

**A STUDY OF SOURCES-AND-USES-OF-FUNDS STATEMENTS
FOR
THE RURAL FARM HOUSEHOLD SECTOR IN INDIA,
1961-62 AND 1971-72.**

**A THESIS SUBMITTED TO THE UNIVERSITY OF POONA
FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY (IN ECONOMICS)**

**BY
MRS. MEDHA PANCHAWAGH-DESHPANDE**

**GOKHALE INSTITUTE OF POLITICS AND ECONOMICS
PUNE - 411 004.**

NOVEMBER 1988

CERTIFICATE

**CERTIFIED that the work incorporated in the thesis,
"A Study of Sources And Uses of Funds Statements For The
Rural Farm Household Sector In India, 1961-62 and
1971-72" submitted by Mrs. Medha Panchawagh-Deshpande
was carried out by the candidate under my supervision.
Such material as has been obtained from other sources
has been duly acknowledged in the thesis.**

B.S.R. Rao

**B.S.R. RAO
Supervisor**

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CHAPTER I
INTRODUCTION

1.1 Objective of the Present Study

The rural farm households which constitute more than 70 per cent of the rural households occupy a crucial position in Indian economy both in terms of their size as well as productive activity in which they participate. The more important distinguishing characteristics of this group of households are structure of their asset holdings, financial markets in which they deal and, hence, composition of their liabilities.

The decisions of millions of these households (producers-cum-consumers) regarding production, consumption, saving and investment in the non-financial sphere and borrowing and lending in the financial sphere determine the course of economic and financial development in rural India. The decisions in these two spheres are not only interdependent but mutually determining also. For example, availability of credit along with savings determine expenditures (business as well as household) and, consequently, influence output and income flows and composition of expenditure. At the same time, changes in income influence saving and investment decisions, liquidity needs, borrowing and lending and, thereby, flows through financial channels.

Analytical and empirical inquiries into the patterns

of these activities of the rural farm households (hereafter referred to as farm households) are of vital importance from the view point of understanding the functioning of this important sector in the economy.

An appropriate statistical framework for this purpose is provided by the Sources-and-Uses-of-Funds (SAUF) statements, components of the Flow-of-Funds (FOF) system of National Accounts.¹ These statements, which present a sector's current income, expenditure, saving and investment (non-financial transactions on current as well as capital account) and borrowing, lending (financial transactions) in an integrated accounting framework, enable the analyst to understand the functioning of the sector.² Moreover, the comprehensive record of activities of the sector 'brings out the inter-relationships between different parts of the structure and so can aid analysis in a way in which partial data, which focus on one end only of each transaction can hope to do.' (Stone, R. and Roe, A., 1971).

In India FOF accounts are being compiled and published by the Reserve Bank of India (RBI).³ However the presented accounts are confined only to financial flows. The non-financial flows are not estimated, non-availability of data being the primary reason for it. Thus, the existing framework of FOF is not suitable for studying the interactions between non-financial and financial transactions.⁴

Furthermore, the present framework of the FOF accounts is not adequate for analyzing the behaviour of the farm households even in financial markets for the following reasons.

Firstly, the FOF accounts do not provide an explicit record of financial flows of the farm household sector. This sector forms a sub-sector of the 'Household' sector which is one of the six sectors for which FOF accounts are being compiled. Besides farm households, the 'Household' sector includes pure households, non-corporate non-farm business including partnerships, charitable institutions and trusts and unorganised financial agents like money-lenders and indigenous bankers. Due to non-availability of data on financial flows of sub-sectors, the estimates pertaining to the whole 'Household' sector are presented.

Secondly, as moneylenders and indigenous bankers are included in this sector, a large volume of financial flows in unorganised money market, which indeed is an important source of finance for the farm households, is not revealed in the official accounts. One may prepare accounts in a gross form (i.e. showing intra-sectoral transactions explicitly) in order to incorporate these flows, provided the required data are available. However, here also the non-availability of data on regular basis is a major constraint. It should be noted in this regard that the information on this aspect is available only at decennial

intervals from Debt and Investment surveys conducted by the RBI since 1951-52.

Incidentally, the Central Statistical Organization (CSO), the agency responsible for compiling National Income and related aggregates, estimates saving and capital formation of the 'Household' sector. However, for reasons similar to those mentioned above, these estimates also pertain to the aggregate 'Household' sector (RBI, 1982 P.3). It needs to be noted that appropriation accounts for the farm households are not being compiled at present and hence the information on income received by the farm households is not available. (Data on current consumption expenditure are, however, available from the NSS Surveys).

In sum, the existing set of National Accounts do not provide a framework suitable for analyzing the behavioural aspects of the farm households.

Therefore, in this study, we propose to compile SAUF accounting statements for the farm household sector and analyze them for the years for which data are available and thereby fill in the gap in existing data base at least partially. The complete accounts are estimated for the two bench-mark years, viz., 1961-62 and 1971-72. For these two years the accounts have been estimated (i) at all India level, (ii) for fractile groups, and (iii) at state level.

The estimates presented in the study are based on secondary data sources published by the CSO, RBI and

National Sample Survey Organisation (NSSO). The estimates of non-financial transactions on current account have been derived from CSO's estimates of gross/net domestic product and different surveys conducted by the NSSO. For estimating capital account transactions and borrowing and lending, especially in unorganized money market, heavy reliance has been placed on the data thrown up by the decennial Debt and Investment Surveys conducted by the RBI. The first survey was conducted in 1951-52 while the latest in 1981-82. However the first RBI survey was not based on random sampling; hence, the reliability of data may be open to question. Therefore we have not compiled the SAUF statements for 1951-52.⁵ So far as 1981-82 survey is concerned, a part of the results pertaining to assets and liabilities, i.e. stock estimates, have only been published upto now (RBI, 1987). Therefore we could not estimate the SAUF statement for this year.

1.2 A brief overview of other studies

Though systematic attempt to compile complete SAUF statements for the farm household sector has not been made so far, there are studies which have dealt with certain aspects of analysis of farm households, such as, (1) estimation and analysis of saving behaviour of farm households, and (2) borrowing behaviour of farm households.

Two studies of the first type may be mentioned, one by RBI (1965) and the other by Mody (1983).⁶ In his study,

Kody has estimated saving of rural households, agricultural households and non-agricultural households and the resultant flows. Besides the limitations arising out of the broad assumptions he has made while estimating saving, main drawbacks of his estimates and analysis are as follows. Firstly, there seems to be an upward bias in his estimates of agricultural households' saving. The factors which have introduced the bias are mentioned in the next chapter. Secondly, since total income received by agricultural households is not estimated, the saving rates are computed by relating savings to income generated in agriculture. In the spatial analysis such a method fails to present a correct picture because the proportion of non-farm income varies considerably from state to state.

The second type of studies mentioned above focus mainly on the analysis of demand for external funds (i.e. borrowings) and explore the determinants of the rates of interest in rural money markets. (Pani 1966, Pani 1977). The latest year for which the study is made relates to 1961-62.

Our study differs from the above two types of studies in the following respects. Firstly, whereas both the afore-mentioned types of studies analyse a particular aspect of behaviour of the farm households, we have compiled a comprehensive statistical framework which enable one to undertake a wholesome analysis of the activities of the

farm households. Secondly, by analyzing the SAUF for fractile groups of farm households, we have gone into distributional aspects which Kody has not touched upon. Thirdly, we have gone a step ahead of Pani in analyzing borrowing behaviour of these households by formulating (i) a separate demand function for non-institutional loans, and (ii) structural equations models explicating the casual relationships between explanatory variables in the demand function. The structural equations models have enabled us analyze various inter-relationships between organised and unorganised money markets which operate via farm households' transactions in non-financial markets.

1.3 Outline of the thesis

The broad outline of our thesis is as follows.

In the second chapter, concepts underlying the SAUF statements in general and those pertaining to the farm household sector in particular are discussed. The farm household sector is defined to include all cultivator families - owners as well as tenants - residing in rural areas.

The third chapter contains a detailed discussion of sources of data and method of estimation of SAUF statement as defined in the second chapter.

The fourth chapter is devoted to an analysis of SAUF statements. The analysis primarily focuses upon changes in income, borrowings, saving and investment and composition

of each of them. The regional variations as well as secular changes in inequality of size distribution of these variables have also been analyzed. The nature and character of surplus flows for the farm household sector, a sub-sector of the 'Household' sector which is a largest surplus sector in our economy, is delineated for the bench-mark years, viz., 1961-62 and 1971-72.

Modelling the borrowing behaviour of farm households is the main theme of the fifth chapter. This chapter is divided into three parts. In the first part the characteristics of organised and unorganised sectors of the rural money market are discussed. In the second part, a model of farm households' demand for total loans is formulated. The demand is expressed as a function of rate of interest, investment expenditures, family expenditures and saving. The demand functions are estimated separately for all households and for fractile groups of households. A structural equations model is formulated in order to capture the interdependence among explanatory variables. In the third part, a single equation model and structural equations model for the demand for non-institutional loans have been formulated. In addition to the explanatory variables in the demand equation for total loans, one more variable, viz., share of institutional loans, is introduced in the demand equation for non-institutional loans. The nature and extent of the complementary and countervailing

influences of the institutional and non-institutional segments of the rural money market are also outlined.

The last chapter summarizes the main findings of the study.

To sum up, the modest aim of this study is to fill the gap in the existing empirical base necessary for studying the operational aspects of the farm household sector. The SAUF statements are compiled and analysed for the years 1961-62 and 1971-72. The analysis facilitates evaluation of structural changes in incomes and expenditures, borrowings and lendings, that have taken place as a consequence of technological change that Indian agriculture experienced in mid-sixties. Since the state-wise accounts are also compiled, the analysis throws light on the regional dimension of the structural change.

Footnotes

1. The FOF system of accounts is nothing but a matrix that puts together SAUF statements of economic units/sectors side by side. For details see Chapter II.
2. We shall return to ^{the} /definition of non-financial and financial transactions in the next chapter.
3. As shall be seen in the next chapter, the FOF accounts, which were initially developed as independent set of accounts, now form an integral part of the System of National Accounts (United Nations, 1968). However, in many countries such as U.S. and India, the agencies responsible for estimating FOF statistics are Central Banks and not the official agencies which prepare National Income and Product accounts. In India the first set of FOF accounts was compiled by a group of experts drawn from CSO, RBI and Planning Commission. The accounts that were prepared were comprehensive, recording both non-financial as well as financial flows (CSO, 1963). However, only non-financial transactions which involve use of money and credit (monetized transactions) were included in the system, leaving aside kind transactions (non-monetized transactions). Afterwards RBI started compiling financial flows accounts.

4. In India the FOF statistics are mainly used for financial planning. A financial model enables planners to compare sectoral saving rates with planned sectoral investment so that the necessary financial transfers to achieve sectoral targets can be determined. (Pani 1977, Ehatt V.V. 1971, Divatia and Venkatachalam, 1976).
5. It should be noted here that though 1961-62 as well as 1971-72 surveys were based on random sampling, the sample size was larger in 1971-72 (12,000 villages) than in 1961-62 (2,000 villages). Besides, there were also some differences in the sample design. For example, while selecting the sample households from sample villages, the 1971-72 survey first stratified the village households, whereas the 1961-62 survey chose households without prior stratification. However, the larger number of sample households selected from each village in 1961-62 survey (40 households) as compared to 1971-72 survey (10 households) is expected to offset, at least partly, the deficiency on account of lack of stratification. The issue of non-comparability of the data for the two years on account of these differences, however, needs to be studied.
6. There are many studies which have estimated and analysed the rural saving behaviour at aggregate

level. A partial list of such studies is : NCAER (1965, 1972, 1975), Datta Roychoudhury, Uma (1968), Krishna Raj and Raychoudhury, (1980). However, these studies are not directly relevant to us since no separate analysis of the saving of the agricultural households was attempted in them.

CHAPTER II

A FRAMEWORK OF FARM HOUSEHOLD SECTOR SOURCES- AND-USES-OF-FUNDS STATEMENTS

This chapter outlines a conceptual framework of the SAUF statements which has been used in preparing estimates for the farm household sector in the study. Since SAUF statements are the elements of FOF system of accounts this has been done in the context of the conceptual frame of reference of FOF system of accounts for the economy. While a generalised framework of the FOF accounting system is presented in Section I, Section II deals with the particular framework of SAUF statements adopted in the present study.

I

2.1 THE FLOW-OF-FUNDS SYSTEM OF ACCOUNTS: HISTORICAL PERSPECTIVE

The FOF system of accounts, one component of the National Accounts System, is designed to record financial transactions between broad sectors of the economy along with the data on non-financial transactions that generate output and income. The origin of the present day FOF system may be traced back to Morris Copeland's classic study, A Study of Money flows in the United States (1952). In that study, he developed the moneyflows accounts as an alternative to National Income and Product accounts (Bain, 1973). However a number of major changes were made subsequently in the

format of the original accounts. The changes were aimed at linking the accounts more closely with the National Income accounts.¹ After considerable discussion, the revised system of National Accounts provide a framework of which is a synthesis of the conceptual frames/^{of} these two accounts. (United Nations, 1968). We shall see later in this chapter that the present framework of FOF account is envisaged as an extension of saving-investment accounts, (of National Income accounts) with the sphere of institutional sectorization.²

2.2 CONCEPTUAL FRAMEWORK OF THE FOF SYSTEM OF ACCOUNTS

In its simplest form, the FOF is a system of accounts in which (a) the economy is divided into sectors; (b) SAUF statements for each sector are constructed; and (c) these SAUF statements are placed side by side to get a FOF matrix for the economy. In practice, construction of FOF accounts involves defining two concepts underlying the FOF accounts viz., (i) sectors and (ii) SAUF statements in a manner that is both theoretically satisfying and empirically meaningful. In what follows we define and briefly discuss these two concepts.

2.2.1 Sector

In the FOF accounts the term sectoring refers to the manner in which all independent decision-making units (i.e. transactors) in the economy are classified into distinct sectors.

In general, two main criteria for defining the sectors in FOF accounts may be noted. First is the criterion of homogeneity which demands that a sector should be defined in such a manner that the accounts of different sectors portray distinct patterns of behaviour. A second principle is that all the transactions of a decision-making unit are allocated to one and only one sector. This inevitably leads to 'institutional' grouping of the economic units.

There is no unique or "ideal" sectoring of the economy by grouping the decision-making units. In practice, the maximum number of sectors depends upon the relative homogeneity of the decision-making groups in the economy as well as by availability of data.

In general, the scheme of sectoring in FOF accounts is such that the domestic financial institutions constitute a separate sector. Often, the financial institutions are separated into monetary system (i.e. banks) and other financial institutions. A minimum division within non-financial domestic sector is between private corporate and public sector units. Households (consumers) are aggregated into a different sector on the assumption that they behave differently from producers. Rest of the world as a separate sector is added to close the accounts.

Considerable complications, however, arise in the treatment of the households which are both consumers as well as producers. The criterion of homogeneity dictates that

production and consumption activities of these households should be separated. Thus, the application of homogeneity principle leads to a violation of the second principle i.e. transactions of a single decision-making unit should not be divided into two sectors. In FOF accounts such a division of assets, which are under common control, is 'artificial to some extent since many decisions to buy and sell or to lend or borrow are based on a proprietor's entire financial situation'. (Board of Governors, 1955, p.93). In single proprietorships particularly, business expenditures compete with family expenditures for a total pool of resources which is at the disposal of the proprietors. The problem of segregation of consumption and production activities of the proprietors is further complicated because many of the production and financial transactions of the proprietors sometimes serve both these purposes simultaneously. Farmers' investment in tractor, electric power system, loans for current consumption of family labourers may be cited as a few illustrative examples in this respect.

The treatment of unincorporated non-farm business and farm sector differs from country to country. For example, in the United States, farm business and non-farm non-corporate business are treated as separate sectors, and each of the sector's income is assigned to the household sector (Board of Governors, 1970). In India, as mentioned earlier, it has not yet been possible to separate the accounts of the

households who are pure consumers from those who are producers-cum-consumers. As a result, the 'Household' sector includes unincorporated non-farm business, farm business, non-profit organisations along with pure households and, consequently, displays considerable heterogeneity.

As we shall see later, the farm household sector in this study is defined as aggregate of firm-households.

2.2.2 Sources-and-Uses-of-Funds Statements

A SAUF statement for a sector can be described as an organised arrangement of sources and uses of funds for that sector arising out of its transactions that are included in the system. All transactions - current and capital, financial and non-financial - of a given group of economic units are included in a sector's SAUF accounts. Non-financial transactions refer to purchase and sale of real goods and services. These may be of two types, viz., capital transactions and current transactions. Acquisition of real assets with expected life of more than one year is a transaction on capital account while purchase of real goods which have an expected life of less than one year (non-durable goods) is transaction on current account. Transactions in financial claims are termed as financial transactions. Thus, net incurrence of liabilities (or net issue of financial claims on one self) i.e. net borrowings from others is a financial source by definition while a financial use denotes purchase of claims against someone else (i.e. financial asset) and

is nothing but lendings to others.

Conventionally, only transactions which involve use of money and credit are recorded in the FOF accounts. However, the scope can be broadened by including imputations and kind transactions. Attempts have been made to use imputations and accruals in FOF accounts. (Cohen, (1972), Copeland, (1957), Read, (1957)).³

The structure of the SAUF accounts is presented in the following table.

Table 2.1: A Framework of Sources-and-Uses-Funds-Statement

Sources	Uses
<u>Current account</u>	
Current Receipts	Current Expenditure
	Saving
<u>Capital account</u>	
Saving (Δ Net worth)	Investment in Physical (Real) Assets (Δ RA)
Borrowings (Δ Liabilities)	Change in Money holdings (Δ M)
	Acquisition of other Financial Assets
	(Δ Lendings)
Σ Sources = Σ Uses	

The SAUF statement presented in the above table contains two sub accounts; current transaction account and capital transaction account.

The current transaction sub-account records sources and uses of current non-financial transactions and the account is closed by including the balancing entry i.e. saving or dissaving. This is familiar income-outlay account, sources side of which comprise current receipts while current expenditures are shown in the uses side. The balance between current receipts and current expenditure is saving and is shown on the uses side of this account with appropriate sign. In the case of households, current receipts are factor incomes accrued to the households while it is mainly sales receipts for the business firms. Current expenditures on wages and salaries, raw materials etc. appear on the uses side of the income-outlay account of the business firms. Expenditures on non-durable consumer goods and services form current uses of the households.

The capital transactions sub-account records sources and uses of non-financial transactions on capital account and financial transactions. It can be seen that the entries in this part of the account depict changes in the items of balance sheet referring to two time periods.⁴ The balance sheet of a sector depicts assets (both physical and financial) and liabilities at a particular point of time. The balancing entry between assets and liabilities is net worth. The changes in physical (real) and financial assets in two successive balance sheets are equivalent to physical (real) investments and financial investments respectively.⁵

Similarly, change in liabilities is equal to net borrowings during the period. Since net worth is defined as the difference between assets and liabilities, change in net worth is identical with the balance between change in assets and change in liabilities. This, in turn, must be equivalent to saving (non-spending) on current account since any excess of current receipts over current expenditure 'must imply either a build-up of (stock of) total assets or a reduction of liabilities, or some combination of the two, exactly equal in amount to the excess of current receipts over current expenditures (Ritter, 1970 p.26).

Thus, a complete SAUF statement for a sector combines income-outlay statements and changes in balance sheets and the logical link between these two set of accounts is provided by the sector's saving.

It should be noted here that the accounts presented in Table 2.1 do not include net current and capital transfers. In order to complete the SAUF, it is necessary to introduce these entries.

Since each sub-account in the structure is balanced independently, removal of the item of saving from SAUF statement does not disturb the equality of total sources and uses of funds.⁶ However, placing saving along with investment in SAUF accounts provides a perspective for these totals in terms of financial flows which are a consequence of the patterns of sectoral saving and investment. At an

individual sector level, saving is seldom equal to investment. In fact, the condition of equality of sources and uses of funds on capital transaction sub-account implies that investment plus lending must equal saving plus borrowing. If a sector's saving exceeds its investment, it follows logically that its lendings are in excess of borrowings. Similarly, excess of investment over saving at the sector level implies that it borrows more than it lends. Thus, the SAUF accounts presented in the above framework, which explicitly record saving and investment magnitudes, 'can be viewed as a direct extension of income and product structure into the financial markets of the economy, with the purpose of establishing direct linkages between data on saving and investment, the capital account in the income and product structure and the lending and borrowing activities that are associated with saving and investment.' (Roy Choudhury Uma Datta and Mukherjee Koni, 1984, p.71). In other words, the Flow-of-Funds system of accounts in this framework can be considered as 'complementary' to National Income and Product Accounts and not as an 'alternative' to them as Copeland had originally conceived them to be.

When the SAUF statements of all the sectors are placed side by side we get a FOF matrix for the economy. The degree of comprehensiveness of the SAUF accounts in a FOF matrix, however, may vary. For instance, instead of presenting complete SAUF statements (Table 2.1), current

transaction accounts are often compressed into one single entry, viz., saving and only capital account of the SAUF statements are shown. An illustrative matrix which contains only capital accounts is given below.

Table 2.2: The Flow-of-Funds Matrix for the Economy.

Sectors :	1		2		3		All sectors	
Transactions	SF	UF	SF	UF	SF	UF	SF	UF
Saving	s_1		s_2		s_3		S	
Investment		i_1		i_2		i_3		I
Borrowing	b_2		b_2		b_3		B	
Lending		l_1		l_2		l_3		L
Hoarding		h_1		h_2		h_3		H
$SF = UF \quad SF = UF \quad SF = UF \quad SF = UF$								

N.B.: The small letters within the matrix represent the data for sector saving, ^(s) investment (i), borrowing (b). The capital letters represent the aggregate sum totals for the economy as a whole.

When the SAUF statements of all the sectors are consolidated, the sum of non-financial flows in any row must add to the corresponding national income accounting magnitude, provided the basis of transactions is similar in both the systems (as, for example, actuals and accruals and cash and kind). Saving must equal investment since one sector's liability is another sector's financial asset and for the

whole economy borrowings must equal lendings plus hoardings. This point may be illustrated as follows. The condition of equality of sources of funds and uses of funds for all sectors taken together implies that,

$$S + B = I + L + H \quad \dots \quad (2.1)$$

$$\text{Since } B = L + H$$

$$S = I \quad \dots \quad (2.2)$$

It should be noted that the framework of SAUF accounts that has been presented in Table 2.1 is highly aggregative and can be elaborated by disaggregating the transactions in current and capital account. Similarly, entries in the account are shown in a net form. For example, on the sources side borrowings are netted out for repayments which is a possible use of fund while on the uses side purchases of real and financial assets represent net purchase, i.e. net of sales of these assets which form a source of fund.

This raises two questions, viz., what is an optimal degree of disaggregation and what is the desirable degree of grossness/netness of the accounts. Ignoring variations in statistical practice and problems like availability of data, these questions cannot be settled independently of the purpose which the analyst has in mind.⁷

A principal purpose in constructing FOF accounts is to investigate the nature of interdependence between financial and non-financial transactions and sectors. For this, the financial transactions of financial institutions

sector along with non-financial and financial transactions of non-financial sectors which reveal these should be recorded with greater disaggregation⁸ (Host - Madsen, 1960). It is also contended that it is better to have an account which is on gross basis, since one can net out the transactions if desired⁹ (Lins, 1977).

Whatever may be the degree of disaggregation and grossness of transactions, a standard classification of transactions and consistent approach to netting throughout the sectors is essential in order to maintain comparability in the rows of the FOF matrix.

We have already mentioned that in India the FOF accounts record only financial transactions. It will be seen in the next section that the framework of the SAUF for the farm household sector in the present study is more comprehensive in that it includes non-financial as well as financial transactions.

2.3 DEFINITION OF FARM-HOUSEHOLD SECTOR AND THE FRAMEWORK OF SAUF STATEMENTS

This section deals with the question of what constitutes the farm-household sector for which the SAUF estimates have been prepared in the study and present an outline of the framework of the SAUF statements.

2.3.1 Sector Coverage

The farm household sector in the present study is confined to the cultivator households (owner as well as tenants) residing in rural areas. Households reporting land

under cultivation more than or equal to 0.005 acres are defined as cultivator households. This was the definition of cultivator households adopted in RBI's AIRDIS, 1961-62 and AIDIS, 1971-72. The primary function of these households need not be confined to agricultural production.

The farm household sector defined in the above manner includes a major part of the transactors engaged in agricultural production but not all. For example, the households of landless agricultural labourers in rural areas and cultivators and agricultural labourers in urban areas as have been excluded from the sector. It is needless to mention that formulation of this definition is guided by the availability of data.

Since it is expected that the behavioural pattern of the households is by and large determined by value of asset holdings, the transactors are further classified into five sub-classes (fractile groups) depending upon the value of asset holdings.

The farm sector which is an aggregate of farm household units is engaged in production and consumption activities. Assets of the households which are used for either purpose are aggregated and shown under the farm sector. Thus, the sector is defined as an aggregate of producer-consumer farm household units. Decision on which transactions are to be included in the accounts are elaborated in the next section.

2.3.2 Framework of the Farm Household Sector
SAUF Statements

The SAUF statement that is estimated in the present study is shown in the following table.

Table 2.3: Sources-and-Uses-of Funds Statement:
Farm Household Sector

Sources	Uses
<u>Current account</u>	
Income	Current consumption
i) Farm income	
ii) Non-farm income	
Transfers	
<u>Capital account</u>	
	Investments
	i) Investment in farm business
	ii) Investment in non-farm business
	iii) Investment in residential construction
	iv) Investment in durable household assets
Change in borrowings	Change in financial assets
i) Institutional agencies	i) Formal
ii) Non-institutional agencies	ii) Informal
$\Sigma \text{Sources} = \Sigma \text{Uses}$	

It can be seen from the above table that the SAUF statements present a comprehensive picture of the activities of the farm households. These statements capture sources and uses of funds arising out of current and capital, non-financial transactions and financial transactions. The detailed transaction categories are presented in the next chapter. Flows relating to household (consumer) account and production, both farm as well as non-farm production account, are recorded. Income from farm and non-farm activities have been shown separately. The non-financial capital flows, i.e. investment expenditures are classified under farm business, non-farm business and household account.¹⁰ The financial transactions in organised (i.e. institutional) and unorganised (i.e. non-institutional) money market are distinguished and shown separately.¹¹ The loan transactions of non-institutional agencies belonging to cultivator households have been explicitly recorded in order to bring out the volume of intra-sectoral loan transactions.

The general principle followed for recording the transactions is inclusive of all transactions including imputations and exchanges in kind. That is, both monetized and non-monetized transactions are covered. In the case of current flows, entries refer to total at cash and kind transactions while monetized and non-monetized capital expenditures are shown separately.

The farm income is obtained by deducting current

business expenditure from farm receipts. However, this is gross of depreciation. Investment in physical assets and change in financial assets are recorded on a net transaction basis for each transaction category; that is, each entry represents funds used to acquire assets of that type in the accounting year less funds realised from disposal of assets of that type in the accounting period. Investments in physical assets are inclusive of depreciation. The borrowing entry represents funds raised by borrowing less repayments in the accounting period. In one respect, however, entries for financial flows are on a gross basis, i.e. asset and liability of a single transaction category are not netted; instead both are shown. For example, deposits in co-operative banks are not netted out from borrowings from co-operative banks.

