken from financial institutions and others by the economic units form their financial liabilities. These assets (liabilities) and returns from them are denominated in standard currency. The financial claims are transacted between surplus and deficit units in financial markets. These transactions may be direct between savers and borrowers, or indirect involving financial intermediaries. The prime role of financial markets is to allocate financial claims among the economic units. The financial assets and financial markets possess a number of important properties that need to be considered in RFM research. Overlooking these characteristics in the study of rural finance give seriously misleading results.

Characteristics of Financial Assets

Financial Assets Represent Claims

Unlike physical or real assets, financial assets are not directly used in the production of goods or services. However, such assets
represent claims on resources. In an economy where all units are economically homogeneous, there is little need for issuing or holding financial assets. Financial assets play a critical role in alleviating discrepancies between the timings of income and investment among units that are heterogeneous.

**Financial Assets are Fungible**

Fungibility is the property of an asset which refers to the ease with which it can be substituted or exchanged for other goods or services without incurring loss in its value. Financial assets are more fungible than non-financial assets because they are readily convertible into money, the most fungible asset, and have negligible transportation cost. Due to their fungible nature, financial assets also have liquidity value to the owner.

**Divisibility**

Financial assets are highly divisible in acquisition as well as utilization. Most of these assets can be acquired in small units. For example, one can hold wealth in the form of currency or other financial instruments ranging from a small to a large amount. Similarly, these assets can be used in small amounts to acquire real or other financial assets. The divisibility characteristic of financial claims is also easy to exploit since the rate of return on a financial asset is generally independent of its size or size of other assets. Whereas, the

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1/ The dictionary meaning of the word fungible is, "being of such a nature or kind that one unit or a part may be exchanged or substituted for another equivalent unit or part in the discharging of an obligation" [Morris]. For a detailed discussion on fungibility characteristic of finance and its implications, see Von Pischke and Adams.
rates of return on most of the real assets depend upon their size and size of other assets in the production process. The divisible nature of financial assets helps the holders to adjust their financial assets portfolios easily and in a reasonably short period of time in response to economic changes.

Characteristics of Financial Markets

Financial claims are transacted between surplus and deficit units through financial markets. These markets include all the institutions and procedures for bringing savers and investors together. The prime function of financial markets is to efficiently allocate claims among economic units. These financial markets have the following important characteristics:

Nature of Transactions in Financial Markets

Transactions in financial markets involve time. In real goods and services markets transactions are usually completed as soon as the goods are transferred to the buyer and payment is made to the seller. There is generally no time lag involved between transfer of goods and payment (or vice versa). So the transactions in non-financial markets do not involve a time element. In financial markets, however, the transaction starts with the transfer of financial claims from surplus to deficit units. It is completed when after the contracted period of time, the borrower repays the loan and a specified rate of interest. The demand and supply of financial services, therefore, not only depends upon rate of interest and other transaction costs but also upon the time element in the contracts. In this respect, transactions in financial markets
closely resemble transactions in rental or lease markets and differ from real goods or services markets. The time element in the financial transactions also adds risk to contracts.

**Financial Markets are Highly Sensitive**

Financial assets, as already discussed, are utilized to command marketable goods and services. The fungibility and divisibility characteristics of these assets allow their universal use. So the demand and supply of financial claims is determined by the variables related to both financial and real sectors. This makes financial markets highly sensitive to changes in financial as well as non-financial sectors. In a relatively competitive economic environment, the financial market, in fact, may be used as a gauge of the overall performance of the economy. However, due to their ability to relatively quickly adjust to exogenous changes, the use of administrative fiats to control flows of funds in financial markets is ineffective and expensive in the long run.

**Implications for Rural Financial Market Research**

Research on RFMs involves the study of rural borrowers, savers, financial institutions, financial policies, and how other economic activities affect these policies. The characteristics of financial assets and markets discussed above have important implications for the selection of theoretical models and analytical techniques in rural finance studies.

Given the fungible and divisible nature of financial assets and a close interdependence between business and household decisions of the rural households, the study of financial management of the rural
households should include their total business as well as the economic environment under which they operate. This is illustrated in the example given in Figure 3.1. Let us suppose that there is a rural household simultaneously engaged in farm, non-farm, off-farm and household business. In addition, assume that the household has access to financial markets, and also makes barter and monetary transactions with other households. The household receives cash, as shown in the Figure, through the sale of farm, non-farm and off-farm products, hiring-out of family labor, borrowings from formal and informal financial agencies, interest or premiums paid on financial assets, and sale of owned real and financial assets. These cash resources are then allocated for different uses in financial and non-financial activities. The goods are also transferred in kind from one type of business to another within the household. For example, farm and non-farm products may be used for consumption purposes. Similarly, family labor resources can be transferred from household business to use in farm, non-farm, off-farm and financial business. The household is also engaged in transfers of resources in cash as well as in kind to and from other economic units.

The funds-allocation decisions of the household are governed by at least two considerations. First, to maximize net revenues, the household compares the present values of risk adjusted, real rates of return on expenditure at the margin in different enterprises. The consumption decisions are determined by marginal utility and consumption time preferences of the household. Secondly, the resources are also held in assets that meet liquidity requirements. The financial management decisions of the household are, therefore, determined by not only the
Figure 3.1: Resource Management Model of a Rural Household.
financial variables but also by the factors affecting non-financial enterprises. To elaborate this, assume that the household is engaged only in farm and household activities, and has access to financial markets. To illustrate this diagramatically, assume that the decisions of the household are concerned with only two time periods. There are no liquidity requirements and the household may either be a saver or a borrower. Also, assume that the rates of interest on savings and loans are the same.

The axes $OX_1$ and $OX_2$ of Figure 3.2 represent period one and period two, respectively. $OI_1$ is the amount of funds available to the household in the beginning of period one. $I_1I_2$ represents the farm business production possibility curve. $U_1$, $U_2$ and $U_3$ are the indifference curves each showing different combinations of consumption levels in periods one and two that provide the same level of utility to the household. Assume that $R_1R_1$ is the market opportunity line at the existing rate of interest. The household, at the existing rate of interest, borrows, as shown in the figure, an amount equal to $B_1C_1$ loans. The consumption levels at the existing rate of interest are $OC_1$ in period one and $OC_2$ in period two. Now suppose that the interest rate is increased. The market opportunity line in this case will shift to $R_2R_2$ and the household will neither borrow nor save. The consumption levels will also change to $OC_3$ in period one and $OC_4$ in period two. When the interest rate is further increased, the market opportunity line of the household shifts to $R_3R_3$. The household will now hold $C_1C_5$ amount of its resources in the form of financial savings. The consumption levels will increase to $OC_5$ in period one and $OC_6$ in period two. This shows that
Figure 3.2: Effects of Changes in Rate of Interest on Financial Management Decisions of a Rural Household.
the financial management decisions of the household are determined by the changes in rates of interest on financial assets. This also shows that changes in interest rates affect both farm investment and consumption decisions of the household.

The effects of variations in factor and product prices and level of technology on financial management decisions of the household are presented in Figure 3.3. Facing the $I_1I_1$ farm production possibility curve and the $R_1R_1$ market opportunity line, the household borrows $B_1C_1$ amount and uses $OC_1$ and $OC_2$, respectively, for consumptions in period one and period two. Assume that the prices of farm products or the level of technology increases. In either case, the production possibility curve will shift to the right to say $I_1I_3$. The market opportunity line in this case will shift to $R_2R_2$. The household will now use loans equal to $B_3B_1$ and the consumption levels will increase to $O_1I_1$ in period one and $OC_5$ in period two. If the prices of farm inputs increase, the production possibility curve and the market opportunity line will shift, respectively, to $I_1I_4$ and $R_3R_3$. The amount of loan taken by the household will also decrease to $B_2C_3$. The consumption expenditures will decrease to $OC_3$ in period one and $OC_4$ in period two. This shows that even when the interest rate remains unchanged, the amount of loan borrowed by the household changes with the variations in factor and production prices, and the level of technology. The above example, therefore, illustrates that the study of financial management decisions of rural households should include not only the financial variables but also the factors related to their non-financial enterprises.
Figure 3.3: Effects of Changes in Factor and Product Prices, and Technology on Financial Management Decisions of a Rural Household.
Similarly, research on the business behavior of a financial institution serving the rural sector should consider all the factors related to its total business portfolio. The studies of rural financial markets performance as well as policies, should also consider the economic environment in the non-financial sectors.

The market supply of real goods and services depends upon costs of production and transaction cost to the producers. However, because of the time element involved in financial transactions, the lenders of financial claims also incur default risk cost and cost due to inflation, in addition to opportunity and transaction costs. The failure to repay loans or interest by the borrowers imposes default cost on the lenders. To minimize this, the lenders may demand collateral or a third party surety from the borrowers. They may also require the borrowers to sell their products to them. The lenders may also incur more transaction costs in order to find reliable borrowers, or may simply include default premium in the charged rates of interest. To compensate for the cost due to inflation, the lenders may either include an inflation premium in the interest rates or may require the borrowers to sell their produce to them at a price that existed at the time the loan was made. The analysis of lending costs to rural borrowers, therefore, should include opportunity costs, transaction costs, default costs and inflation costs to the lenders. The relationships among different components of the total cost of lending should also be considered in the study.

The research on cost of borrowing in RFMs should include interest cost, transaction cost and inflation cost to the borrowers. The total
ex post borrowing cost should be then converted into ex ante perceived
cost of loans in order to understand borrowing decisions of the rural
economic units.
Studies on rural borrowers in India, before Independence, mainly focused on problems of rural indebtedness. The research focus has been expanded during the last three decades to include several other issues related to the demand for loan services. The AIRCS Committee for the first time in 1954 made an indepth study of economic life of rural households. Their survey provided useful insights on sources and uses of credit, term structure of borrowings, repayment of loans, and interest rates on borrowings in the rural sector. The inquiry on these issues was continued in the Rural Credit Follow-up Surveys and by independent researchers. During the 1960s and the 1970s a large amount of research was done on rural credit demand and impact of loans on borrowers. However, relatively few studies looked into costs of credit and the problem of loan defaults and delinquencies. Also, few efforts have been made to study important issues such as impact of access to credit on income distribution and resource allocation in the rural sector, elasticity of demand for credit, and effects of different RVM policies on demand for loan services.

In this chapter, the research on rural borrowers in India is theoretically and methodologically reviewed. The representative studies selected for this purpose were grouped in the following categories:
studies on demand for credit, studies on impact of loans, studies on cost of borrowing in RFMs, and studies related to repayment of rural loans.

Rural Credit Demand Studies

A number of studies have focused on various aspects of micro and macro demand for rural credit. Desai and Naik, Gupta (1980), Shah and Patel, and Subbarao (1980A), for example, discussed the factors determining credit requirements of farmers. A large amount of research has estimated credit demand in the rural sector. The findings of these studies suggest that farmer's owned funds, in general, were insufficient to meet their agricultural capital needs. The studies recommended that credit should be extended to the cultivators to enable them to make their farm business more efficient and profitable.

An important consideration in research on borrowing behavior of households, as discussed in Chapter III, is that basic characteristics of finance such as fungibility and divisibility are taken into account in the conceptual framework. Most studies on rural demand for credit in India, however, explicitly or implicitly perceived credit as an input rather than as access to additional liquidity. For example, demand for agricultural loans of cultivators in the majority of studies was estimated by considering only their farm business. The non-farm, off-farm and household activities of the farmers were not included in most research. Due to possible substitution and diversion of loans by borrowers and a close interdependence between investment and consumption decisions of rural households, however, the credit needs can only be
estimated by using the farm-household as a unit of analysis. Studies on credit demand have mainly used budgeting, econometrics and programming techniques as analytical tools.

**Budgeting Studies**

Budgeting studies have estimated demand for farm credit using two methods. A number of studies deducted owned investible funds of cultivators from their calculated total farm capital requirements [Bhanja; Garg et al; Singh and Kahlon; Singh (1972); Suryawanshi et al]. Some researchers simply deflated the total budgeted farm capital needs of households by a predetermined percentage and defined the resultant amount as their agricultural credit demand [Bansil; Gupta and Singh; Shakara Murthy et al; Subbarao (1980A)].

The budgeting technique is simple to use and does not require computers. These studies, however, suffer from serious methodological weaknesses. Researchers who use total agricultural capital requirements minus owned investible funds methods to estimate farm credit requirements do not account for the possible substitution or diversion of loans for non-farm or consumption uses. The amount of owned investible funds for agricultural purposes by farmers was considered in these studies as independent of their access to borrowing facilities. This assumption, however, overlooks the possible relocation of owned fund by farm-households in response to availability of credit. The percentages used to deflate total capital requirements in many studies that used the second method to estimate credit demand were also selected without strong justification.
Econometric Studies

Recently some researchers have used econometric techniques to study demand for credit by rural households. Kumar et al (1978), for example, estimated short-term credit demand functions for small farmers. Dhawan and Kahlon and Singh et al (1971) used production function models to evaluate the rationality of credit allocation for different uses. The results of these studies are summarized in Tables 4.1 and 4.2. As shown in Table 4.1, the credit demand of small farmers was found to be highly insensitive to interest rate changes, but to be highly responsive to variations in both input and output prices. Similarly, the use of improved farm inputs by cultivators was found as more responsive to favorable changes in factor and product prices than the provision of low cost credit. The results of production function studies revealed that farmers were generally rational in allocating their capital. The high ratios of marginal value productivity to the factor cost for many inputs also indicated that the agriculturists suffered from shortage of investible funds.

The econometric studies provided useful insights into borrowing behavior and uses of funds by the rural households. The findings of these studies were also not based upon subjective judgements as made in many budgeting studies. Problems of multicollinearity, heteroskedasticity and autoregression are, however, not uncommon in econometric models. The econometric studies may also include specification errors if all the relevant explanatory variables having non-random relationship with dependent variable are not included in the model, or if an incorrect functional form of the model is used. The models used in econometric
TABLE 4.1: Impact of Changes in Interest Rates and Input and Output Prices on Demand For Credit and Use of Inputs by Marginal Farmers of U.P., India.

<table>
<thead>
<tr>
<th>Price Changes Assumption</th>
<th>Percent Increase in Demand for Credit</th>
<th>Season I</th>
<th>Season II</th>
<th>Season III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ten Percent Decrease in Price of Variable Inputs</td>
<td>46</td>
<td>37</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Ten Percent Decrease in Rate of Interest</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ten Percent Increase in Price of Output</td>
<td>41</td>
<td>30</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

Percent Increase in the Use of Variable Inputs

<table>
<thead>
<tr>
<th>Price Changes Assumption</th>
<th>Percent Increase in the Use of Variable Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ten Percent Decrease in Variable Inputs Price</td>
<td>32</td>
</tr>
<tr>
<td>Ten Percent Decrease in Rate of Interest</td>
<td>2</td>
</tr>
<tr>
<td>Ten Percent Increase in Price of Output</td>
<td>29</td>
</tr>
</tbody>
</table>

Figures are rounded off.

### TABLE 4.2: Estimated Regression Coefficients (RC) and Ratio of Marginal Value Product (MVP) to Factor Cost (FC) of Factors Affecting Demand for Credit in Econometric Studies.