As mentioned in the earlier chapter, the SAUF statements are estimated at all India level, for sub-classes of the transactors and at state level for the years 1961-62 and 1971-72. The complete accounts presented in Table 2.3 could be estimated only at all India level. The approach followed is to estimate income, investments, acquisitions of financial assets and net change in borrowings and then estimate consumption as a residual. Saving is then derived as a balance between change in assets and change in liabilities i.e.,

**Saving = Investment (ΔRA) + Change in financial
assets (ΔFA) - Net change in borrowings.**

However, non-availability of data did not permit us to estimate net transfers into the sector at fractile group level as well as at state level in the treatment of some of the transaction categories. For example, only cash capital expenditures have been recorded at fractile group and state levels. The data on receipts from sale of physical assets are not available for fractile groups and hence the investment estimates are gross of sales. At state level, the income estimates are net of depreciation while at the all India level they include depreciation.

Another important difference between fractile group accounts and all India accounts is that repayments to institutional and non-institutional agencies could not be separated in the case of the former. Thus, borrowings are gross of repayments. Consequently, the derivation of saving aggregates has not been possible at the fractile group level.

After having defined the framework of SAUF statements for the farm household sector in this chapter we propose to explicate sources of data, method of estimation of SAUF statements and difficulties encountered in the process of estimation in detail in the next chapter.

Foot-notes

1. The earlier attempts were directed towards reconciling the FOF accounts with National Income accounts rather than integrating them. (Sigel, 1955, pp. 253). Subsequently, however, integration of the two was preferred to reconciliation (Sigel, 1962, Rampersad F.B., 1962). Many problems were encountered while integrating these two systems since there are basic differences in the concepts, viz., sectoring and basis of transactions in them. For a discussion of conceptual problems of constructing an integrated set of accounts, see Tice, H.S. (1967), Sigel (1962), Read, L.H. (1957) and Dorrance G.S. (1955).
2. The new system of national accounts proposed by the United Nations is omnibus accounting structure with Balance Sheets, Flow-of-Funds, National Income, and Input-Output forming its integrants. The scheme of sectorisation, however, is different for input-output and capital expenditure accounts. With respect to the input-output account, it is functional while capital accounts are based on institutional sectoring (United Nations, 1968, (Chapter II)). Functional sectoring implies homogeneous activity of all economic units and follows commodity organisation while in institutional grouping all activities

- of an economic unit are included in one sector.
3. In developing countries, explicit recording of imputed and kind transactions in the FOF accounts might improve analytical usefulness of the accounts, for these transactions are sizeable in these countries. Moreover, the importance of such transactions is expected to reduce over time as monetization increases. Hence, it would be necessary to incorporate them in the accounts.
 4. Assets may be recorded at book or market values in the balance sheet. There is controversy over appropriate basis of valuation for estimating stocks. However, while presenting the theoretical framework here we assume that the assets are estimated at book value. This implies exclusion of capital gains as a source of fund.
 5. Investments may be shown either gross or net of depreciation. Similar is the case with saving. Saving in gross terms would imply that income is unadjusted for depreciation provision.
 6. When saving is deleted from the uses side on the current account and the sources side on the capital account the equality of sources and uses of funds implies that current receipts plus net borrowings are equal to current expenditures plus capital expenditures plus acquisition of financial assets.

Thus, the difference between non-financial uses on current and capital account and current receipts are equivalent to financial surplus (or deficit) of the sector.

7. For example, gross extensions of credit to agriculture are important from the point of view of studying its impact on growth of agricultural income.
8. The principle that should be adopted for classifying the financial transactions is that of homogeneity which refers to sector of issue and the nature of financial instrument - e.g. its maturity or object of finance. Liquidity may be another criterion (Bain, 1973).
9. Grossness adopted by Copeland in his study is considered to be of optimal degree (Bain, 1973). He has shown receipts and payments between economic units, classified by sector without any offsetting entries within sectors or between sectors. His accounts have been described as 'to-whom-from-whom' accounts.
10. As we shall see in the next chapter, investments in farm business and non-farm business refer to fixed investments. Change in inventories have not been estimated due to non-availability of data and data problems with regards to some others. These are spelt out in the next chapter.

11. Non-institutional credit agencies mainly comprise traders and moneylenders. Since many of the rich farmers are involved in moneylending activities, moneylenders are classified, for our purpose, under two heads, viz., cultivator moneylenders and non-cultivator moneylenders.

CHAPTER III

SOURCES-AND-USES-OF-FUNDS STATEMENTS FOR THE RURAL FARM HOUSEHOLD SECTOR : DATA SOURCES AND ESTIMATION METHODS

In this chapter, we undertake a detailed discussion of the sources of data and methods of estimation of the SAUF statements for the rural farm (cultivator) household sector as outlined earlier in the second chapter in Table 2.3. Complete accounts are estimated for the two bench-mark years, 1961-62 and 1971-72, for which the requisite data are available. For these two years the SAUF statements are estimated (i) at the aggregate (i.e. all India) level, (ii) for five fractiles of the cultivator population, and (iii) for the States in the country.

Broadly, the scheme of this chapter is as follows. Sections 3.1, 3.2 and 3.3 are devoted to presentation of discussion on sources of data and methods of estimation of different items of sources of funds while Sections 3.4, 3.5 and 3.6 deal with items of uses of funds and their method of estimation. In Section 3.7 estimates of saving and current consumption are derived from the estimates of SAUF statements and a comparison with the estimates from other sources is attempted.

3.1 SOURCES OF FUNDS

In the SAUF statement presented in Table 2.3, sources of funds are classified under three broad heads, viz.,

income, transfers (i.e. non-financial sources) and net change in borrowings (i.e. financial sources). The itemwise details that are to be estimated are presented in the following table.

Table 3.1: Sources of Funds of the Rural Cultivator Household Sector

 I. Non-financial (A + B)

A. Productive

- 1) Income from agriculture and allied activities:
 - i) Cultivation and plantations of crops,
 - ii) Livestock,
 - iii) Operation of government irrigation system.
- 2) Income from activities other than agriculture:
 - i) Income from self-employment, i.e., income from unorganised non-agricultural sector,
 - ii) Wage income of cultivators as employees in organised non-agricultural sector.

B. Non-productive

- 3) Amount received as transfers.

II. Financial

- 4) Net change in borrowings:
 - i) From institutional agencies,
 - ii) From non-institutional agencies:
 - (a) Cultivator moneylenders,
 - (b) Non-cultivator moneylenders.

Total (I + II)

Let us now review the sources of data and the methods of estimating each of the items of sources of funds mentioned above.

3.2 NON-FINANCIAL SOURCES: DATA SOURCES AND METHODS OF ESTIMATION

In this section we have discussed data sources and method of estimating non-financial sources of funds (except current transfers) at all India level, for fractile groups and at the state level. Complete data on current transfers to rural farm households are not available; data relating to remittances (which form a part of current transfers) to the farm households have been taken from the RBI, AIRDIS, 1961-62 and AIDIS, 1971-72.

3.2.1 Income from Agriculture Proper, Livestock and Operation of Government Irrigation System, All-India

Estimates of income earned by the rural cultivator households from cultivation of field and plantation crops, livestock production and operation of government irrigation system are based upon the estimates of income generated in the sector 'agriculture and allied activities' prepared by the CSO, Government of India.¹ The estimates are compiled by the CSO using production (i.e. value added) approach. The gross values of output from agriculture and livestock are separately estimated. However, as agriculture and livestock production generally go together in India, it is rather difficult to separate the various inputs, like livestock feed, repairs and maintenance costs, consumption

of fixed assets, etc., into those used for agricultural production and livestock production. Hence, the estimates of gross value added from agriculture and livestock are worked out for the activity as a whole by the CSO. (CSO, April 1980, p.3). The income estimates from the operation of government irrigation system are separately estimated, using the income approach.

It is, therefore, necessary to segregate the CSO's combined estimate of income into its two component parts, as a first step towards deriving separate estimates of income of the rural cultivators from agriculture and livestock.

Secondly, the CSO estimates of income from the above three sub-sectors of 'agriculture and allied activities', being country-wide estimates, represent domestic income generated in the entire sector. In other words, it is the sum of the factor incomes earned by all the owners of factors of production-cultivators as well as non-cultivators (i.e. non-cultivating landlords and landless labourers) in both rural and urban areas. Hence, in order to estimate income received by rural cultivators, it is essential to deduct factor incomes earned by urban cultivators and non-cultivators and rural non-cultivators from the aggregate income from agriculture and livestock and income from operation of government irrigation system from the CSO figure.

In what follows we explain the method of (I) sub-division of the CSO estimate of income from agriculture and livestock, and (II) estimating income received by rural cultivator households from these activities.

(I) Disaggregating the CSO Estimate of Income from Agriculture and Livestock

The CSO's estimates of income from agriculture and livestock (combined), for the years 1961-62 and 1971-72 have been disaggregated, using estimates of coefficients of value added (at producers' prices) in these sectors from the Regional Input Output Matrices, India, 1965 (P. Venkatramaiah et al., 1980). The method is elaborated in the following paragraphs.

In order to estimate the value added from agriculture for 1961-62 and 1971-72, CSO's commodity-wise estimates of the gross value of output from agriculture which are available for 63 agricultural commodities, are reclassified and aggregated into 8 crop sectors defined for the purpose of input-output matrices. Livestock is treated as a separate sector. Value added from these 8 crop sectors and livestock, V_A and V_L , is estimated as follows:

Value added in agriculture

$$V_j = X_j (1 - \sum_1^8 a_{1j}) \quad \dots \quad (3.1)$$

$$V_A = \sum_{j=1}^8 V_j \quad \dots \quad (3.2)$$

Value added in livestock

$$V_L = X_L (1 - \sum_1^8 a_{1L}) \quad \dots \quad (3.3)$$

where X_j is the gross value of output and $\sum_i a_{ij}$ is the coefficient (at producers' prices) in j th crop sector, X_L and $\sum_i a_{iL}$ are the estimates of gross value of output and input coefficient in the livestock sector. The estimates are presented in Table 3.2.

The estimates of value added from agriculture and livestock for the years 1961-62 and 1971-72 are then obtained applying the proportion of value added from agriculture and livestock (i.e. V_A/V_A and V_L/V_L) to the CSO's combined estimate of value added from agriculture and livestock in the respective years.

(II) Estimation of Income of Rural Cultivators

For estimating the income received by rural cultivators from agriculture and livestock and operation of government irrigation system, the following procedure is adopted. Firstly, income of rural workforce is separated from the estimates of income from these activities. Secondly, earnings of rural non-cultivators have been deducted from these estimates of rural income.

Separating Rural Income

The estimates of factor earnings of rural workforce from employment in agriculture and livestock are obtained using the combined index (used by CSO)² of the proportion of rural to total workers employed in these activities and the per worker rural-urban differential in the value added.

Thus rural income from the i th activity is given by

Table 3.2: Decomposition of the Value Added from Agriculture and Allied Activities: All India, 1961-62, 1971-72

Sector Code (1)	Value of Output (Rs. lakhs)		Coefficient of value added per unit of output (1965-66) (4)	Value added (Rs. lakhs)	
	1961-62 (2)	1971-72 (3)		(Col.2 x Col.4) 1961-62 (5)	(Col.3 x Col.4) 1971-72 (6)
011 Foodgrains	4,281,12	10,960,03	0.7864271	3,366,79	8,619,26
021 Oilseeds	617,58	1,570,56	0.8723503	538,75	1,370,08
031 Fibres	360,13	997,15	0.8625858	310,64	860,13
041 Sugarcane	426,36	1,253,90	0.8468147	362,74	1,061,82
042 Tobacco	94,53	217,00	0.9625202	90,99	208,87
043 Tea Plantations	87,14	131,24	0.8659494	75,46	113,65
044 Coffee Plantations	12,07	31,59	0.6478277	7,82	20,46
069 Other agriculture	1,507,74	3,231,24	0.9369262	1,453,35	3,027,43
Total Agriculture	7,388,67	18,392,71		6,206,53 (89.96%)	15,281,70 (90.16%)
070 Animal Husbandry	1,507,28	3,351,21	0.4597996	693,05 (10.04%)	1,540,88 (9.16%)
Grand Total	8,895,95	21,743,92		6,899,58 (100.00)	16,822,58 (100.00)

N.B.: Figures in brackets in Col.(5) and Col.(6) denote percentages of value added in agriculture and livestock respectively.

Sources: 1) GOI, National Accounts Statistics (NAS), CSO, March 1975 and February 1980.
2) P. Venkatramah, et.al., August 1980.

$$Y_{1R} = Y_{1t} \times \frac{(W_{1R} \times V_{1R})}{(W_{1R} \times V_{1R}) + (W_{1U} \times V_{1U})} \quad (3.4)$$

where Y_{1t} and Y_{1R} represent total income and rural income from i th activity, W_{1R} and W_{1U} are the work-force engaged in rural and urban areas and V_{1R} and V_{1U} stand for the value added in rural and urban areas in the i th activity respectively.

Dividing both numerator and denominator of the right hand side in equation (3.4) by $W_{1t} \times V_{1R}$ (where W_{1t} is the total workforce in i th activity) we get the following equation:

$$Y_{1R} = Y_{1t} \times \frac{\frac{W_{1R}}{W_{1t}}}{\left(\frac{W_{1R}}{W_{1t}}\right) + \left(\frac{V_{1U}}{V_{1R}} \times \frac{W_{1U}}{W_{1t}}\right)} \dots \quad (3.5)$$

Data on work-force proportions are obtained from the censuses of the respective years, whereas the ratio of urban-rural per worker value added is taken from NAS (CSO, January 1981) which refers to the year 1970-71. We have used this ratio for agriculture and livestock for both the years 1961-62 and 1971-72.

The rural share of income from operation of government irrigation is estimated, using the proportion of rural to total work-force on the assumption that there is no difference in per worker earnings in urban and rural areas.³

The estimated shares are presented in Table 3.3

Table 3.3: Rural Share in Income from Agriculture, Livestock and Operation of Government Irrigation System: All India, 1961-62 and 1971-72.

Activity	Years	Proportion of rural to total workers	Ratio of Urban/Rural value added	Rural share
Agriculture	1961-62	0.9792	1.0336	0.9785
	1971-72	0.9719	1.0336	0.9710
Livestock	1961-62	0.9351	1.0336	0.9331
	1971-72	0.9091	1.0336	0.9061
Operation of Government Irrigation System	1961-62	0.7548	-	0.7548
	1971-72	0.7506	-	0.7506

- Sources:** 1) Census of India 1961. General Economic Tables, B-IV Part C.
- 2) Census of India 1971. General Economic Tables, B-IV Part A.
- 3) GOI, NAS, CSO, January 1981.

Separation of Rural Cultivators' Income

The income of rural cultivators from agriculture and livestock is obtained by deducting income received by rural non-cultivators from the estimates of rural income from these two activities. The factor earnings of rural non-cultivators from agriculture and livestock are estimated as follows.

Firstly, income of rural non-cultivators from livestock is estimated applying the proportion of receipts from livestock of the non-cultivators obtained from AIDIS, 1961-62 (REI, December 1965) and AIDIS, 1971-72 (REI, unpublished data). Secondly, since landless labour constitute the main category of rural non-cultivators who derive wage-income from agricultural occupations, their wage-bill from employment in these occupations is deducted from the estimated rural income from agriculture and livestock.⁴ Estimates of wage income of landless labourers from agricultural occupations are not readily available in the official source i.e. NAS. What are available are the annual estimates of total wage bill from agriculture and allied activities (i.e. compensation to employees in agriculture). It is, therefore, necessary to estimate wage income of landless labour from agricultural occupations.

Wage Income of Rural Landless Labourers
from Agricultural Operations: All India

Estimates for the year 1971-72 are prepared on the basis of the 25th round of the NSS relating to the year

1970-71, which was conducted to enquire into the conditions - including employment of weaker sections - in rural India. For the year 1971-72, two alternate estimates are obtained using (i) the data from the 25th round of NSS with appropriate adjustments (which will be elaborated subsequently), and (ii) the data from the NSS Report No. 134, 'Tables with Notes on Income of the Rural Labour Households, 1963-64'.

The estimates of wage income of rural landless labour from agricultural occupations (based on the 25th round of the NSS) are derived as a product of the total number of man-days of landless labour in wage employment in agriculture and the daily wage rate in these occupations.

The data on average wage rates per man-day for working on other's farm earned by male and female landless labour are culled from the NSS Report No. 237, 'Time Disposition and Wage Rate for Economically Weaker Sections of the Rural Population of India'. The same report also provides information on the total time spent by persons belonging to landless labour households in gainful employment, classified by sex.⁶ The number of man-days in agricultural wage employment of rural landless labour (males and females) is estimated using this information along with the estimated number of persons in these households (see Table 3.4).

These estimates of total man-days and daily wage

rates of male and female landless labour in agricultural occupations relating to the year 1970-71 are carried backward to 1961-62 and forward to 1971-72, using the proxy of gross value of output from agriculture and livestock at constant prices and index of daily wages of the field labour (calculated from 'Agricultural Wages in India', Directorate of Economics and Statistics, Ministry of Agriculture) respectively. The results are presented in Table 3.4.

Before we proceed, it would be desirable to explain in some detail, why the gross value of output from agriculture at constant prices has been used as a proxy for moving the estimate of the number of man-days employed (of the landless labour) in agricultural occupations, to 1961-62 from 1970-71. In estimating the number of man-days employed in agricultural occupations of landless labour for the years 1971-72 and 1961-62 with the help of the above mentioned proxy, it is implicitly assumed that the average productivity of the landless labour (per man-day) remains unchanged for the period under consideration. On a-priori grounds, it is difficult to justify the assumption, because the technological change in Indian agriculture in mid-sixties might have had an impact on the overall labour productivity in agricultural sector.

The empirical evidence that can be had in this regard is the average agricultural productivity (per man-day)

Table 3.4: Estimates of Wage Income of Rural Landless Labourers from Agricultural Occupations: All India, 1961-62 and 1971-72.

	Males	Females	Total
<u>Estimates from NSS 25th Round (1970-71)</u>			
1. Estimated number of landless labour households (in 00)			1,03,925.57
2. Average number of males and females per household	2.04	2.09	
3. Total number of man-days (in crores)	773.83	792.80	
4. Percentage time spent in agricultural wage employment	33.33	17.05	
5. Estimated number of man-days in agricultural wage employment (in crores)	257.92	135.17	393.09
6. Daily wage rate in agricultural occupations (Rs.)	2.63	1.41	
<u>Wage Income from Agricultural Occupations of the Landless Labourers</u>			
<u>1961-62</u>			
7. Estimated man-days (in crores)	207.53	108.76	316.29
8. Estimated daily wage (Rs.)	1.39	0.75	
9. Wage income (Rs. crores)	288.47	81.57	370.04
<u>1971-72</u>			
10. Estimated man-days (in crores)	256.12	134.23	390.35
11. Estimated daily wage	2.78	1.49	
12. Wage income (Rs. crores)	712.01	200.00	912.01

N.B.: Sex ratio among children is assumed = 1:1.

Sources: 1) GOI, NSS, 25th Round: Report No. 232.

2) GOI, NSS, 25th Round: Report No. 234.

3) GOI, NSS, 25th Round: Report No. 237.

4) GOI, NAS, CSO, January 1979 and February 1980.

worked out from the data on the number of man-days of agricultural wage employment from Rural Labour Enquiry (1963-65 and 1974-75) and the information on gross value of output from agriculture and livestock from NAS. The relevant information is furnished in the following table.

Table 3.5: Productivity Per Man-day in Agriculture of Labourers Belonging to Rural Labour Households, 1964-65 and 1974-75.

Year	Mandays of agricultural wage employment (in crores)	Gross value of output from agriculture and livestock (Rs. lakhs) at 60-61 prices	Productivity per man-day (Rs.)
1964-65	625.11	93,96.74	15.03
1974-75	808.26	1,06,83.17	13.22

Sources: 1) GOI, NAS, CSO, March 1975 and October 1976.

2) GOI, Rural Labour Enquiry: 1963-65, Final Report, July 1973.

3) GOI, Rural Labour Enquiry: 1974-75, Final Report on Employment and Unemployment of Rural Labour Households, February 1981.

However, the productivity per man-day given in the above table refers to a 'broader' class of labourers. That is, besides the landless labour, this class includes the man-days of agricultural wage employment of labourers belonging to rural labour households 'with land'.

Whether the trend observed in the productivity per

man-day of this 'broader' class of labourers holds good in the case of the landless labourers depends upon two factors. First, the proportion of landless labour and labour in total number of workers and second, the nature of change in the composition over time of total time spent in agricultural operations by the former class. However, no information is available on these. Hence we cannot get conclusive evidence to justify the use of the proxy that we have used for moving the estimate of the number of man-days of agricultural wage employment of the landless labourers.

The error that might have been introduced by the use of this proxy is probably negligible as illustrated in the following paragraphs.

A Cross Check for the 1961-62 Estimate of Wage Income of Landless Labourers from Agricultural Operations

An alternative estimate of the wage income of landless labourers for the year 1961-62 is obtained using the data thrown up by the 18th round of the NSS for the reference year 1963-64.

The NSS Report No. 134, 'Tables with Notes on Income of the Rural Labour Households' furnishes data on average annual income of rural labour households 'without land' from manual labour which is inclusive of wage income from agricultural occupations. This estimate is obtained by pooling the estimates from the four sub-samples of the round. However, for two sub-samples (out of a total of four) separate estimates of wage income from these two occupations

are available. Making use of the above information available for the two sub-samples, the pooled estimate (based on four sub-samples) of the average annual income from 'manual labour' of the landless labour households is divided into average annual income from agricultural labour and non-agricultural labour. The total income of landless labour households from agricultural wage employment is obtained as a product of average income and estimated number of landless labour households. The proportion of this estimate of the total agricultural wages of the landless to the total wage bill in agriculture (compensation to employees in agriculture published by the CSO) for the year 1963-64 is worked out and applied to the estimate of total wage bill in agriculture and allied activities for the year 1961-62 in order to get the estimate of wage income of landless labourers for 1961-62.⁷ The estimate of agricultural wages of landless labourers for the year 1961-62 worked out as above is around Rs. 363.83 crores (see Table 3.6) which compares well with the estimate derived on the basis of 25th round which is Rs. 370.04 crores.

The final picture in regard to income of rural cultivators from agriculture and allied activities that has emerged is shown in Table 3.7

Estimates of agricultural income of rural cultivators (row 10 in Table 3.7) are further divided into two parts, viz., (i) income from self employment, and (ii)

Table 3.6: Estimate of Wage-Income of Landless Labour, 1961-62

Year	(Rs. crores)	
	Wage-income of landless labourers from agricultural occupations	Compensation to employees in agriculture
1963-64	448.05	2000.63
1961-62	363.83	1624.53

Sources: 1) GOI, NAS, CSO, October 1976 and February 1980.

2) NSS, Report No. 134

income from wages, in the following manner.

Wage income = ((Value added by rural agriculture and allied activities minus share of the non-cultivators in value added by livestock) $\times P_w$) minus wages paid to landless labourers.

Where P_w denotes the share of compensation to employees in agriculture and allied activities in the gross value added by this sector in each year. These proportions are worked out from NAS. The figures of income from self-employment are then calculated as the difference between total income of the rural cultivators from agriculture and allied activities and wage income. The estimates are presented in Tables 3.40 and 3.41.

3.2.2 Income from Agriculture and Allied Activities: Fractiles of Rural Cultivators

Earnings of rural cultivators in different fractile groups from self-employment in agriculture have been

Table 3.7: Income of Rural Cultivators from Agriculture and Allied Activities: All India, 1961-62 and 1971-72.

	(Rs. crores)	
	1961-62	1971-72
1. Value added from agriculture (Total)	6,229.67	15,657.44
2. Value added from agriculture (Rural)	6,095.73	15,203.37
3. Value added from livestock (Total)	695.06	1,563.36
4. Value added from livestock (Rural)	648.56	1,416.87
5. Value added from operation of government irrigation system (Total)	41.51	158.54
6. Value added from government irrigation system (Rural)	31.33	118.90
7. Value added from agriculture and allied activities (Rural) (Row 2 + 4 + 6)	6,775.62	16,739.14
8. Earnings of the non-cultivators from livestock	71.49	176.78
9. Wages paid to landless labourers	370.04	912.01
10. Income of the rural cultivators from agriculture and allied activities (Row 7 - (8+9))	6,334.09	15,650.35

Sources: 1) GOI, NAS, March 1975 and February 1980.

2) RBI, AIRDIS: 1961-62, RBI Bulletin (December 1965).

3) Tables 3.3 and 3.4

estimated using fractile distributions of gross value of produce from agriculture and livestock worked out from the unpublished data from RBI's AIRDIS, 1961-62 and AIDIS, 1971-72.⁸ Likewise, wage earnings by rural cultivators from agriculture are decomposed into fractile groups using the distribution of wages obtained from the same sources. Table 3.40 and 3.41 contain the results.

3.2.3 Income from Agriculture and Allied Activities: State-wise Estimates

State-wise estimates of income received by rural cultivator households from agriculture and allied activities are based on estimates of State Net Domestic Product (SNDP) in this sector.⁹ However, the procedure adopted for obtaining State-wise estimates of agricultural income of rural cultivators is slightly different from the method employed for all-India estimates. This is because all the requisite data are not available at the State level. The method used for computing State-level estimates is explained below.

Firstly, estimate of SNDP from this activity sector are apportioned to rural and urban sectors in proportion to the ratio of rural work-force to the total work-force engaged in this sector in that State.

Secondly, State-wise estimates of rural income from these activities obtained as above are adjusted to (i) non-cultivators' share in income from livestock, and (ii) wage-income earned by landless labourers from agricultural

occupations in each State in order to arrive at the estimates of income received by rural cultivators.

Estimates of income received by non-cultivators are derived using the State-wise data from AIRDIS, 1961-62 (RBI, December 1965) pertaining to the proportion of gross receipts from livestock of non-cultivators in the total gross receipts of all rural households from agriculture and livestock. These State-wise proportions observed in 1961-62 are assumed to hold good for 1971-72 as well, in the absence of relevant data for that year.

The State-level estimates of the agricultural wage income of landless labour are compiled using a method similar to the one used for getting the all-India estimates. The only difference is that the proxy of net value added at constant prices has been used for moving the estimates of man-days from 1970-71 to 1971-72 and 1961-62 instead of the gross value of output at constant prices as in the case of all-India estimates.

The state-wise estimates of income of the rural cultivators from agriculture and allied activities are furnished in Tables 3.8 and 3.9.

3.2.4 Income from Non-Agricultural Activities

Earnings of rural work-force from self-employment in unorganised non-agricultural activities and wage-income from employment in organised sector of these activities have been estimated for the following industry groups.¹¹

Table 3.8: Statewise Estimates of Income from Agriculture and Allied Activities of Rural Cultivators, 1961-62

(Rs. lakhs)						
State	SNDP from agriculture and allied activities (at current prices)	Ratio of rural work-force to total workforce	Rural SNDP from agriculture and allied activities	Non-cultivators' earnings from livestock production	Wages paid to landless labourers	Income of rural cultivators from agriculture and allied activities
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	613,73	0.9699	595,26	16,19	42,85	536,22 (1,311.05)
Assam	192,92	0.9962	192,19	4,38	7,62	180,19 (1,170.06)
Bihar	511,00	0.9881	504,92	5,91	19,73	479,28 (802.28)
Gujarat	350,23	0.9679	338,99	8,95	30,95	299,09 (1,561.01)
Jammu and Kashmir	56,89	0.9771	55,89	60	N.A.	54,99 (1,133.81)
Karnataka	439,81	0.9545	419,80	6,93	31,02	381,85 (1,544.08)
Kerala	224,52	0.9686	217,47	2,37	89	214,21 (1,063.08)
Madhya Pradesh	482,90	0.9846	475,46	5,70	14,01	455,75 (1,030.18)
Maharashtra	588,40	0.9659	568,34	9,77	48,21	510,36 (1,355.54)
Orissa	224,11	0.9920	222,32	3,67	3,71	214,94 (903.11)
Punjab	413,71	0.9733	402,66	22,39	23,40	356,87 (2,194.77)
Rajasthan	361,04	0.9798	353,75	5,84	1,50	346,41 (1,274.97)
Tamil Nadu	536,67	0.9522	511,02	11,70	59,16	440,16 (1,286.64)
Uttar Pradesh	1,111,37	0.9900	1,100,26	28,28	17,27	1,054,71 (1,089.69)
West Bengal	526,33	0.9902	521,17	9,48	43,34	468,35 (1,420.10)

N.B.: Figures in parentheses in Col.(7) refer to per household income of cultivators.

Sources: 1) GOI, Estimates of State Domestic Product, 1960-61 to 1983-84, CSO, November 1985.

2) Census of India 1961. General Economic Tables, B-IV Part C.

3) REI, AIRDIS: 1961-62, REI Bulletin, Vol.19 (December 1965).

Table 3.9: State-wise Estimates of Income from Agriculture and Allied Activities of Rural Cultivators, 1971-72

(Rs. lakhs)						
State	SNDP from agriculture and allied activities (at current prices)	Ratio of rural workforce to total workforce	Rural SNDP from agriculture and allied activities	Non-cultivators' earnings from live-stock production	Wages paid to landless labourers	Income of rural cultivators
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	1,500,22	0.9666	1,450,11	39,44	89,22	1,321,45 (3,206.62)
Assam	464,80	0.9879	459,18	10,47	12,09	436,62 (2,761.67)
Bihar	1,311,09	0.9783	1,282,64	15,01	61,95	1,205,68 (1,737.79)
Gujarat	1,005,47	0.9596	964,85	25,47	59,11	880,27 (3,645.01)
Haryana	606,06	0.9700	587,88	32,69	12,63	542,56 (8,544.25)
Jammu and Kashmir	134,56	0.9701	130,54	1,42	N.A.	129,12 (2,464.12)
Karnataka	934,26	0.9467	884,46	14,59	71,26	798,61 (2,785.52)
Kerala	544,45	0.9568	520,93	5,68	2,79	512,46 (2,193.75)
Madhya Pradesh	1,243,00	0.9831	1,221,99	14,66	30,44	1,176,89 (2,426.58)
Maharashtra	1,012,15	0.9582	969,84	16,68	94,04	859,12 (2,089.30)
Orissa	651,84	0.9833	640,95	15,19	13,98	611,78 (2,157.95)
Punjab	877,10	0.9610	842,89	46,86	53,75	742,28 (11,178.92)
Rajasthan	863,38	0.9730	840,07	13,86	3,07	823,14 (3,028.48)
Tamil Nadu	1,058,79	0.9371	992,19	22,72	113,18	856,29 (2,402.61)
Uttar Pradesh	2,527,58	0.9833	2,485,37	63,87	39,96	2,381,54 (2,232.83)
West Bengal	1,453,24	0.9773	1,420,11	25,85	137,43	1,256,83 (3,141.29)

N.B.: Figures in parentheses in Col.(7) refer to per household income of cultivators.

Sources: 1) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

2) Census of India 1971. General Economic Tables, B-IV Part A.

3) RBI, AIRDIS: 1961-62, RBI Bulletin, Vol. 19 (December 1965).

- (a) Income from self-employment
Fishing, Manufacturing (unregistered),
Transport, Trade, Construction, Other Services.
- (b) Income from wages and salaries¹²
Forestry and logging, Mining and Quarrying,
Manufacturing (registered), Construction,
Electricity, Gas and Water Supply, Railways,
Transport by other means, Communication,
Banking and Insurance, Real Estate, Public
Administration and Defence and other Services.

3.2.4.1 Income from Self-Employment: All India

Estimates of income from fishing and unregistered manufacturing are based upon CSO estimates of gross value added from these industry groups. For other industry groups, viz., transport by other means, trade, construction and other services estimates of net income from unorganised sector of these industry groups are available from official source (i.e. various issues of NAS). However, we have not used these estimates for the following reason.

These estimates of the CSO before 1974-75 are based on the old data culled from various NSS rounds with different reference years in sixties. In the year 1974-75, the NSS conducted a country-wide survey which was designed to enquire into some key aspects such as fixed and working capital, employment, value added, etc., of non-agricultural enterprises which are carried on by self-employed workers

and employers not employing more than five hired workers. This survey covered all the unorganized enterprises except in industry divisions 0 (i.e. agriculture, hunting and fishing) and 4 (i.e. electricity, gas and water supply) of National Industrial Classification - 1970. The survey results for the following industry groups are available from the Draft Report No. 280/6, 'Tables with Notes on Survey of Self-employed Households in Non-agricultural Enterprises - Detailed Results', 29th Round : 1974-75 (NSS, 1978: (i) Small scale manufacturing and repair service, (ii) Transport by other means, (iii) Trade, hotels and restaurants, (iv) Services and construction, and (v) Mining and Quarrying. The estimates of value added from unorganized sectors of these industry groups, except for unregistered manufacturing, have been revised by the CSO from 1974-75 onwards in the light of fresh data from the 29th round. It was, therefore, decided to compile independent estimates of income from self-employment in unorganized sectors of transport by other means, trade and hotels, construction and other services for the years 1961-62 and 1971-72, using the data from the 29th round of the NSS.

The procedure adopted for estimating income of rural cultivator households from the above-mentioned activities is outlined below. First, rural incomes are estimated; second, cultivators' incomes are separated therefrom using

unpublished data from the RBI surveys on the proportion of receipts of cultivator households to total receipts from these activities. The methods of estimating income of rural households from these activities have been summarised in Table 3.10.

3.2.4.2 Wage-income from Employment in Organized Sector of Non-agricultural Activities

The estimates of wage-income of rural households from employment in organized sector of non-agricultural activities are based on estimates of compensation to employees from the statement 'Factor Incomes by Industry of Origin' from NAS (CSO, February 1980 and October 1986).

Procedure

The estimates of compensation to rural employees in the industry groups mentioned in sub-section 3.2.4 (C_{ir}) are obtained by decomposing CSO's estimate of compensation to employees (C_{it}) into rural and urban in these industry groups in the respective years using following index.

$$C_{ir} = C_{it} \times \frac{\frac{(E_{ir})}{(E_{it})}}{\frac{(E_{ir})}{(E_{it})} + \frac{(V_{iu} \times E_{iu})}{(V_{ir} \times E_{it})}} \dots (3.6)$$

where E_{ir}, E_{iu} and E_{it} stand for the number of rural, urban and total employees in the ith industry group, respectively, V_{iu} and V_{ir} are as defined on page 41.

Data Sources and Assumptions

The proportions of employees are worked out from the censuses of the respective years. For all industry groups

Table 3.10: Rural Income from Self-employment in Fishing, Unregistered Manufacturing, Construction, Transport by other means, Trade and Hotels and Other Services:- All India: Methodology and Data Sources.

Industry Group and Table Number containing results (1)	Procedure (2)	Data Sources and Data Adjustments (3)
1. <u>Fishing (F)</u> (Table 3.11)	Rural income from fishing (Y_{Fr}) for each year is estimated by decomposing CSO's estimate of gross value added from fishing (Y_{Ft}) as follows: $Y_{Fr} = Y_{Ft} \times \frac{\frac{(W_{Fr})}{(W_{Ft})}}{\frac{(W_{Fr})}{(W_{Ft})} + \left(\frac{V_{Fu}}{V_{Fr}} \times \frac{V_{Fu}}{W_{Fr}}\right)}$	1) Workforce proportions are computed from the censuses of respective years. 2) V_{Fu}/V_{Fr} is taken from the NAS (CSO, 1981). This ratio, which refers to the year 1970-71, is assumed to hold good for 1971-72 and 1961-62 as well.
Variables are as specified on page 41		
2. <u>Unregistered Manufacturing (UM)</u> (Table 3.12)	Rural income from this industry group (Y_{UMr}) has been obtained as follows $Y_{UMr} = Y_{UMt} \times S_{UMr}$	CSO has estimated S_{UMr} for the years 1960-61 and 1970-71. We have used these estimated proportions for 1961-62 and 1971-72 respectively.
Where S_{UMr} is the share of rural sector in net domestic product from unregistered manufacturing and Y_{UMt} represent total income from UM.		

Table 3.10 (Contd.)

(1)	(2)	(3)
-----	-----	-----

3. Construction, Transport by other Step I

means, Trade and Hotels

(Table 3.13)

See also Appendix

Table 3A.1

Table 3A.2

Table 3A.3

Estimates of rural income from these industry groups (Yir) for the year 1971-72 are worked out using an income approach, i.e.,

$$Yir = Vir \times Nir$$

Where Vir is per worker value added in rural unorganised sector of ith industry group and Nir represent number of workers in unorganised (rural) sector of ith industry group.

Step II

Yir for the year 1971-72 has been moved backward to 1961-62 with the index of net value added from unorganised sector in respective industry groups. This index is prepared using CSO estimates.

1) Vir are taken from 29th round of NSS. These estimates, which pertain to the year 1974-75, have been carried backward to 1971-72 with the help of index of wages of agricultural labourers.

2) Nir is obtained from the Population Census, 1971. So far as rural trading activity is concerned, most of it is assumed to be of unorganised nature and hence total number of rural workers engaged in trade are used while estimating income from trading.

In the case of construction and transport by other means, the share of organised activity is not very small. Hence, it has been assumed that Nir in unorganised sectors of these industry groups consists of family and single workers and a part of employees. The number of family and single workers are taken from the census while the number of employees in unorganised sector of these industry groups is estimated by applying the ratio of family to hired (principal) workers from

Table 3.10 (Contd.)

(1)	(2)	(3)
-----	-----	-----

the 29th round of NSS. As the census figure of workers pertain to principal workers, adjustment is made to take account of secondary workers by using the proportion of principal to secondary workers as obtained from the 29th round of NSS.

4. Other Services (O)
(Table 3.14)

See also Table 3A.4

Step I

Total income from unorganised sector of 'other services' (Y_{ot}) is obtained for the year 1974-75 in the following manner:

$$Y_{ot} = (V_{ot} \times W_{or}) + (V_{ou} \times W_{ou})$$

Variables are as specified on page 41

Step II

This estimate for 1974-75 is moved backward to 1971-72 and 1961-62 using the index of net value added from other services (unorganized sector) worked out from CSO.

Step III

Rural incomes for the two bench-mark years are obtained from estimated aggregate income for these years using following index

- 1) Workforce figures for 1974-75 have been obtained by extrapolating the number of workers (employers, single and family workers and employees in unorganised sector) from 1971 census using intercensal growth rate. In order to calculate growth rates, the number of workers from 1961 census has been adjusted to the changed definition of worker in 1971 census.
- 2) The ratio V_{ou}/V_{or} for 1971-72 and 1961-62 are derived from 29th round of the NSS and NSS Report No. 130, Tables with Notes on Professions and Liberal Arts, 18th Round: 1963-64 (NSS, 1968), respectively.

Table 3.10 (Contd.)

(1)	(2)	(3)
	$Y_{or} = Y_{ot} \times \frac{\frac{(W_{or})}{(W_{ot})}}{\frac{W_{or}}{W_{ot}} + \left(\frac{V_{ou}}{V_{or}} \times \frac{W_{ou}}{W_{ot}} \right)}$	
	Variables are specified on page 41	

Table 3.11: Income of Rural Households and Rural Cultivator Households from Fishing: All-India, 1961-62 and 1971-72

(Rs. crores)

Year	Ratio of rural to total workers	Ratio of per worker value added urban to rural	Rural share	Rural Income	Cultivators' Income
1961-62	0.8788	1.0317	0.8754	79.79	40.69
1971-72	0.7669	1.0317	0.7613	200.22	105.98

Sources: 1) Census of India, 1961 and 1971. General Economic Tables, B-IV.

2) GOI, NAS, CSO, October 1976, February 1980 and January 1981.

Table 3.12: Income from Unregistered Manufacturing of Rural Households and Rural Cultivator Households, All-India, 1961-62 and 1971-72

(Rs. crores)

	1961-62	1971-72
Total Income (GDP)	880	2,045.38
Rural Income	223.73 (0.2531)	575.57 (0.2814)
Cultivators' Income	113.59	304.65

N.B.: Figures in brackets denote rural share in GDP from the sector.

Sources: 1) GOI, NAS, CSO, October 1976 and February 1980.

2) GOI, Sources and Methods, CSO, April 1980.

Table 3.13: Income of Rural Households and Rural Cultivator Households from Self-employment in Transport by other means, Construction and Trade and Hotels: All-India, 1961-62 and 1971-72.

(Rs. crores)

Years:	<u>1961-62</u>		<u>1971-72</u>	
Industry Group	Rural Income	Rural Cultivators' Income	Rural Income	Rural Cultivators' Income
Transport by other means	9.09	6.64	47.82	31.45
Construction	16.52	9.91	55.49	29.37
Trade and Hotels	177.24	90.39	549.68	290.95

Sources: 1) Tables 3A.1 and 3A.2 and 3A3.

2) RBI, AIRDIS : 1961-62 and AIDIS : 1971-72 (unpublished data).

3) COI, NAS, CSO, February 1980 and January 1981.

Table 3.14: Income of Rural Households and Rural Cultivator Households from Unorganized Sector of 'Other Services': All India, 1961-62 and 1971-72.

	Total income (Rs. crores)	Proportion of rural to total workers	Ratio of per worker value added urban to rural	Rural share in total income	Rural income (Rs. crores)	Rural cultivators' income (Rs. crores)
1974-75	662.81	-	-	-	-	-
1971-72	501.39	0.5843	2.8228	0.3324	166.66	88.21
1961-62	370.88	0.7407	3.6300	0.4404	163.34	98.00

Sources: 1) Table 3A.4.

2) GOI, NSS, 29th Round: Draft Report No. 280/6.

3) GOI, NAS, CSO, February 1980 and January 1981.

4) Census of India 1961. General Economic Tables, B-IV Part B.

5) Census of India 1971. General Economic Tables, B-IV Part D.

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other than construction, transport by other means and other services, the ratios of urban to rural per worker value added are taken from NAS (CSO, January 1981). These ratios which are estimated by the CSO for the year 1970-71 are assumed to hold good for the subsequent year (i.e. 1971-72) as well as for 1961-62.

For Construction, Transport by other means and other services industry groups, the per worker value added in rural and urban organised sectors are worked out with the help of following equations.

$$VA_1(u) = VA_1(uN) \times \frac{W_1(uM)}{W_1(uT)} + VA_1(uR) \times \frac{W_1(uR)}{W_1(uT)} \quad \dots (3.7)$$

$$VA_1(r) = VA_1(rN) \times \frac{W_1(rN)}{W_1(rT)} + VA_1(rR) \times \frac{W_1(rR)}{W_1(rT)} \quad \dots (3.8)$$

where, $VA_1(u)$ and $VA_1(r)$ represent per worker value added in urban and rural sectors of the i th industry group, $VA_1(uN)$, $VA_1(uR)$ and $VA_1(rN)$, $VA_1(rR)$ are the urban and rural per worker value added in unorganized and organized sectors of the i th industry group, $W_1(uN)$, $W_1(uR)$ and $W_1(rN)$, $W_1(rR)$ are the urban and rural work-force engaged in unorganized and organized sectors and $W_1(uT)$ and $W_1(rT)$ represent the total number of workers in urban and rural areas of the i th industry group.

Equations (3.7) and (3.8) are solved for per worker value added in urban and rural organized sectors, i.e. $VA_1(uR)$ and $VA_1(rR)$, for each industry group. For solving

these equations, information on other terms is taken from the following sources. Estimates of value added per worker (total) and value added per worker (unorganized) in rural and urban sectors of each industry group are taken from the NAS (CSO, January 1981) and the 29th round of the NSS respectively. The estimates from the NAS relate to the year 1970-71 whereas the NSS estimates are for the year 1974-75. Hence the NSS estimates are carried backward to the year 1970-71. Of these, the value added per worker in rural areas are moved backward with the help of the index of wages of agricultural labour and value added per urban worker by using the consumer price index of urban non-manual employees.

The industry group-wise proportions of work-force engaged in unorganized and organized sectors in rural area are worked out utilizing the estimates of work-force engaged in unorganized sectors of these industry groups prepared for estimating income from self-employment in these industries.

While the estimates of the value added per worker in organized sectors of these activities are presented in ^{Tables} Table 3.15, 3.16 and 3.17 exhibit wage income of rural cultivators from employment in organized non-agricultural activities.

3.2.5 Income from Non-agricultural Activities: Fractiles of Rural Cultivators

The fractile group-wise estimates of income from self-employment in non-agricultural activities for 1961-62

Table 3.15: Estimates of Value Added Per Worker in Organized Sectors of Construction, Transport by Other Means and Other Services: All India, 1970-71.

Industry group	Proportion of workers in unorganized sector	Value added per worker (Rs.)			
		Total 1970-71	Unorganized 1974-75	Organized 1970-71	Organized 1970-71
(1)	(2)	(3)	(4)	(5)	(6)
Construction	R 0.4693	6,253	1,363	994	10,903
	U 0.5170	9,046	2,198	1,416	17,213
Transport by Other Means	R 0.2942	1,951	2,351	1,714	2,048
	U 0.3366	3,478	3,578	2,306	4,082
Other Services	R 0.4136	1,164	1,060	773	1,237
	U 0.3150	2,079	2,330	1,501	1,964

R = Rural. U = Urban.

Sources: 1) GOI, NSS, 29th Round: Draft Report No. 280/6.

2) GOI, NAS, CSO, January 1981.

3) Census of India 1961. General Economic Tables, B-IV Part B.

4) Census of India 1971. General Economic Tables, B-IV Part D.

5) Census of India 1971. Series I. Miscellaneous Studies. Paper 1 of 1974.

**Table 3.16: Wage Income of Rural Cultivator Households from Organized Sector:
All India, 1961-62**

Industry group (1)	Proportion of rural employees to total employees (2)	Ratio of value added per worker - urban to rural (3)	Compensation to employees (Total) (Rs. crores) (4)	Compensation to rural employees (Rs. crores) (5)	Wage income of rural cultivators (6)
Forestry and logging	0.8995	1.0320	41.74 (0.8966)	37.42	22.45
Mining and quarrying	0.7544	1.2433	96.01 (0.7119)	68.34	40.40
Manufacturing registered	0.2611	1.1008	628.93 (0.2430)	152.83	91.70
Construction	0.5491	1.5787	390.56 (0.4355)	170.09	102.05
Electricity, gas and water supply	0.2758	1.0058	30.81 (0.4986)	15.36	9.22
Railways	0.3095	1.0936	168.42 (0.2907)	48.96	29.38
Transport by other means	0.2578	1.9932	121.85 (0.1484)	18.08	10.85
Communications	0.3407	1.0885	49.53 (0.3219)	15.94	9.56
Banking and Insurance	0.1389	1.0876	97.54 (0.1292)	12.60	7.56
Real estate	0.0991	2.6643	17.52 (0.0396)	0.69	0.41
Public administration and defence	0.3745	1.0971	593.34 (0.3531)	209.51	125.71
Other services	0.4831	1.5877	475.18 (0.3705)	176.05	105.61
Total			2711.43	925.85	554.90

N.B.: Figures in the parantheses of Col. (4) are the rural shares in total compensation to employees.

Sources: 1) Census of India 1961. General Economic Tables, B-IV, Part B.

2) GOI, NAS, October 1976 and January 1981.

Table 3.17: Wage Income of Rural Cultivator Households from Organized Sector: All India, 1971-72.

Industry group	Proportion of rural employees to total employees	Ratio of value added per worker - urban to rural	Compensation to employees (Total) (Rs. crores)	Compensation to rural employees (Rs. crores)	Wage income of rural cultivators (Rs. crores)
(1)	(2)	(3)	(4)	(5)	(6)
Forestry and logging	0.8244	1.0320	108.91 (0.8198)	89.28	47.26
Mining and quarrying	0.6221	1.2433	173.16 (0.5697)	98.65	52.21
Manufacturing registered	0.2551	1.1008	1986.66 (0.2373)	471.43	249.53
Construction	0.5188	1.5787	1558.29 (0.4058)	632.35	334.70
Electricity, gas and water supply	0.4008	1.0058	145.52 (0.3994)	58.12	30.76
Railways	0.2821	1.0936	379.48 (0.2644)	100.33	53.10
Transport by other means	0.2716	1.9932	567.22 (0.1576)	89.39	47.31
Communication	0.3775	1.0885	158.29 (0.3578)	56.64	29.98
Banking and Insurance	0.2059	1.0876	446.95 (0.1925)	86.04	45.54
Real estate	0.1707	2.6643	73.03 (0.0571)	4.17	2.21
Public administration and defence	0.4448	1.0971	1831.48 (0.3788)	693.76	367.21
Other services	0.4783	1.5877	1375.68 (0.3661)	503.64	266.58
Total			8804.67	2883.80	1526.39

N.B.: Figures in parantheses of Col. (4) are the rural shares in total compensation to employees.

Sources: 1) Census of India 1971. General Economic Tables, B-IV, Part D.

2) GOI, NAS, CSO, February 1980 and January 1981.

and 1971-72 are derived, using fractile group-wise distributions of receipts from these activities worked out from the unpublished data from RBI surveys (see Table A3.17). For estimating wage-income from employment in organized non-agricultural activities, the fractile group-wise distributions of wages and salaries computed from the same sources have been used. Tables 3.40 and 3.41 contain the estimates.

3.2.6 Income from Non-agricultural Activities: State-wise

The State-level estimates of income from non-agricultural activities of rural cultivator households are based on the industry-level estimates of State Net Domestic Product (CSO, November 1985).

As in the case of all-India estimates, rural incomes are first estimated and cultivators' share is separated therefrom using the information on the share of cultivators in total receipts from non-agricultural activities available in the RBI surveys. The procedures adopted and sources of data used in estimating income from self-employment and wage-income from non-agricultural activities are presented in Tables 3.18 and 3.19 respectively. Estimates of income of rural cultivators from self-employment and wage-income from non-agricultural activities are presented in Tables 3.20, 3.21, 3.22 and 3.23.

Table 3.18: State-wise Rural Income from Fishing, Unregistered Manufacturing, Construction, Transport by other means, Trade and Hotels and Other Services: Methodology and Data Sources.

Industry Group and Table Number containing results (1)	Procedure (2)	Data Sources and Data Adjustments (3)
1. <u>Fishing (F)</u> (Table 3A.5 and 3A.6)	<p>Estimates of income received by rural households (YFr) are derived by decomposing the estimate of SNDP from fishing (YFt) in each State into rural and urban in the following manner:</p> $YFr = YFt \times \frac{WFr}{WFt}$ <p>Variables are as specified on page 41.</p>	<p>Work-force proportions have been computed using the data from the Population Censuses in the respective years.</p>
2. <u>Unregistered Manufacturing (UM)</u> (Table 3A.7 and 3A.8)	<p><u>Step I</u></p> <p>For the year 1971-72, the official estimates of SNDP from unregistered manufacturing (YUM) are first decomposed into household (YH) and non-household (YNH) components using the following index.</p> $Y_H = Y_{UM} \times \frac{\frac{(W_H)}{(W_{UM})}}{\frac{(W_H)}{(W_{UM})} + \frac{(V_{NH})}{(V_H)}} \times \frac{W_{NH}}{W_{UM}}$ <p>Where W_H, W_{NH} and W_{UM} represent the number of workers in household manufacturing, non-household</p>	<p>1) For each state, W_H are taken from the Population Census, 1971 while W_{NH} are derived as the balance between the number in non-household manufacturing from the Census and the number of persons employed in registered manufacturing as obtained from the Annual Survey of Industries .</p> <p>2) V_H is taken from the 29th round of the NSS. V_{NH} are obtained from the <u>All-India Report on the Census of Small Scale Industrial Units (1972)</u>, published by the</p>

Table 3.18 (Contd.)

(1)	(2)	(3)
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manufacturing (unregistered) and unregistered manufacturing (total) respectively. V_{NH} and V_H are per worker value added in non-household (unregistered) and household manufacturing respectively

Y_{NH} is estimated as the balance between Y_{UM} and Y_H

Step II

Rural incomes are estimated by separating Y_H and Y_{NH} between rural and urban sector using the following equation:

$$Y_{Hr} = Y_H \times \frac{\frac{(W_{Hr})}{(W_{Ht})}}{\frac{(W_{Hr})}{(W_{Ht})} + \frac{(V_{Hu})}{(V_{Hr})} \frac{W_{Hu}}{W_{Ht}}}$$

Similar index is computed for Y_{NH}
Variables as specified on page 41.

Step III

Sum of Y_{Hr} and Y_{NHr} for each state for the year 1971-72 is moved backward to 1961-62 with the help of the index of SNDP from unregistered manufacturing which is prepared using CSO estimates.

Development Commissioner, Small Scale Industrial Units (DCSSI) in 1977. As the Census results pertain to 1972, the value added per worker from this source have been extrapolated to 1974 with the help of an index of factory workers earning upto Rs.400 per month. State-wise V_{NH}/V_H for the year 1974-75 are assumed to hold good for 1971-72 as well.

3) Work-force ratios in household manufacturing are computed from the Census of India, 1971. For calculating these ratios for non-household (unregistered) manufacturing, the total work-force in this sector is bifurcated into rural and urban with the help of employment ratios derived from Establishment Tables of 1971 Population Census.

4) The ratios of per worker value added in urban and rural sectors in household manufacturing are derived from the 29th round of the NSS. In the absence of information on V_{NHr} and V_{NHu} , the ratios worked out from the NSS are assumed to hold good for non-household unregistered manufacturing units.

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Table 3.18 (Contd.)