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RC</td>
<td>MVP/FC</td>
<td>RC</td>
</tr>
<tr>
<td>Intercept</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Operational Area</td>
<td>0.3682*</td>
<td>0.75</td>
<td>0.5293**</td>
</tr>
<tr>
<td>Labor Days Used</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Expenditure on Irrigation</td>
<td>0.2216**</td>
<td>6.63</td>
<td>0.1494**</td>
</tr>
<tr>
<td>Expenditure on Implements and Machinery</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Investment on Draft Animals</td>
<td>-0.048</td>
<td>-0.94</td>
<td>0.0432</td>
</tr>
<tr>
<td>Investment on Milch Animals</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Expenditure on Seeds, Manures and Fertilizers</td>
<td>0.2170**</td>
<td>2.80</td>
<td>0.1690***</td>
</tr>
<tr>
<td></td>
<td>R²</td>
<td>-</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>Number of Observations</td>
<td>70</td>
<td>76</td>
</tr>
</tbody>
</table>

* Significantly different from zero at 0.10 level.
** Significantly different from zero at 0.05 level.
*** Significantly different from zero at 0.01 level.

Sources: Dhawan and Kahlon; Singh et al (1971).

---

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studies were, however, frequently not tested for the above mentioned
problems. Findings by Kumar et al (1978), for example, may suffer from
specification errors. In their analysis, they considered the amount of
owned investible funds of farmers for agricultural uses as a function of
only the preceding year's profits. Other relevant variables such as
access to borrowing facilities, cost of borrowing, and relative rates of
return on capital for farm and non-farm uses were not included in the
estimation.

Credit was also underpriced in many econometric studies. These
studies considered only nominal rates of interest as the borrower's cost
of credit. The transaction costs, liquidity reserve value of credit,
and costs due to inflation were not considered. Adams and Nehman have
shown that transaction costs of obtaining loans from formal institutions
can substantially raise effective cost of credit to borrowers. The
underestimated costs of borrowing used in these studies might have
overexpressed their results. The problem of credit rationing in rural
areas as revealed in the findings of study by Dhawan and Kahlon, for
example, may not be so serious if all costs of loans to the borrowers
were considered in the analysis.

**Programming Studies**

The use of programming techniques in rural credit demand studies in
India has become popular during the last two decades. The majority
of these studies used single or multiperiod linear models. The general
form of the models used may be summarized as:
Maximize $Z = \sum_{j=1}^{n} C_j X_j$

Subject to $\sum a_{ij} x_j \leq b_i$ (i=1,2,3,...,m)

$x_j \geq 0$

Where;

$Z$ = Total net income, or net revenue, or returns to fixed resources of the rural households.

$C_j$ = Net income, or net revenue, or returns to fixed resources from the Jth production activity.

$b_i$ = the amount of the ith available resource.

$a_{ij}$ = the ith resource requirement of the jth production activity.

The optimum production plans were prepared using different levels of technology and resource availability. Loan demand was estimated in the studies by either introducing a capital borrowing activity directly in the models, or by subtracting owned investible funds of the households from their total capital requirements estimated in the optimum plans.

Table 4.3 presents the per acre credit requirements of farmers as estimated in some studies. The findings of credit demand studies generally revealed that the farmers, irrespective of type and size of their agricultural business, needed credit to augment their owned capital. The studies also found that the adoption of improved farm technology by cultivators would further increase their credit requirements.

The use of programming models to study demand for rural credit has an advantage over budgeting and econometric techniques since these allow
TABLE 4.3: Annual Per Acre Production Credit Requirements Based on Estimates of Programming Studies in India.

<table>
<thead>
<tr>
<th>Author(s)/Farm Categories</th>
<th>Per Acre Annual Production Credit Requirements (Rs)a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing Level of Technology</td>
</tr>
<tr>
<td>Sharma and Prasad</td>
<td></td>
</tr>
<tr>
<td>(a) Small Farms</td>
<td>128</td>
</tr>
<tr>
<td>(b) Medium Farms</td>
<td>134</td>
</tr>
<tr>
<td>(c) Large Farms</td>
<td>76</td>
</tr>
<tr>
<td>Singh and Jha*</td>
<td></td>
</tr>
<tr>
<td>(a) Low Income Farms</td>
<td>1,536</td>
</tr>
<tr>
<td>(b) High Income Farms</td>
<td>1,490</td>
</tr>
<tr>
<td>Agarwal and Kumawat (1974A)</td>
<td></td>
</tr>
<tr>
<td>(a) Small Farms</td>
<td>259</td>
</tr>
<tr>
<td>(b) Medium Farms</td>
<td>245</td>
</tr>
<tr>
<td>(c) Large Farms</td>
<td>232</td>
</tr>
<tr>
<td>Grewal</td>
<td></td>
</tr>
<tr>
<td>(a) Marginal Farms</td>
<td>618</td>
</tr>
<tr>
<td>(b) Small Farms</td>
<td>491</td>
</tr>
<tr>
<td>Dhawan and Kahlon*</td>
<td></td>
</tr>
<tr>
<td>(a) Without Irrigation</td>
<td>722</td>
</tr>
<tr>
<td>Purchased Activity</td>
<td></td>
</tr>
<tr>
<td>(b) With Irrigation</td>
<td>1,164</td>
</tr>
<tr>
<td>Purchased Activity</td>
<td></td>
</tr>
</tbody>
</table>

Figures are rounded off.

a Total Annual Per Acre Credit requirements were calculated by adding the estimated credit demand for the kharif and rabi seasons.

* Refers to total farm level annual credit requirements.

Sources: Agarwal and Kumawat (1974A); Dhawan and Kahlon; Grewal; Sharma and Prasad; Singh and Jha.
the researchers to simulate the effects of changes in variables such as cost of credit, level of technology, resource availability, and input and output prices. Most programming studies, however, have several methodological weaknesses. The objective functions in the models used in a number of these studies were based upon single valued expectations. The demand for agricultural credit, for example, was estimated using the assumption that farmers choose an enterprise mix that maximizes their income. No provisions were made to account for risk and uncertainty in the farm business. The allocation of large amounts of resources to high profit enterprises and manyfold increases in farm income in the optimal plans developed in these studies, therefore, should not be surprising. Some researchers used maximum and/or minimum constraints on the allocation of resources to different enterprises in order to include the risk factor in farmers' decision making [Baker and Bhargva; Gangwar and Ghakar; Grewal; Singh and Jha; Subrahmanyam]. Only a few of them, however, tested whether their models closely proxied the actual decisions of cultivators. The use of over, or under constrained models in programming studies might have under or over assessed the actual credit needs of farm households.

Special attention is needed to handle non-storable resources such as land, family labor, owned draft power, and irrigation capacity in programming studies to estimate demand for credit. Due to seasonality in the use and inability to store such resources, their supply may become surplus in some periods and scare in others. The supply of family labor for farm business use, for example, may become scarce when crops are planted or harvested, and surplus during post planting and
harvesting periods. To avoid transfer of non-storable resources from surplus to scarce periods in the models, researchers have to identify such periods and constrain the maximum utilization of these resources in each period to their actual supply. In a number of studies that attempt to assess rural credit requirements in India no provisions were made to prevent transfer of non-storable resources from surplus to scarce supply periods [Agarwal and Kumawat (1974A); Sharma and Prasad; Subrahmanyam]. As a result, the demand for credit in these studies may be overestimated.

The majority of programming studies also based their analysis on a critical assumption that the amount of owned investible funds of cultivators available for farm business uses were independent of their access to borrowing facilities, rate of interest on loans, input output prices, and level of farm technology. This assumption overlooked the possible substitution of loans for owned funds by the farmers. There were also no provisions made in the models to account for possible diversion of loans from farm to non-farm uses by the agriculturists. The actual credit needs of farmers, therefore, may be seriously over or underassessed.

Finally, the credit was underpriced by a number of researchers. The cost of loans to borrowers used in most studies was only the nominal rate of interest. The transaction costs and inflation were not considered. Except for a few studies, the liquidity reserve value of credit to the farmers was also ignored. The actual cost of borrowing to the farmers, if all the costs of a loan are considered, might have far
exceeded the interest cost used in the studies. As a result, the demand for credit is likely to be significantly overestimated.

Studies on Loan Impact

Another credit issue that is extensively studied in India is the impact of loans on borrowers. The majority of such studies assessed the impact of agricultural loans on farmers economic activities. Various techniques have been used to achieve this objective. The main unit of analysis used in these studies was the farm business. The substitution and diversion impact of borrowing on non-farm activities of farmers was, however, mostly ignored. Due to the partial analysis made in the studies, their findings generally failed to capture the overall impact of loans on the entire household. Methodologically, these studies were classified as descriptive, econometric and programming studies.

Descriptive Studies

A number of researchers have used the descriptive approach to study the impact of agricultural loans on farmers [Garg and Singh; Jain and Jain; Jodha; Lavinia et al; Sharma (1978A); Subbarao et al]. In descriptive studies the farm business of borrowers and non-borrowers, or borrowers before and after using credit were compared in order to assess impact of loans on borrowers. The variables used in the above comparisons were gross or net farm income, farm expenses, cropping patterns, cropping intensity, benefit-cost ratio, and farm assets. These studies, as is shown in Table 4.4, reveal that the use of loans was positively associated with borrower income. The availability of
TABLE 4.4: Estimated Impact of Loans on Farm Business of Rural Borrowers in Descriptive Studies on India.

<table>
<thead>
<tr>
<th>Author(s)*</th>
<th>Gross Farm Income/Acre</th>
<th>Net Farm Income/Acre</th>
<th>Variable Farm Expenses/Acre</th>
<th>Total Fixed Farm Assets</th>
<th>Cropping Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lavinia et al</td>
<td>56</td>
<td>68</td>
<td>30</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Sharma (1978A)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) High Yielding Varieties</td>
<td>108</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>(b) Improved Varieties</td>
<td>17</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>(c) Other Crops</td>
<td>5</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Garg and Singh</td>
<td>43</td>
<td>41</td>
<td>50</td>
<td>--</td>
<td>12</td>
</tr>
<tr>
<td>Jain and Jain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Average farm size 2.87 ha</td>
<td>--</td>
<td>29</td>
<td>23</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>(b) Average farm size 6.11 ha</td>
<td>--</td>
<td>40</td>
<td>11</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>(c) Average farm size 19.34 ha</td>
<td>--</td>
<td>49</td>
<td>12</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>(d) Average farm size 41.05 ha</td>
<td>--</td>
<td>33</td>
<td>32</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>

Figures are rounded off.

* Study by Jain and Jain compared farm business of the borrowers before and after receiving loans. All other studies compared farm businesses of borrower and non-borrower households.

Sources: Garg and Singh; Jain and Jain; Lavinia et al; Sharma (1978A)
credit was also found to have positive impacts on variable and fixed farm investments and other studied variables.

The most serious weakness in descriptive studies is the attribution problem. All the changes detected in variables used to compare borrowers and non-borrowers, or farm business of borrowers before and after borrowing, were attributed in these studies to the use of credit. However, this may not be always true. The farm income of cultivators, for example, may increase over time because of improvements in agricultural technology or increased access to improved inputs, with or without credit. This is especially true in India since agriculture has gone through significant technological transformations during the last two decades. Similarly, the farm income or cropping pattern of borrower and non-borrower farmers may differ, not only because the former used loans, but also because their farm or non-farm resource structure is not similar. In many cases lenders ration credit to borrowers on the basis of their assets or income. The majority of the studies did not investigate the reasons why the non-borrowers did not use credit, or whether they obtained loans from alternative sources. If allowances for the contributions to changes of factors other than credit in the studied variables were made, the true impact of borrowing on rural households might have differed significantly than the findings of many descriptive studies. A study by the World Bank, for example, assessed the impact of medium and long term credit projects in the Philippines, Pakistan, Morocco, Uruguay and Mexico. It was found that after the effects of variables other than credit were segregated, the use of loans contributed only about 28 percent of the total increase in net production of
borrower households. The inferences made in descriptive studies on impact of rural loans in India, therefore, must be treated with caution.

**Econometric Studies**

A number of studies on LICs in recent years have used econometric techniques to assess the impact of loans on borrowers [David and Meyer]. These studies mainly used production functions, input demand functions and efficiency gap functions. The India, econometric studies on impact of credit have mainly used production function and input demand function models.

Many production function studies on India assessed the impact of borrowing on farm business returns [Pawar; Raju et al]. Credit was represented in the models in these studies by different variables. Raju et al, for example, used the amount of inputs financed by bank loans as an independent variable in order to proxy the credit variable in their study. A number of other explanatory variables were also used in the production function studies. Some researchers also tried various functional forms of used models. The results of these studies generally revealed that borrowing had a significant impact on agricultural income. The use of credit was also found by some to have complementary effects on productivities of other factors of production.

Schluter's study is representative of input demand function studies conducted on the impact of loans. He assessed the impact of cooperative credit and uncertainty on use of family and hired human labor, adoption of modern crop varieties, use of fertilizer, changes in cropped area, and use of animal and machine power by farmers. The financial
constraints in his model were represented by maximum cooperative credit availability and income variables. Several other independent variables were also used. The risk bearing ability of farmers was proxied by using their nonfarm assets, farm size, and technology and education levels as explanatory variables. Table 4.5 presents the results of Schluter's study. He found that availability of cooperative credit had a significant positive impact on adoption of modern rice varieties and use of fertilizer. In the case of wheat, the estimated regression coefficient of the credit variable had a negative sign. It was, however, not statistically significant.

The findings of econometric studies did not have attribution problems. A number of these studies, however, suffered from several other methodological weaknesses. The majority of the studies, for example, assessed only a partial impact of loans on borrowers. The impact of use of agricultural credit by households was analyzed, in these studies, mainly on their farm business. The substitution and diversion effects of loans on non-farm activities of borrowers were not recognized. The true impact of loans, therefore, may be significantly different from the findings reported in the majority of econometric studies.

Econometric studies may also include selectivity bias. In India, institutional credit in rural areas is concentrated mainly among large and influential farmers. Such farm households also have relatively greater access to high yielding inputs such as fertilizer and improved crop varieties as compared to other farmers. The data on borrowers used in econometric studies, therefore, may be collected from a sample of
TABLE 4.5: Linear Regression Estimates of Factors Determining the Adoption of Modern Rice and Wheat Varieties and Use of Fertilizer by the Farmers in Surat District, India, 1971-72.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Modern Varieties</th>
<th>Wheat Fertilizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop Acreage</td>
<td>0.666***</td>
<td>0.541***</td>
</tr>
<tr>
<td>Gross Cropped Area</td>
<td>-0.056*</td>
<td>0.006</td>
</tr>
<tr>
<td>Maximum amount of Cooperative Credit Available</td>
<td>0.182*</td>
<td>-0.114</td>
</tr>
<tr>
<td>Non-Agricultural Income</td>
<td>0.089</td>
<td>-0.016</td>
</tr>
<tr>
<td>Dairying Income</td>
<td>0.100</td>
<td>0.073</td>
</tr>
<tr>
<td>Non-farm Assets</td>
<td>0.020***</td>
<td>-0.005</td>
</tr>
<tr>
<td>Number of Family Members</td>
<td>0.011</td>
<td>-0.009</td>
</tr>
<tr>
<td>Education</td>
<td>-0.005</td>
<td>0.076***</td>
</tr>
<tr>
<td>Home Consumption Requirements</td>
<td>0.005</td>
<td>0.009</td>
</tr>
<tr>
<td>Value of Kharif Crop Sales</td>
<td>--</td>
<td>-0.30</td>
</tr>
<tr>
<td>Total Assets</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Region</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Acreage under HYV Rice</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Acreage under Improved Rice (Improved)</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Acreage under Unirrigated Traditional Rice Varieties</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Acreage under Unirrigated Cotton and Jowar Crops</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>R²</td>
<td>0.76</td>
<td>0.54</td>
</tr>
<tr>
<td>Number of Observations</td>
<td>59</td>
<td>50</td>
</tr>
</tbody>
</table>

* Significant at .05 level.
** Significant at .01 level.
*** Significant at .005 level.

Source: Schluter.
mainly large sized and highly efficient farmers. Consequently, the true impact of loans on average borrowers may be seriously overestimated in these studies.