(1)	(2)	(3)
<p>3. <u>Construction, Transport by other means</u> <u>Trade and hotels</u> 13 <u>and other services</u> (Table 3A.9 to 3A.16)</p>	<p>Rural income from these industry (Yir) for the two bench-mark years have been estimated by segregating SNDP from the respective industry groups (Yit) as given below:</p> $Yir = Yit \times \frac{\frac{(Wir)}{(Wit)}}{\frac{(Wir)}{(Wit)} \times \frac{(Viu)}{(Vir)} \times \frac{Wiu}{Wit}}$ <p>Variables are as specified on page 41.</p>	<p>1) Data on total work-force engaged in these industries have been taken from Population Census for the respective years.</p> <p>2) For the year 1971-72, the ratios Vir/Viu are worked out from the 29th round of the NSS. The estimates of Vir and Viu have been carried backward to 1961-62 with the help of the index of wages of agricultural labourers and the index of urban non-manual employees respectively.</p>

Table 3.19: State-wise Wage-income of Rural Households from Organised Non-agricultural Activities: Methodology and Data Sources

Industry Group and Table Number containing results (1)	Procedure (2)	Data Sources and Data Adjustments (3)
<p>1. <u>Forestry and logging, Mining and Quarrying, Electricity, gas and water supply, Railways, Communications, Banking and Insurance and Public Administration</u> (Table 3.22 and 3.23)</p>	<p>For each State, estimates of wage-incomes of the rural households from ith industry group (Cir) have been computed as</p> $Cir = SNDP \times Si,$ <p>where, Si is the ratio of compensation to employees to Net Domestic Product in ith industry group observed at all-India level</p>	<p>The assumption is that the factor share of labourers in SNDP is same for all states</p>
<p>2. <u>Registered Manufacturing (M)</u> Table 3.22 and 3.23</p>	<p><u>Step I</u></p> <p>For estimating compensation to employees the percentage distribution of wages and salaries worked out from the Annual Survey of Industries for the years 1961-62 and 1971-72 have been used. To obtain estimates of different states the ratios so obtained are applied to the all-India estimates of compensation to employees in this industry group</p> <p><u>Step II</u></p> <p>Rural share is separated from the above estimates as:</p>	<p>Kmr for 1971-72 is computed by dividing Emt into rural and urban sectors using the Employment ratios derived from Establishment Tables of 1971 Population Census. In the absence of similar information for 1961-62, 1971-72 ratios are assumed to hold good for 1961-62 as well.</p>

Table 3.19: (Contd.)

(1)	(2)	(3)
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$$C_{mr} = C_{mt} \times \frac{E_{mr}}{E_{mt}}$$

where, E_{mr} and E_{mt} refer to employees in registered manufacturing in rural sector and total employees

Table 3.20: State-wise Estimates of Income of Rural Cultivator Households from Self-employment in Non-agricultural Activities, 1961-62

State	(Rs. lakhs)						Total	Average per Household (Rs.)
	Fishing	Unregis-tered Manu-facturing	Transport by other means	Construc-tion	Trade and hotels	Other services		
Andhra Pradesh	5,33	12,10	2,43	10,19	15,49	15,06	60,60	148.17
Assam	-	-	-	-	-	-	-	-
Bihar	7,64	10,77	5,86	3,64	26,81	41,34	96,06	160.80
Gujarat	70	1,64	1,52	7,39	5,74	8,64	25,63	133.77
Jammu and Kashmir	8	1,46	4	1,31	1,05	1,65	5,59	115.26
Karnataka	67	5,09	98	7,74	9,02	7,41	30,91	124.99
Kerala	2,00	14,60	6,93	6,83	18,76	21,18	70,30	248.88
Madhya Pradesh	29	6,19	1,15	14,53	5,00	10,55	37,71	85.24
Maharashtra	2,08	4,11	4,08	10,09	4,34	11,04	35,74	94.93
Orissa	1,72	6,54	54	5,71	6,95	19,05	40,51	170.21
Punjab	3	4,10	64	3,64	2,90	4,70	16,01	98.46
Rajasthan	8	11,40	2,04	9,40	23,16	13,44	59,52	219.07
Tamil Nadu	3,97	6,92	1,77	3,66	10,57	17,28	44,17	129.11
Uttar Pradesh	54	16,13	11,56	24,44	42,30	38,92	133,89	138.33
West Bengal	11,79	8,26	4,43	6,11	26,57	24,46	81,62	247.48

Sources: 1) Tables 3A.5, 3A.8, 3A.9, 3A.11, 3A.13, 3A.15.

2) GOI, Estimates of State Domestic Product, CSO, November, 1985.

3) RBI, AIDRIS 1961-62 and AIDIS 1971-72 (unpublished data).

Table 3.20: State-wise Estimates of Income of Rural Cultivator Households from Self-employment in Non-agricultural Activities, 1961-62

State	(Rs. lakhs)						Total	Average per Household (Rs.)
	Fishing	Unregis-tered Manu-facturing	Transport by other means	Construc-tion	Trade and hotels	Other services		
Andhra Pradesh	5,33	12,10	2,43	10,19	15,49	15,06	60,60	148.17
Assam	-	-	-	-	-	-	-	-
Bihar	7,64	10,77	5,86	3,64	26,81	41,34	96,06	160.80
Gujarat	70	1,64	1,52	7,39	5,74	8,64	25,63	133.77
Jammu and Kashmir	8	1,46	4	1,31	1,05	1,65	5,59	115.26
Karnataka	67	5,09	98	7,74	9,02	7,41	30,91	124.99
Kerala	2,00	14,60	6,93	6,83	18,76	21,18	70,30	248.88
Madhya Pradesh	29	6,19	1,15	14,53	5,00	10,55	37,71	85.24
Maharashtra	2,08	4,11	4,08	10,09	4,34	11,04	35,74	94.93
Orissa	1,72	6,54	54	5,71	6,95	19,05	40,51	170.21
Punjab	3	4,10	64	3,64	2,90	4,70	16,01	98.46
Rajasthan	8	11,40	2,04	9,40	23,16	13,44	59,52	219.07
Tamil Nadu	3,97	6,92	1,77	3,66	10,57	17,28	44,17	129.11
Uttar Pradesh	54	16,13	11,56	24,44	42,30	38,92	133,89	138.33
West Bengal	11,79	8,26	4,43	6,11	26,57	24,46	81,62	247.48

Sources: 1) Tables 3A.5, 3A.8, 3A.9, 3A.11, 3A.13, 3A.15.

2) GOI, Estimates of State Domestic Product, CSO, November, 1985.

3) RBI, AIDRIS 1961-62 and AIDIS 1971-72 (unpublished data).

Table 3.21: State-wise Estimates of Income of Rural Cultivator Households from Self-employment in Non-agricultural Activities, 1971-72.

State	Industry Group:					Total	Average per Household (Rs.)
	Fishing	Unregistered Manufacturing	Transport by other means	Construction	Other services		
Andhra Pradesh	9,63	37,38	3,01	13,95	23,73	87,70	212.81
Assam	10,14	31,95	1,42	15,82	13,57	72,90	461.10
Bihar	9,03	63,57	12,07	44,51	31,55	160,73	231.67
Gujarat	3,14	9,72	3,37	8,00	11,96	36,94	152.96
Haryana	4	2,51	1,54	6,48	5,67	16,24	255.75
Jammu and Kashmir	1,01	10,27	1,93	15,32	6,08	34,61	660.50
Karnataka	3,59	34,41	4,50	18,02	14,72	75,24	262.43
Kerala	17,96	124,90	28,03	25,86	74,86	253,65	1085.83
Madhya Pradesh	2,55	49,07	2,70	32,02	20,63	106,97	220.56
Maharashtra	6,44	33,35	13,65	21,49	22,33	97,26	236.53
Orissa	4,32	23,42	1,44	9,49	18,29	56,96	148.53
Punjab	4	5,86	1,15	6,09	4,29	17,43	262.50
Rajasthan	78	22,95	1,90	18,48	24,44	68,55	252.21
Tamil Nadu	9,42	65,93	8,30	35,21	9,66	128,52	360.61
Uttar Pradesh	2,58	62,19	9,76	79,12	42,26	195.91	183.68
West Bengal	27,97	91,22	7,12	16,87	28,01	171,19	427.87

Sources: 1) Tables 3A.6, 3A.8, 3A.10, 3A.12, 3A.14, 3A.16.

2) RBI, AIRDIS: 1961-62 and AIDIS: 1971-72 (unpublished data).

Table 3.22: State-wise Estimates of Wage-income of Rural Households and Rural Cultivator Households from Organised Sector of Non-Agricultural Activities, 1961-62

State	Industry Group: Income of the Rural Households								(Rs. lakhs)		
	Forestry and logging	Mining and Quarrying	Manufacturing (registered)	Electricity, gas and water supply	Railways	Communication	Banking & Insurance	Public Administration	Total	Income of the Rural Cultivator Households	Total Average per Household (Rs.)
Andhra Pradesh	1.62	2.80	9.58	61	3.08	94	60	13.44	32.67	16.99	41.54
Assam	-	-	-	-	-	-	-	-	-	-	-
Bihar	1.73	25.01	17.52	39	15.23	1.19	21	18.24	79.47	51.66	86.47
Gujarat	1.01	98	13.82	69	3.92	72	78	4.22	26.14	12.02	62.73
Jammu and Kashmir	1.48	6	38	30	-	6	2	2.08	4.38	3.68	55.26
Karnataka	3.92	2.22	3.28	49	94	64	41	5.06	16.96	9.33	37.73
Kerala	86	92	9.66	61	93	77	1.15	7.51	22.41	17.48	86.75
Madhya Pradesh	6.14	6.39	4.26	33	5.27	80	24	8.54	31.97	19.82	44.80
Maharashtra	4.74	1.68	26.08	64	4.87	1.76	1.71	11.57	53.05	26.52	70.44
Orissa	2.07	3.76	1.84	17	1.27	27	12	6.42	15.92	9.39	39.45
Punjab	25	32	6.00	13	1.48	1.03	43	6.43	16.07	4.66	28.61
Rajasthan	88	2.50	1.98	4	2.07	42	30	8.34	16.53	12.07	44.42
Tamil Nadu	63	1.50	9.31	1.77	1.48	1.41	78	13.04	29.92	14.06	41.10
Uttar Pradesh	4.21	1.53	13.50	89	6.73	1.93	1.09	17.77	47.65	31.93	32.99
West Bengal	86	18.13	75.32	64	6.06	1.75	100	9.74	113.50	60.15	182.39

Sources: 1) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

2) GOI, Annual Survey of Industries, 1961-62, Vol. I.

3) Table 3.16.

Table 3.23: State-wise Estimates of Wage-income of Rural Households and Rural Cultivator Households from Organised Sector of Non-Agricultural Activities, 1971-72.

State	Industry Group: Income of the Rural Households								Income of the Rural Cultivator Households		
	Fores- try and logg- ing	Mining and Quarry- ing	Manufac- turing (regis- tered)	Electri- city, gas and water supply	Rail- ways	Communi- cation	Bank- ing & Insu- rance	Public Admin- istrea- tion	Total Rural	Total	Average per Hou- sehold (Rs.)
Andhra Pradesh	2,51	3,92	38,63	5,01	8,96	3,63	2,63	32,00	97,29	42,81	103.88
Assam	1,55	6,15	16,81	44	3,25	1,70	80	13,99	44,69	27,26	172.42
Biher	5,57	24,65	45,19	4,15	24,31	3,00	1,62	40,46	148,95	101,29	146.10
Gujarat	2,00	6,52	31,53	2,64	7,05	3,59	3,84	13,55	70,72	24,75	102.48
Haryana	41	65	18,75	2,17	2,21	1,68	76	14,91	41,54	8,72	137.32
Jammu and Kashmir	3,51	14	14	26	2	54	39	9,86	14,86	13,37	255.15
Kernataka	5,12	2,84	15,68	3,64	1,61	2,76	2,03	14,99	48,67	20,93	73.00
Kerala	2,60	58	34,77	1,09	1,95	4,45	4,76	26,03	76,23	66,32	283.90
Madhya Pradesh	19,51	12,46	20,16	1,73	10,70	1,72	2,53	19,00	87,81	58,83	121.30
Maharashtra	7,55	3,15	77,14	9,82	5,87	7,58	9,21	39,21	159,53	73,38	178.45
Orissa	2,76	7,98	16,61	1,35	5,28	1,29	1,27	24,34	60,88	40,18	104.77
Punjab	63	16	7,74	2,14	1,80	1,78	2,79	20,14	37,18	4,09	61.60
Rajasthan	64	6,35	6,68	1,26	5,90	1,88	1,75	19,52	43,98	26,39	97.09
Tamil Nadu	1,34	5,39	56,51	6,62	4,82	5,51	4,33	37,30	121,82	77,96	218.74
Utter Pre- desh	16,63	3,60	63,08	5,51	11,37	5,96	3,02	62,30	171,47	94,31	88.42
West Bengal	1,85	21,61	78,39	5,04	11,50	4,82	3,56	40,13	166,90	85,12	212.75

Sources: 1) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

2) GOI, Annual Survey of Industries, 1971-72, Vol. I.

3) Table 3.17.

3.3 FINANCIAL SOURCES : DATA SOURCES AND METHODS OF ESTIMATION

As presented in Table 3.1, financial sources of funds, i.e. net change in borrowings (borrowings less repayments), of the rural cultivators have been estimated under two broad heads, viz., institutional and non-institutional. The former includes co-operatives, commercial banks and government while the latter mainly comprises moneylenders, traders and commission agents and relatives. Some of the moneylenders may belong to cultivator households while others may belong to non-cultivators and thus the non-institutional agencies are further divided into these two groups. As mentioned in the previous chapter, such classification has not been attempted at the fractile group level since requisite data are not available. Moreover, repayments to institutional and non-institutional agencies could not be estimated for the fractile groups. Hence, the figures given pertain to gross borrowings by the fractile groups from these agencies. Similarly, due to certain data problems, which will be discussed later, repayments to all classes of non-institutional agencies could not be derived at the State-level. Thus, the State-wise figures of borrowings from non-institutional agencies are in gross terms. The sources of data are dealt with and methods of estimation explained in the following sections.

3.3.1 Net Change in Borrowings : All-India

The procedure and data sources used for estimation of

net change in borrowings by rural cultivator households have been summarised in Table 3.24 and explained in the subsequent sections.

3.3.1.1 Method of Segregating borrowings from non-institutional agencies between Cultivator Moneylenders and Non-cultivator Moneylenders

In the RBI survey reports, borrowings of rural cultivator households from non-institutional credit agencies are classified under the following credit agencies. (1) Landlords, (2) Agricultural Moneylenders, (AML) (3) Professional Moneylenders, (PML) (4) Traders and Commission Agents, (5) Relatives, and (6) Others. This classification is based on the criterion of the main occupation of the moneylenders. For example, moneylenders whose major source of income is agriculture are termed as 'AML' whereas those moneylenders for whom moneylending forms the main source of income are classified under the head 'PML'. The category 'Traders and Commission Agents', as the name implies, includes moneylenders whose main occupation is trading. The category 'Landlords' includes all loans from landlords to the tenants while all interest-free loans from either of the non-institutional agencies are clubbed under 'Relatives'. The last class, termed 'Others', is a residual class and comprises all borrowings for which the credit agency is not specified by the respondents.

Out of the non-institutional credit agencies mentioned above, Landlords and AML can be unambiguously classified as

**Table 3.24: Net Change in Borrowings of Rural Cultivator Households,
All-India : Data Sources and Procedures.**

Credit Agency and Table Number containing the estimates	Borrowings	Repayments
<u>Institutional</u>		
1. Co-operative Credit Societies (Table 3.25)	Loans advanced by Primary Agricultural Credit Societies (PACS) and Primary Land Development Banks (PLDB) during the reference years published in Statistical Statements Relating to Co-operative Movement in India are taken as borrowings of rural cultivators from these agencies	Loans recovered by PACS and PLDB during the reference years provided in Statistical Statements Relating to Co-operative Movement in India are taken as repayments by rural cultivators to these agencies.
2. Government (Table 3.25)	Credit Flows from Government to agriculture i.e. borrowings by the cultivators from Government are obtained from RBI's Reports on Currency and Finance	The RBI survey reports provide estimates of total repayments by rural cultivator households in the reference years. However, the credit agency-wise break-up is not available. An attempt is, therefore, made to prepare such estimates. The method used is explained in Section 3.3.1.2.
3. Commercial Banks (Table 3.25)	Borrowings of rural cultivators from commercial banks have been derived from the RBI's AIRDIS, 1961-62 and AIDIS, 1971-72	
<u>Non-institutional</u> (Table 3.25)		
5. Cultivator Money-lenders	The RBI surveys provide information on borrowings by the cultivator households from moneylenders, relatives, traders and commission agents. We have segregated these estimates into two parts, viz., Cultivator Moneylenders and Non-cultivator Moneylenders. The method is explained in Section 3.3.1.1.	
6. Non-Cultivator Moneylenders		

cultivator moneylenders. So far as traders and commission agents are concerned, almost all the loans from them are assumed to originate from urban areas since the place of business of most of the traders is located in urban areas. The remaining credit agencies, i.e., PML and relatives may belong to either class of rural households, i.e. cultivators or non-cultivators. Some of the PML may even be from the urban areas. However, the information on the place of business of moneylenders and the class to which the moneylenders belong (i.e. cultivator or non-cultivator) is not available from the RBI surveys. The only data (unpublished) that are available are on the cash loans advanced by cultivator and non-cultivator households to cultivators and non-cultivators (at all-India level) for the two reference years. The loan transactions of cultivator and non-cultivator PML and relatives (LNC) are separated, using these unpublished data in the following manner.

$$(1) \quad L_{NCi} = L_i \times P_i,$$

where, L_i represent loans advanced by AML, PML, Landlords and relatives in the i th year and P_i is the ratio of loans by non-cultivators advanced to cultivators to total loans advanced to cultivators, (i.e., cultivators and non-cultivators taken together in i th year).

(2) Loans by cultivator PML and relatives are then obtained as the difference between total loans

advanced by PML and relatives and LNC (in the respective years).

3.3.1.2 Procedure for Estimating Credit Agency-wise Repayments

- (1) For obtaining credit agency-wise break-up of total repayments of cultivator households (R), the amount repaid to co-operative credit societies (R_0) in each year are first obtained in the following manner.

$$R_0 = (O_0 + B_0) \times S_0 \quad \dots \quad (3.9)$$

where O_0 and B_0 stand for the survey estimates of outstandings to co-operative credit societies at the beginning of the reference year and amount borrowed during the reference year from these agencies respectively, S_0 is the ratio of loans recovered to the sum of loans outstanding at the beginning of the reference years, i.e. 1961-62 and 1971-72, and loans advanced during these years by PACS worked out from Statistical Statements Relating to Co-operative Movement in India.

- (2) Repayments to remaining credit agencies (R_R) are then estimated as follows

$$R_R = R - R_0 \quad \dots \quad (3.10)$$

- (3) Credit agency-wise repayments are then obtained as

$$R_j = R_R \times \frac{(O_j + B_j)}{(O + B)} \quad \dots \quad (3.11)$$

where R_j represents repayments to jth credit agency,

O_j is outstandings at the beginning of the reference year to j th credit agency while B_j stand for borrowings during the reference year from j th credit agency. $O + B$ is the sum of outstanding to and borrowings from all other credit agencies except co-operative credit societies.

3.3.2 Fractile Group-wise Borrowings of Rural Cultivator Households from Institutional and Non-institutional Agencies:

The RBI surveys provide data on credit agency-wise borrowings of cultivator households in different asset-size classes. Lorenz curves are fitted to the asset group-wise distribution of loans from institutional and non-institutional agencies. Fractile distributions are obtained by reading the values from these curves, (see Table 3A.17). These fractile distributions are used to apportion the All-India figures of institutional and non-institutional borrowings in order to estimate borrowings of different fractile groups from those agencies. The estimates are presented in Tables 3.40 and 3.41.

3.3.3 Net change in Borrowings: State-wise:

The State-level estimates of net change in debt from co-operative credit agencies and borrowings from all other credit agencies are derived using the same data sources and procedures as those adopted for obtaining the all-India estimates (see Table 3.24 and Section 3.2.1.1).

Table 3.25: Net Borrowings from Credit Agencies from 'Outside' and 'Within' the Sector by Cultivator Households: All-India, 1961-62 and 1971-72.

Credit Agency	(Rs. crores)					
	Borrowings	1961-62 Recoveries from cultivators	Net change in borrowings	Borrowings	1971-72 Recoveries from cultivators	Net change in borrowings
(A) Outside Sector						
I. Institutional						
1. Government	45.00	22.07	22.93	93.00	39.83	53.17
2. Cooperative banks	240.89	200.58	40.31	713.90	525.59	188.31
3. Commercial banks	6.51	1.84	4.67	25.08	14.94	10.14
1+2+3	292.40	224.49	67.91	831.98	580.36	251.62
II. Non-institutional						
4. Traders	125.35	41.70	83.65	191.25	66.73	124.52
5. Non-cultivator Professional Moneylenders and Relatives	123.03	65.60	57.43	224.84	61.15	163.69
4 + 5	248.38	107.30	141.08	416.09	127.88	288.21
I + II	540.78	331.79	208.99	1248.07	708.24	539.83
(B) Within Sector						
6. Landlords	9.11	4.08	5.03	77.10	49.39	27.71
7. Agricultural Moneylenders	400.71	188.93	211.78	251.82	145.17	106.65
8. Cultivator Professional Moneylenders and Relatives	170.59	36.47	134.12	124.48	112.75	11.74
6 + 7 + 8	580.41	229.48	350.93	453.40	307.30	146.10
A + B	1121.19	561.27	559.92	1701.47	1015.54	685.93

N.B.: Loans from 'others' are merged into all other credit agencies pro-rata.

Sources: 1) RBI, AIRDIS: 1961-62, RBI Bulletin, Vol. 19, (September 1965).

2) RBI, AIDIS: 1971-72, 1978.

3) RBI, Statistical Statements Relating to Co-operative Movement in India 1961-62 and 1971-72.

For the year 1961-62, estimates of credit agency-wise repayments are computed using the procedure explained in Section 3.2.1.2 above. However, when a similar method is adopted for computing repayments to different credit agencies, the estimated repayments to co-operatives (R_c) exceeded the survey estimate of total repayments (R) in three states, viz., Gujarat, Maharashtra and Punjab. This indicates that repayments to rest of the credit agencies must have been negative! Because of these unacceptable results, we have to discard this method for estimating repayments for 1971-72. Nevertheless, repayments to traders and non-cultivator moneylenders have been estimated for the purpose of obtaining saving of cultivator households in the following manner. Repayments to traders are estimated using a method similar to the one adopted for all-India which is explained in sub-section 3.3.2.2. In the case of non-cultivator moneylenders, the ratio of repayments received to the loans advanced by the non-cultivator households observed at the all-India level is assumed to hold good for all the States in order to derive net change in debt from these moneylenders.

3.4 USES OF FUNDS

Uses of funds are estimated here under the following heads, viz., non-financial uses on current and capital accounts and financial uses. In the following table, we present items of uses of funds that are estimated.

Table 3.26: Uses of Funds of the Rural Cultivator Household Sector

I	<u>Non-Financial Uses (A+B)</u>
	A) <u>Current</u>
	1) Current consumption
	B) <u>Capital</u>¹⁴
	1) Investment in agriculture (farm business) ¹⁵
	ii) Investment in non-farm business
	iii) Investment in residential construction
	iv) Investment in durable household assets
II	<u>Financial Uses (A+B)</u>
	A) <u>Formal</u>
	1) Currency
	ii) Shares of and Deposits with Co-operative banks
	iii) Deposits with Commercial banks
	iv) Small Savings
	v) Insurance Premia
	vi) Provident Fund Contributions
	B) <u>Informal</u>
	Direct lendings
III	Total uses (I + II)

We now elaborate data sources and method adopted for estimating each of the items of non-financial uses on capital account and financial uses. As mentioned in the preceding chapter, current consumption is estimated as a residual.

3.5 NON-FINANCIAL USES

This section deals with the discussion of data sources and adjustments in data made while deriving the estimates of different types of physical investments by rural cultivators at all India and State levels, and for fractile groups.

3.5.1 Investment in Farm Business, Non-farm Business, Residential Construction and Durable Household Assets: All-India, Fractile Groups and States

The information collected by the RBI surveys, AIRDIS, 1961-62 and AIDIS, 1971-72, provide the basic source of data for obtaining investment in the above items. These reports provide detailed information on gross i.e. inclusive of cash and kind expenditure and imputed value of family labour and cash capital expenditures on these items at all-India, State and asset group level. In the present study, estimates of investments in different activities by the rural cultivator households are derived by making the following adjustments in the survey estimates.

Firstly, since the survey estimates of capital expenditures are inclusive of expenditure on repairs and replacements, a part of which are of current nature, it is

necessary to subtract current expenditure on repairs from the estimated capital expenditure in farm business.

This adjustment is done using the unpublished survey data on gross expenditure on repairs on individual items of farm business. Accepting the proportion adopted by the CSO (see CSO, April 1980, p.100), one third of the expenditure on repairs and replacements has been treated as current expenditure. The cash component of this estimate is worked out by applying the proportion between gross and cash capital expenditures revealed by the RBI surveys. It needs to be mentioned here that such information is available only at all-India level; hence, it was not possible to make similar adjustments in the case of the estimates of farm business investments for the States and fractile groups.

Secondly, as purchases and sales of various assets by individual units cancel out while aggregating for the sector, sales of land, livestock and other farm assets, residential houses and durable household assets are deducted from estimates of capital expenditures. The relevant data are taken from the unpublished information from the RBI surveys. This adjustment could not be made at the fractile group level due to non-availability of data.

The all-India estimates are presented in Table 3.27 while State-wise and fractile group-wise estimates are given in Tables 3.42, 3.43, 3.46 and 3.47.

Table 3.27: Gross and Cash Capital Expenditure in Farm Business, Non-Farm Business, Residential Construction and Durable Household Assets by Rural Cultivator Households: All India, 1961-62 and 1971-72.

Type of Assets	Years	Purchase of Assets		Current Expenditure on repairs		Sale of Assets	Capital Expenditure by rural cultivators		Cash Expenditure as a proportion of Gross Expenditure (10)
		Gross	Cash	Gross	Cash		Gross	Cash	
		(3)	(4)	(5)	(6)		(8)	(9)	
Farm Business	1961-62	702.10	626.00	44.99	40.11	254.61	402.50	331.28 (58.30)	0.82
	1971-72	1164.91	1038.96	69.28	61.95	378.53	717.10	598.48 (51.09)	0.83
Non-Farm Business	1961-62	32.48	31.40	-	-	4.00	28.48	27.40 (4.82)	0.96
	1971-72	95.02	90.62	-	-	8.30	86.72	82.32 (7.03)	0.95
Residential Plots and Construction	1961-62	242.17	190.60	-	-	5.09	237.08	185.51 (32.64)	0.78
	1971-72	437.17	363.18	-	-	7.03	430.14	356.15 (30.40)	0.83
Durable Household Assets	1961-62	40.81	40.70	-	-	16.60	24.21	24.10 (4.24)	0.99
	1971-72	135.09	134.95	-	-	0.43	134.66	134.52 (11.48)	0.99
Total	1961-62	1017.56	888.70	44.99	40.11	280.30	692.27	568.29 (100.00)	0.82
	1971-72	1832.19	1627.71	69.28	61.95	394.29	1368.62	1171.47 (100.00)	0.86

N.B.: Figures in parantheses in Col. (9) represent percenteges to total capital expenditure.

Sources: 1) RBI, AIRDIS: 1961-62, RBI Bulletin, Vol. 19 (June 1965) and (Unpublished data).

2) RBI, AIDIS: 1971-72, 1977.

3.6 FINANCIAL USES OF FUNDS (i.e. GROSS SAVING IN FINANCIAL ASSETS)

As indicated in Table 3.26, financial uses of funds of rural cultivators comprise acquisition of formal financial assets and direct lendings. In this section, sources of data and procedures for obtaining estimates of financial uses of funds at all-India and State levels and fractile group are discussed.