The impact of borrowing on demand for various inputs by farm households, as has been analyzed by Schluter and other similar studies, could be better assessed by making simple comparisons of marginal rates of returns on alternative uses of capital by farmers with their effective costs of credit [David and Meyer]. In most econometric studies, the models used were also not tested for multicollinearity, heteroskedasticity, autocorrelation and specification error problems.

Programming Studies

A large amount of research has been done to assess the impact of loans on rural borrowers using programming techniques [Agarwal and Kumawat (1974); Baker and Bhargava; Grewal; Schluter; Singh and Jha; Sirohi and Gangwar; Tiwari and Sharma]. Most researchers used linear models, however, non-linear models were also used in some studies. The optimum production plans were developed in these studies representing the situations of with and without access to credit by the rural households. These plans were then compared to analyze the changes in variables such as farm income, cropping pattern, cropping intensity, adoption of modern farm technology, and employment of human labor resulting from access to borrowing facilities.

The findings of selected studies on impact of loans on farmers are summarized in Table 4.6. These studies generally concluded that the use of credit by farm households had a significant impact on income and
<table>
<thead>
<tr>
<th>Author(s)/Farm Size</th>
<th>Percent Increase in Income/Acre</th>
<th>Existed Technology</th>
<th>Recommended Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sirotti and Gangwar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Small Farms</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Medium Farms</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Large Farms</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singh and Jha*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Low Income Farms</td>
<td>18</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>(b) High Income Farms</td>
<td>23</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>Agarwal and Kumawat (1974B)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Small Farms</td>
<td>38</td>
<td></td>
<td>238</td>
</tr>
<tr>
<td>(b) Medium Farms</td>
<td>47</td>
<td></td>
<td>159</td>
</tr>
<tr>
<td>(c) Large Farms</td>
<td>39</td>
<td></td>
<td>178</td>
</tr>
<tr>
<td>Grewal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Marginal Farms</td>
<td>59</td>
<td></td>
<td>219</td>
</tr>
<tr>
<td>(b) Small Farms</td>
<td>30</td>
<td></td>
<td>213</td>
</tr>
</tbody>
</table>

Figures are rounded off.

* Refers to percentage increase in total farm income.

Sources: Agarwal and Kumawat (1974B); Grewal; Singh and Jha; Sirotti and Gangwar.
other studied variables. The studies also found that access to both credit and improved farm technology by the farmers had greater impact on income and other studied variables than the use of either loans or modern technology alone. Baker and Bhargava found that borrowing decisions of farm households were governed not only by profit considerations but also by their future liquidity reserve requirements. The investigations by them and Tiwari and Sharma revealed that provision of reliable access to credit facilities to the farmers had a significant positive impact on their agricultural business.

These programming loan impact studies had a number of similar methodological weaknesses as found in programming studies on demand for credit: the focus on the farm business instead of farm-household as a unit of analysis, and overlooking substitution and diversion effects of loans on the non-farm activities of the farmers. Also the implicit assumption made by almost all the researchers that the amount of owned funds available for agricultural uses by farmers was independent of their access to credit, did not clarify the problem of measuring additionality in the models. Similarly, in a majority of the studies, the nominal rate of interest was assumed to be the only borrower's cost of loans. Some researchers also did not adjust their programming models to prohibit transfer of non-storable resources from surplus to scarce supply periods. The models used were also not generally tested in order to calibrate these with the actual decision making process of rural households. As a result of the above weaknesses, the true impact of

1/ For details on the problem of additionality and its implications in the evaluation of credit projects, see Von Pischke and Adams.
loans on rural borrowers may be seriously over or underestimated in most of the studies.

Studies on Cost of Borrowing in Rural Financial Markets

Relatively little research has been done on rural borrowing costs in India. A few recent studies have looked into farmer costs of borrowing from different sources [Datey; Jain and Bisen; Mohan and Singh; Naryana Kurup; Thingalaya (1980)]. Some of these studies also discuss the relative importance of interest and non-interest costs of rural loans. The estimated total borrowers cost of loans from formal financial institutions in these studies varied from 10 percent to about 20 percent per year. Mohan and Singh, and Thingalaya (1980), for example, found the annual total cost of formal credit to the borrowers to be between 10-14 percent including two to four percent non-interest costs. Datey revealed that only the interest and share contribution cost of loans from primary agricultural cooperative credit societies was a little less than 17 percent per year. The analysis by some researchers also revealed that when all the costs of borrowing were considered, the total effective cost of credit to rural households from formal and informal sources did not differ significantly.

Borrower costs are important in understanding borrowing behavior. The majority of studies on costs of loans in RFMs were found to have at least two serious weaknesses. Theoretically, the total effective cost of a loan to a borrower includes interest cost, transaction cost, changes in the purchasing power of money due to inflation or deflation and loss of credit reserves. The nominal rate of interest charged on
loans makes up the interest costs for the borrowers. The transaction costs include expenditure on securing necessary documents, loan application filing cost, loan processing fees, and loan repayment costs. Any contractual agreement between lender and borrower may incur direct or indirect costs to borrowers. The delay in disbursement of loans may also cost borrowers because of either a loss in the real value of the loan due to inflation, or, a reduction in the benefits derived from the use of credit. The loss of credit reserves due to borrowing is another loan cost perceived by borrowers. In most of the studies, however, all these costs of borrowing were not considered. The actual cost of loans to rural households, therefore, is likely underestimated in these studies.

Most of the studies looked into ex post borrowing costs of rural households. However, the perceived ex ante cost of loans to households, determine their borrowing decisions. These may significantly differ from ex post costs if the approval of a loan is not certain. For example, if a farmer finds that to borrow Rs 100 for a year, he will have to incur Rs 5 in costs to obtain necessary documents, file loan application, and pay loan processing fees. His post loan approval transaction cost is Rs 10. The rate of interest charged by the lender is 10 percent. He does not perceive any change in prices of goods and services in coming year. There is also no liquidity cost of borrowing. If the farmer is certain about approval of his loan request, his ex ante and ex post cost of borrowing will be 25 percent. However, if he perceives that his chances of getting the loan approved are fifty percent, his ex ante perceived cost of credit will be (5/0.5+10+10) percent or 30 percent. The findings of most borrowing cost studies cannot be used to
analyze credit use behavior of rural households under conditions of uncertainty.

**Studies on Repayment of Rural Loans**

Defaults on agricultural loans are a serious problem in India. One estimate predicted default rates on rural loans in India in 1975-76 as a little less than 39 percent in primary agricultural cooperative societies and about 48 percent in commercial banks [Desai (1978A)]. However, relatively few efforts have been made to analyze loan default and delinquency problems. Few studies have been conducted in the past to identify socio-economic characteristics of borrowers that distinguished defaulters from the non-defaulters [Ames (1973); Pandey and Muralidram; Patil]. Some researchers also attempted to empirically estimate loan repayment capacity of different types of rural households [Singh and Kahlon].

Studies that attempted to predict defaulters and non-defaulters analyzed characteristics such as size of land holding, cropping pattern, irrigated area, assets structure, farm and non-farm income, consumption expenditure, debt outstanding, family size, age and education status. Using econometric or chi-square techniques, these studies found that borrowers with small land holdings, low income, large financial obligations and high family expenses generally defaulted or delayed on repayment of loans.

The repayment of loans by borrowers depends upon their ability as well as willingness to repay. The variables such as income, resource level, technology and repayment structure determine ability to repay.
The willingness of borrowers to repay loans depends upon their perceived costs from default, such as loss of access to credit or subsidized inputs in the future. A complete diagnosis of the loan defaults problem should include both credit demand (borrower) and supply (lender) variables affecting ability as well willingness to repay. The majority of studies on identification of defaulters and non-defaulters in the rural sector focused only on characteristics of the borrowers. The factors related to the supply of credit such as timeliness of loan disbursement, repayment structure and reliability of source credit to the borrowers, were not considered. Also, in a number of these studies, the off-farm and non-farm activities of farm households were excluded from the analysis. The effectiveness of findings and recommendations made in a majority of these studies in solving loan default problems in rural areas is weak.

The study of repayment capacity of rural households can be useful to lending agencies in designing their loan programs. It may also provide useful information for formulating effective RFM policies. But, the estimation of loan repayment ability of rural households can be meaningful only if it is based on an ex post concept. In other words the capacity to repay loans should be analyzed by considering income and expenditures of households after the loan is used. Also, given the fungible nature of credit, loan repayment capacity of borrowers need to be assessed by documenting their post loan use income and expenditures related to all of farm, off-farm, non-farm and household activities. The majority of researchers did consider the post loan use revenues and
expenses in order to assess the loan repayment ability of rural households, however, their off-farm and non-farm businesses were mainly not included in the analysis. The findings of most of these studies are also not very helpful in explaining high loan defaults and delinquency rates in rural areas since they mainly looked into overall economic ability of households to service loan repayment obligations and did not analyze their flow of funds. The willingness to repay loans of the borrowers was also not generally considered by the investigators.
CHAPTER V
RESEARCH ON RURAL SAVINGS

Relatively little research has been done on rural saving behavior in developing countries for two main reasons. First, the data available are generally inadequate for research on savings [Adams (1977A); Snyder]. Second, there has been a widely held presumption in economic literature that rural households in LICs are too poor to save.\(^1\) Despite this assumption, a significant number of researchers in recent years have attempted to study rural household savings in India. Many of these studies were focused on capacity to save and determinants of rural savings. Commendable efforts have also been made to build data bases on savings in rural India. Relatively few studies, however, looked into issues such as composition and mobilization of savings. Similarly, negligible amount of research have been done on saving measurement and data problems.

\(^1\) For example, Keynes in his General Theory argued that "a poor community will be prone to consume by far a greater part of its output." Buchanan and Ellis in 1955 observed that "throughout the economically underdeveloped world, with only few exceptions, the typical peasant, fellah, coolie or peon saves little or nothing." According to Lewis, the landed aristocracy, the peasants, the wage and salary earning classes -- all except the capitalist class, which is conspicuous by its absence in such (developing) countries -- have a mentality directed towards spending. In India, the Central Enquiry Committee in its report concluded that "the surplus left with the agriculturists, who constitute the bulk of the population, is very little in normal years [Government of India (1930)]. The argument that there is little savings available for investment in rural India also gained support from Rangnekar.
In this chapter, representative studies on rural savings in India are reviewed.

**Saving Capacity and Determinants of Rural Household Savings**

A substantial amount of research has been conducted on saving capacity and factors affecting saving behavior of rural households in India. These studies have used both micro and macro level data collected from primary as well as secondary sources. Primary data were collected from rural households, while secondary data sources used in the studies were the RBI, the National Council of Applied Economic Research, the Central Statistical Organization, and National Sample Surveys. Both income and expenditure accounting (direct method) and asset accounting (indirect method) techniques were used to measure savings.

**Saving Capacity Studies**

The research on saving capacity estimated total gross or net savings, and saving-income ratios among various types of rural households. The findings of some of the macro level studies are summarized in Table 5.1. The majority of these studies used secondary data. The estimates of savings as a percentage of income of rural households in the studies, as shown in the table, varied from two to four percent [Khatkhate and Deshpande; Krishna and Raychaudhuri] to more than fourteen percent [Panikar (1970); Bhalla (1976, 1978B)]. The saving capacity in rural areas was also found to increase over time [Bhalla (1976); Krishna and Raychaudhuri]. Due to the differences in sources of data and methods used to measure the savings and time of
TABLE 5.1: Macro Level Estimates of the Saving Capacity of Rural Households in India.

<table>
<thead>
<tr>
<th>Author(s)/Study Region</th>
<th>Years</th>
<th>Savings/Family(Rs)</th>
<th>Income/Family(Rs)</th>
<th>Savings as Percent of Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panikar (1961)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Hydrabad State</td>
<td>1949-51</td>
<td>91(G)</td>
<td>1,147(G)</td>
<td>8.0</td>
</tr>
<tr>
<td>(b) All-India</td>
<td>1951-52</td>
<td>107(N)</td>
<td>892(N)</td>
<td>12.0</td>
</tr>
<tr>
<td>Khatkhate and Deshpande</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All-India</td>
<td>1950-51</td>
<td>--</td>
<td>--</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>1952-53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1956-57</td>
<td>--</td>
<td>--</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>1958-59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1959-60</td>
<td>--</td>
<td>--</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>1962-63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panikar (1970)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Punjab State</td>
<td>1950-51</td>
<td>115(G)</td>
<td>1,000(G)</td>
<td>11.5</td>
</tr>
<tr>
<td>(b) Orissa State</td>
<td>1950-51</td>
<td>71(G)</td>
<td>2,440(G)</td>
<td>2.9</td>
</tr>
<tr>
<td>(c) Bombay-Deccan</td>
<td>1950-51</td>
<td>131(G)</td>
<td>596(G)</td>
<td>21.9</td>
</tr>
<tr>
<td>RBI (1976)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All-India</td>
<td>1970-71</td>
<td>--</td>
<td>--</td>
<td>8.1</td>
</tr>
<tr>
<td>Bhalla (1976)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All-India</td>
<td>1968-69</td>
<td>294</td>
<td>2,314</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>1970-71</td>
<td>437</td>
<td>2,649</td>
<td>16.5</td>
</tr>
<tr>
<td>Bhatty and Sarma*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All-India</td>
<td>1967-68</td>
<td>12,966(N)</td>
<td>281,020(N)</td>
<td>4.6</td>
</tr>
<tr>
<td>Bhalla (1978B)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All-India cultivator</td>
<td>1970-71</td>
<td>699</td>
<td>4,959</td>
<td>14.1</td>
</tr>
<tr>
<td>households</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Krishna and Raychaudhuri*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All-India</td>
<td>1950-51</td>
<td>1,663(N)</td>
<td>70,886(G)</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>1960-61</td>
<td>2,253(N)</td>
<td>94,221(G)</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>1970-71</td>
<td>8,647(N)</td>
<td>23,131(G)</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>1973-74</td>
<td>12,793(N)</td>
<td>336,324</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Figures are rounded off.

* The estimates by Bhatty and Sarma refer to total rural household savings (Rs Millions) and net national income (Rs Millions) at current prices. Krishna and Raychaudhuri used total savings and income (Rs Millions) of rural households.

Sources: Bhalla (1976, 1978B); Bhatty and Sarma; Khatkhate and Deshpande; Krishna and Raychaudhuri; Panikar (1961, 1970); RBI (1972).
studies, it is difficult to identify specific reasons for the variations in findings. However, researchers who used the National Council of Applied Economic Research and the National Sample Survey data generally estimated higher saving capacities of rural households than those who used the RBI or the Central Statistical Organization data. The study by Bhalla (1976) also showed that the National Council of Applied Economic Research data produced significantly different saving capacity estimates when alternative saving measurement techniques were used.

Micro level studies have generally used primary data. Both direct and indirect saving measurement methods were used in these studies. As is also shown in Table 5.2, the saving capacity estimates of micro level studies likewise varied widely. The investigations of many researchers revealed that savings of farm households grew with increases in farm size and level of farm technology. In a number of studies, the savings of small sized farmers were found to be negative [Blyn; Kanlon and Bal; Kumar et al (1975); Pandey et al; Singh and Gugnani].

Studies of Rural Household Savings Determinants

A large amount of research has been done on the factors affecting rural household saving behavior. A majority of these studies used econometric and descriptive methods of analysis. The econometric studies analyzed the impact of variables such as income, wealth, prices, returns on investment, income distribution, population and family size on saving behavior of rural households. The household income was measured in the forms of absolute income, relative income, permanent income and transitory income. Both micro as well as macro level data were used.
### TABLE 5.2: Micro Level Estimates of Saving Capacity of Farm Households in India.

<table>
<thead>
<tr>
<th>Author(s)/Study Region/ Household Type</th>
<th>Years</th>
<th>Savings/Family(Rs)</th>
<th>Income/Family(Rs)</th>
<th>Savings as Percent of Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kahlon and Bal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ludhiana District (Pb)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) small farms</td>
<td>1969-70</td>
<td>2,052</td>
<td>12,275</td>
<td>16.7(N)</td>
</tr>
<tr>
<td>(b) medium farms</td>
<td></td>
<td>5,800</td>
<td>21,907</td>
<td>26.5(N)</td>
</tr>
<tr>
<td>(c) large farms</td>
<td></td>
<td>1,1093</td>
<td>44,124</td>
<td>25.1(N)</td>
</tr>
<tr>
<td>Chauhan et al; Sangli District (Maharashtra)</td>
<td>1970-71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Irrigated farms</td>
<td></td>
<td>510</td>
<td>3,203</td>
<td>15.9(G)</td>
</tr>
<tr>
<td>(b) Non-Irrigated farms</td>
<td></td>
<td>255</td>
<td>2,121</td>
<td>12.0(G)</td>
</tr>
<tr>
<td>Nandal; Haryana State</td>
<td>1969-70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Small farms</td>
<td></td>
<td>234</td>
<td>19,511</td>
<td>1.2(N)</td>
</tr>
<tr>
<td>(b) Medium farms</td>
<td></td>
<td>3,065</td>
<td>29,995</td>
<td>10.2(N)</td>
</tr>
<tr>
<td>(c) Large farms</td>
<td></td>
<td>12,147</td>
<td>55,735</td>
<td>21.8(N)</td>
</tr>
<tr>
<td>Pandey et al</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Varanasi district (UP)</td>
<td>1970-71</td>
<td>1,234</td>
<td>4,685</td>
<td>26.3(G)</td>
</tr>
<tr>
<td>(b) Deoria district (UP)</td>
<td></td>
<td>752</td>
<td>4,105</td>
<td>18.3(G)</td>
</tr>
<tr>
<td>Kumar et al (1975) Hissar District (Haryana)</td>
<td>1971-72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Small farms</td>
<td></td>
<td>-384</td>
<td>8,240</td>
<td>-4.7(G)</td>
</tr>
<tr>
<td>(b) Medium farms</td>
<td></td>
<td>229</td>
<td>13,795</td>
<td>1.7(G)</td>
</tr>
<tr>
<td>(c) Large farms</td>
<td></td>
<td>301</td>
<td>27,244</td>
<td>2.9(G)</td>
</tr>
<tr>
<td>Pawar and Patil</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maharashtra State</td>
<td>1972-73</td>
<td>12,349</td>
<td>33,762</td>
<td>36.6(G)</td>
</tr>
<tr>
<td>Singh and Gugnani</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muzaffernagar District (UP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Traditional farms</td>
<td></td>
<td>--</td>
<td>--</td>
<td>6.8(G)</td>
</tr>
<tr>
<td>(b) Modern farms</td>
<td></td>
<td>--</td>
<td>--</td>
<td>16.0(G)</td>
</tr>
<tr>
<td>Blyn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Punjab State</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1960-61</td>
<td></td>
<td>386</td>
<td>2,804</td>
<td>13.8(G)</td>
</tr>
<tr>
<td>1964-65</td>
<td></td>
<td>1,472</td>
<td>4,450</td>
<td>36.3(G)</td>
</tr>
</tbody>
</table>

Figures are rounded off.
Sources: Blyn; Chauhan et al; Kahlon and Bal; Kumar et al (1975); Nandal; Pandey et al; Pawar and Patil; Singh and Gugnani.
The results of some of the econometric studies are presented in Table 5.3. The findings of almost all the studies showed that household savings in rural areas were directly related to absolute as well as permanent household incomes. The relationship between savings and transitory income was found to be positive by some researchers and negative by others. The savings of the households were also positively related to their wealth. This relationship, however, was found to be statistically weak [Gupta (1970A); Ramanathan]. The increase in prices had a negative impact on rural savings.

Only a few researchers have explored the relationship between returns on investments and rural savings. Bhalla (1976 and 1978B), for example, argued that increases in returns on investments had a positive impact on total savings of subsistence households. In the case of non-subsistence households, however, the above relationship was found to be inverse. Bhalla attributed this to the availability of credit to non-subsistence rural households. The savings in the form of financial assets were found by other researchers to be directly related to changes in interest rates [Gupta (1970A); Lahiri]. The results of studies on the relationship between income distribution and savings in the rural sector were largely inconclusive. In many studies, the increases in income inequalities was associated with increased rural household savings [Bhalla (1976); Pandey et al]. The above relationship was found to be inverse, however, by other investigators.

The descriptive studies analyzed saving behavior of rural households by their socio-economic characteristics. The findings revealed that total savings as well as the average propensity to save rose with
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Absolute</th>
<th>Permanent</th>
<th>Transitory</th>
<th>Wealth</th>
<th>Prices</th>
<th>Population</th>
<th>Yield on Savings</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gupta (1970A)</td>
<td>I</td>
<td>0.25813*</td>
<td>--</td>
<td>--</td>
<td>-14.99*</td>
<td>--</td>
<td>--</td>
<td>0.782</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>--</td>
<td>0.2931*</td>
<td>-0.0383</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.914</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>--</td>
<td>0.2263</td>
<td>--</td>
<td>-12.8214*</td>
<td>--</td>
<td>0.6880*</td>
<td>0.743</td>
</tr>
<tr>
<td>Gupta (1970B)</td>
<td>--</td>
<td>0.249*</td>
<td>0.04185*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.0066</td>
<td>0.943</td>
</tr>
<tr>
<td>Bhalla (1976)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsistence</td>
<td>Farm Households</td>
<td>0.11*</td>
<td>0.21*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.05</td>
<td>0.21</td>
</tr>
<tr>
<td>Non-Subsistence</td>
<td>Farm Households</td>
<td>0.34*</td>
<td>0.34*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-0.06*</td>
<td>0.34</td>
</tr>
<tr>
<td>Bhalla (1978B)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsistence</td>
<td>Farm Households</td>
<td>0.11*</td>
<td>0.21*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>20.6*</td>
<td>0.11</td>
</tr>
<tr>
<td>Non-Subsistence</td>
<td>Farm Households</td>
<td>0.36*</td>
<td>0.36*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-57.4</td>
<td>0.31</td>
</tr>
</tbody>
</table>

* Statistically significant at 0.05 level.

a Gupta (1970A) studied determinants of per capita real savings in financial assets of rural households.

increases in their farm size. Similarly, the use of improved agricultural technology by farmers had a positive impact on savings. Rural households with non-farm occupations saved more than those solely dependent on agriculture [Kahlon and Bal; Kumar et al (1975)]. The savings by households also depended upon their income and education status. The relationship between household savings and type of family or number of earners in the family, however, was not consistent.

Research on rural savings has provided useful insights on factors affecting rural saving behavior. The majority of these studies challenged the myth about rural households being too poor to save. The knowledge of socio-economic determinants of household saving behavior is important inorder to design policies that promote rural surplus. The findings and recommendations of the majority of studies, however, may not be fully reliable because of the following weaknesses.

Data Problems

Most of the data used in savings studies are gathered on a recall basis. Such data are prone to omission as well as reporting errors. The omission errors occur when some information on income or consumption expenditure is not recorded. Over or under-expression of information by the interviewees cause reporting errors. The reporting errors, if fairly randomly distributed, can be easily corrected using statistical techniques. The omission gaps in the data, however, may be persistant and serious unless they are filled by using appropriate proxies.
Availability of adequate data is one of the major problems faced by researchers on rural savings. The primary as well as secondary data used in a majority of the studies on India had a number of omission errors. The secondary data commonly used in the studies were collected by the RBI, the National Council of Applied Economic Research, and the National Sample Surveys. The RBI data did not include non-monetized investments in the saving estimates. Such investments, however, form a significant portion of total savings of rural households in India. The survey by the National Council of Applied Economic Research, for example, found that non-monetized investments by the sample households made up about 11 percent of their average savings [Bhalla (1976)]. In the case of farm-households with less than 5 acres of land, the share of non-monetized investments in total savings was 37 percent. The data collected by the RBI also did not include savings in the form of gold and jewelry. While the borrowings of the households were included in the data, no allowances were made to account for funds lent. The estimates of depreciation and changes in inventories were also based upon arbitrary and subjective judgements. In some cases, excessively liberal allowances were made to account for replacements, repairs, and maintenance of assets [Desai (1981)]. The data used by the RBI to make estimates of rural savings were collected in the All India Rural Credit Survey of 1951-52 and follow-up surveys. The samples of rural households included in these surveys were not representative of the entire country [Sen (1962)].

2/ For details on data problems in rural saving research on India, see Rudra, and Desai (1981).
Savings data collected by the National Council of Applied Economic Research did not include savings of households in currency, jewelry, gold and silver. Also, no adjustments were made for capital gains or losses incurred by the households. Further, the household consumption may also not be fully enumerated in the National Council Survey since its main objective was only to assess investments and changes in assets in the rural sector [Bhalla (1976)]. The changes in crop inventories and purchases of livestock by the rural households were also not included in the National Council's data.

In a number of studies using primary data, the capital gains or losses incurred by rural households were not included in the savings estimates. Many researchers did not consider household savings in the form of cash, ornaments and jewelry, non-monetized investments and loans to others. In a majority of studies, both using primary and secondary data, no adjustments were made to fill data gaps. The use of incomplete and inadequate data in the studies may have over or underexpressed their findings.

**Definitional Weaknesses**

Definitions affect estimates. Savings may be defined as the surplus of net disposable income of an economic unit over its consumption expenditure in a given period of time. The estimates of rural savings, therefore, depend upon whether or not the income and expenditure of the households are correctly defined. Similarly, if the asset accounting is used, then the assets as well as liabilities of the households must be carefully defined.
Definitional errors were frequently included in studies on rural savings. Many researchers have, for example, considered borrowings of the rural households as a part of their income [Kahlon and Bal; Kalla; Kumar et al (1975); Nandal; Pawar and Patil]. In a number of studies, household expenditures were defined to include items such as capital expenses, repayment of loans and interest expenses [Kalla; Kumar et al (1975); Pawar and Patil]. Several similar definitional errors were also located in asset-accounting-rural-saving studies. The findings of research, as a result, are often distorted.

Other Theoretical and Methodological Weaknesses

A number of saving studies also had other theoretical and methodological weaknesses. The research on determinants of savings, for example, have been done mainly using the "Keynesian approach." The majority of these studies looked into the relationships between savings and the ability to save, particularly the income of the household. There has been a growing school of thought in recent years that savings in rural areas are determined by both ability and incentives to save. Variables such as access to saving facilities and rates of return on investments provide the households incentives to save. Very few rural saving studies on India have included both ability and incentives to save in the analysis. Due to this one sided approach, the findings of a majority of the studies give an incomplete explanation of rural saving determinants. The exclusion of incentives to save in the models used by econometric studies also caused specification bias.

See Desai (1981) for a discussion on the impact of "incentives to save" on rural household saving behavior.
Most researchers who have studied determinants of rural savings in the form of financial assets used nominal interest rates. Only a few used real rates of interest [Gupta (1970A and B); Lahiri]. The use of nominal interest rates ignored that real rate of return on all investment opportunities, and not just the absolute rate of interest, determines savings behavior. The changes in relative rates of interest may also not have a direct relation with changes in absolute interest rates under the situation where returns on non-financial assets vary overtime. The true responsiveness of rural financial savings to changes in interest rates is not fully captured in most such studies.

The descriptive techniques used in a number of studies on determinants of rural household savings also have attribution problems. The conclusion drawn from these studies, therefore, need to be treated with caution.

Research on the Composition of Rural Household Savings

The composition of savings means the various forms in which rural households hold their savings. The households pool savings with other investible resources obtained through loans or from sale of owned assets and utilize these resources in various investments. Due to fungibility of funds, however, the investments made by households out of savings cannot be isolated from their total investments. The savings composition in rural areas, therefore, must be studied by analyzing all household investments made in a given period of time.

Many researchers have looked into micro as well as macro level investment patterns of rural households in India. A number of
researchers have also analyzed the determinants of investment patterns. These studies mainly used descriptive or econometric analytical methods. The secondary data used in the studies were collected in the AIRCS, the All India Debt and Investment Surveys of 1961 and 1971, and the surveys made by the National Council of Applied Economic Research. The primary data was directly collected from households.

The findings of selected rural investment studies are summarized in Table 5.4. Both the micro and macro studies revealed that all types of households preferred to invest in non-financial assets. In most studies financial assets formed less than ten percent of total investments of the households [Lahiri; Panikar (1970)]. Some researchers, however, found that financial assets in rural areas accounted as high as 15 to 20 percent of the total investments [Bhalla (1976); Kalla]. The analysis of composition of non-financial investment in a number of studies showed that farm level investments ranked higher than non-farm, off-farm and household investments.

Research findings on determinants of rural investment patterns varied widely. Kahlon and Bal, for example, found in Ludhiana district that small farmers held the largest percentage of their total investments in farm assets. In the same study, however, they found that in Hissar district, the percentage of farm level investments, of total investments in rural areas, was highest in households with large farms. Similarly, the study by Bhalla (1976) revealed that farmers who used high yield crop varieties invested relatively more in financial assets, housing and irrigation and other farm equipments. Kalla, on the other
TABLE 5.4: Investment Patterns of Rural Households in India

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Land</th>
<th>Buildings</th>
<th>Livestock</th>
<th>Implements &amp; Machinery</th>
<th>Consumer Durables</th>
<th>Financial Assets</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kahlon and Bal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ludhiana District</td>
<td>25.9</td>
<td>12.8</td>
<td>12.5</td>
<td>33.6</td>
<td>5.9</td>
<td>--</td>
<td>9.2</td>
</tr>
<tr>
<td>Hissar District</td>
<td>28.7</td>
<td>10.4</td>
<td>16.0</td>
<td>37.3</td>
<td>2.6</td>
<td>--</td>
<td>5.0</td>
</tr>
<tr>
<td>Chakravorty</td>
<td>16.2</td>
<td>11.2</td>
<td>12.7</td>
<td>26.6</td>
<td>9.1</td>
<td>24.2*</td>
<td>--</td>
</tr>
<tr>
<td>Bhalla (1976)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultivator households</td>
<td>13.4</td>
<td>23.4</td>
<td>13.2</td>
<td>24.8</td>
<td>8.1</td>
<td>15.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Kalla</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional farmers</td>
<td>0.2</td>
<td>23.8</td>
<td>5.0</td>
<td>22.3</td>
<td>20.7</td>
<td>14.4</td>
<td>7.2</td>
</tr>
<tr>
<td>Transitional farmers</td>
<td>1.9</td>
<td>15.0</td>
<td>7.5</td>
<td>32.5</td>
<td>11.8</td>
<td>19.5</td>
<td>11.9</td>
</tr>
<tr>
<td>Advanced farmers</td>
<td>1.5</td>
<td>34.4</td>
<td>6.1</td>
<td>20.4</td>
<td>11.9</td>
<td>8.7</td>
<td>16.9</td>
</tr>
<tr>
<td>Lahiri</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-farmers</td>
<td>32.1</td>
<td>39.0</td>
<td>6.6</td>
<td>3.0</td>
<td>11.3</td>
<td>5.3</td>
<td>--</td>
</tr>
<tr>
<td>Small farmers</td>
<td>61.9</td>
<td>22.1</td>
<td>7.2</td>
<td>1.9</td>
<td>5.2</td>
<td>0.9</td>
<td>--</td>
</tr>
<tr>
<td>Middle farmers</td>
<td>71.2</td>
<td>14.1</td>
<td>6.5</td>
<td>3.0</td>
<td>3.8</td>
<td>0.6</td>
<td>--</td>
</tr>
<tr>
<td>Big farmers</td>
<td>83.1</td>
<td>8.0</td>
<td>3.0</td>
<td>2.3</td>
<td>1.7</td>
<td>0.6</td>
<td>--</td>
</tr>
</tbody>
</table>

* Repayment of debt.

a Lahiri analyzed the total asset structure of the households.