3.6.1 Gross Saving in Formal Financial Assets: All-India

An attempt is made here to estimate the financial saving of rural cultivator households in the form of currency holdings, insurance premia, provident fund, small savings, deposits in commercial banks and shares of and deposits in co-operative banks using the information from the household surveys and official sources like the annual reports of the Life Insurance Corporation, RBI's reports on Currency and Finance, Basic Statistical Returns and Statistical Statements Relating to Co-operative Movement in India. In the case of each category, different set of assumptions are employed in the process of estimation. We now elaborate the method of estimating each of these items.

(1) Change in currency holdings

The All-India Rural Household Saving Survey (AIRHSS) conducted by the National Council of Applied Economic Research (NCAER) for the year 1961-62 provides the only

basis for deriving estimates of change in currency holdings of the rural cultivator households. According to this survey report, rural households are expected to hold roughly one third of the total currency holdings of the entire household sector (NCAER, 1965, p.84). Doubts could be raised about the basis of this observation and credibility of this estimate. However, in the absence of any better source, we have used this estimated proportion (i.e. one third) in order to derive the estimates of change in currency holdings of rural households (and cultivator households therefrom) for both the years i.e. 1961-62 and 1971-72. The estimates of currency holdings of the entire household sector have been taken from the RBI's reports on Currency and Finance. The estimated changes in currency holdings of rural households were Rs. 33.13 crores and Rs. 134.67 crores respectively for these two years. About 61 per cent and 77 per cent respectively of these estimates are attributed to the cultivator households. These are the proportions of cultivator households' commercial bank deposits in total commercial bank deposits held by the rural households as observed from the RBI's AIRDIS, 61-62 and AIDIS, 71-72. Currency holdings of the rural cultivator households thus amount to Rs. 20.23 crores and 103.69 crores.

(ii) Life Insurance Premiums

Estimates of life insurance premiums paid by rural households in the years 1961-62 and 1971-72 are derived on

the basis of aggregate household savings in life insurance premiums (as available from the RBI's Reports on Currency and Finance) and the rural-urban break-up of the new business (sum assured) as reported in the annual reports of the Life Insurance Corporation (LIC) of India. The rural-urban proportion observed between the new business is assumed to hold good in the case of premiums as well. So we have derived the estimates of the insurance premium paid by rural households by decomposing the aggregate estimates of the savings of the households in insurance premium into rural and urban in the same proportion as new business completed in these areas in the respective years (see Table 3.30). It is pertinent to note that the estimate of the rural households' saving in the form of insurance premium for the year 1961-62 from an independent source (i.e. All India Rural Household Saving Survey (AIRHSS) conducted by NCAER) is Rs. 21.56 crores which is quite close to our estimate (see Table 3.28).

Finally, these estimates of insurance premiums paid by the rural households are apportioned between cultivator and non-cultivator households in proportion to their respective share in the insurance premia paid by all the rural households. These shares are worked out from the unpublished data from AIRDIS (1961-62) and AIDIS (1971-72).

(iii) Provident Fund Contributions

Estimates of provident fund contributions for the

Table 3.28: Insurance Premia (Gross) paid by Rural Cultivator Households, 1961-62 and 1971-72

(Rs. crores)

Year	Proportion of new business in rural areas (sum assured)	Insurance Premia paid by		
		All Households	Rural Households	Rural Cultivator Households
1961-62	0.30	72.9	21.87	14.65
1971-72	0.25	251.2	62.80	37.68

Sources: (1) Life Insurance Corporation of India, Annual Report, 1961 and 1972.

(2) RBI, Report on Currency and Finance, 1964-65 and 1974-75.

(3) RBI, AIRDIS : 1961-62 and AIDIS : 1971-72 (Unpublished data).

year 1961-62 are available in AIRSS, 1961-62 conducted by the NCAER while RBI's AIDIS, 1971-72 provide the figures of provident fund contribution for the year 1971-72. The AIDIS 1971-72 provides separate estimates of the provident fund contributions for the two classes of rural households i.e. cultivators and non-cultivators. In the present study, we have adopted the estimate of provident fund contributions of the cultivator households given by the RBI survey for the year 1971-72. For the year 1961-62, the NCAER estimate of provident fund contributions by rural households is split into cultivator and non-cultivator households using the share of the cultivator households in the total provident fund contributions as observed in 1971-72 in the RBI survey. The estimates are presented in the table given below.

Table 3.29: Provident Fund Contributions of Rural Cultivator Households, 1961-62 and 1971-72

Year	Provident Fund Contributions (Rs. crores)	
	Rural Households	Rural Cultivator Households
1961-62	16.03	7.56
1971-72	45.44	21.42

Sources: (1) NCAER, All India Rural Household Saving Survey: 1961-62

(2) RBI, AIDIS: 1971-72 (Unpublished data)

(iv) Small Savings

This category comprises post office deposits and other small savings like National Plan Saving Certificates, Government Securities etc.

The RBI surveys, i.e. AIRDIS, 1961-62 and AIDIS, 1971-72, provide data on outstanding postal deposits held by rural cultivator households at the end of December 1961 and end of June 1971. In order to derive the change in the post office deposits held by these households during the agricultural years 1961-62 and 1971-72, the outstanding post office deposits at the end of June 1961 and 1962 and 1972 are obtained following the procedure outlined here. The proportion of the survey estimates of cultivator households' outstanding postal deposits to total postal deposits are worked out. To calculate this proportion, for each year, data on total postal deposits are taken from the RBI's Reports on Currency and Finance. Since these estimates refer to the outstandings at the end of March, these are adjusted to December 1961, and June 1971 assuming uniform growth of outstandings over each year. These proportions are then applied to the total outstanding postal deposits (published in the RBI's Report on Currency and Finance) after adjusting the figures to end of June 1961, June 1962 and June 1972. The difference between the outstandings at June end 1962 and 1961 and 1972 and 1971 give the flows during the year. The estimates work out to Rs. 2.43 crores and 14.81 crores, respectively, for the years 1961-62 and 1971-72.

The procedure adopted for estimating other small savings is as follows. The ratios of the financial assets

held by the cultivator households in the form of National Plan Saving Certificates, Government Securities, Annuity Deposits to the post office deposits are calculated for the end-December 1961 and end-June 1971. These ratios are assumed to hold good at the end of June 1961, 1962 and 1972 - as well. The saving in the form of other small savings during the years are then derived as the difference between the outstandings. The amounts are Rs. 1.17 crores and Rs. 3.55 crores respectively in the year 1961-62 and 1971-72.

(v) Deposits in Commercial Banks

The estimates of change in deposits with commercial banks of the rural households for the years 1961-62 and 1971-72 have been obtained as follows.

The Basic Statistical Returns (BSR) published by the RBI provide data on outstanding deposits in the rural branches of commercial banks for the year 1973 and afterwards on regular basis.¹⁶ For the earlier years i.e. from 1961 to 1972, a series of outstanding rural deposits is generated using the average annual compound growth rate of 12 per cent. This growth rate is calculated from the estimates of outstanding deposits of the rural households with commercial banks at the end December 1961 and end June 1971 as obtained from the RBI's AIRDIS, 1961-62 and AIDIS, 1971-72. Changes in the deposits in rural branches of commercial banks for the years 1961-62 and 1971-72 are then derived by subtracting the outstandings at the end of 1961 and 1971 from the

outstanding at the end of 1962 and 1972 respectively.

The entire deposits are attributed to the rural households in the absence of information on occupational classification of the deposits in rural branches of commercial banks. Out of these, the cultivator households' holdings are assumed to be 61 per cent and 77 per cent in 1961-62 and 1971-72, respectively. These are the proportions observed in the RBI survey data. Table 3.30 contains the estimates.

Table 3.30: Change in Rural Cultivator Households Deposits with Commercial Banks, 1961-62 and 1971-72

Year	(Rs. crores)	
	Rural Households	Cultivator Households
1961-62	22.94	13.99
1971-72	69.99	53.89

Sources: (1) RBI, Basic Statistical Returns

(2) RBI, 'Financial Assets of Rural Households' Staff Occasional Papers, Vol. 2, No. 1 (June 1977).

(vi) Shares of and deposits with co-operatives

Investment of rural households in shares and their deposits with co-operative credit societies have been estimated using the data from RBI's Statistical Tables Relating to the Co-operative Movement in India. The annual issues of this publication contain information on various

aspects such as outstandings, paid-up capital and deposits held by individuals in Primary Agricultural Credit Societies (PACS), Central Co-operative Banks (CCBs), Primary and Central Land Development Banks (PCLDB, CLDB). Out of these, the paid-up capital and deposits of the individuals in PACS, PLDBs, CLDBs are taken to represent the holdings of the rural cultivator households. Since branches of CCBs are located in urban as well as rural areas, it would be inappropriate to attribute all holdings of shares and deposits by individuals to rural households. In fact, the Report of the Banking Commission (Government of India, 1972) indicates that nearly 42 per cent of the offices of CCBs were in areas with population greater than 10,000 at the end of 1969. In the absence of population group-wise (i.e. rural-urban) classification of the deposits, we have assumed that 60 per cent of shares and deposits held by individuals in CCBs are held by the rural households. The estimates are presented below.

Table 3.31: Shares and Deposits of Rural Cultivator Households in Co-operative Banks, 1961-62 and 1971-72

(Rs. crores)

Year	PACS		PLDB		CLDB		CCB		Total
	A	B	A	B	A	B	A	B	
1961-62	3.05	9.76	0.20	0.86	0.56	0.02	3.78	-0.06	18.17
1971-72	5.47	15.04	0.23	6.21	3.93	2.70	21.43	-0.03	54.98

N.B.: A and B stand for Deposits and Shares respectively.

Source: RBI, Statistical Statements Relating to Co-operative Movement in India, 1961-62 and 1971-72.

3.6.1.1 Gross Saving in Formal Financial Assets, Fractile Group-wise

The fractile group-wise estimates of financial saving of the rural cultivator households for the years 1961-62 and 1971-72 are derived by apportioning the all-India estimate (obtained from the unpublished RBI survey data) into fractile groups in proportion to the share of each fractile group in total gross saving. The estimates are presented in Table 3.42 and 3.43.

3.6.1.2 Gross Saving in Formal Financial Assets: State-wise

The state-wise estimates of saving of rural cultivator households in shares and deposits in co-operative credit societies and banks are obtained using the same data sources as used for all-India estimates, i.e. RBI's Statistical Statements relating to Co-operative Movement in India.

Saving in other formal financial instruments for 1961-62 and 1971-72 are estimated essentially by apportioning the relevant all-India estimates to the states according to their share in the financial assets on June 30, 1962 and June 30, 1971, respectively. For currency holdings the State-wise distributions of commercial bank deposits have been used. The estimates are given in Tables 3.32 and 3.33.

3.6.2 Savings in Informal Financial Assets, i.e. Direct Lendings: All-India, Fractile Group-wise and Statewise

All-India

The method used for estimating direct lendings by

Table 3.32: State-wise Estimates of Gross Saving in Formal Financial Assets
(Average per Household), 1961-62.

(Rs.)							
State	Change in Currency Holdings	Life Insurance Premia	Provident Funds	Small Savings	Co-operative Shares and Deposits	Commercial Benks	Total
Andhra Pradesh	5.05	1.71		0.05	1.81	3.51	12.13
Assem	0.73	21.93		0.42	0.13	0.50	23.71
Biher	1.99	4.60		0.41	0.54	1.38	8.92
Gujarat	18.64	6.86		0.87	7.64	12.91	46.92
Jammu and Kashmir	1.15	0.38		0.93	0.29	0.80	3.55
Karnataka	15.78	3.32		0.10	4.47	10.93	34.60
Kerala	10.27	4.57		0.59	3.43	7.11	25.97
Madhya Pradesh	-	0.41		1.02	1.86	-	3.29
Maharashtra	1.16	2.10		0.42	7.89	0.80	12.37
Orissa	-	0.71		0.23	0.19	-	1.13
Punjab	12.73	6.46		1.30	17.21	8.81	46.51
Rajasthan	1.26	1.18		0.05	11.21	0.87	14.57
Tamil Nadu	12.93	1.57		0.10	1.43	8.94	24.97
Utter Pradesh	3.83	2.50		0.77	1.95	2.26	11.31
West Bengal	2.32	7.82		2.15	0.57	1.60	14.46

Sources: 1) Table 3.35.

2) REI, "Financial Assets of Rural Households", Staff Occasional Papers,
Vol. 2 - No. 1 (June 1977).

Table 3.31: State-wise Estimates of Gross Saving in Formal Financial Assets
(Average per Household), 1971-72.

State	(Rs.)						
	Change in Currency Holdings	Life Insu- rance Pre- mia	Provident Funds	Small Savings	Co-operative Shares and Deposits	Commercial Bank Deposits	Total
Andhra Pradesh	22.39	5.46	0.69	0.27	4.65	11.63	45.09
Assam	6.56	9.23	16.76	4.11	1.28	3.35	41.29
Bihar	26.15	5.17	4.88	2.19	0.41	13.59	52.39
Gujarat	18.46	15.19	2.69	1.35	37.05	9.61	84.35
Haryana	21.23	4.59	1.31	0.43	54.76	11.02	93.34
Jammu and Kashmir	9.89	3.18	6.36	5.17	-3.30	4.96	26.26
Karnataka	12.66	22.24	1.22	0.28	14.05	6.59	57.04
Kerala	94.99	22.48	13.34	2.20	17.89	49.36	200.26
Madhya Pradesh	2.99	1.55	2.10	0.67	6.54	1.53	15.38
Maharashtra	6.56	3.45	1.74	2.37	17.06	3.40	34.58
Orissa	1.10	1.32	1.65	3.25	2.61	0.56	10.49
Punjab	120.24	8.16	3.01	17.13	117.46	62.35	328.35
Rajasthan	16.40	7.82	0.74	0.10	7.12	8.54	40.72
Tamil Nadu	16.00	7.25	2.76	1.14	15.39	8.30	50.84
Utter Pradesh	10.30	3.40	2.41	5.10	6.04	5.34	32.59
West Bengal	24.10	8.02	11.04	14.08	3.14	12.52	72.90

Sources: 1) Table 3.35.

2) REI, "Financial Assets of Rural Households", Staff Occasional Papers, Vol. 2 - No. 1 (June 1977).

cultivators (i.e. AML, Landlords and PML and relatives belonging to cultivator households) to cultivators is outlined above, in Sub-section 3.3.1. The same method is used for deriving estimates of direct lendings by these agencies to non-cultivators. The estimates are given in Table 3.34. A consolidated picture of the cultivators' saving in formal and informal financial assets for the bench-mark years are presented in Table 3.35.

Fractile Groups

Fractile group-wise estimates of net lendings to cultivators and non-cultivators are computed using the proportion of each fractile group in total lendings of the cultivator households (see Tables 3.42, 3.43). These proportions are obtained from the Lorenz curves fitted to asset group-wise lendings of the cultivator households taken from the RBI Surveys (unpublished data). The fractile distributions are presented in Table 3A.18.

State-wise data on amount lent by AML and landlords to non-cultivators are available in the RBI survey reports. The direct lendings to non-cultivators by PML and relatives (cultivators) are estimated by applying the proportion of lendings of the cultivator households to total lendings. These proportions are worked out from the unpublished data from the RBI surveys. The estimates are furnished in Tables 3.37 and 3.38.

**Table 3.34: Net Lending by Cultivators to Non-Cultivators: All India,
1961-62 and 1971-72.**

Credit Agency	(Rs. crores)					
	1961-62			1971-72		
	Advances	Recoveries	Net Change in Lendings	Advances	Recoveries	Net Change in Lendings
Landlord	3.75	2.07	1.68	22.11	16.87	5.24
Agricultural Moneylenders	60.32	38.40	21.92	37.23	30.96	6.27
Cultivator Professional Moneylenders and Relatives	33.46	11.83	21.58	47.44	33.99	13.45
Total	97.53	52.35	45.18	106.78	81.82	24.96

Sources: 1) REI, AIRDIS 1961-62, REI Bulletin, Vol. 19 (September 1965).

2) REI, AIDIS, 1971-72, 1978 and (Unpublished data).

Table 3.35: Saving of Cultivator Households in the form of Financial Assets: All-India, 1961-62 and 1971-72.

(Rs. crores)		
Type of Asset	1961-62	1971-72
I <u>Formal (Gross)</u>		
1. Currency	20.23 (25.87)	103.69 (35.75)
2. Share and Deposits in Co-operative Banks	18.17 (23.24)	54.98 (18.96)
3. Deposits in Commercial Banks	13.99 (17.89)	53.89 (18.58)
4. Small Savings	3.60 (4.60)	18.36 (6.33)
5. Insurance Premia	14.65 (18.73)	37.68 (12.99)
6. Provident Fund	7.56 (9.67)	21.42 (7.39)
7. Total Formal	78.20 (100.00)	290.02 (100.00)
II <u>Informal</u>		
9. Direct Lendings to Non-cultivators	45.18	24.96
10. Direct Lendings to Cultivators	350.93	146.10
11. Total Informal	396.11	171.06
12. Total (I & II)	474.31	461.08

N.B.: Figures in parentheses denote percentage share of each asset in total formal financial assets.

Sources: 1) NCAER, AIRHSS 1961-62, Vol. 3.

2) RBI, Report on Currency and Finance.

3) RBI, "Financial Assets of Rural Households", Staff Occasional Papers, Vol. 2 - No.1 (June 1977).

4) Tables 3.25, 3.28, 3.29, 3.30, 3.31 and 3.34.

3.7 ESTIMATES OF SAVING AND CURRENT CONSUMPTION

In this section, estimates of saving and current consumption expenditure of the rural cultivator household sector are obtained. The estimates of current consumption expenditure are computed at all India level while saving estimates have been derived at all India level and State level. Our estimates are then compared with those available from other sources.

3.7.1 Saving

As mentioned in Chapter II, saving estimates have been derived by balance sheet approach. The all-India estimates are presented in Table 3.36 while Tables 3.37 and 3.38 contain state-wise estimates of saving.

The all-India estimates of saving from another source (Mody, 1983) for the two bench-mark years are Rs. 871 crores and Rs. 1,634 crores respectively, which are higher than ours for both these years. It needs to be noted in this context that Mody has used the same data sources and approach that have been adopted in the present study for estimating saving.¹⁷ However, his procedure is different from ours in the following respects. Firstly, he has not adjusted estimates of capital expenditures to sales of physical assets and current repairs. Secondly, net change in liabilities from non-institutional agencies from 'outside' sector, i.e. traders and non-cultivator PML and relatives, have not been taken into account while deriving estimates of saving. Since

net change in borrowings from 'outside' sector were positive (see Table 3.25) for both the years, his estimates have an upward bias.

3.7.2 Current Consumption Expenditure

The current consumption expenditures have been estimated as the difference between total sources of funds and total uses of funds on capital account for the two bench-mark years. These estimates work out to Rs. 6666.55 crores and Rs. 17004.76 crores for 1961-62 and 1971-72 respectively.

An alternative estimate of current consumption of the rural cultivator households has been worked out using the data from NSS rounds. They are Rs. 7021.24 crores and Rs. 16098.74 crores for the two years. As regards the 1971-72 estimate, ours was higher by 5.6 per cent than the corresponding NSS one. It needs to be noted here that our estimate has been computed as a residual, containing all errors and omissions. For example, we have already mentioned that farm and non-farm inventories could not be estimated because of lack of data. Similarly, the NSS estimate is not free from sampling and non-sampling errors.¹⁸ In this background, the divergence between the two estimates is no proof of bias in our estimate. Nor is the close correspondence between the two, a guarantee of the absence of bias.

Our main task in this chapter has been to estimate

Sources-and-Uses-of-Funds statements for the rural cultivator households. The complete SAUF statements which are estimated at all India level for the years 1961-62 and 1971-72 are presented in Table 3.39. Tables 3.40 to 3.47 contain fractile group-wise and state-wise estimates of SAUF. The next two chapters are devoted to an analysis of the SAUF statements.

**Table 3.36: Gross Saving of Rural Cultivator Households:
All-India, 1961-62 end 1971-72.**

		(Rs. crores)	
		1961-62	1971-72
I	Gross Saving in Physical Assets	A 692.27	1368.62
		B 568.29	1171.67
II	Gross Saving in Financial Assets		
	Formal	78.20	290.02
	Informal (direct lendings) to cultivators	350.93	146.10
	to non-cultivators	45.18	24.96
	Total	474.31	461.08
III	Total Gross Saving	A 1166.58	1829.70
		B 1042.60	1632.55
IV	Net Change in Liabilities	559.92	685.93
V	Net Saving in Financial Assets	- 85.61	-224.85
VI	Total Saving	A 606.66	1143.77
		B 482.68	946.62
VII	Net Inflow of Funds (i.e. Net Change in Financial Assets) as percentage to Saving in Physical Assets	A 12.37	16.43
		B 15.06	19.19
VIII	Total Saving as a proportion to income (Per cent)	A 8.37	6.34
		B 6.66	5.25

N.B.: A refers to cash as well as kind expenditures while B is cash expenditures on capital assets.

Sources: 1) Tables 3.25, 3.27 and 3.35.

Table 3.37: State-wise Estimates of Saving of Rural Cultivator Households, 1961-62

State	Saving in Physical Assets	Gross Saving in Financial Assets			Total Gross Saving	Net Change in Liabilities	Net Saving in Financial Assets	Total Saving	(Average Per Household)
		Formal	Informal	Total					(Rs.)
									Net Financial Flow (i.e. Net Financial Savings as a percentage to Total Saving)
1. Andhra Pradesh	134.50	12.13	23.86	35.99	170.49	49.21	-13.22	121.28	-10.90
2. Assam	53.70	23.71	2.31	26.02	79.72	0.31	25.71	78.81	32.62
3. Bihar	77.90	8.92	8.17	17.09	99.99	11.93	5.16	88.06	5.86
4. Gujarat	208.50	46.92	3.15	50.07	258.57	169.33	-119.26	89.24	-133.64
5. Jammu and Kashmir	131.70	3.55	0.23	3.78	135.48	83.09	-79.31	52.39	-151.38
6. Karnataka	229.00	34.60	4.20	38.80	267.80	63.35	-24.55	204.45	-11.86
7. Kerala	121.90	25.97	0.94	26.91	148.81	4.64	22.27	144.17	15.45
8. Madhya Pradesh	90.90	3.29	11.22	14.51	105.41	33.96	-19.45	71.45	-27.22
9. Maharashtra	141.90	12.37	5.92	18.29	160.19	62.93	-44.64	97.26	45.90
10. Orissa	61.30	1.13	4.20	5.33	66.63	17.50	-12.17	49.13	-24.77
11. Punjab	246.80	46.51	54.83	101.34	348.14	68.85	32.49	279.29	11.27
12. Rajasthan	147.60	14.57	11.56	26.13	173.73	96.85	-70.72	76.88	-91.99
13. Tamil Nadu	140.20	24.97	24.25	49.22	189.42	45.84	3.38	143.58	2.35
14. Uttar Pradesh	131.00	11.31	14.75	26.06	157.06	19.35	6.71	137.71	4.87
15. West Bengal	50.40	14.46	8.36	22.82	73.22	20.03	2.79	53.19	5.24

N.E.: 1) Informal financial saving pertain to lendings by cultivators to non-cultivator households only.

2) Figures of Saving in Physical Assets refer to cash purchases only.

Sources: 1) RBI, AIRDIS: 1961-62, RBI Bulletin, Vol. 19 (September 1965).

2) Tables 3.32, 3.46.

3) RBI, Statistical Statements relating to Co-operative Movement in India, 1961-62.

Table 3.38: State-wise Estimates of Saving of Rural Cultivator Households, 1971-72

(Average Per Household)
(Rs.)

State	Saving in Physical Assets	Gross Saving in Financial Assets			Total Gross Saving	Net Change in Liabilities	Net Saving in Financial Assets	Total Saving	Net Financial Flow (i.e. Net Financial Savings as a percentage to Total Saving)
		Formal	Informal	Total					
Andhra Pradesh	123.20	45.09	21.46	66.55	189.75	55.73	10.82	134.02	8.07
Assam	150.95	41.29	1.54	42.83	193.78	9.09	33.74	184.69	18.27
Bihar	98.55	52.39	5.94	58.33	156.88	20.95	37.38	135.93	27.50
Gujarat	449.45	84.35	5.12	89.47	533.80	159.27	-68.80	379.65	-18.12
Jammu and Kashmir	123.65	26.26	0.02	26.28	149.93	6.62	19.66	143.31	13.72
Karnataka	344.72	57.04	17.42	74.46	419.98	63.06	11.40	356.12	3.20
Kerala	201.39	200.26	1.11	201.27	402.66	63.50	137.77	339.16	40.62
Madhya Pradesh	224.18	15.38	8.35	23.73	247.91	83.60	-59.87	164.31	-36.43
Maharashtra	207.70	34.58	3.75	38.33	246.03	71.32	-32.99	174.71	-18.88
Orissa	59.98	10.49	2.53	13.02	73.00	27.26	-14.24	45.74	-31.13
Punjab*	1047.05	213.47	130.98	344.45	1391.50	477.33	-132.88	914.17	-14.53
Rajasthan	286.94	40.72	8.01	48.73	335.67	155.37	-106.64	180.30	-59.15
Tamil Nadu	179.72	50.84	27.31	78.15	257.87	108.48	-30.33	149.39	-20.30
Uttar Pradesh	251.01	32.59	15.98	48.57	299.58	52.50	-3.93	247.08	-1.59
West Bengal	119.21	72.90	6.98	79.88	199.09	27.36	52.52	171.73	30.58

N.B.: 1) Informal financial saving pertain to lendings by cultivators to non-cultivator households only.

2) Figures of saving in physical assets refer to cash purchases only.

Sources: 1) RBI, AIDIS: 1971-72, 1978.

2) Tables 3.36 and 3.47.

3) RBI, Statistical Statements Relating to Co-operative Banks in India, 1971-72.

* Estimates are inclusive of Haryana.

Table 3.39: Sources-and-Uses-of-Funds Statements of The Rural Farm Household Sector: All-India, 1961-62 and 1971-72.

	(Rs. crores)	
	1961-62	1971-72
<u>SOURCES OF FUNDS</u>		
<u>Non-Financial Sources</u>		
1. Income from Agriculture and Allied Activities	6,334.09	15,650.35
less Land Revenue	103.20	113.60
2. Income from Non-agricultural Activities	914.12	2,377.00
1) Self-employment	359.22	850.61
ii) Wages and Salaries	554.90	1,526.39
3. Current Transfers	128.20	234.78
4. Total (1 + 2 + 3)	7,273.21	18,148.53
<u>Financial Sources</u>		
5. Net Change in Borrowings	559.92	685.93
1) Institutional	67.91	251.62
ii) Non-institutional	492.01	434.31
a) Non-cultivators	141.08	288.21
b) Cultivators	350.93	146.10
6. Total Sources (4 + 5)	7,833.13	18,834.46
<u>USES OF FUNDS</u>		
<u>Non-Financial Capital Uses</u>		
7. Capital Expenditures	692.27	1,368.62

Contd.

Table 3.39 [Contd.]