Sources: Bhalla (1976); Chakravorty; Kahlon and Bal; Kalla; Lahiri.
hand, found no definite relationship between level of farm technology and investment patterns of farm-households.

The study by Lahiri may be regarded as a comprehensive econometric analysis of factors determining the assets structure of rural households in India. In addition to a number of other variables, he analyzed the impact of access to financial services and rates of return on household asset portfolios in the rural sector. He found that the land-to-networth ratio of the households was directly related to their irrigation expenditure, total networth and rates of return, and inversely related to family size. The expenditure on irrigation and family size inversely affected the household's investments in financial assets.

In research on rural investments, it is important to clarify investment preferences of rural households and the factors affecting such preferences. The most serious weakness in a majority of past studies was the use of incomplete data. The primary as well as secondary data used in almost all studies had shortcomings. A number of researchers, for example, did not consider non-monetized investments even though they formed a significant proportion of total rural household investments. As mentioned earlier, the investments in gold, jewelry and ornaments were ignored in almost all the studies. Only a few researchers attempted to fill out gaps in the data used. The use of incomplete data in studies caused underestimation of total investments and distorted their finding of rural household investment preferences.

The reliability of research on factors affecting investment patterns also depends upon the appropriateness of variables used in the analysis. Lahiri, for example, used the rate of interest on cooperative
loans as an index of average returns on household assets. However, the interest rates on cooperative credit in India have been prescribed by the RBI and were not determined by market forces. These rates were generally fixed below market rates. Interest rates, therefore, might not be a representative proxy of returns on rural household assets. Moreover, the decision to invest in different assets by the households should be determined by their relative rates of returns in real terms and not the average return on total assets. Specification errors were not uncommon in studies on determinants of rural investment preferences.

Mobilization of Savings Through Rural Financial Markets

Rural surpluses may be mobilized through taxation, inflation, centrally planned systems, and financial markets [Gurley]. Recently some research has been done on mobilization of rural savings through financial markets in India. A number of these studies have discussed various problems in these efforts. [Adhvaryu; Bhatt and Meerman; Chakrobarti; Khadekar]. Some studies have also analyzed the determinants of investments in financial assets [Gupta (1970A and B); Sahni; Thingalaya (1980)].

These studies show that rural savings in financial markets have increased significantly during the post Independence years. Lack of adequately trained personnel, rural illiteracy and lack of public confidence in banks were some of the major problems encountered by financial institutions in their attempts to mobilize savings. Many researchers also argued that RFM policies in India have not been consistent with the objective of increasing rural financial savings.
The rates of interest paid on deposits were not competitive with other investment opportunities available to rural households. Easy access to subsidized credit from the RBI to the banks, and narrow margins between the prescribed rates of interest on loans and deposits discouraged the financial institutions from mobilizing private savings [Adhvaryu]. The inadequate services and complicated and cumbersome deposit procedures prevented rural households from holding saving deposits. The main recommendations made in the studies to encourage rural household financial savings were expansion of banking facilities in rural areas, flexible interest rate policies, and simple and convenient saving plans.

A number of rural financial savings studies have shown that the supply of savings was interest responsive. Researchers have argued that increases in interest rates on deposits would encourage financial savings. Some researchers, however, argued that increases in rates of interest might decrease total rural savings [Khadekar]. Other variables analyzed in these studies include household income, education status and access to credit facilities. These were all shown to have a direct impact on investments in financial assets by the rural households. The amount of financial savings of the households were inversely related to family size and expenditure on irrigation, machinery, and equipment.

Recent research on mobilization of rural surplus through financial markets has stressed institutionalization of financial savings and provision of simple and convenient savings plans. Only a few investigators have suggested that RFM policies in India need to be reformed to provide adequate incentives to rural people to invest in financial assets. This includes flexible interest rate policies. The rates of
interest offered by banks on deposits must be competitive with the rates of returns on alternative investment in rural areas. Similarly, the financial institutions should be permitted to charge interest rates on loans that cover lenders' costs of intermediation and also adequately reflect scarcity of capital. These policy issues have been largely overlooked, nevertheless, in past India research.

The true impact of changes in interest rates on rural financial savings was not fully documented in past studies because the data used in most of these studies were incomplete. The nominal interest rates on deposits of financial institutions in India did not change significantly over time. The rates offered by different financial institutions also did not differ significantly. The relationship between rates of interest and rural household savings in financial assets cannot be properly analyzed by using the data with little or no change in nominal interest rates. The responsiveness of rural financial savings to changes in interest rates may be better studied by organizing experiments or pilot projects. Financial institutions in selected areas may be allowed to raise their interest rates on deposits and loans to a level competitive with rates of returns on other types of investments. The changes in financial as well as in total savings of the households may then be analyzed. Similar experiments in Peru recently have provided useful insights on savings potential in rural areas [Vogel].

Many studies on the impact of rates of interest on rural financial savings also included specification errors. These studies used absolute nominal rates of interest in the analysis. Whereas, as already
discussed, the investment in financial assets by the households will be determined by the relative real rates of return on various investment alternatives.
CHAPTER VI
RESEARCH ON RURAL FINANCIAL
INSTITUTIONS AND POLICIES

A large amount of research on RFMs in India has focused on financial institutions and policies. This has included analyses of the organization and structure of formal financial institutions, the performance of these institutions, and the impact of policies. Relatively few studies have been done on informal intermediaries. Issues such as the process of financial intermediation, the costs of rural financial intermediaries, and rural interest rate policies have received even less research attention. Likewise, few studies have looked at the impact of rural financial services on income distribution and allocation of resources.

In this chapter, research on rural financial institutions and policies in India is evaluated. The representative studies were classified into two categories: those related to formal financial institutions and policies, and studies on informal financial agencies and related policies.

Formal Rural Finance Research

Structure and Organization

A number of studies have focused on the structure and organization of the formal financial institutions serving rural India. These
investigations generally showed that formal financial markets underwent significant transformations during the post-independence period. Early, the cooperative banks dominated the supply of formal credit. More recently, as a result of changes in policy emphasis from the "single agency approach" to the "multi-agency approach" in the late 1960s, the share of commercial banks in total rural formal loans also increased significantly. The relative importance of direct government credit to agriculture decreased over time, but the amount of government loans to financial institutions serving rural areas increased several-fold. With these changes, the share of informal loans in total rural debt decreased during the last three decades. The relative contribution of commercial banks in mobilizing rural savings also increased significantly after the nationalization of major banks.

A number of policy measures were instituted after Independence to improve the organization and structure of RFMs [Choubey; Ghosal; Nanavati and Anjaria]. Several efforts have also been directed to strengthening the coordination among different financial institutions. The overall progress made in this direction, however, was found by researchers as inadequate to satisfy financial needs of rural households. Various policies also had short comings, and were often changed. Policies on the organization of the cooperative credit movement, for example, were often designed without complete understanding of major problems in rural areas [Choubey]. Similarly, the policy to restrict the supply of credit from Regional Rural Banks and Farmers Service Societies to only economical weak households made these institutions heavily dependent upon their sponsors for funds, since other people
generally did not deposit their savings with these banks [Wadhva (1977, 1980)].

Many researchers have recommended a complete reorganization of formal RFMs [Bhole; Desai (1978A); Ghosal]. Other common suggestions include providing more types of credit and deposit services to all rural households, and encouraging the financial institutions to be more independent in terms of loanable funds and giving state assistance only as a backup. Some professionals have also emphasized the need to improve coordination among financial intermediaries.

**Credit Supply and Savings Deposits**

Studies of the supply of formal rural credit have analyzed changes in the amount of rural loans. A number of researchers also looked into changes in relative shares of different formal and informal lenders in total rural debt. The performance of financial institutions was evaluated by studying the changes in amounts of loans going to rural households, share of rural loans in overall loan portfolios, and contributions to the total amount of rural formal credit. Many studies were also conducted to analyze changes in numbers of loan accounts, term structures and size of loans, geographic distribution of credit, distribution of loans according to types of borrowers, and loan default and delinquency rates. The mobilization of rural surpluses by financial institutions was studied by investigating changes in total number of rural deposit accounts, amount of deposits, and percentage of total rural savings invested in financial assets. Some research was conducted on functions and the role played by supporting institutions such as the
Agricultural Refinance and Development Corporation, the Credit Guarantee Corporation, the Deposit Insurance Corporation and the RBI in improving rural financial services. Various policies and policy instruments used to increase the supply of loans and the mobilization of rural savings through financial institutions were also critically evaluated in a number of studies.

Many studies have shown that the amount of formal credit and deposits in the rural sector increased rapidly during the past few years. Financial institutions have also made commendable progress in terms of branch expansion in rural and semi-urban areas. Despite some improvement, the services of commercial as well as cooperative banks are still mainly concentrated in a few geographic regions, and loans by these banks are supplied to large and well-to-do farmers. Many researchers also concluded that loan default and delinquency in rural areas is an increasingly serious problem. The banks were also found to have made no significant progress in increasing credit-deposit ratios in the rural sector, despite several policy measures instituted with this intent. The cooperative and Regional Rural Banks relied heavily upon external assistance to meet their needs for funds. Many researchers argued that despite significant expansion of formal financial services, these facilities were still not adequate to satisfy rural household needs.

The loan procedures of financial intermediaries were found as generally security oriented, time consuming and cumbersome to borrowers. A number of researchers argued that despite significant increases in amounts of rural formal credit, the quality of loan services did not
improve considerably. Similarly, savings plans offered by banks in rural areas were found to be rarely compatible with other investment opportunities available to the households. The policies related to supply credit and formal mobilization of deposits also had several shortcomings, and their main emphasis remained on quantity rather than quality of services. Some researchers argued that availability of low cost rediscounting facilities from the RBI and other agencies to financial institutions discouraged their efforts to mobilize savings. Relatively few policy measures were instituted to reduce regional and personal disparities in access to credit.

Two main types of prescriptions have been made in the literature to improve the supply financial services in the rural sector. A number of researchers recommended closer supervision of bank activities. They also suggested that the RBI should issue directives to financial institutions on matters such as minimum percentage of loan portfolios to be advanced to the rural sector and maximum limits on size of loans. It was suggested that access to state assistance to financial institutions be linked to their contribution of loans to rural borrowers in general, and to economically poor households in particular. A few professionals, however, suggested flexible RFM policies [Datta; Desai (1978A); Khusro]. They recommended that these policies should be designed by considering costs of financial intermediation and viability of rural financial institutions. More emphasis was suggested in these studies on measures that improved economic condition of rural households. They also recommended state efforts to improve rural infrastructure and to provide facilities to banks that reduced their costs of doing rural business.
Financial Innovations

Some research attention has been given in the recent years to study financial innovations in rural areas [Bhatt (1978); Das; D'Mello; Rangarajan; Thingalaya (1978A)]. A number of these studies looked into various innovative schemes adopted by formal financial institutions. Some research has also been done to evaluate the economics of these financial innovations. The studies found that many commercial banks had recently adopted innovative programs to expand services in rural areas. These schemes included group lending, village adoption schemes, pigmy deposit, loan programs linked to deposit contributions, and insurance linked saving schemes. A number of these innovations were also adopted by cooperatives, Regional Rural Banks and the post office saving banks.

Studies on the economics of financial innovations give mixed results. Thingalaya (1978A) in his comprehensive analysis of operations of the Syndicate Bank of India, for example, argued that because of innovative deposit plans offered by the bank, its cost of funds as well as total cost of operations were lower than the other similar size financial intermediaries. Desai's (1979) evaluation of the group lending scheme used by a commercial bank, however, showed that the program provided little benefit to the bank or to borrowers over regular individual loan procedures.

Economics of Financial Intermediation in Rural Areas

Relatively little research has been done on interest rates, costs of lending, and profitability of rural formal financial institutions. The views expressed on interest rates have varied widely [Desai (1978A),
Khatkhate, Khusro, Thirumalai]. Subsidized rural loans policies were favored by many researchers. They argued that due to high risk and uncertainties in agriculture, loans to rural households should be granted at low rates of interest. They also argued that such policies were needed to speed technological change in farming. The supply of low cost credit was also supported in order to transfer resources to rural areas and thus reduce income disparities between rural and urban sectors.

Some researchers, however, have argued that subsidized loan policies discourage financial institutions from extending their services to rural households [Khusro]. Such policies were also found to contribute to inefficient use of credit by borrowers. Critics argue that low interest rates on loans attract the rich and affluent and result in the needy people being left out. They recommended that interest rates in rural areas should be determined on the basis of costs of lending and viability of financial institutions. Further, that interest rate policies should be flexible and banks should be allowed to pay attractive rates on deposits in order to mobilize rural surpluses.

Relatively few studies have looked at costs of lending and profitability of financial intermediaries serving rural India. A few studies on these issues estimated various costs of lending and discussed economics of financial intermediations in rural areas [Datey; Thingalaya (1978A, 1980); Wadhva (1977, 1980)]. Some professionals also compared costs of lending to rural and urban borrowers of the banks. The study by Datey is more comprehensive on the costs of rural lending. His findings are summarized in Table 6.1. He, as well as other researchers,
TABLE 6.1: Costs of Lending to Rural Households by Formal Financial Institutions.

<table>
<thead>
<tr>
<th>Financial Institution</th>
<th>Cost of Funds (Percent of Loan Amount)</th>
<th>Administrative Costs</th>
<th>Default Cost</th>
<th>Tax Cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Cooperative Banks (Short and Medium term Loans)</td>
<td>11.0</td>
<td>6.0</td>
<td>1.3</td>
<td>0.3</td>
<td>18.6</td>
</tr>
<tr>
<td>Land Development Banks (Long term Loans)</td>
<td>7.5</td>
<td>8.0</td>
<td>0.5</td>
<td>--</td>
<td>16.0</td>
</tr>
<tr>
<td>Commercial Banks (Simple) Average Cost</td>
<td>12.0</td>
<td>6.0</td>
<td>1.5</td>
<td>1.0</td>
<td>20.5</td>
</tr>
</tbody>
</table>
found that total costs of lending to rural clients by financial institutions generally exceeded the rates of interest officially allowed on such loans. The profitability analysis of financial institutions also showed that the banks many times incurred losses from their business in rural areas [Thingalaya (1980); Wadhva (1977, 1980)]. The theoretical comparison of various costs of lending to rural and urban borrowers by the formal intermediaries revealed that administrative costs were higher in rural loans than in urban loans [Desai (1978C)]. The researchers recommended that the banks should adopt cost reducing innovations such as group lending. Other suggestions made to lower the costs of financial intermediaries include reducing default rates, supply of more credit through cooperative banks, making rural businesses more profitable, and lowering of cash reserve and liquidity ratio requirements for rural banks.

Overall, there has been a significant amount of research done on problems related to formal financial intermediaries and policies on rural India. The findings and recommendations of these studies have also been used by the decision makers to increase the supply of financial services. As a result, the access to credit facilities to rural population improved significantly during the last three decades. The progress made in institutionalization of RFMs has also been commendable. A careful review of the research efforts, however, showed that a majority of the studies had serious methodological and theoretical weaknesses. In the following discussion, I will highlight some of these shortcomings.
The most serious weakness in this type of research was the quality of the data used. These studies have mainly analyzed aggregated data published by the RBI and other government organizations. Much of the information important for research purposes was averaged out in this data. Also, the data, such as that published in the Basic Statistical Reports, are submitted by financial institutions partly to show that the regulatory requirements are fulfilled. The actual business practices of banks may not be reflected in this data. For example, to satisfy the requirements of a minimum amount of loans to be advanced to rural households, and to maintain prescribed minimum credit deposit ratios, banks may redefine loan purposes. To show a decrease in average size of rural loans and an increase in number of small size loan accounts, financial institutions may make multiple small sized loans to big borrowers. Similarly, the statistics published on the progress of the cooperative credit movement in rural areas generally does not isolate non-functional credit societies. The investigations on availability of financial services may be more complete if either the branch level data from banks or information gathered from rural households is used in the research. Few studies, however, used such data in the past. The available data are also inadequate and insufficient to do indepth research on costs and profitability of rural financial institutions.

The methodologies used in a number of studies had several weaknesses. Most studies on adequacy of formal credit in rural areas, for example, compared the amount of credit advanced by formal financial institutions with either the estimated rural credit requirements or the target amount of rural formal loans set by authorities. Some researchers compared the
share of agricultural loans in total formal credit with the contribution made by the agricultural sector in Gross National Product [Desai (1978A); Shetty]. These approaches are not completely reliable. The estimates of rural credit demand, as already discussed in Chapter IV, suffers from many theoretical and methodological shortcomings. The loan supply targets fixed by the government were generally unrealistically high [Wadhva (1977, 1980)]. The method of comparison between share of farm credit in total formal loans with share of agricultural sector in Gross National Product also does not account for the difference in capital intensiveness of various sectors.

The research on distribution of credit compared farmer's shares in total formal agricultural loans with their respective shares in either number of total farm loan accounts, cultivated area, or number of farm holdings. These methods are also not fool proof. The comparisons of share of small farm loans in total agricultural credit with their share in total cultivated area, for example, implicitly assumed that per acre credit needs of all farmers were identical. This may not be true. The actual borrowing needs of cultivators may not only depend upon their size of farm but also factors such as type of farming, total capital requirements and availability of owned investible funds.

Several studies assessed the progress made by commercial banks in rural branch expansion. Only a few researchers, however, isolated the offices of banks that were actually located in suburban areas of cities, but were reported as rural or semi-urban branches. Such branch offices constituted as high as 30 percent of total reported rural branches by the banks [Bhole; Datta]. Similarly, the non-functional primary credit
societies and central cooperative banks were not excluded in many stu-
dies on evaluations of progress of cooperative credit movements. The
results of such studies may not represent the true progress made by
rural financial institutions.

Research on rural financial institutions and policies excessively
focused on issues such as progress of banks in branch expansion,
increases in amounts of loans and deposits, and structure and organiza-
tion of RFMs. Most experts agreed that, despite significant progress
made by banks, their performance was still unsatisfactory. However,
only a few efforts were made to rigorously diagnose the reasons for
unsatisfactory performance of financial intermediaries. Also, little
efforts have been made to study the reasons why RFM policies were
generally ineffective in improving the supply of financial services in
rural areas. Because of this, the prescriptions made by researchers to
improve lenders' performance were usually based on subjective judge-
ments. The views on future RFM policies also varied widely in the
literature.

More research is needed on innovative behavior of rural financial
intermediaries. The focus of these studies should be to investigate the
reasons for failure of many innovative schemes adopted by banks in
reducing their costs of operations. Efforts should also be directed to
identifying the type of economic environment and policies that may
encourage financial institutions to adopt cost reducing innovations.
Some researchers have suggested that use of regulatory measures would
induce the banks to use innovations in order to cut their costs [Bhatt
(1978)]. Such recommendations, however, need to be fully tested before
implementations. The use of regulatory pressure, as some people have argued, may instead force financial intermediaries to find ways to circumvent the laws and cause social wastes [Kane].

A new school of thought has emerged during the last decade on reasons for unsatisfactory performance of RFMs in developing countries. This school argues that RFM policies in LICs have been designed using unsubstantiated assumptions [Adams (1977B); Adams and Graham; Khusro]. Further, that policies of low interest rates discourage financial institutions from extending services in rural areas in general, and to rural poor in particular [Adams (1979); Gonzalez-Vega (1976); Vogal (1978)]. Such policies were also argued to cause market fragmentation [Mckinnon]. The ceilings on interest rates prevented financial institutions from offering attractive saving plans to rural households and thus discouraged "financial deepening" [Shaw]. Relatively little research has been done on the impact of subsidized interest rate policies on the performance of financial institutions. Also, few studies were conducted to investigate the impact of such policies on access to financial services and income distribution in rural areas. It is obvious that more research on these issues in India could help clarify RFM problems.

**Informal Financial Agencies and Related Policies**

The study of rural moneylenders in India received relatively little attention. This was mainly due to two reasons. First, the data on informal lenders is scanty. Secondly, the policy emphasis in India has historically been to replace moneylenders by formal financial institutions.
A few studies have looked into moneylending by informal agencies [Desai (1976); Ghosal, Harris, Madiman, Michie, Nanavati and Anjaria, Parthasarthy, RBI (1955)]. Some researchers also evaluated how various policies affected moneylending business in rural areas. The findings by them revealed that moneylenders still dominated RFMs, although their relative share in total rural debt declined over time. The share of agriculturist moneylenders in total informal rural debt increased over time [RBI (1954A, 1965B, 1977A)].

The research on business of moneylenders showed that they generally provided loans for both production and consumption purposes. Their lending procedures were found to be simple, flexible and convenient to borrowers. A variety of assets including personal surety were accepted as collateral. Informal loans were repaid by borrowers both in cash and kind, and the moneylenders kept close relationships with clients. The schedule for loan repayment was generally flexible; in the event of crop failure or other economic tragedies, repayment of credit could be rescheduled. The default losses on moneylender's loans were also relatively low. Some experts found that informal financial intermediaries were well organized and coordinated.

Research on policies related to rural informal lenders showed that these policies attempted to regulate the business of moneylenders [Nanavati and Anjaria]. A number of policy measures were instituted in order to reduce moneylender importance in RFMs. The major objective of these legislations was to prevent exploitation of peasants by moneylenders. Lenders were required to maintain proper records and provide their customers details of terms and conditions of loan contracts. The
maximum limits on interest rates on informal loans were set by state
governments. Many researchers argued that policies on informal lenders
generally were not successful in achieving the intended objectives.
They found that a large amount of informal loans were still advanced at
interest rates well above the prescribed limits. Also, few informal
lenders obtained licenses, and conducted their business according to the
standards set in the regulations.

Studies of quality of services provided by moneylenders had
conflicting findings. A number of researchers argued that activities of
moneylenders were exploitative [Agrawal (1955); Desai (1976); Mahabal;
Parthasarthy]. They found that interest rates charged by informal
agencies were several times higher than formal financial institutions.
They also argued that moneylenders falsified loan records and charged
high implicit interest. The prices paid on products and labor services
provided by borrowers to repay loans in kind were generally signifi-
cantly lower than market prices. Some times, in order to surrender loan
collateral, the moneylenders also deliberately forced borrowers to
default.

The findings of other studies, however, showed that moneylenders
provided valuable services to their customers [Harris; Michie].
Informal lenders were described as being easily approachable, flexible
and helpful to their clients in thick and thin. The interest rates
charged on informal loans were also not unreasonably high. Harris's
study, for example, found that agricultural traders charged 13-14
percent annual interest rate on their loans, and the rates charged by
Pawnbrokers were between 18 percent and 25 percent per annum. The
moneylenders were also found to provide marketing and employment facilities to their clients which were otherwise sparse in rural areas.

Two main theories were forwarded on reasons for high interest rates in informal markets. One school of thought argued that the main reason for high rates of interest charged by moneylenders was their high costs of lending [Bottomley (1962); Bottomley and Nudds; Ghatak; Long; Singh (1968)]. The empirical estimates of lending costs of informal agencies by proponents of this view showed that the interest rates charged by informal agencies mainly covered their costs. They recommended that provision of discounting facilities to the informal lenders and efforts to reduce risk and uncertainties in agriculture would reduce informal interest rates.

Some researchers, however, challenged the argument of high lending costs as a reason for high interest rates in informal markets [Bhaduri; Chandavarker (1965, 1971); Sarap]. They have argued that fragmented financial markets in rural areas enabled the money lender to enjoy monopoly power and charge usurious interest rates. They suggested that expansion of formal credit facilities in rural areas and policy measures to regulate the business of moneylenders would eliminate monopoly profit. These researchers challenged the "demand and supply" based approach generally used by proponents of high lending costs as a cause for high informal interest rates thesis. They argued that assumptions used in a number of studies, that the lending costs were exogenous to moneylenders, was incorrect [Bhaduri]. They also argued that due to monopoly power in credit markets, the informal lenders were able to underprice the assets offered by borrowers as collateral. Under such a
situation, considering the default risk as a cost to lenders was irrelevent.

Several topics have been covered in the research on rural informal financial agencies. However, too few studies were conducted to fully substantiate these important issues. The findings and recommendations of these studies, as is evident from the preceding discussion, also varied widely. It is therefore difficult to draw clear cut conclusions based upon the past research. More research is needed to clarify these unresolved issues. Better understanding of business behavior of informal financial intermediaries and the role played by them in economic life of rural households would facilitate the formulation of effective policies. This will also be useful in designing programs to better serve the rural sector through formal financial institutions.

The conflicts in findings of past studies could be attributed to two reasons. First, the data used by many researchers were incomplete and inadequate. For example, it is difficult to make any conclusive analysis of costs and revenue of moneylenders from the data collected in the AIRCS and Rural Debt and Investment Surveys. The data collected through surveys of lenders may also not be fully dependable since they hesitate to disclose their actual business activities.

Secondly, the methodologies used in many studies were not reliable. Few examples, Chandavarkar in his analysis measured competition in terms of number of moneylenders in a village [Chandavarkar (1965)]. He argued that a number of cases of one lender in a village in his sample proved that moneylenders generally enjoyed monopoly position. This, however, may not be always true. As Long has argued, the moneylenders might have
business in more than one village, or, some lenders might have failed to respond. Also, anyone with money can be a lender.

Some researchers have argued that moneylenders charge high interest rates in order to force the borrowers to default and hence surrender their collateral [Bhaduri; Sarap]. This argument was not fully supported in the literature. Some studies, for example, have found that a significant amount of informal loans were in fact advanced against personal surety [Harris; Michie]. The moneylenders also did not want to spoil business relations with borrowers by foreclosing on loans. They were also generally reluctant to appeal to the court for recovery of loans since they would have to disclose their business practices to authorities.

The findings of future research may be more conclusive if these weaknesses are eliminated.
CHAPTER VII
A PLAN FOR RURAL FINANCIAL MARKET RESEARCH

This chapter is divided into two sections. In section one, a resource allocation plan for future RFM research on India is presented. The coordination and interaction between rural finance research and policies in India is reviewed in the latter part of the chapter.

A Resource Allocation Plan For Rural Financial Market Research

Relatively little attention has been devoted to laying out priorities for RFM research on developing countries. The issues suggested for investigations also differ widely. Adams (1977A) did a critical review of research efforts and the problems encountered in studying rural finance in LICs. He recommended a reorientation of RFM research priorities in these countries. In a resource allocation plan for rural finance studies, he suggested that more emphasis be placed on investigations of financial institutions, loan defaults, repayment procedures, collection incentives, loan collateral and group lending. Loan quota requirements, the overall supply of agricultural credit, and coordination of research and evaluation were other topics identified for research consideration. Eckaus recommended higher priorities on analysis of interest rate policies and their impact on overall development.

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He also emphasized investigations of selective credit controls and impact of institutionalization policies on the structure of RFMs.

Among the other studies conducted on organization of rural finance research on developing countries, Bhatt (1971, 1977) recommended emphasis on flow of funds studies. Little suggested higher priorities on investigations of impacts of interest rate reforms on RFMs. Several important issues for small farmer credit studies were also identified by Donald. He argued that more research efforts should be focused on topics such as impact of interest rate subsidies on supply of small farmer credit. He also suggested investigations on group lending, and RFM policies intended to improve availability of credit facilities to small farmers, saving mobilization and loan repayments.

The major objective of research on rural finance should be to achieve efficiency and growth of RFMs. Broadening the access to financial services in rural areas should be the other important consideration. In order to achieve these objectives, research portfolios need to be developed to adequately cover all the important researchable issues. The review of Indian RFM literature in the preceding chapters showed that past research efforts were not well organized. Too many studies focused on a relatively few issues, whereas, little or no attention was paid to several important problems. The efficiency of research resource use in the future can be enhanced by reorganizing research priorities.

A number of problems require prompt and indepth study in order to improve efficiency, growth, and access to services of financial markets in rural India. The resources, however, are inadequate to investigate all these problems simultaneously. Therefore, priorities have to be
placed on relatively more important issues. A research plan may be organized by using at least three dimensions: 1) the level of analysis needed to treat the problems, 2) the time priorities, and 3) the agencies or individuals responsible for investigation of the problems [Adams (1977A)]. The resource allocation plan for RFM studies presented in this chapter has been prepared using the first two dimensions. The plan is laid out in Table 7.1. Easily researchable and relatively less data demanding issues on which little investigations has been done in the past are recommended for initial consideration. On the other hand, the problems on which adequate research has already been done, or, that are theoretically or methodologically difficult to study and excessively data demanding are assigned intermediate or long run time priorities for research attention.