	1961-62	1971-72
<u>Financial Uses</u>		
8. Acquisition of Financial Assets	474.31	461.03
i) Formal	78.20	290.02
ii) Informal (Direct Lendings)	396.11	171.06
a) to Non-cultivators	45.13	24.96
b) to Cultivators	350.93	146.10
9. Total Uses of Funds (7 + 8)	1,166.58	1,829.70
10. Current Consumption	6,666.55	17,004.76

Sources: 1) Tables 3.7, 3.11, 3.12, 3.13, 3.14, 3.16, 3.17, 3.25, 3.27 and 3.35.

**Table 3.40: Sources of Funds of Rural Cultivator Households:
Fractile Groups, 1961-62**

(Rs. crores)

Sources	Fractile Groups:					All Fractiles
	0-20	20-40	40-60	60-80	80-100	
1. <u>Farm Income</u>						
a) Cultivation and Livestock	296.05	479.82	663.57	1,061.71	2,603.24	5,104.39
b) Wage Income	368.91	280.37	233.56	194.29	147.57	1,229.70
2. Total Farm (a+b)	664.96	760.19	902.13	1,256.00	2,750.81	6,334.09
3. <u>Non-Farm Income</u>						
c) Self-employment in non-farm activities	35.92	53.88	61.07	71.13	137.22	359.22
d) Wage Income	166.47	126.52	107.65	87.67	66.59	554.90
4. Total Non-farm (c+d)	202.39	180.40	168.72	158.80	203.81	914.12
5. Total Income (2+4)	867.35	940.59	1,070.85	1,414.80	2,954.62	7,248.21
6. <u>Borrowings</u>						
e) Non-institutional Sources	54.84	90.05	133.14	183.94	366.82	823.79
f) Institutional Sources	7.31	14.62	31.29	54.67	184.51	292.40
7. Total Borrowings (e+f)	62.15	104.67	164.43	238.61	551.33	1,121.19
8. Total Sources of Funds (5+7)	929.50	1,045.26	1,235.28	1,653.41	3,505.95	8,369.40

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Sources: 1) Tables 3.33 and 3A.17.

**Table 3.41: Sources of Funds of Rural Cultivator Households:
Fractile Groups, 1971-72**

(Rs. crores)

Sources	Fractile Groups:					All Fractiles
	0-20	20-40	40-60	60-80	80-100	
1. Farm Income						
a) Cultivation and Livestock	681.14	1,309.88	1,912.43	2,423.28	6,772.08	13,098.81
b) Wage-Income	790.93	622.53	454.17	354.66	329.15	2,551.54
2. Total Farm (a+b)	1,472.12	1,932.46	2,366.60	2,777.94	7,101.23	15,650.35
3. Non-Farm Income						
c) Self-employment in non-farm	89.31	108.03	134.40	140.35	378.52	850.61
d) Wage-Income	473.18	372.44	271.70	212.17	196.90	1,526.39
4. Total Non-Farm (c+d)	562.49	480.47	406.10	352.52	575.42	2,377.00
5. Total Income (2+4)	2,034.61	2,412.93	2,772.70	3,130.46	7,676.65	18,027.35
6. Borrowings						
e) Non-institutional agencies	58.38	99.77	139.68	218.38	353.28	869.49
f) Institutional agencies	23.29	33.28	64.06	163.07	548.28	831.93
7. Total Borrowings (e+f)	81.67	133.05	203.74	381.45	901.56	1,701.47
8. Total Sources of Funds (5+7)	2,116.28	2,545.93	2,976.44	3,511.91	8,578.21	19,723.82

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Sources: 1) Tables 3.38 and 3A.17.

**Table 3.42: Uses of Funds on Capital Account of Rural Cultivator Households:
Fractile Groups, 1961-62.**

Uses	(Rs. crores)					
	Fractile Groups:		40-60	60-80	80-100	All Fractiles
0-20	20-40					
1. <u>Physical Investment Expenditure (Cash)</u>						
a) Farm Business	18.78	46.95	75.12	125.20	359.95	626.00
b) Non-farm Business	0.75	1.48	2.48	4.87	21.82	31.40
c) Residential Construction	8.58	13.91	21.35	33.36	113.40	190.60
d) Durable Household Assets	1.22	2.04	3.46	6.63	27.35	40.70
2. Total Physical (a+b+c+d)	29.33	64.38	102.41	170.06	522.52	888.70
3. <u>Financial Saving</u>						
e) Formal (Gross)	1.40	4.46	6.26	10.17	55.91	78.20
Informal (i.e. Direct lendings)						
f) to non-cultivators	0.54	1.04	2.48	6.42	34.70	45.18
g) to cultivators	4.21	8.07	19.30	49.83	269.52	350.93
4. Total Financial Savings (e+f+g)	6.15	13.57	28.04	66.42	360.13	474.31
Total Uses (2+4)	35.48	77.95	130.45	236.48	882.65	1,363.01

N.B.: Direct lendings are net of amount received as repayments.

Source: 1) Tables 3.27, 3.35 and 3A.18.

Table 3.43: Uses of Funds on Capital Account of Rural Cultivator Households: Fractile Groups, 1971-72

(Rs. crores)

Uses	Fractile Groups:					All Fractiles
	0-20	20-40	40-60	60-80	80-100	
1. Physical Investment Expenditure (Cash)						
a) Farm Business	30.14	78.96	135.06	187.01	607.79	1,038.96
b) Non-farm Business	2.17	4.35	10.69	10.34	63.07	90.62
c) Residential construction	19.87	31.60	43.58	71.91	196.12	363.18
d) Durable Household Assets	5.67	12.15	19.30	25.50	72.33	134.95
2. Total Physical (a+b+c+d)	57.85	127.06	208.63	294.76	939.31	1,627.71
3. Financial Saving						
e) Formal (Gross)	15.95	21.75	27.56	58.00	166.76	290.02
Informal (i.e. Direct lendings)						
f) to non-cultivators	0.62	0.62	1.75	3.37	18.60	24.96
g) to cultivators	3.65	3.65	10.23	19.72	108.85	146.10
4. Total Financial Savings(e+f+g)	20.22	26.02	39.54	81.09	294.21	461.08
Total Uses (2+4)	78.07	153.08	248.17	375.85	1,233.52	2,088.79

N.B.: Direct lendings are net of amount received as repayments.

Sources: 1) Tables 3.27, 3.35 and 3A.18.

Table 3.44: State-wise Estimates of Sources of Funds of Rural Cultivators, Average per Household, 1961-62

(Rs.)

State	Income			Total Income	Institutional	Borrowings			Total Borrowings	Total Sources (5+10)
	Income from Agriculture and Allied Activities	Income from Self Employment in Non-agricultural Activities	Wage Income from Non-Agricultural Activities			Cultivator money-lenders	Non-cultivator money-lenders	Total Non-institutional		
1	2	3	4	5	6	7	8	9	10	11
Andhra Pradesh	1,311.05	148.17	41.54	1,500.76	41.83	193.62	40.47	234.09	275.92	1,776.68
Aseam	1,170.06	-	-	-	2.36	26.65	6.75	33.40	35.76	-
Bihar	802.28	160.80	86.47	1,049.33	3.87	85.84	12.79	98.63	102.50	1,151.83
Gujarat	1,561.01	133.77	62.73	1,757.51	102.21	70.02	197.92	267.94	370.15	2,127.66
Jammu and Kashmir	1,133.81	115.26	55.26	1,304.33	24.88	55.26	74.30	129.56	154.44	1,458.77
Karnataka	1,544.08	124.99	37.73	1,706.80	93.51	187.05	42.80	229.85	323.36	2,030.16
Kerala	1,063.08	248.88	86.75	1,398.71	56.06	105.80	41.67	147.47	203.53	1,602.24
Madhya Pradesh	1,030.18	85.24	44.80	1,160.22	32.46	101.00	35.77	136.78	169.23	1,329.45
Maharashtra	1,355.54	94.93	70.44	1,520.91	103.67	96.12	20.39	116.51	220.18	1,741.09
Orissa	903.11	170.21	39.45	1,112.77	11.61	24.74	18.60	43.34	54.95	1,167.72
Punjab	2,194.77	98.46	28.61	2,321.84	51.11	256.17	57.91	314.08	365.19	2,687.03
Rajasthan	1,274.97	219.07	44.42	1,538.46	23.73	217.08	148.60	365.68	389.41	1,927.87
Tamil Nadu	1,286.64	129.11	41.10	1,456.85	61.98	213.04	23.11	236.15	298.13	1,754.98
Uttar Pradesh	1,089.69	138.33	32.99	1,261.01	37.40	109.17	20.87	130.04	167.44	1,428.45
West Bengal	1,420.10	247.48	182.39	1,849.97	12.41	94.91	36.49	131.40	143.81	1,993.78
All-India	1,257.24	71.30	110.14	1,438.68	58.03	115.20	49.30	164.50	222.53	1,661.21

Sources: 1) RBI, AIRDIS, 1961-62. RBI Bulletin, Vol.19 (September, 1965).

2) Tables 3.8, 3.20 and 3.22.

3) RBI, Statistical Statements Relating to Co-operative Movement in India, 1961-62.

Table 3.45: State-wise Estimates of Source of Funds of Rural Cultivator Households, Average per Household,, 1971-72.

(Rs.)											
State	Income from Agriculture and Allied Activities	Income			Total Income	Insti- tutio- nal	Borrowings			Total Borrow- ings	Total Sour- ces (5+10)
		Income from Self Employ- ment in Non-ag- ricult- ural Activi- ties	Wage Income from Non-Ag- ricult- ural Activi- ties				Culti- vator money- lenders	Non-cu- ltiva- tor money- lenders	Total Non-in- stitu- tional		
1	2	3	4	5	6	7	8	9	10	11	
Andhra Pradesh	3,206.62	212.81	103.88	3,523.31	73.79	132.70	49.54	182.24	256.03	3,779.34	
Assam	2,761.67	461.10	172.42	3,395.19	8.69	9.38	16.83	26.21	34.90	3,430.09	
Bihar	1,737.79	231.67	146.00	2,115.46	26.14	57.75	3.91	61.66	87.80	2,203.26	
Gujarat	3,645.01	152.96	102.48	3,900.45	418.59	31.12	123.15	154.27	572.86	4,473.31	
Haryana	8,544.25	255.75	137.32	8,937.32	342.69	292.68	218.89	511.57	854.26	9,791.58	
Jammu and Kashmir	2,464.12	660.50	255.15	3,379.77	19.88	73.19	94.69	167.88	187.76	3,567.53	
Karnataka	2,785.52	262.43	73.00	3,120.95	159.09	222.03	21.61	243.64	402.73	3,523.68	
Kerala	2,193.75	1,085.83	283.90	3,563.48	184.99	49.57	19.53	69.10	254.09	3,817.57	
Madhya Pradesh	2,426.58	220.56	121.30	2,768.44	122.19	54.46	101.78	156.24	278.43	3,046.87	
Maharashtra	2,089.30	236.53	178.45	2,504.28	309.41	80.17	37.85	118.02	427.43	2,931.71	
Orissa	2,157.95	148.53	104.77	2,411.25	51.59	38.36	3.01	41.37	92.96	2,504.21	
Punjab	11,178.92	262.50	61.60	11,503.02	988.32	410.58	389.82	800.40	1,788.72	13,291.74	
Rajasthan	3,028.48	252.21	97.09	3,377.78	49.33	153.00	234.73	387.72	437.50	3,815.28	
Tamil Nadu	2,402.61	360.61	218.74	2,981.96	200.56	155.23	38.16	193.39	393.95	3,375.91	
Utter Pradesh	2,232.83	183.68	88.42	2,504.93	65.67	97.73	34.84	132.57	198.24	2,703.17	
West Bengal	3,141.29	427.87	212.75	3,781.91	30.94	83.60	17.91	101.51	132.45	3,914.36	
All-India	2,806.23	152.52	273.69	3,232.44	149.18	81.30	74.60	155.90	305.38	3,537.82	

Sources: 1) RBI, AIDIS, 1971-72, November 1978.

2) Tables 3.9, 3.21 and 3.23.

3) RBI, Statistical Statements Relating to Co-operative Movement in India, 1971-72.

Table 3.46: State-wise Estimates of Uses of Funds on Capital Account of Rural Cultivator Households, Average per Household, 1961-62

State	Physical Investments					Receipts from sale of physical assets	Net Physical Investment	Formal	Financial Saving		Total Financial Saving	Total Uses (8+12)
	Farm Business	Non-farm Business	Residential construction	Durable Household Assets	Total Physical Investments				Cultivators	Non-cultivators		
1	2	3	4	5	6	7	8	9	10	11	12	13
Andhra Pradesh	176.2	1.6	41.0	4.6	223.4	88.9	134.5	12.13	193.62	23.86	229.61	364.11
Assam	49.6	1.8	14.6	3.3	69.3	15.6	53.7	23.71	26.65	2.31	52.67	106.70
Bihar	58.4	3.5	37.3	11.7	110.9	33.0	77.9	8.92	85.84	8.17	102.93	180.83
Gujarat	188.0	6.0	43.0	11.2	248.2	39.7	208.5	46.92	70.02	3.15	120.09	328.59
Jammu and Kashmir	87.2	2.4	51.5	12.9	154.0	22.3	131.7	3.55	55.26	0.23	59.04	190.74
Karnataka	243.6	4.0	45.9	10.3	303.8	74.8	229.0	34.60	187.05	15.68	237.33	466.33
Kerala	82.4	13.9	60.2	10.6	167.1	45.2	121.9	25.97	105.80	0.94	132.71	254.61
Madhya Pradesh	90.9	1.2	21.0	5.7	118.8	27.9	90.9	3.29	101.00	11.22	115.51	206.41
Maharashtra	127.9	14.0	33.8	6.0	181.7	39.8	141.9	12.37	96.12	5.92	114.41	256.31
Orissa	51.9	1.6	23.5	4.4	81.4	20.1	61.3	1.13	24.74	4.20	30.07	91.37
Punjab	264.4	5.1	69.0	19.9	358.4	111.6	246.8	46.51	256.17	54.83	357.51	604.31
Rajasthan	176.6	5.9	47.4	8.5	238.4	90.8	147.6	14.57	217.08	11.56	243.21	390.81
Tamil Nadu	186.0	9.4	33.1	5.6	234.1	93.9	140.2	24.97	213.04	24.25	262.26	402.26
Uttar Pradesh	121.2	10.1	42.2	9.4	182.9	51.9	131.0	11.31	109.17	14.75	135.23	266.23
West Bengal	51.3	4.5	28.8	2.7	87.3	36.9	50.4	14.40	94.91	8.36	117.67	168.07
All-India	124.3	6.2	37.8	8.1	176.4	55.6	170.8	15.52	115.20	19.36	150.08	320.88

Sources: 1) REI, AIRDIS, 1961-62, REI Bulletin, Vol.19 (June, 1965).

2) REI, AIRDIS, 1962-63, REI Bulletin, Vol.19 (September, 1965).

3) Table 3.32.

Table 3.47: State-wise Estimates of Uses of Funds on Capital Account of Rural Cultivator Households, Average per Household, 1971-72

(Rs.)

State	Physical Investments					Recei- pts from sale of phy- sical assets	Net Physi- cal Inves- tment	Form- al	Financial Saving		Total Finan- cial Saving	Total Uses (8+12)
	Farm Busi- ness	Non- farm Busi- ness	Resi- denti- al con- struc- tion	Dure- ble House- hold Assets	Total Physi- cal In- vest- ments				Informal Culti- vators	Non-cu- ltiva- tors		
1	2	3	4	5	6	7	8	9	10	11	12	13
Andhra Pradesh	116.10	10.12	22.73	18.25	167.20	44.00	123.20	45.09	132.70	21.46	199.25	322.45
Assam	73.33	13.77	49.51	33.14	169.75	18.80	150.95	41.29	9.38	1.54	52.21	203.16
Bihar	58.44	25.20	50.11	18.00	151.75	55.20	98.55	52.39	57.75	5.94	116.08	214.63
Gujarat	354.81	14.84	97.05	32.65	499.35	49.90	449.45	84.35	31.12	5.12	120.59	570.04
Haryana	829.13	17.33	136.06	68.90	1,051.82	155.00	896.82	93.34	292.68	116.10	502.12	1,398.94
Jammu and Kashmir	88.62	7.59	50.76	28.18	175.15	51.50	123.65	26.26	73.19	0.02	99.47	223.12
Karnataka	306.64	30.17	64.71	32.40	433.92	89.20	344.72	57.04	222.03	17.42	296.49	641.21
Kerala	102.07	26.49	91.59	19.44	239.59	38.20	201.39	200.26	49.57	1.11	250.94	452.33
Madhya Pradesh	191.80	9.47	54.57	20.04	275.88	51.70	224.18	15.38	54.46	8.35	78.19	302.37
Maharashtra	214.65	22.87	37.07	17.19	291.70	84.00	207.70	34.58	80.17	3.75	118.50	326.20
Orissa	49.59	8.88	25.99	8.92	93.38	33.40	59.98	10.49	38.36	2.53	51.38	111.36
Punjab	1,368.62	76.57	226.35	103.98	1,775.52	202.30	1,573.22	328.35	410.58	140.15	879.08	2,452.30
Rajasthan	238.58	7.70	101.55	49.70	397.54	110.60	286.94	40.72	153.00	8.01	201.73	488.67
Tamil Nadu	198.17	13.69	34.03	17.53	263.42	83.70	179.72	50.84	155.23	27.31	233.38	413.10
Uttar Pradesh	177.14	9.37	90.62	25.08	302.21	51.20	251.01	32.59	97.73	15.98	146.30	397.31
West Bengal	110.19	11.48	55.94	13.90	191.51	72.30	119.21	72.90	83.60	6.98	163.48	282.69
All-India	183.32	15.99	64.08	23.81	287.20	70.70	216.50	52.03	81.30	19.15	152.48	368.98

Sources: 1) RBI, AIDIS, 1971-72, October, 1977.

2) RBI, AIDIS, 1971-72, November, 1978.

3) Table 3.33.

Foot Notes

1. In the case of unorganised activities, income generated in the sector and income received by the factors of production employed in that sector are the same. Since agricultural production is mostly of unorganised nature, we have treated value added by this activity sector in rural area as income received by rural households.
2. Attempts have been made since sixties to separate total income generated into rural and urban component by different scholars and researchers. (see Roychoudhury and Mukherjee, 1984, P. 171-72). Of these, the latest statistics of industry group-wise net domestic product in rural and urban areas are those estimated by the CSO for the year 1970-71 which are published in NAS, January 1981. The same issue contains a brief note on the methodology adopted. Rural net domestic product is largely estimated using a combined index of the proportion of rural to total workers and the differential in value added per worker in rural and urban areas in each state for individual sectors. The ratio of value added per worker is approximated by ratio of wages or earnings per worker in rural and urban sectors.
3. In 1961 census, the workforce engaged in operation of

government irrigation system was included in the minor group 890, (i.e. services rendered by organisations and individuals not elsewhere classified) of the Standard Industrial Classification - 1960.

Therefore the rural/urban proportion of the workforce of this group is applied to obtain the break-up of the estimate of rural income from this activity.

4. Besides landless labour, the other recipients of income from agriculture and allied activities belonging to non-cultivators are share-croppers and non-cultivating landlords. However, there is no data to adjust the agricultural earnings of these groups of non-cultivators.
5. The 'weaker section' of the rural sector was defined to consist of (a) non-cultivating labour households and (b) the lowest 10 per cent of the households cultivating some land.
6. The time disposition of each member of the sample household on each of the seven days preceding the day of enquiry was noted. This was noted not in hours but in days. For noting the intensity of time disposition, the following intensity code was specified. If a person had spent more than half of his normal working day on any particular activity, then the intensity was to be recorded as one. If he had spent half or less of the working day in any work then the

intensity was to be noted as one half. There were four sub-rounds of enquiry. We have used the pooled estimates of all sub-rounds which represent the average position for the year July 1970 - June 1971 of the time disposition.

7. Incidentally, the estimate of agricultural wage-income of the landless labour is available for the year 1974-75 from Rural Labour Enquiry (1974-75). The proportion of this estimate to total wage bill of agriculture (CSO estimate) in that year works out to 0.31. This proportion was 0.22 in 1963-64, while it was 0.26 in 1970-71. This indicates that over the decade the share of landless labour in total wage bill has increased almost by 9 percentage points.
8. Survey data are available for different asset size classes of cultivator households. From the asset group-wise distribution of gross value of produce from agriculture and livestock and wages, the fractile distributions are obtained by reading off the Lorenz curves fitted to these distributions. The fractile distributions are presented in Table 3A.17.
9. Two sets of estimates of state income (i.e. state domestic product) are available - one prepared by the State Statistical Bureaus (SSBs)/Directorate of Economics and Statistics (State series) and the other compiled by the CSO. (comparable series).

We have used the state series published by the CSO (CSO, November 1985).

Though the estimates of state domestic product by industry of origin have been prepared by the SSEs following the standard methodologies recommended by the Working Group on State Income and Regional Account Committee, the inter-state comparability of the SSE's estimates is limited for various reasons. (Roychoudhury and Mukherjee, 1984). However, as the estimates released by the SSEs would be appropriate for inter-temporal comparison they are used in the present study.

Moreover, we could not have used the comparable series (which are prepared keeping in view the interstate comparability) because the annual estimates of state domestic products are available only from 1970 onwards and prior to 1970 these estimates have been prepared for different points of time and the year 1961-62 is not one of them.

10. Non-agricultural activities include minor groups. Of the major industry group 0, viz., forestry and logging and fishing and rest of the industry groups i.e. 1 to 9 of the National Industrial Classification (NIC), 1970.
11. For coverage of productive activities in these sectors, see CSO, April 1980.

12. In the case of unorganised non-agricultural activities, income generated and income earned are the same. However, in case of the organised sector income generated is not identical with income received because some part of the profits may be retained by the business organisations. Moreover, even if it is possible to estimate income received from organised non-agricultural activities, it is difficult to break-up profits, interest and rent into rural and urban sectors. It is, therefore, decided to consider only factor share of the rural labourforce, i.e. compensation to employees from organised non-agricultural activities. This, in fact, constitutes the major proportion (nearly 70%) of the net domestic product in organised sector.
13. It is not possible to estimate separately income from self employment in unorganised sectors and wage-income from employment in organised sectors of construction, transport by other means and other services at the State level since the estimates of ENDP are not available for organised and unorganised sectors separately. Hence, for these industry groups, State estimates of rural income refer to total income from these activities.
14. We have not estimated change in farm and non-farm

inventories held by rural cultivators in farm business and non-farm business. The reasons are as follows. For non-farm inventories the data are not available. The agricultural inventories in the private sector are computed by the CSO. However, the calculation is done by a very unsatisfactory indirect method using data on bank advances and bank margins classified according to occupation and organisation in REI's Basic Statistical Returns (BSRs). The Committee on Capital Formation and Savings in India (1982), (the Raj Committee) has recommended that this method should be changed. An alternative procedure suggested by the Committee is to use a bench-mark ratio of inventories in agriculture to value added in agriculture. This was the method initially adopted by the REI for deriving estimates of inventories in agriculture (REI, 1965). However, this bench-mark ratio was available only for the year 1951-52 and it may not be appropriate to use the same ratio for the years 1961-62 and 1971-72.

15. The individual items for which this information is available are as follows. Farm-business - (1) Purchase of land (2) Purchase of land rights (3) Reclamation of land (4) Bunding and other land improvements (5) Orchards and Plantations (6) Wells

(7) Other irrigation sources (8) Agricultural implements (9) Farm-houses, grain golas and cattle sheds (10) Purchase of livestock (11) Other capital expenditure in farm business. Non-farm business - (1) Land and buildings (2) Production equipment and accessories (3) Transport equipment (4) Furniture and fixtures (5) Other capital expenditure in non-farm business.

16. It should be noted that the BSRs define rural areas as centres with a population of 10,000 or less. The census classification, and one followed by the REI surveys also, is based on multiple criteria of size, density and occupational distribution (i.e. more than three-quarters of the workforce is engaged in agriculture). This classificational difference causes problems of comparability to which there is no ready solution.
17. Our procedures for deriving estimates of financial saving are different from the ones used by Mody, especially for provident fund contributions, deposits with co-operatives and commercial banks and informal financial saving, i.e. direct lendings. See for the methods adopted by Mody (Mody, 1983).
18. Incidentally, the accuracy of the NSS estimates of consumption expenditure has been challenged. The main criticism is that the non-sampling errors of the estimates have been increasing over the period (See Srinivasan, 1974).

APPENDIX TABLESTable 3A.1: Value Added in Transport by Other Means (Unorganized): Rural, 1971-72

Industry Group	Estimated No. of principal and secondary workers (in 000) 1971	Value added per worker 1971-72 (Rs.)	Valued added (aggregate) 1971-72 (Rs.000)
Passenger transport by bus	5.481	2,128	1,16,63.57
Passenger transport by other motor vehicle	8.243	3,081	2,53,96.68
Freight transport by motor vehicles	18.845	3,920	7,38,72.40
Passenger and freight transport by animals	2,98.805	594	17,74,90.17
Transport by man (rickshaw, hand-craft)	1,25.043	913	11,41,64.25
Water transport	39.662	615	2,43,92.13
Services incidental to transport	1.925	26,613	5,12,30.02
Total			47,82,09.22

Sources: 1) Census of India 1971. General Economic Tables, B-IV Part D.

2) GOI, NSS, 29th Round: Draft Report No. 280/6.

**Table 3A.2: Value Added in Construction (Unorganised):
Rural, 1971-72**

Estimated No. of principal and secondary workers 1971 (in 000's)	Value added per worker 1971-72 (Rs.)	Value added (aggregate) 1971-72 (Rs. 000)
646.022	859	55,49,32.89

Sources: 1) Census of India 1971. General Economic Tables, B-IV Part D.

2) GOI, NSS, 29th Round : Draft Report No. 280/6.

**Table 3A.3: Value Added in Trade, Hotels and Restaurants:
Rural, 1971-72**

Industry Group	Estimated No. of principal and secondary workers 1971 (in 000's)	Value added per worker 1971-72 (Rs.)	Value added (aggregate) 1971-72 (Rs. 000)
Wholesale trade in food, beverages, live animals, etc.	1,68.335	2,304	39,79,79.40
Wholesale trade in textile and textile products	14.201	2,289	3,25,06.08
Other wholesale trade	95.500	1,678	16,02,49.00
Retail trade in food, beverages and live animals	26,42.439	1,052	277,98,45.80
Pan, bidi shops	2,15.039	602	12,94,53.47
Retail trade in textile and textile products	2,67.289	1,558	41,64,36.26
Other retail trade	7,36.417	1,233	90,80,02.16
Hotels and restaurants	5,14.061	1,157	49,47,68.57
Purchase and sale agents and auctioneering	30.967	1,212	3,75,32.00
Collectors of miscellaneous forest	90.465	443	4,00,75.99
Total			549,68,48.30

Sources: 1) Census of India 1971. General Economic
Tables, B-IV Part D.

2) GOI, NSS, 29th Round: Draft Report No. 280/6.