Several rural finance issues require prompt research attention in India. Important among these are use of RFMs to achieve economic equity objectives, loan defaults and delinquency problems and impact of institutional specialization policies on structure and performance of RFMs. The major objective of rural finance policies in India has been to use financial markets to reduce disparities in income and resource distribution both between rural and urban sectors as well as within the rural sector. This has been attempted by instituting measures to increase the supply of credit to rural households in general and the rural poor in particular, and providing direct income transfers through subsidized loan programs. The past studies on this issue have mainly been focused on performance of financial institutions in terms of increase in number of bank branches and amount of loans disbursed in rural areas. Many
TABLE 7.1: A suggested Research Map on Rural Financial Markets in India

<table>
<thead>
<tr>
<th>Level of Analysis</th>
<th>Immediate</th>
<th>Intermediate</th>
<th>Long Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Borrowers</td>
<td>1. Worth of preferential loan policies to rural borrowers</td>
<td>1. Sources and uses of funds</td>
<td>1. Capital budgets of farm and non-farm rural enterprises.</td>
</tr>
<tr>
<td></td>
<td>2. Loan defaults and attitude toward repayment</td>
<td>2. Worth of technical assistance</td>
<td>2. Financial management behavior of rural household firms.</td>
</tr>
<tr>
<td></td>
<td>4. Role of RFMs in income distribution and resource allocation.</td>
<td>4. Liquidity reserve value of credit.</td>
<td>4. Worth of lines of credit.</td>
</tr>
<tr>
<td></td>
<td>5. Adequacy of rural credit.</td>
<td>5. Credit worthiness.</td>
<td>5. Value of long term credit.</td>
</tr>
<tr>
<td>Rural Savers</td>
<td>1. Saving capacity and determinants of rural savings.</td>
<td>1. Saving measurement methods and data requirements.</td>
<td>1. Data bases on rural household savings.</td>
</tr>
<tr>
<td></td>
<td>3. Compatibility of savings deposit facilities offered by financial institutions.</td>
<td>3. Interest rate policies and rural savings.</td>
<td>3. Life Insurance on deposits.</td>
</tr>
</tbody>
</table>
### Table 7.1 (continued)

<table>
<thead>
<tr>
<th>Level of Analysis</th>
<th>Time Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Institutions and Policies</strong></td>
<td><strong>Immediate</strong></td>
</tr>
<tr>
<td></td>
<td>1. Interest rate policies and economics of financial intermediation</td>
</tr>
<tr>
<td></td>
<td>2. Loan defaults</td>
</tr>
<tr>
<td></td>
<td>3. Worth of specialized institutions.</td>
</tr>
<tr>
<td></td>
<td>4. Selective credit control policies</td>
</tr>
<tr>
<td></td>
<td>5. Informal financial agencies.</td>
</tr>
<tr>
<td></td>
<td>6. Linkages between formal and informal financial institutions.</td>
</tr>
<tr>
<td></td>
<td>7. Interest elasticity of supply of credit.</td>
</tr>
<tr>
<td></td>
<td>8. Structure, organization and performance of RFMs</td>
</tr>
<tr>
<td></td>
<td>9. Innovations in RFMs</td>
</tr>
<tr>
<td></td>
<td><strong>Intermediate</strong></td>
</tr>
<tr>
<td></td>
<td>1. Lending and saving mobilization procedures of financial institutions.</td>
</tr>
<tr>
<td></td>
<td>2. The RBI rediscounting policies.</td>
</tr>
<tr>
<td></td>
<td>3. Bank supervision</td>
</tr>
<tr>
<td></td>
<td>4. Supporting institutions and supply of financial services.</td>
</tr>
<tr>
<td></td>
<td><strong>Long Run</strong></td>
</tr>
<tr>
<td></td>
<td>2. Personnel needs of rural financial institutions.</td>
</tr>
<tr>
<td></td>
<td>3. Economies of scale in financial intermediation business.</td>
</tr>
</tbody>
</table>
Table 7.1 (continued)

<table>
<thead>
<tr>
<th>Level of Analysis</th>
<th>Immediate</th>
<th>Intermediate</th>
<th>Long Run</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Role of financial markets in income distribution and resource allocation.</td>
<td>2. Financial deepening and economic development and vice-versa.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Economic linkages between financial and real sector markets.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Research technology.</td>
<td>2. Data requirements of rural finance studies.</td>
<td>2. Quality of rural finance research.</td>
</tr>
<tr>
<td></td>
<td>3. Approach to studies on rural finance issues.</td>
<td>3. RFM Research priorities.</td>
<td></td>
</tr>
</tbody>
</table>
researchers also looked into interpersonal and geographic distribution of credit facilities in the rural sector. Only a few efforts were, however, devoted to make an indepth diagnosis of the factors that inhibited the satisfactory performance of RFMs. Greater emphasis in future research should be put on detailed evaluation of major RFM policy instruments used to achieve equity objectives and the impact of such policies on resource allocation. The findings of some recent studies have revealed that many instruments implemented to use RFMs for income and resource distribution purposes in developing countries have been countereffective [Adams (1981)]. Immediate attention is also needed to assess the feasibility of using RFMs to achieve equity objectives and the pros and cons of these policies.

RFMs in India suffer from high loan defaults and delinquency rates. This directly affects the economic viability and performance of financial institutions. Non-repayment or delay in repayment of loans also inhibit efficient allocation of resources through financial markets. The defaulters are generally not issued additional loan by the banks and they do not deposit their savings with financial intermediaries. This may, over time, significantly reduce the number of clientele served by financial markets. Immediate attention is, therefore, required to investigate the extent, nature, causes and remedies of loan default and delinquency problems. Some studies in the past have been conducted on these issues. A majority of these default studies, however, used a similar approach. The data collected from records of financial institutions or reports published by the RBI or other organizations for the majority of these studies were generally not adequate to reflect the
true nature and extent of the problem. A multidimensional diagnosis using the information gathered from both the financial institutions and borrowers will be helpful to improve loan repayments in rural areas.

Another important research area that requires prompt attention is the impact of institutional specialization policies on structure and performance of RFMs. Several specialized financial institutions such as Land Development Banks, Farmer's Service Societies and Regional Rural Banks have been established in India. The function of these institutions is either to provide special types of services or serve special rural household groups. A detailed investigation should be conducted on the possible impacts of specialized institutions and related policies on market fragmentation and overall structure and performance of financial markets. The emphasis is also needed on studies of advantages and disadvantages of specialized institutions as compared to "all types of services provided by all financial institutions" approach.

Borrower level research in India in the immediate future should also be focused on costs of borrowing from various sources in RFMs. Such studies will provide useful insights on borrowing behavior of the rural households as well as nature and extent of fragmentation in financial markets. The issues of impact of loans on borrowers and demand for rural credit are theoretically and methodologically difficult to investigate and require excessive amount of data. The majority of past studies on these topics, as already discussed in chapter IV, had a number of serious weaknesses. Such issues should be assigned a low priority in allocating research resources. Assuming that the rural households behave rationally in making decisions, we should take it on
faith that the use of credit will have a positive impact on the overall economic life of borrowers, otherwise they will not borrow. The adequacy of access to credit facilities in rural areas, however, can be indirectly studied by comparing marginal value productivity of different types of capital investments of households with their effective cost of loans. Such studies will also be useful to reveal nature and extent of credit rationing faced by different types of rural households.

Although a considerable amount of research has been done on saving capacity, determinants of savings and saving composition in rural India, the data used in a majority of the studies were incomplete. Many of these studies also had methodological, theoretical and definitional problems. These issues, therefore, need immediate research priority. The various saving plans offered by financial institutions in rural areas should be analyzed in order to evaluate their compatibility with other investment opportunities available to the rural households. The impact of interest rates and other RFM policies on financial as well as total savings in rural areas can be better studied by organizing area experiments. The intermediate and long run organization of rural savings studies should include research saving measurement methods and their data requirements, impact of financial institutionalization policies on structure and composition of rural household savings, and saving mobilization alternatives. Similarly, efforts should be devoted in the long run to build better data bases on rural savings.

In addition to the three broad areas recommended in the beginning for immediate research priorities, the financial institutions and policies level studies should be focused on economics of rural financial
intermediation and the impact of different RFM policies on economic viability of financial institutions. The other important issues for research emphasis would be the study of innovative behavior of financial intermediaries and the structure and organization of RFMs which best serves the needs of rural people. Due to the major emphasis of RFM policies on expanding and strengthening formal financial institutions, relatively few studies have been conducted in the past on informal financial agencies. The study of different services provided by money-lenders and the scope of integration between formal and informal financial sectors will be useful to design more effective RFM policies. Issues such as loan disbursement and saving mobilization procedures used by financial intermediaries, the RBI rediscounting policies, bank supervision, the process of financial intermediation and its role in economic development, and the contribution of supporting institutions in improving the supply of rural financial services should also be considered for long run research planning.

RFMs can be better involved in the process of development if a close coordination between financial and overall development programs is achieved and the policies related to different sectors are consistent. Research on these issues was virtually ignored in the past in India. There is a need to analyze the existing linkages between financial and real sector markets and how the various markets could be better integrated. Relatively difficult to investigate and more data demanding issues such as role of financial markets in overall economic development (and vice versa) should be considered only in the long run.
A good research network is important in order to improve coordination among professionals and make efficient use of resources. This is also essential to minimize duplication and redundancy in research investigations. Continuous efforts should, therefore, be directed to assess as well as improve the rural finance research infrastructure. Prompt attention is needed to develop appropriate conceptual and analytical frameworks to enhance the quality and reliability of studies. As the problems in RFMs may change over time, regular revisions of research priorities should also be made to avoid inefficient allocation of resources. In the long run, studies should also include the evaluation of costs and benefits of research on different RFM topics.

**Organization of Rural Finance Research:** After the priorities for RFM studies have been laid out, the next step is to organize the research activities. This is a broad subject. My objective here is to outline the general guidelines for research planning.

One of the essential elements of a well organized research system is the close coordination among various units involved in investigations. In spite of a significant increase in the number of RFM studies on India during the last three decades, there has been little improvement in coordination among research professionals. I feel that the solution to the problem will be to assign a leadership role to an organization closely associated with rural finance, in organizing RFM research. The RBI might perform such a role since the Bank not only formulates monetary policies for the country but also has a key responsibility in improving the supply of financial services in rural areas. The other instrument to be used to improve coordination among different research
units will be the establishment of a centralized reference source such as a periodical or annotated bibliography in which abstracts of all published and unpublished studies as well as ongoing research are given. Such a source may also be used to communicate potential problems and issues for future rural finance studies.

Another consideration in allocation of research resources should be that adequate emphasis is assigned to both theoretical and empirical studies. In order to achieve comprehensiveness in investigations, more studies should be organized using project approach as opposed to individualized efforts made in the past. While collecting the data for studies, more emphasis should be put on gathering detailed information on key decision making units rather than covering large sized samples. The choice between micro or macro level analysis in research should mainly be determined by the factors such as nature of the problem, objectives of investigation and the data available.

Coordination Between Rural Financial
Market Research and Policies

Appropriated research is a necessary but may not be a sufficient condition to improve the performance of RFMs. To achieve this, findings and recommendations of researchers need to be implemented by the decision making authorities. Close coordination between the two provides a necessary channel through which research results are transmitted to decision makers, and potential problems and topics for future investigations are brought in the knowledge of researchers. The interaction between researchers and policy makers is important since the policies
directly and indirectly affect the economic environment in which RFMs function.

The coordination between RFM researchers and policy makers in India in the past has been quite intimate. A number of professional committees were set up during the past ten decades to obtain advise on major policy decisions. The first formal intervention in RFMs by the Government through the Debtor's Relief Act of 1879 was, in fact, recommended by the Deccan Riots Commission. The appointed expert groups used various sources of information such as field surveys and consultation from other professionals to prepare their recommendations. Several expert committees set up during the last ten decades and the major policy decisions made based upon recommendations of these committees have already been discussed in brief in Chapter II.

In addition to the appointment of professional committees to obtain advice for policies, many RFM experts have also been appointed to policy making positions in the RBI and other government institutions. This provided direct involvement of rural finance experts in policy formulation. The other frequently used method to bring researchers and policy makers together was through arranging special meetings and seminars. In such meetings, major rural finance problems are discussed and general directions of future policies are outlined.

Despite these various types of efforts to improve linkages between RFM research and policies, the existing system has several shortcomings. The recommendations made by expert committees in the past were frequently only partially implemented through policy decisions. The recommendations made by some professional groups were never implemented. In
many cases, decisions of the authorities were more politically determined than suggested by the appointed expert committees. The nationalization of major commercial banks, for example, was mainly a political decision. Similarly, the decision to set up the Regional Rural Banks was already partially made up even before the Working Group on Rural Banks was appointed. This tradition of partial use of research recommendations in policy formulations reduced the effectiveness of many policy measures and also caused undesirable side effects.

The participation of researchers in RPM policy decisions also remained limited to relatively a few issues. For example, a number of expert committees were appointed to seek advice for policy issues related to supply of formal credit and institutionalization of RFMs. The decisions on interest rate policies, savings mobilization and informal moneylenders were, however, not extensively discussed with the professionals. There was also relatively little research done on these issues.

Another weakness in the system of coordinating RPM research and policies has been that many times the appointed committees were inadequately constrained with time and other resources. The Working Group on Rural Banks made their recommendations within one month. Several other expert committees submitted their reports within six to eight months after appointment. The lack of a sufficient time period restricted these committees from making indepth investigations on which to base their policy suggestions.

The above mentioned shortcomings in the present system to make use of RPM research findings in policy formulation will be reduced when the
already made suggestions, namely, providing the RBI a leadership role in rural finance research organization and establishment of a source of information on RFM research, are implemented. The involvement of the RBI in planning rural finance research could not only improve efficiency of resource use but also bring researchers and policy makers closer. The setting up of centralized reference source on RFM studies could provide the policy authorities with information on what research has been done on a given problems and where to look for technical advice.

In order to obtain professional advice in policy decisions, the information source on rural finance research should be referred to first. If a sufficient amount of investigations have already been done on the issues, a committee may be appointed to make recommendations using results of these studies. The authors of the studies may also be directly or indirectly involved in this process.

The issues on which too little research has been done in the past, or, for problems expected in the future, original studies should be conducted through the existing research network. Such a study may be organized in the form of a research project in which experts specialized in the problem area participate. The project may be further divided into area and sub area studies in order to account for diverse socio-economic conditions. The problem as well as objectives of the study should be effectively communicated to the researchers. As far as possible, the methodologies and procedures used in area studies should be similar unless dictated by local conditions. A regular interaction among project participants including the policy authorities is also important. The comprehensiveness and quality of investigations can be significantly
improved if adequate amount of time and other facilities are made available to the researchers.

The results of area studies conducted under a project should be presented in the form of policy papers. The findings of these studies should be then discussed in a meeting or seminar participating the researchers, policy makers and other rural finance professionals. The recommendations outlined for policy measures must be practicable and easy to implement. Before the major policy decisions are instituted at a macro level, their effectiveness may be tested by organizing pilot area experiments.

For the day-to-day policy decisions, there is no need to go through the lengthy procedures suggested above. Such decisions may be made by using judgements of RFM specialists working in the RBI and other government departments. If necessary, the professionals serving in research organizations may be consulted.
CHAPTER VIII
SUMMARY, CONCLUSION, AND IMPLICATIONS

Summary

In the past three decades a number of policies have been instituted to increase the supply of financial services in rural India. This has resulted in a sharp increase in the number of financial institutions that supply credit and mobilize savings of rural households. Along with these efforts, a large amount of resources were invested in RFM research.

However, relatively little attention has been paid to critically evaluate the rural finance research in India. The present study is an attempt to do this. The study had the following objectives: (1) To identify the important characteristics of finance and financial markets, and to do a theoretical evaluation of RFM research. (2) To do methodological review of rural finance research. (3) To identify the important researchable issues on rural finance, and, based upon the review of literature, to prepare a resource allocation plan for RFM studies. (4) To evaluate the past coordination and interaction between RFM research and policies in India and suggest measures for improvement.

Rural Financial Market Policies in India

RFM policies in India originated during the British period. The setting up of civil courts in India by the British strengthened the
legal position of moneylenders. The British administration system also reduced the community control on moneylenders. These administrative changes coupled with the deteriorating rural economic conditions due to crop failures caused a rapid increase in rural debt. The massive transfer of land and other assets from peasants to moneylenders as a result of loan foreclosures generated unrest in many parts of the country. In response to these developments, the Deccan Agriculturist Relief Act was passed by the government in 1879. The provisions of this regulation strengthened the legal position of borrowers and restricted the transfer of land from debtors to moneylenders. The Deccan Agriculturist Act was followed by a series of laws during the last ten decades that shaped RFM policies in India.

The Indian rural finance policies may be classified as institutional development policies, credit supply policies, saving mobilization policies, and interest rate policies. The overall emphasis of these policies has historically been to expand the access to formal financial services in rural areas, particularly the supply of credit, and reduce the importance of informal lenders.

The institutional development policies related to RFMs have been oriented toward introducing new formal financial institutions as well as strengthening and expanding the existing ones. The British introduced cooperative banks and postal saving banks in rural areas. Under the provisions of the Land Improvement Loans Act of 1883 and the Agriculturists Loans Act of 1884, direct government credit was also made available to the cultivators. Several policy measures including nationalization of big commercial banks and special branch licensing schemes
have been instituted after Independence in order to extend services of commercial banks in the rural sector. Recently the Farmer's Service Societies and Regional Rural Banks were set up to serve the financial needs of poor rural households. Special revitalization and amalgamation programs have also been initiated during the last three decades to support the weak cooperative banks.

To increase the supply of formal rural credit, state assistance in the form of special discounting facilities from the RBI and other public sector organizations to the financial institutions serving rural households was substantially increased after Independence. Since the mid 1950s the state governments contributed to the share capital of cooperative banks. A number of statutory policy instruments such as Credit Authorization Scheme, bank loan portfolio assignment to priority sectors, and minimum credit-deposit ratios for rural areas have also been instituted during the recent years to increase the supply of formal loan services to rural households in general and rural poor in particular.

Efforts to mobilize rural savings through the financial markets mainly originated after Independence and were boosted by sharp increases in number of bank branches in rural areas. Savings deposits were further promoted by the establishment of a Deposit Insurance Corporation in 1960. The Corporation insures small sized saving accounts of households with the approved financial institutions. During the last decades, many formal financial intermediaries introduced special saving plans in rural areas under the guidelines of the RBI. Some refinancing programs of the RBI have also been linked with the bank's performance in terms of mobilization of private savings.
Two types of instruments have been used in interest rate policies in India. The major objective of these policies was to provide low cost credit facilities to the rural masses. Concessionary loans have been provided by the RBI and other government organizations to formal financial institutions in order to reduce their cost of funds. The Credit Guarantee Corporation established in 1960 protects approved types of rural loans of financial intermediaries against default losses. Several other facilities are also provided to the formal financial institutions. The cooperative credit institutions and Regional Rural Banks, for example, are allowed to maintain lower cash reserve and liquidity ratios than the big commercial banks. The cooperative banks have been exempted from income tax and stamp duty. The commercial banks were also occasionally granted special exemptions in terms of cash reserve and liquidity ratio requirements. The other type of instruments used to keep cost of formal credit low to rural borrowers has been through the RBI setting of interest rate ceilings both on loans and deposits. These limits varied for different types and sizes of banks, and were revised from time to time. A special Differential Interest Rate Scheme was introduced in 1972 to advance credit at an annual interest rate of 4 percent to households with meager economic means.

The emphasis of policies related to informal financial agencies has been consistent in attempting to reduce dominance of moneylenders in RFMs. A number of laws at federal and state level were issued during the past century in attempts to regulate business of informal lenders and restrict their legal rights in the matter of loan recovery and foreclosures. In many states, these agencies have been required to
obtain license to conduct business. The moneylenders are also required to maintain proper loan records and to provide their clients complete information on terms and conditions of loan contract. The maximum limits on interest rates charged by informal moneylending agencies have been determined by state governments.

RFM institutional development policies in India have been considerably successful. The number of bank branches in rural areas increased severalfold particularly during the last three decades. The amount of rural loans advanced and deposits mobilized by formal financial intermediaries also increased significantly. The overall supply of financial services, however, is still inadequate and insufficient to fulfill the needs of rural households. Relatively little progress has been made to correct regional and personal inequalities in access to credit. Defaults and delinquencies of formal rural loans have increased over time despite several policy measures instituted in the past to overcome this problem. The moneylenders are still a dominant source of credit in the rural sector. Most informal lending business is still conducted outside the rules set up by the regulatory authorities.

Rural Finance Research on India

India has made a unique achievement among the developing nations in conducting research on RFMs. As already discussed, a large amount of resources have been invested during the past three decades to investigate various rural finance related issues. The findings of these studies provided useful insights in understanding as well as solving the problems related to both demand and supply sides of financial services in rural areas.
The economic valuation of RFM research would require an excessive amount of data because both the costs and benefits of such studies are generally widely scattered and highly diffused. Such data are not easily available and are expensive to gather. The alternative approach used in this study is based upon the assumption that well organized research activities adequately covering various important issues and implementation of findings of these studies through policies would improve the performance of RFMs. The study was based upon a comprehensive review of Indian RFM literature. The research was classified into five categories; studies on rural borrowers, research on rural household savings, studies on rural financial institutions and policies, investigations on the relationship between financial and real sector economic variables, and research on valuation of RFM research. The studies related to linkages between financial and real sectors, and evaluation of rural finance research were not included in the review since little research has been done in the past on these topics. Representative studies from the other three categories were selected to do conceptual and methodological evaluation. The past system of coordination between RFM research and policies was critically examined and suggestions were made for further improvements.

Research on Rural Borrowers: Several topics have been covered in the rural borrower level studies on India. The main emphasis was, however, on estimations of demand for credit and impact of loans on borrowers. Some professionals also analyzed costs of borrowing, and problem of loan defaults in rural areas. The issues of impact RFM policies on demand for credit and distribution of loans, value of technical
assistance to the borrowers, and sources and uses of funds by rural households received little or no research attention.

The findings of a majority of the rural borrower level studies were generally consistent. The investigations on demand for credit and impact of loans revealed that owned funds of rural households were insufficient to meet capital needs. A more abundant supply of credit was, therefore, recommended. The use of loans was found to improve economic condition of borrowers. Some experts also argued for advancing credit to rural borrowers at subsidized interest rates.

The studies on loan default problems found that the many borrowers with small land holdings, low income, high family expenses, and large financial obligations either deferred or defaulted repayment of loans. Investigations on costs of borrowing revealed that the total effective cost of loans to rural households was most of the times significantly higher than the rates of interest paid by them. Some studies also showed that despite a large difference in the interest rates charged by formal and informal lenders, the total cost of borrowing to rural households from the two sources were not significantly different.

A careful look at the rural borrower level research revealed several serious theoretical and methodological weaknesses in a majority of the studies. The investigations on demand for credit and impact of loans were carried out without properly understanding the role of finance and financial markets in economic life of rural households. Many researchers perceived credit as an input like fertilizer and seed, etc. Too much emphasis in these studies was devoted to farm level enterprises, whereas, substitution and diversion of loans for off-farm,
non-farm and consumption uses by the borrowers were generally ignored. In most of the studies, nominal interest rates paid on loans were assumed as the only cost of credit to borrowers. This underestimated the effective cost of borrowing to the households and resulted in overestimation of the demand for credit and impact of loans.

The research efforts on characteristics of defaulter and non-defaulter borrowers were mainly focused on factors determining ability to repay loans. The findings of such studies, however, may not provide complete explanations of the reasons for high loan default and delinquency rates in rural areas since borrower's willingness to repay loans was not considered. Also, a majority of the investigations on loan repayment problems analyzed only borrower related issues. The factors such as quality and reliability of services provided by lenders which may determine both ability and willingness to repay loans by the borrower were generally ignored. Similarly, only a few studies on costs of borrowing included all types of costs incurred by rural households to obtain loans. The focus on ex post borrowing costs in a majority of the investigations may also not reveal borrowing behavior of rural households because decisions on how much to borrow and from whom to borrow are governed by their ex ante perceived cost of credit from different sources.

Rural Household Savings Studies: Research on saving behavior of Indian rural households received attention mainly during the last two decades. A large number of such studies were focused on topics such as saving capacity, determinants of rural household savings, composition of savings, and mobilization of rural surplus through financial markets.
The findings of this research strongly challenged a widely held presumption in the economics literature that rural people in LICs are too poor to save. Many researchers found that a significant portion of household income in rural areas was saved. The major portion of these savings was invested in non-financial assets. Level of income, prices, income distribution, wealth and yield on investments were the factors found that significantly affected macro level savings in the rural sector. Micro level studies revealed that rural savings were determined by size of land holding, income level and sources of income, family size, type of family, number of earners in the family, and education status of the family head. Some experts evaluated saving mobilization schemes of the different financial institutions. They revealed that amount of rural deposits with the financial intermediaries increased significantly after the mid 1960s. There were, however, a number of shortcomings pointed out in the saving facilities offered by banks.

Study of household savings requires detailed information in their income, consumption and investments. The data used in a majority of such investigations had both reporting and omission errors. For example, household savings in the form of non-monetized investments, currency, and gold and jewelry were generally not included in the data used by many researchers. The savings were also incorrectly defined as well as measured in a number of studies. The focus of investigators excessively remained on factors related to ability to save of the rural households. The incentives to save in rural areas were analyzed by only a few. Similarly, the issues of increasing the number of rural bank branches and inducing the financial institutions to offer attractive
saving plans received more research attention as compared to the studies on impact of RFM policies and overall economic conditions on total as well as financial savings of rural households.

**Research on Rural Financial Institutions and Policies:** The study of financial institutions serving the rural sector and related policies has been a major focus of researchers in India. A large number of such investigations looked into organization and structure of formal financial institutions and evaluated their performance in purveying financial services particularly credit to rural households. Some research has also been done on costs of operations of financial intermediaries and the innovations adopted by them to reduce these costs. The topics of impact of different policies and policy instruments on performance of RFMs, and distribution of income and allocation of resources in rural areas received relatively little attention. Also, few studies were conducted on informal financial agencies.

The results of a majority of investigations were consistent in revealing a commendable progress made by formal financial institutions in terms of increase in number of bank branches and supply of credit in the rural sector. Their performance in terms of eliminating regional and personal disparities in supplying loan and deposit services, and improving loan recovery rates was not satisfactory. The studies on various innovative schemes used by banks showed that only a few among these were successful in reducing their operational costs. Some investigations also revealed that costs of rural lending of formal financial intermediaries were greater than the maximum interest rates allowed by the RBI.
The results of research on informal financial agencies varied widely. A number of studies argued that moneylenders exploited the borrowers. Some investigators, however, showed that informal lenders played a valuable role in the economic life of rural people. They argued that moneylenders charged high rates of interest because their lending costs were high. The views held by professionals on how the performance of RFMs could be improved were also significantly different. While the majority of researchers recommended strict regulatory control in order to induce financial intermediaries to expand their services in rural areas, some experts held the view that flexible policies would help the banks in serving a heterogeneous clientele.

The findings and recommendations of research on rural financial institutions and policies have been useful in explaining many RFM problems. The quality of data used in a majority of the investigations was, however, poor. Most of such data were incomplete and inadequate to reflect the actual business practices of financial intermediaries. Only a few researchers used bank branch level data collected from financial institutions or rural households.

The studies evaluating performance of financial institutions used only few and more or less similar tests. These methodologies were generally weak and inadequate to achieve the state research objectives. Also, few attempts were made to diagnose in detail the reasons for unsatisfactory performance of RFMs and why rural finance policies were not effective in eliminating these problems. The research on business practices of informal moneylenders was generally inconclusive. Comprehensive analysis of value of moneylenders to rural households and
determination of interest rates on informal loans is needed in order to
design effective RFM policies.

Coordination Between Rural Finance Research and Policies

Various efforts have been made in India to improve coordination and interaction between RFM researchers and policy makers. A number of expert committees were set up during the last ten decades in order to obtain professional advice on major policy decisions. Since Independence, many rural finance specialists have been appointed to leading positions in the RBI and other government institutions. Special meetings and seminars were also arranged from time to time between rural finance experts and policy authorities to discuss emphases in future policies and the choice of policy instruments.

However, several shortcomings were found in the system used to develop linkages between rural finance research and policies. Despite the appointment of a number of professional committees, the research input in policy decisions remained restricted to a relatively few issues. The recommendations made by several expert groups were not fully implemented and many times the policy decisions were politically determined. Some of the committees set up to obtain policy advice were not given enough time and other facilities to enable them to do indepth study of the problems before making policy suggestions. Due to these shortcomings the potential usefulness of research in designing RFM poli­cies was not fully exploited.
Conclusions

This study came up with the following specific conclusions: (1) India has made commendable achievement in conducting research on her RFM problems. However, a careful review of the literature revealed that research efforts were not well organized. Too many studies were concentrated on relatively few issues. Whereas, little or no attention has been paid to investigate several equally or even more serious problems. This also caused a considerable amount of duplication and redundancy in research on topics such as demand for rural credit, impact of loans on borrowers and performance of formal financial institutions. The efficiency of resource use in the future, therefore, can be significantly improved by reorganizing research priorities.

(2) A number of rural finance studies in the past were conducted without fully understanding the nature and role of finance and financial markets in the rural economy. Many researchers, for example, perceived the role of credit in the production process to be similar to physical inputs. Consequently, emphasis of both research and policies remained on increasing the quantity of credit rather than improving the overall supply of financial services in the rural sector. It has also been generally assumed that the flows of resources in RFMs could be easily controlled through administrative fiat. The other implicit presumption that dominated in the organization of rural finance studies was that formal financial intermediaries were unwilling to extend their services to rural households in general and to rural poor in particular. Such unsubstantiated assumptions many times led to the selection of
unreliable theoretical frameworks and methodological techniques for research.

(3) The research on rural finance in India was not only excessively concentrated on a few issues but also there were relatively few and similar tests used in majority of the studies. However, a "complete physical" of major problems would be required in order to improve the supply of financial services in rural areas. The other weakness in a number of studies was the poor quality of data used for investigations. The emphasis in the surveys to collect these data was mainly covering large number of units in order to gather representative information rather than collection of indepth data. The methods used in the surveys were also generally not adequate to obtain enough information that would allow comprehensive analysis of the problems.

(4) Despite considerable efforts made to achieve close coordination between RFM research and policies, the procedures used for this purpose had several shortcomings. A more systematic approach should be adopted in the future in order to improve linkages between the two.

Organization of Future Rural Finance Research:

In view of the observations made and conclusions arrived at in this study, a plan for future RFM research was prepared. The highest priorities in allocation of research resources should be given to the studies on use of RFMs to achieve economic equity objectives, rural loan default and delinquency problems, and impact of institutional specialization policies on the structure and performance of financial markets. In addition, more borrower level studies in immediate future should be
focused on topics such as costs of loans to the rural households, value of preferential credit policies to the borrowers, and adequacy of access to credit in rural areas. More research on household savings is needed to investigate saving capacity, composition of savings and incentives to save in the rural sector. Little attention has been paid in the past to assess the economics of financial intermediation in rural areas and impact of various policies on profitability and viability of financial institutions. The study of these topics should have higher priority in the future.

There is also an urgent need to allocate some research resources to studies that will lead to strengthen the economic linkages between financial and real sector markets in rural areas. Such studies should focus on analyzing the consistency between RFM policies and overall development programs in the rural sector, and how the financial and real sector markets may be better integrated. Continuous efforts are also needed to improve rural finance research infrastructure. Adequate amount of research should be done to develop proper theoretical models, analytical methods and data collection techniques in order to improve reliability of RFM studies.

The RBI should assume a leadership role in organizing rural finance research. Similarly, a publication or periodical should be established that disseminates information on past as well present RFM research activities on different issues. These measures will be useful in improving coordination and interaction both among researchers, and between research and policies. The problem of availability of sufficient amount of reliable data for rural finance research can be overcome by using a
project approach in organizing studies. The usefulness of research in policy formulation would be further improved if the recommendations of professionals are given proper consideration in designing RFM policies.

Implications

Due to the similar rural finance problems and policy emphases in developing countries, the focus of research has also been on similar issues. The theoretical and methodological techniques used in majority of these studies were also not significantly different. The results, conclusions and recommendations of the present study, therefore, has several important implications in achieving efficient utilization of research resources in the future in LICs in general and India in particular.

In this study the focus of past rural finance research on India was analyzed in detail. Similarly, relative advantages and disadvantages of various theoretical and methodological approaches used in studies on different issues were critically evaluated. Major assumptions used in designing these studies were also analyzed for their validity and reliability. The data problems of rural finance investigations and its effects on quality and reliability of research findings were also assessed in the present study. Subsequently, various suggestions were made to facilitate the selection of conceptual and analytical models for future RFM studies. The approaches suggested here to collect data for rural finance investigations will be useful in improving comprehensiveness and quality of the information gathered.

A detailed plan for future rural finance research on India is presented in this study. The important topics suggested in the plan were
selected by giving proper consideration to the problems faced by RFMs and the past research done on these issues. These topics were further arranged by time priorities for allocation of research resources. The research plan laid out in this study would help to organize future RFM investigations in India. This can also be useful in determining research priorities for other developing countries.

Finally, in the review of coordination and interaction between RFM research and policies, various weaknesses were pointed out in the procedures used in the past. Recommendations were made to eliminate these shortcomings and improving linkages between the two.
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