Table 3A.4: Value Added from Other Services, 1974-75

Industry Group	Rural		Urban		Total value added 1974-75 (Rs. in 000)		
	Estimated number of principal and secondary workers 1974-75	Value added per worker 1974-75 (Rs.)	Value added (aggregate) 1974-75 (Rs. in 000)	Estimated number of principal and secondary workers 1974-75		Value added per worker 1974-75 (Rs.)	
Financial institutions, real estate and business services	6,06,29	3135	19,00,72	6,00,25	4938	29,64,03	48,64,75
Education, health, community services, recreational and cultural services	63,20,33	1027	64,90,98	42,66,57	3363	143,48,47	208,39,45
Personal services	143,10,52	1081	154,69,67	108,85,35	1939	211,06,69	365,76,36
Total	212,37,14	1124	238,61,37	157,52,17	2439	384,19,19	622,80,56

Sources: 1) Census of India 1971. General Economic Tables, B-IV Part D.

2) Census of India 1971. Series I Miscellaneous Studies. Paper 1 of 1974.

3) GOI, NSS, 29th Round: Draft Report No. 280/6.

Table 3A.5: State-wise Estimates of Net Domestic Product in Rural Sector: 'Fishing', 1961-62

(Rs. lakhs)

States	$\frac{W_r}{W_t}$	SNDP at current prices	SNDP (rural) at current prices
Andhra Pradesh	0.8999	11,39	10,25
Assam	0.9290	3,24	3,01
Bihar	0.8900	13,00	11,57
Gujarat	0.7480	2,46	1,84
Jammu & Kashmir	0.7200	16	11
Karnataka	0.7500	1,56	1,17
Kerala	0.6793	3,68	2,50
Madhya Pradesh	0.8167	60	49
Maharashtra	0.7092	5,64	4,00
Orissa	0.9896	2,90	2,87
Punjab	0.6200	19	12
Rajasthan	0.5238	21	11
Tamil Nadu	0.7296	12,65	9,23
Uttar Pradesh	0.7155	1,16	83
West Bengal	0.8998	24,26	21,83

Sources: 1) Census of India 1961. General Economic Table, B IV Part C.

2) GOI, Estimates of State Domestic Product, CSO, November, 1985.

Table 3A.6: State-wise Estimates of Net Domestic Product in Rural Sector: 'Fishing', 1971-72

States	$\frac{W_r}{W_t}$	(Rs. lakhs)	
		SNDP at current prices	SNDP (rural) at current prices
Andhra Pradesh	0.8700	25,15	21,88
Assam	0.8701	19,10	16,62
Bihar	0.7802	17,02	13,28
Gujarat	0.6398	9,55	6,11
Haryana	0.7500	24	18
Jammu & Kashmir	0.6914	1,62	1,12
Karnatak	0.7301	11,45	8,36
Kerala	0.7301	28,27	20,64
Madhya Pradesh	0.7391	2,30	1,70
Maharashtra	0.6700	20,91	14,01
Orissa	0.8493	7,70	6,54
Punjab	0.6190	63	39
Rajasthan	0.6500	2,00	1,30
Tamil Nadu	0.6901	21,33	14,72
Uttar Pradesh	0.6802	6,91	4,70
West Bengal	0.9101	60,27	54,85

Sources: 1) Census of India, 1971. General Economic Tables, B IV - Part D.

2) GOI, Estimates of State Domestic Product, CSO, November, 1935.

Table 3A.7 : Break-down of the Net Domestic Product from 'Unregistered Manufacturing' into Household Manufacturing and Non-household Manufacturing (Unregistered), Statewise, 1971-72

(Rs. lakhs)

States	$\frac{W_H}{WUM}$	$\frac{VA_{NH}}{VA_H}$	SNMP from unregistered manufacturing	SNMP from Household manufacturing at current prices	SNMP from Non-household manufacturing at current prices
Andhra Pradesh	0.6776	3.1852	153,85	61,16	92,69
Assam	0.7690	2.2780	30,60	18,17	12,43
Bihar	0.7101	2.4458	62,65	31,35	31,30
Gujarat	0.4482	1.9679	90,68	26,49	64,19
Karyana	0.5578	4.7624	33,79	7,08	26,71
Jammu and Kashmir	0.7173	1.6729	12,91	7,78	5,13
Kernataka	0.5736	3.9319	142,27	36,27	106,00
Kerala	0.3528	2.2081	89,25	17,67	71,58
Madhya Pradesh	0.6882	3.3415	103,60	41,21	62,39
Maharashtra	0.4134	4.3332	248,29	34,70	213,59
Orissa	0.7987	4.9432	28,82	12,83	15,99
Punjab	0.4124	1.3826	67,36	22,68	44,68
Rajasthan	0.6518	2.000	79,05	38,21	40,84
Tamil Nadu	0.4802	2.7069	217,62	55,37	162,25
Uttar Pradesh	0.6332	1.9711	200,20	93,48	106,72
West Bengal	0.3884	3.6120	159,15	23,80	135,35

- Sources:**
- 1) Census of India, 1971. General Economic Tables.
 - 2) GOI, Annual Survey of Industries, 1971-72, Vol.I.
 - 3) GOI, NSS, 29th Round: Draft Report No. 280/6.
 - 4) GOI, All India Report on the Census of Small Scale Industrial Units (1972), 1977.
 - 5) GOI, Statistical Abstract, CSO, 1979.

Table 3A.8: State-wise Estimates of Net Domestic Product in Rural Sector:
Household and Non-household (Unregistered) Manufacturing, 1971-72

(Rs. lakhs)

States	Household manufacturing				Non-household manufacturing				SNDP (rural) household + non-household
	Wr Wt	VAu VAR	SNDP at current prices	SNDP (rural) at ou- rrent prices	Wr Wt	VAu VAR	SNDP at current prices	SNDP (rural) at ou- rrent prices	
Andhra Pradesh	0.8368	1.5484	61,16	46,97	0.4414	1.5484	92,69	31,32	78,29
Assam	0.7521	1.4446	18,17	12,31	0.4794	1.4446	12,43	4,84	17,15
Bihar	0.8258	1.7127	31,35	23,03	0.5178	1.7127	31,30	12,06	35,09
Gujarat	0.7375	2.6722	26,49	13,58	0.0362	2.6722	64,19	89	14,47
Haryana	0.8705	1.2986	708	5,93	0.2637	1.2986	26,71	5,77	11,70
Jammu and Kashmir	0.7163	1.3242	778	5,10	0.3102	1.3242	5,13	1,30	6,40
Karnataka	0.6744	2.0408	3627	18,27	0.3294	2.0408	106,00	20,56	38,83
Kerala	0.8714	1.4448	1767	14,56	0.6584	1.4448	71,58	40,91	55,47
Madhya Pradesh	0.7597	1.8952	41,21	25,76	0.2311	1.8952	62,39	8,54	34,30
Maharashtra	0.7016	2.0719	3470	18,45	0.1861	2.0719	13,59	1,35	19,80
Orissa	0.9063	2.3193	1283	10,35	0.5256	2.3193	15,99	5,17	15,52
Punjab	0.8289	3.6290	2268	12,97	0.2776	3.6290	44,68	4,28	17,25
Rajasthan	0.7125	1.9020	38,21	21,63	0.3262	1.9020	40,84	8,29	29,92
Tamil Nadu	0.5987	1.3397	5537	29,17	0.3753	1.3397	162,25	50,23	79,40
Utter Pradesh	0.7397	3.5487	9348	41,57	0.4724	3.5487	106,72	21,50	63,07
West Bengal	0.7172	2.2343	2380	12,65	0.3224	2.2343	135,35	23,76	36,41

Sources: 1) Census of India 1971. General Economic Tables, B-IV Part B, and Part C and Establishment Tables, E-II Part B.

2) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

3) Table 3A.7.

Table 3A.9: State-wise Estimates of Net Domestic Product in Rural Sector: 'Transport by Other Means', 1961-62

(Rs. lakhs)

States	$\frac{W_r}{W_t}$	$\frac{V_{11}}{V_r}$	Rural share	SNDP at current prices	SNDP (rural) at current prices
A.P.	0.2361	1.7865	0.1475	24,92	3,68
Assam	0.5278	1.0450	0.5464	-	-
Bihar	0.5160	1.2940	0.4517	16,00	7,23
Gujarat	0.2643	1.3429	0.2111	21,11	4,46
J & K	0.2741	2.5511	0.1289	3,59	46
Karnataka	0.1963	-	0.1963	12,24	2,40
Kerala	0.6382	1.4929	0.5416	13,20	7,15
M.P.	0.1875	1.9171	0.1074	12,50	1,34
Maharashtra	0.1099	1.5867	0.0722	62,05	4,48
Orissa	0.3599	2.3988	0.1899	3,28	62
Punjab & Haryana	0.3347	2.3097	0.1789	14,32	2,56
Rajasthan	0.2419	1.1460	0.2178	9,80	2,13
Tamil Nadu	0.1944	1.8111	0.1176	21,89	2,57
U.P.	0.3723	1.9495	0.2333	64,33	15,01
W.B.	0.1680	1.0567	0.1604	36,86	5,91

N.B.: For Assam and Jammu and Kashmir the value added differentials refer to the year 1974-75.

Sources: 1) Census of India 1961. General Economic Table, B-IV. Part C.

2) GOI, NSS, 29th Round: Draft Report No. 280/6.

3) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

Table 3A.10: State-wise Estimates of Net Domestic Product in Rural Sector: 'Transport by Other Means', 1971-72

(Rs. lakhs)

States	$\frac{W_r}{W_t}$	$\frac{V_u}{V_r}$	Rural share	SNDP at current prices	SNDP (rural) at current prices
Andhra Pradesh	0.2597	1.9258	0.1541	81,34	12,53
Assam	0.4098	1.0450	0.3992	10,60	4,23
Bihar	0.4205	1.1495	0.3870	40,01	15,48
Gujarat	0.2625	1.8022	0.1649	65,85	10,86
Haryana	0.3797	1.1876	0.3401	21,60	7,35
Jammu and Kashmir	0.3801	2.5511	0.1938	10,76	2,08
Karnataka	0.1664	-	0.1664	33,01	5,49
Kerala	0.6221	1.2466	0.5691	52,39	29,82
Madhya Pradesh	0.1520	2.0212	0.0815	36,50	2,97
Maharashtra	0.1332	1.5282	0.0914	158,81	14,52
Orissa	0.3178	2.4388	0.1604	14,21	2,28
Punjab	0.3873	1.7072	0.2702	35,56	9,61
Rajasthan	0.2706	1.6455	0.1340	26,48	4,87
Tamil Nadu	0.1645	1.6633	0.1058	93,43	9,88
Uttar Pradesh	0.2322	1.4229	0.1753	92,81	16,27
West Bengal	0.2106	1.1092	0.1939	96,55	18,73

Sources: 1) Census of India 1971. General Economic Tables, B-IV Part A.

2) GOI, NSS, 29th Round: Draft Report No. 280/6.

3) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

Table 3A.11: State-wise Estimates of Net Domestic Product in Rural Sector: 'Construction', 1951-62

(Rs. lakhs)

States	$\frac{W_r}{W_t}$	$\frac{V_r}{V_t}$	Rural share	SNDP at current prices	SNDP (rural) at current prices
Andhra Pradesh	0.5908	2.1859	0.3978	49,24	19,59
Assam	0.8327	1.0920	0.8201	7,03	
Bihar	0.6300	1.0726	0.6135	9,00	5,52
Gujarat	0.5797	1.0329	0.5602	34,72	19,45
Jammu and Kashmir	0.5396	0.8287	0.5858	2,87	1,63
Karnataka	0.5357	2.0611	0.3267	41,58	13,58
Kerala	0.8042	1.6987	0.7074	12,08	8,54
Madhya Pradesh	0.4692	1.1928	0.4256	56,20	23,92
Maharashtra	0.5282	2.8792	0.2800	69,31	19,41
Orissa	0.4840	1.4659	0.3902	24,37	9,51
Punjab	0.5432	1.6321	0.4215	31,98	13,48
Rajasthan	0.4574	1.2594	0.4048	33,66	13,63
Tamil Nadu	0.4995	1.4092	0.4146	20,53	8,51
Uttar Pradesh	0.5642	1.0275	0.5575	67,45	37,60
West Bengal	0.3894	2.0631	0.2361	47,90	11,31

N.B.: For Assam, Jammu and Kashmir the value added differentials refer to the year 1974-75.

- Sources:** 1) Census of India 1961. General Economic Tables, B-IV Part C.
 2) GOI, NSS, 29th Round: Draft Report No. 280/6.
 3) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

Table 3A.12: State-wise Estimates of Net Domestic Product in Rural Sector: 'Construction', 1971-72

States	(Rs. lakhs)				
	$\frac{Vr}{Vt}$	$\frac{Vu}{Vr}$	Rural share	SNDP at current prices	SNDP (rural) at current prices
Andhra Pradesh	0.5009	2.3578	0.2986	106,20	31,71
Assam	0.6199	1.0920	0.5990	43,30	25,94
Bihar	0.4399	0.9534	0.4517	144,91	65,46
Gujarat	0.3199	1.4528	0.2446	93,51	22,87
Haryana	0.6300	0.8287	0.7194	42,91	30,87
Jammu and Kashmir	0.6240	0.7181	0.6980	24,38	17,02
Karnataka	0.5201	2.4515	0.3066	136,68	41,91
Kerala	0.7887	1.4107	0.7257	40,95	29,72
Madhya Pradesh	0.4908	1.2564	0.4341	110,10	47,79
Maharashtra	0.4096	2.7716	0.2002	233,30	46,71
Orissa	0.6331	1.4888	0.5368	26,79	14,38
Punjab	0.6007	1.2064	0.5550	99,69	55,33
Rajasthan	0.5115	1.2394	0.4579	67,26	30,80
Tamil Nadu	0.4493	1.2945	0.3866	142,32	55,02
Uttar Pradesh	0.5140	0.7508	0.5848	246,00	143,86
West Bengal	0.3912	2.1640	0.2289	144,51	33,08

Sources: 1) Census of India 1971. General Economic Tables, B-IV Part A.

2) GOI, NSS, 29th Round: Draft Report No. 280/6.

3) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

Table 3A.13: State-wise Estimates of Net Domestic Product in Rural Sector: 'Trade, Hotels and Restaurants', 1961-62

(Rs. lakhs)

States	$\frac{W_r}{W_t}$	$\frac{V_u}{V_r}$	Rural share	SNDP at current prices	SNDP (rural) at current prices
Andhra Pradesh	0.5881	3.0021	0.3223	104,48	33,67
Assam	0.6262	1.2573			
Bihar	0.6664	2.2752	0.4675	94,00	43,95
Gujarat	0.3839	1.5103	0.2921	93,58	27,33
Jammu and Kashmir	0.3695	1.6411	0.2631	7,13	1,83
Karnataka	0.4098	2.7837	0.1996	75,32	15,03
Kerala	0.6962	3,3278	0.4073	51,12	20,85
Madhya Pradesh	0.4050	2.7461	0.1936	59,90	11,90
Maharashtra	0.2655	2.6868	0.1186	62,05	7,36
Orissa	0.6863	2.6358	0.4551	20,68	9,39
Punjab and Haryana	0.3932	3.2634	0.1657	87,51	14,50
Rajasthan	0.4557	2.6729	0.2335	63,90	15,24
Tamil Nadu	0.3848	3.0409	0.1706	131,91	22,50
Uttar Pradesh	0.4846	2.8521	0.2479	304,70	75,53
West Bengal	0.3412	1.3523	0.2769	171,34	47,44

N.B.: For Assam and Jammu and Kashmir V_u/V_r refer to the year 1974-75.

- Sources:** 1) Census of India 1961. General Economic Tables, B-IV Part C.
 2) GOI, NS3, 29th Round: Draft Report No. 280/6.
 3) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

Table 3A.14: State-wise Estimates of Net Domestic Product in Rural Sector: 'Trade, Hotels and Restaurants', 1971-72

(Rs. lakhs)					
States	$\frac{W_r}{W_t}$	$\frac{V_u}{V_r}$	Rural share	SNDP at current prices	SNDP (rural) at current prices
Andhra Pradesh	0.4968	3.2381	0.2337	331,49	77,47
Assam	0.5534	1.2575	0.4963	78,30	38,86
Bihar	0.4920	2.0213	0.3239	133,96	43,39
Gujarat	0.3133	2.0266	0.1838	299,10	54,97
Haryana	0.3695	2.8592	0.1701	78,82	13,41
Jammu and Kashmir	0.3616	1.6411	0.2566	23,32	5,98
Karnataka	0.3609	3.3138	0.1456	170,99	24,90
Kerala	0.7122	2.7782	0.4711	161,33	76,00
Madhya Pradesh	0.3620	2.8930	0.1640	184,50	30,26
Maharashtra	0.2225	2.5858	0.0996	562,28	56,00
Orissa	0.5801	3.0904	0.3089	85,15	26,30
Punjab	0.3157	2.4123	0.1605	196,60	31,55
Rajasthan	0.4077	3.8332	0.1522	190,06	28,93
Tamil Nadu	0.3347	2.7931	0.1526	379,80	57,96
Uttar Pradesh	0.4149	2.0810	0.2541	413,30	105,02
West Bengal	0.3037	1.4193	0.2351	433,01	101,80

- Sources:** 1) Census of India 1971. General Economic Tables, B-IV Part A.
 2) GOI, NSS, 29th Round: Draft Report No. 280/6.
 3) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

Table 3A.15: State-wise Estimates of Net Domestic Product in Rural Sector: 'Other Services', 1961-62

States	(Rs. lakhs)				
	$\frac{Wr}{Wt}$	$\frac{Vu}{Vr}$	Rural share	SNDP at current prices	SNDP (rural) at current prices
Andhra Pradesh	0.6602	3.0461	0.3894	72,99	28,42
Assam	0.7308	1.0606		N.A.	
Bihar	0.7662	1.9015	0.6328	92,00	58,22
Gujarat	0.5041	1.3034	0.4382	68,00	29,80
Jammu and Kashmir	0.4616	1.3820	0.3829	6,35	2,43
Karnataka	0.5494	1.7817	0.4063	33,15	13,47
Kerala	0.8163	1.9958	0.6901	42,04	29,01
Madhya Pradesh	0.6388	1.9264	0.4786	38,00	18,19
Maharashtra	0.3742	2.6881	0.1820	108,30	19,71
Orissa	0.8560	2,0754	0.7412	42,13	31,23
Punjab	0.6546	2.6844	0.4138	37,90	15,68
Rajasthan	0.5871	1.0001	0.5871	36,92	21,68
Tamil Nadu	0.6657	4.2754	0.3178	113,32	36,01
Uttar Pradesh	0.6852	3.6225	0.3753	142.06	53,31
West Bengal	0.5180	1.8406	0.3686	102,10	37,63

N.B.: Assam, Gujarat, Jammu and Kashmir Vu/Vr refer to 74-75.

Sources: 1) Census of India 1961. General Economic Tables, B-IV Part C.

2) GOI, NSS, 29th Round: Draft Report No. 280/6.

3) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

Table 3A.16: State-wise Estimates of Net Domestic Product in Rural Sector: 'Other Services', 1971-72

States	(Rs. lakhs)				
	$\frac{Wr}{Wt}$	$\frac{Vu}{Vr}$	Rural share	SNDP at current prices	SNDP (rural) at current prices
Andhra Pradesh	0.6433	3.6153	0.3328	139,83	46,53
Assam	0.7440	1.0606	0.7326	43,10	31,57
Bihar	0.6518	1.6896	0.5256	85,75	45,07
Gujarat	0.3578	1.3034	0.2995	133,13	39,87
Haryana	0.5481	2.2324	0.3521	40,24	14,17
Jammu and Kashmir	0.4913	1.3820	0.4111	17,83	7,33
Karnataka	0.5636	2.1173	0.3208	97,63	31,32
Kerala	0.7163	1.6649	0.6026	137,82	83,05
Madhya Pradesh	0.4612	2.0329	0.2963	103,90	30,79
Maharashtra	0.3450	2.5899	0.1690	293,67	49,63
Orissa	0.7476	2.1076	0.5842	46,73	27,30
Punjab	0.4417	1.9844	0.2850	75,19	21,43
Rajasthan	0.5247	1.3994	0.4410	90,85	40,06
Tamil Nadu	0.4937	3.9295	0.1988	147,24	29,27
Uttar Pradesh	0.5796	2.6448	0.3427	232,68	79,74
West Bengal	0.4120	1.9309	0.2663	194,80	51,87

Sources: 1) Census of India 1971. General Economic Tables, B-IV Part A.

2) GOI, NSS, 29th Round: Draft Report No. 280/6.

3) GOI, Estimates of State Domestic Product 1960-61 to 1983-84, CSO, November 1985.

Table 3A.17: Fractile Group-wise Distribution of Sources of Funds, 1961-62 and 1971-72

Fractile Groups	Agriculture and Allied Activities				Non-agricultural Activities			
	Income from Cultivation and Self-employment in Livestock		Wage-income from Agriculture and allied activities		Income from self-employment		Wage-income	
	1961-62	1971-72	1961-62	1971-72	1961-62	1971-72	1961-62	1971-72
0-20	5.8	5.2	30.0	31.0	10.0	10.5	30.0	31.0
20-40	9.4	10.0	22.8	24.4	15.0	12.7	22.8	24.4
40-60	13.0	14.6	19.4	17.8	17.0	15.8	19.4	17.8
60-80	20.8	18.5	15.8	13.9	19.8	16.5	15.8	13.9
80-100	51.0	51.7	12.0	12.9	38.2	44.5	12.0	12.9
All Fractile Groups	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gini Coefficient	0.4252	0.4380	-0.1668	-0.1688	0.2874	0.3358	-0.1668	-0.1688

Contd.

Table 3A.17: (Contd.)

Fractile Groups	Institutional		Borrowings Non-institutional		Total Borrowings	
	1961-62	1971-72	1961-62	1971-72	1961-62	1971-72
0-20	2.5	2.8	6.6	6.7	5.5	4.8
20-40	5.0	4.0	10.9	11.5	9.3	7.8
40-60	10.7	7.7	16.1	16.1	14.7	12.0
60-80	18.7	19.6	22.1	25.1	21.3	22.4
80-100	63.1	65.9	44.3	40.6	49.2	53.0
All Fractile Groups	100.0	100.0	100.0	100.0	100.0	100.0
Gini Coefficient	0.5946	0.6302	0.6812	0.6731	0.4114	0.4794

N.B.: Gini Coefficients are computed from Lorenz Curves.

Sources: 1) RBI, AIRDIS: 1961-62 (Unpublished data). and RBI Bulletin, Vol.19 (Sept.1965).

2) RBI, AIDIS: 1971-72 (Unpublished data).

3) RBI, AIDIS: 1971-72, 1978.

Table 3A.18: Fractile Group-wise Distribution of Uses of Funds on Capital Account, 1961-62 and 1971-72.

Fractile Groups	Physical Investments							
	Farm Business		Non-Farm Business		Residential Construction		Durable Household Assets	
	1961-62	1971-72	1961-62	1971-72	1961-62	1971-72	1961-62	1971-72
0-20	3.0	2.9	2.4	2.4	4.5	5.5	3.0	4.2
20-40	7.5	7.6	4.7	4.8	7.3	8.7	5.0	9.0
40-60	12.0	13.0	7.9	11.8	11.2	12.0	8.5	14.3
60-80	20.0	18.0	15.5	11.4	17.5	19.8	16.3	18.9
80-100	57.5	58.5	69.5	69.6	59.5	54.0	67.2	53.6
All Fractile Groups	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gini Coefficient	0.540	0.5544	0.6582	0.6430	0.5284	0.4630	0.6420	0.4816

(Contd.)

Table 3A.18: (Contd.)

Fractile Groups	<u>Financial Savings</u>			
	<u>Formal</u>		<u>Informal</u>	
	1961-62	1971-72	1961-62	1971-72
0-20	1.8	5.5	1.2	2.5
20-40	5.7	7.5	2.3	2.5
40-60	8.0	9.5	5.5	7.0
60-80	13.0	20.0	14.2	13.5
80-100	71.5	57.5	76.8	74.5
All Fractile Groups	100.0	100.0	100.0	100.0
Gini Coefficient	0.6862	0.5370	0.7486	0.7030

N.B.: Gini Coefficients are computed from Lorenz Curves.

- Sources: 1) RBI, AIRDIS: 1961-62 (Unpublished data).and RBI Bulletin, Vol.19
(June 1965).
2) RBI, AIDIS: 1971-72 (Unpublished data)
3) RBI, AIDIS: 1971-72, 1977

Table 3A.19: Estimated Number of Rural Cultivator Households, 1961-62 and 1971-72

States	(in 000)	
	1961	1971
Andhra Pradesh	40,90 (65.4)	41,24 (61.6)
Assam	15,40 (75.4)	15,81 (81.6)
Bihar	59,74 (78.2)	69,38 (80.4)
Gujarat	19,16 (67.8)	24,15 (64.0)
Haryana	-	6,35
Jammu and Kashmir	4,85 (91.2)	5,24 (93.9)
Karnataka	24,73 (73.3)	23,67 (68.7)
Kerala	20,15 (80.5)	23,36 (89.7)
Madhya Pradesh	44,24 (78.8)	48,50 (82.0)
Maharashtra	37,65 (68.2)	41,12 (68.6)
Orissa	23,80 (71.1)	28,35 (77.2)
Punjab	16,29 (58.4)	12,99 (49.9)
Rajasthan	27,17 (86.7)	27,18 (86.8)
Tamil Nadu	34,21 (63.0)	35,64 (55.4)
Uttar Pradesh	96,79 (80.0)	1,06,66 (77.8)
West Bengal	32,98 (67.0)	40,01 (65.8)
Others	5,75	9,40
All-India	5,03,81 (73.4)	5,57,70 (72.4)

- N. B.:** 1) Figures in parentheses denote cultivator households as percentage of rural households.
 2) Figures of Assam and Punjab are inclusive of Meghalaya and Haryana respectively.
 3) In 1971-72 estimated number of rural households was lower than the census number of households by 3.0 per cent.

Source: REI, 'Pattern of Assets of Rural Households, 1961-71', Staff Occasional Papers, Vol. 2 (June 1977).

CHAPTER IVINCOME, SAVING, INVESTMENT AND FINANCIAL FLOWS OF
THE RURAL FARM HOUSEHOLD SECTOR, 1961-62 AND 1971-72

In this chapter we analyse changes in income, saving, investment and financial flows of rural cultivator households at all-India and state levels and for fractile groups. Since we have estimated the SAUF accounts only for two years, viz., 1961-62 and 1971-72, our analysis is primarily based on comparison of the two point data. However, in addition, wherever possible, an attempt has been made to supplement our analysis by referring to the data from external sources. Another aspect that has been analysed with the help of cross-sectional data is of inter-relationship between income, saving, investment and financial flows for the two bench-mark years, viz. 1961-62 and 1971-72.

In section 4.1, an analysis of growth and composition of income has been presented. Sections 4.2 and 4.3 deal with saving and its composition. A brief analysis of net financial flows into rural cultivator households' sector is presented in sections 4.4 and 4.5.

4.1 INCOME: GROWTH AND COMPOSITION

Average income per cultivator household, at current prices, is estimated to have increased from Rs. 1,438.68 in 1961-62 to Rs. 3,128.12 in 1971-72. When deflated by consumer price index of agricultural labour (base 1960-61 =

100), this increase works out from Rs. 1,424.43 in 1961-62 to Rs. 1,564.06 in 1971-72, implying an annual compound growth rate of less than 1 per cent. It is also noticed that different components of income have shown different rates of growth (see Table 4.1). Out of these, income from wages and salaries in non-farm occupations recorded the highest annual compound growth rate of 1.96 per cent, which comes to more than twice the growth rate of farm income at 0.87 per cent per annum. Non-farm income from self-employment, on the other hand, increased only at 0.44 per cent per annum. As a result, the combined share of wages and salaries in total income went up, from 7.65 to 8.47, while that of agricultural income and of non-agricultural income declined by 0.53 and 0.23 percentage points respectively. (Table 4.2).

Growth of Non-agricultural Income

Data on per capita real income of cultivators from self-employment in different non-agricultural industry groups are presented in Table 4.2. They show that income from all industry groups except other services increased at an annual compound growth rate ranging from 1.40 per cent per annum to 7.74 per cent per annum. Per capita income from other services, on the other hand, declined sharply from Rs. 19.26 in 1961-62 to Rs. 7.65 in 1971-72.¹

Furthermore, when the industry group 'Other Services' is excluded from the services sector (i.e. infrastructure

Table 4.1: Average Per Household Income of Rural Cultivators in current and constant (1960-61) prices: All-India, 1961-62 and 1971-72

(Rupees)

Source (1)	Per Household Income of Rural Cultivators				Annual Compound Growth of Rural Income (%) *
	At Current Prices		At 1960-61 Prices		
	1961-62 (2)	1971-72 (3)	1961-62 (4)	1971-72 (5)	
1. Agriculture and Allied Activities	1257.24	2751.66	1244.79	1357.83	0.87
2. Non-agricultural Activities					
1) Self employment	71.30	147.60	70.59	73.80	0.45
ii) Wages and Salaries	110.14	264.86	109.05	132.43	1.96
3. Total Non-agriculture (1 + ii)	181.44	412.46	179.64	206.23	1.39
4. Total Income (1 + 3)	1438.68	3128.12	1414.43	1564.06	0.94

* Computed using columns 4 and 5.

N.B.: Computed from Table 3.39. Deflators used are consumer price index of agricultural labour (1960-61 = 100).

Table 4.2: Per Capita Real Income of Rural Cultivators from Self-employment in Different Industry Groups, 1961-62 and 1971-72

Industry Group (1)	Per Capita Income at 1960-61 Prices		Annual Compound Growth Rate (%) (4)
	1961-62 (2)	1971-72 (3)	
1. Fishing	8.00	9.19	1.40
2. Unregistered Manufacturing	22.32	26.43	1.70
3. Total Commodity Producing Industries (1+2)	30.32	35.62	1.52
4. Transport by other Means	1.30	2.74	7.74
5. Construction	1.95	2.55	2.72
6. Trade and Hotels	17.76	25.24	3.58
7. Other Services	19.26	7.65	-0.09
8. Total Services (4+5+6+7)	40.27	38.18	-0.53 3.81*
9. Total (3+8)	70.59	73.80	0.44

* Excluding the industry group 'Other Services'.

N.B.: 1) Growth rates are based on 1961-62 and 1971-72 data.

2) Deflators used are consumer price index of agricultural labourers.

Sources: Tables 3.11, 3.12, 3.13, 3.14 and 3A.19.

Table 4.3: Percentage Distribution of Wage-Income of Rural Cultivator Households from Different Industry Groups (Organised Sector) 1961-62 and 1971-72

Industry Group (1)	1961-62 (2)	1971-72 (3)
1. Forestry and logging	4.05	3.10
2. Mining and quarrying	7.28	3.42
3. Manufacturing (Registered)	16.52	16.35
4. Construction	18.39	21.93
5. Electricity, gas and water supply	1.66	2.01
6. Railways	5.29	3.48
7. Transport by other means	1.96	3.10
8. Communication	1.72	1.96
9. Banking and Insurance	1.36	2.98
10. Real estate	0.07	0.14
11. Public Administration	22.65	24.06
12. Other Services	19.03	17.46
13. Total	100.00	100.00

N.B.: Compiled from Tables 3.16 and 3.17.

sub-section), the income from the services sector shows a higher growth rate than by the commodity-producing sector.

Industry group-wise composition of wages and salaries of rural cultivators gives a similar picture (Table 4.3). That is, it shows that the share of wage income from services sector went up while wage income from commodity-producing sectors declined in 1971-72 over 1961-62.

Growth of Agricultural Income during the Decade

An analysis of composition and growth of income presented so far is based on two point data, viz., 1961-62 and 1971-72 for which we have estimated SAUF statements for the farm household sector. However, the share of rural cultivator households in total agricultural income has not changed over the decade (see Table 3.3). We, therefore, can construct a time series of income earned by rural cultivators from agriculture and allied activities using the data on income generated in agriculture and allied activities published by the CSO, and assess the trend rate of growth.

The compound trend rate of growth of the net real income (NDP) generated in the agricultural sector was 2.25 per cent per annum. (This growth rate is estimated using the regression $\log Y = \log A + bt$). Growth rate of cultivator population on the other hand was 1.35 per cent per annum. Thus, the average real per capita income of cultivators increased at a rate of 0.90 per cent per annum.

This modest rate of growth can be largely attributed to improved productivity per hectare in agriculture (GOI, 1976)². This improvement in per hectare yield came mostly in the form of extension of irrigation and, since mid-sixties, the spread of HYV technology in some better endowed regions.³ However, the levels of growth achieved continued to be extremely uneven among various states. We shall return to this shortly.

4.1.1 Growth and Composition of Income of Different Fractile Groups

The data contained in Table 4.4 (last row) on growth rates of income of different fractile groups of cultivator households show that the rate of income increase was only marginal (i.e. 0.35 per cent per annum) in the case of bottom 20 per cent of cultivator households. Whereas for the remaining classes (except the last but one class, viz., 60-80) the growth rate of per household real income ranged between 1.25 per cent to 1.38 per cent per annum, per household real income decreased in absolute terms for the fractile group 60-80.

A consequence of this differential growth rate in per capita real income of the two extreme ends of the distribution was the marginal widening of the gap between the incomes of the two fractile groups. While the average annual income of the latter was higher than the average annual income of the former by 3.45 times in 1961-62, it

Table 4.4: Composition of Income of Rural Cultivator Households in different Fractile Groups, 1961-62 and 1971-72

Fractile Group Source (1)	0-20		20-40		40-60		60-80		80-100		All Groups	
	1961-62 (2)	1971-72 (3)	1961-62 (4)	1971-72 (5)	1961-62 (6)	1971-72 (7)	1961-62 (8)	1971-72 (9)	1961-62 (10)	1971-72 (11)	1961-62 (12)	1971-72 (13)
1. Farm Income												
1) Cultivation and Live-stock	34.14	33.47	51.01	54.29	61.54	68.97	75.04	77.41	88.11	88.22	70.42	72.66
ii) Wages	42.53	38.88	29.81	25.80	22.12	16.33	13.73	11.33	4.99	4.29	16.97	14.15
2. Total Farm (i+ii)	76.67	72.35	80.82	80.09	83.66	85.35	88.77	88.74	93.10	92.51	87.39	86.81
3. Non-Farm Income												
1) Self-employment	4.14	4.39	5.73	4.48	5.41	4.85	5.03	4.88	4.65	4.93	4.95	4.72
ii) Wages and Salaries	19.19	23.25	13.45	15.43	10.93	9.80	6.20	6.78	2.25	2.56	7.66	8.47
4. Total Non-Farm (i+ii)	23.33	27.65	19.18	19.91	16.34	14.65	11.23	11.26	6.90	7.49	12.61	13.19
5. Total Income (1+3)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
6. Per Household Income (at 1960-61 prices) from Farm and Non-Farm Activities	852.26	882.60	924.23	1046.73	1059.54	1202.80	1390.19	1357.99	2903.23	3332.14	1424.43	1564.06

Table 4.4: (Contd.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
7. Annual Compound Growth Rate		0.35		1.25		1.28		-0.23		1.38		0.94	

N.B.: 1) Compiled from Tables 3.40 and 3.41.

2) Growth rates are computed using average income (at 60-61 prices) in the years 1961-62 and 1971-72. Income is deflated using consumer price index of agricultural labourers (1960-61 = 100).

Table 4.5: Fractile Group-wise Distribution of Value of Assets, Land under Personal Cultivation and Owned Land under Personal Cultivation of Rural Cultivator Households, 1961-62 and 1971-72

Fractile Group (1)	Value of Assets		Land under Personal Cultivation		Owned Land under Personal Cultivation	
	1961-62 (2)	1971-72 (3)	1961-62 (4)	1971-72 (5)	1961-62 (6)	1971-72 (7)
0-20	2.0	2.0	5.8	6.0	2.2	3.5
20-40	5.0	5.8	10.7	9.0	7.6	8.5
40-60	10.0	10.5	15.7	14.9	13.2	14.0
60-80	18.5	18.7	22.7	21.6	22.0	23.0
80-100	64.5	63.0	45.1	48.5	55.0	51.0
All Fractile Groups	100.0	100.0	100.0	100.0	100.0	100.0

N.B.: Compiled from RBI, AIRDIS: 1961-62, RBI Bulletin, Vol.19 (June 1965).

Sources: 1) RBI, AIRDIS: 1961-62 (Unpublished data)

2) RBI, AIDIS: 1971-72, July 1978.

3) RBI, AIDIS: 1971-72, April 1975.

was 3.7 times higher in 1971-72. In this context it needs to be noted that there was a shift in the distribution of land under personal cultivation in favour of the uppermost class. Its share in the total increased from 45.1 in 1961-62 to 48.5 in 1971-72 (see Table 4.5).

A decline in per capita real income of the fractile group 60-80 noted above needs some explanation. Although the share of this class in land under personal cultivation decreased somewhat, it did not happen only in the case of this group (see Table 4.5). Thus the reduction in the productive base, viz., land cannot provide an adequate explanation. Moreover, it cannot explain the fall in non-farm and wage incomes. Incidentally, it may be of interest to note that this class got a larger proportion of loans from institutional as well as non-institutional sources in 1971-72 than in 1961-62 (see Table 3A.17).

It has been noted earlier (see footnote No. 8 of the third chapter) that the fractile group-wise estimates of income are derived using asset group-wise distributions of income from the RBI surveys. In 1961-62 survey, this fractile group (viz., 60-80) coincided with a single class having asset value Rs. 5,000 to Rs. 10,000, whereas in AIDIS (1971-72), it contained two asset classes, with value of assets between Rs. 10,000, Rs. 15,000 and Rs. 15,000 to Rs. 20,000. Whatever errors exist in the survey estimates for different classes, will be reflected in our estimates.

However, the RBI surveys do not provide estimates of standard errors. Against this background we may only conjecture that the above phenomenon, viz. decline in real income of the class 60-80, is due to data problems in the RBI surveys.

Two other noteworthy features of composition and distribution of income of fractile groups are to be noted here. Firstly, while the composition of income of all other classes remained the same, the share of non-farm income in total income of the bottom 20 per cent of the households increased from 23.33 per cent in 1961-62 to 27.65 per cent in 1971-72. Secondly, the distribution of income from livestock has shifted in favour of the bottom 60 per cent of the households. Their share in total income from livestock rose by 2 percentage points from 32.2 per cent in 1961-62 to 34.5 per cent in 1971-72. As against this, the distribution of agricultural income has remained unaltered (Table 3A.17).

4.1.2 State-wise Growth Pattern of Income

The facts mentioned below emerge from the estimates of per capita real income and growth rates for different states presented in Tables 4.6 and 4.7. In both the years Andhra Pradesh, Gujarat, Karnataka, Punjab, Rajasthan, Tamil Nadu and West Bengal had per capita income higher than all-India average while per capita income in five

**Table 4.6: Per Capita Real Income of Rural Cultivators
in Different States, 1961-62 and 1971-72**

S. No.	State	Income from Agricultural Activities (Rs.)		Income from Non-agricultural Activities (Rs.)		Total Income (Rs.)	
		1961-62	1971-72	1961-62	1971-72	1961-62	1971-72
(1)		(2)	(3)	(4)	(5)	(6)	(7)
1	Andhra Pradesh	244.00	309.67	35.31	24.59	279.31	334.26
2	Assam	187.01	174.85			-	214.96
3	Bihar	130.47	136.73	40.18	29.71	170.65	166.44
4	Gujarat	247.23	362.16	31.13	25.36	278.36	387.52
5	Jammu and Kashmir	188.97	214.12	28.42	81.13	217.39	295.25
6	Karnataka	249.64	252.75	25.65	30.44	275.29	283.19
7	Kerala	165.76	147.89	52.34	92.35	218.10	240.24
8	Madhya Pradesh	173.04	187.26	21.84	26.38	194.88	213.64
9	Maharashtra	238.89	162.01	29.15	32.18	268.04	194.19
10	Orissa	162.16	165.13	37.64	19.39	199.80	184.52
11	Punjab	310.35	609.80	17.97	21.75	328.32	631.55
12	Rajasthan	227.96	244.76	47.10	28.24	275.06	273.00
13	Tamil Nadu	256.30	260.08	33.91	62.72	290.21	322.80
14	Uttar Pradesh	186.72	197.78	28.23	24.10	214.95	221.88
15	West Bengal	224.67	251.40	68.00	51.27	292.67	302.67
	All-India	213.51	232.90	30.82	36.78	244.33	269.67

(Contd.)

Table 4.6: (Contd.)

- N.B.: 1) Per capita income for Punjab is inclusive of Haryana.
- 2) Estimates of per capita income at current prices are first derived by dividing the estimates of per household income from Tables 3.44 and 3.45 by average size of cultivator households. These estimates have been then deflated by the index number of consumer prices of agricultural labourers (1960-61 = 100).

Table 4.7: Growth Rates of Per Capita Real Income of Rural Cultivators in Different States.

S. No.	State	Annual Compound Growth Rate (%)			Annual Compound Growth Rate of Agricultural Income (%)		
		Agricultural Income	Non-agricultural Income	Total Income	Net Income Generated in Agricultural Sector -or	Growth Rate of Cultivator Population	Growth Rate of Per Capita Real Income from Agriculture
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1.	Andhra Pradesh	2.41	-3.55	1.81	1.18	0.75	0.43
2.	Assam	-0.01	N.A.	N.A.	N.A.	1.83	N.A.
3.	Bihar	0.47	-2.97	-0.24	1.18	1.70	-0.52
4.	Gujarat	3.89	-2.03	3.36	2.77	1.04	1.73
5.	Jammu and Kashmir	1.26	11.06	3.11	2.02	2.00	0.02
6.	Karnataka	0.12	1.73	0.28	2.55	0.90	1.65
7.	Kerala	-0.01	5.84	0.97	2.11	2.94	-0.83
8.	Madhya Pradesh	0.79	1.91	0.92	1.40	1.76	-0.36
9.	Maharashtra	-0.04	1.00	-0.03	-1.53	1.39	-2.92
10.	Orissa	0.18	-0.06	-0.79	8.59	2.13	6.46
11.	Punjab *	6.99	1.93	6.76	-	2.37	N.A.
12.	Rajasthan	0.71	-4.93	-0.001	3.62	1.65	1.97
13.	Tamil Nadu	1.00	6.34	2.18	0.68	-0.001	0.68
14.	Uttar Pradesh	0.58	-1.57	0.32	1.29	0.89	0.61
15.	West Bengal	0.82	-2.78	0.31	1.85	1.64	0.21
	All-India	0.87	1.78	0.94	1.96	1.35	0.61

* Growth rates for Punjab are inclusive of Haryana.

N.B.: 1) Growth rates in column 2, 3 and 4 are based on the data in columns 2 and 3, 4 and 5 and 6 and 7 in Table 4.6 respectively.

2) Growth rates in column 5 are based on three yearly averages (centered at 1961-62 and 1971-72). These are worked out using CSO's estimates of State Domestic Product from agriculture and allied activities (CSO, November, 1985).

other states, viz., Bihar, Kerala, Madhya Pradesh, Orissa and U.P. was lower than the all India average. Maharashtra, which had a higher per capita income than all India average in 1961-62, experienced a decline in its agricultural income in 1971-72. The index of per capita real income in Maharashtra in 1971-72 was only 72 to the base 1961-62 = 100. Thus, the State slipped in the rank of per capita income which was well below the all-India average. On the other hand, Jammu and Kashmir, which had a per capita income below the all-India average in 1961-62, moved up the ladder in income rank.

4.1.3 State-wise Growth Patterns of Agricultural Income

In Table 4.7 we have presented rates of growth of per capita agricultural income in various states. Two measures of growth rates are given, viz., (i) based on 1961-62 and 1971-72, and (ii) based on triennium centred at 1961-62 and 1971-72.⁴ In the following discussion, by and large, we have used triennium-based growth rates. As noted earlier, rates of growth differ considerably among states. The prominent 'Green Revolution States', viz., Punjab and Haryana⁵ had experienced highest growth (6.76 per cent per annum) followed by Rajasthan (1.97 per cent) and Gujarat (1.73 per cent). The growth rates for states of Karnataka (1.65 per cent), U.P. (0.69 per cent) and Tamil Nadu (0.68 per cent) were just modestly above the all-India rate of growth. Those states which had rates of

growth below the all-India level but had positive growth rates were Andhra Pradesh (0.43 per cent) and West Bengal (0.21 per cent).

Four states, viz., Bihar (-0.52 per cent), Kerala (-0.83 per cent), Madhya Pradesh (-0.36 per cent) and Maharashtra (-2.92 per cent) had negative rate of growth. In Bihar, Madhya Pradesh and Maharashtra, the trend growth rates of net agricultural income during the decade were not statistically significant. With positive growth rate of population, this implies negative decadal growth rates of per capita agricultural income in these states. Although the trend growth rate of net income from agriculture was significant in Kerala, the value of estimated growth rate (2.66 per cent) was less than the growth rate of cultivator population, viz. 2.94 per cent.⁶

Before proceeding further, a point to be noted is that Orissa registered a very high rate of growth, which we suspect to be spurious, and therefore refrain from inferring anything from these results.⁷

The following observations may be made regarding growth of non-agricultural income of rural cultivators. Levels of per capita real income from non-agricultural occupations had decreased in absolute terms in 1971-72 over 1961-62 in Andhra Pradesh, Bihar, Gujarat, Orissa, Rajasthan, Uttar Pradesh and West Bengal. In contrast, per capita non-farm income of cultivators in real terms increased in

the States of Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra and Tamil Nadu. Per capita non-agricultural real income in Jammu and Kashmir, Kerala and Tamil Nadu recorded considerable growth. This is reflected in the increased proportion of non-farm income in total income (see Table 4.8).

With this background of income growth experienced by various States as outlined above, we now turn to examine changes in saving rate between two points of time, viz., 1961-62 and 1971-72.

4.2 SAVING RATES OF RURAL CULTIVATOR HOUSEHOLDS

Over the decade, saving of the rural cultivator household sector increased from Rs. 482.63 crores in 1961-62 to Rs. 946.62 crores in 1971-72 (Table 3.36). The saving rate of the sector (i.e. average propensity to save) decelerated from 6.66 per cent in 1961-62 to 5.25 per cent in 1971-72. (See Table 4.9).⁸ On the other hand, aggregate saving rate of household sector, based on CSO's estimates of saving, had almost doubled - increasing from 5.8 per cent to 11.5 per cent between the two years.

The level and rate of saving are principally dependent on income as well as its distribution and stability. It was mentioned earlier, in section 4.1, that during the decade under consideration cultivators' income had increased at the modest rate of 0.87 per cent per annum. Furthermore, data on fractile group-wise distribution given

in Table 3A.17 do not show any significant changes⁹ in income distribution. It would be, therefore, instructive to examine the saving propensities of fractile groups. However, we do not have the data on net saving (i.e. saving netted out for change in liabilities) at fractile group level. But data on rates of saving in physical assets and gross financial assets are available and are presented in Table 4.10. The data clearly show a fall in the average propensity to save for all fractile groups, the decline being substantial in the case of the uppermost class, between 1961-62 and 1971-72.

4.2.1 State-wise Patterns of Average Propensity to Save (APS)

State-wise estimates of average saving rates (APS) contained in Table 4.11 divulge considerable variation across the states. It is, perhaps, needless to state that the inter-state variability in saving rates cannot be explained by levels of per capita income alone. Apart from the levels of income, its distribution and APS of different classes in various regions of the state are other important variables that determine a state's saving rate. Besides, social psychology of cultivators in different regions and variations in cost of living are some of the other determinants of a state's saving rate. (However, we do not have the data on any of these variables except per capita income and hence could not do an investigation of across state variability in saving rates).

Table 4.8: Proportion of Income from Agriculture and Allied Activities to Total Income of Rural Cultivators in Different States, 1961-62 and 1971-72

S.No.	State (1)	1961-62 (2)	1971-72 (3)
1.	Andhra Pradesh	0.87	0.91
2.	Assam	-	0.81
3.	Bihar	0.76	0.82
4.	Gujarat	0.89	0.93
5.	Jammu and Kashmir	0.87	0.72
6.	Karnataka	0.90	0.89
7.	Kerala	0.76	0.61
8.	Madhya Pradesh	0.89	0.88
9.	Maharashtra	0.89	0.83
10.	Orissa	0.81	0.89
11.	Punjab	0.94	0.96
12.	Rajasthan	0.83	0.90
13.	Tamil Nadu	0.88	0.80
14.	Uttar Pradesh	0.87	0.89
15.	West Bengal	0.77	0.83
	All India	0.87	0.87

N.B.: 1) Compiled from Tables 3.44 and 3.45.

2) For 1971-72 the proportion for Punjab relates to Punjab and Haryana.

Table 4.9: Rates of Saving in Physical and Financial Assets of Rural Cultivator Households, 1961-62 and 1971-72 (Percentages)

(1)	1961-62		1971-72	
	A (2)	B (3)	A (4)	B (5)
I. <u>Gross Saving in Physical Assets</u>				
1. Farm Business	5.56	4.57	3.98	3.32
2. Non-farm Business	0.39	0.38	0.48	0.46
3. Residential Construction	3.27	2.56	2.38	1.98
4. Durable Household Assets	0.33	0.33	0.75	0.75
5. Total Physical (1+2+3+4)	9.55	7.84	7.59	6.51
II. <u>Gross Saving in Financial Assets</u>				
6. Formal		1.08		1.61
7. Informal		5.46		0.95
8. Total Financial (6+7)		6.54		2.86
III. Total Gross Saving (5+8)	16.09	14.38	10.15	9.07
IV. Net Saving in Financial Assets		-1.18		-1.24
V. Total Saving	8.37	6.66	6.35	5.25

N.B.: 1) A is based on saving estimates inclusive of cash as well as kind expenditure on physical assets while B is based on saving estimates which include only cash expenditures on physical assets.

2) Compiled using column (8) and column (9) of Table 3.27 and the last column of row (5) of Tables 3.40 and 3.41.

Table 4.10: Rates of Saving in Physical and Financial Assets of Rural Cultivator Households, 1961-62 and 1971-72.

Fractile Groups: Type of Assets (1)	0-20		20-40		40-60		60-80		80-100		All Fractiles	
	1961-62 (2)	1971-72 (3)	1961-62 (4)	1971-72 (5)	1961-62 (6)	1971-72 (7)	1961-62 (8)	1971-72 (9)	1961-62 (10)	1971-72 (11)	1961-62 (12)	1971-72 (13)
1. Physical Assets												
a) Farm Business	2.16	1.48	4.97	3.27	7.02	4.87	8.85	5.97	12.18	7.92	8.64	5.76
b) Non-farm Business	0.09	0.10	0.16	0.18	0.23	0.38	0.34	0.33	0.74	0.82	0.43	0.50
c) Residential Construction	0.99	0.98	1.48	1.31	1.99	1.57	2.36	2.30	3.84	2.55	2.63	2.01
d) Durable Household Assets	0.14	0.28	0.21	0.50	0.32	0.70	0.47	0.81	0.92	0.94	0.56	0.75
2. Total (a+b+c+d)	3.38	2.84	6.84	5.26	9.56	7.52	12.02	9.41	17.68	12.23	12.26	9.02
3. Financial Assets												
e) Formal (Gross) (i.e. Direct lendings)	0.16	0.78	0.47	0.90	0.58	0.99	0.72	1.85	1.89	2.17	1.08	1.61
f) to Non-Cultivators	0.06	0.03	0.11	0.03	0.23	0.06	0.45	0.11	1.17	0.24	0.62	0.14
g) to Cultivators	0.49	0.18	0.86	0.15	1.80	0.37	3.52	0.63	9.12	1.42	4.84	0.81
4. Total (e+f+g)	0.71	0.99	1.44	1.08	2.62	1.42	4.69	2.59	12.19	3.83	6.54	2.56
5. Total (2+4)	4.09	3.83	8.28	6.34	12.18	8.95	16.11	12.01	29.87	16.06	18.80	11.58

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(Contd.)

Table 4.10: (Contd.)

N.B.: 1) Direct Lendings are net of recoveries of loans.

2) Compiled from Tables 3.42, 3.43 and Row (5) of Tables 3.40 and 3.41.

Table 4.11: States Ranked in Descending Order of Saving Rates of Rural Cultivator Households, 1961-62 and 1971-72

(1)	1961-62		1971-72	
	State (2)	Saving Rate (as % of Income) (3)	State (4)	Saving Rate (as % of Income) (5)
Group 1 (High Saving Rate States)	Punjab *	12.03	Punjab *	11.71
	Karnataka	11.98	Karnataka	11.41
	Uttar Pradesh	10.92	Uttar Pradesh	9.86
	Kerala	10.31	Gujarat	9.73
	Tamil Nadu	9.85	Kerala	9.53
Group 2 (Average Saving Rate States)	Bihar	8.39	Maharashtra	6.98
	Andhra Pradesh	8.08	Bihar	6.42
	All-India	7.21	All-India	5.59
	Maharashtra	6.39	Madhya Pradesh	5.93
	Madhya Pradesh	6.16	Assam	5.44
			Rajasthan	5.34
			Tamil Nadu	5.01
			West Bengal	4.54
			Jammu and Kashmir	4.24
	Group 3 (Low Saving Rate States)	Gujarat	5.09	Andhra Pradesh
Rajasthan		5.00	Orissa	1.90
Orissa		4.41		
Jammu and Kashmir		4.02		
West Bengal		2.88		

(Contd.)

Table 4.11: (Contd.)

* Saving rate for Punjab are inclusive of Haryana.

N.B.: 1) Saving rates are compiled using last but one column of Tables 3.37 and 3.38 and column 5 of Tables 3.44 and 3.45.

2) Saving rates for all India differ from those in Table 3.36 (last row, B) because estimates of saving in physical assets are inclusive of expenditures on current repairs. This has been done in order to maintain comparability among States.

A comparison of State-wise saving rates at two points of time, viz. 1961-62 and 1971-72, reveals that in eight states, i.e., Punjab, Karnataka, Kerala, Uttar Pradesh, Maharashtra, Madhya Pradesh, Rajasthan and Jammu and Kashmir, saving rates remained almost unchanged. As against this, APS of cultivators in two states, Gujarat and West Bengal, showed substantial increase while in Andhra Pradesh, Tamil Nadu, Bihar and Orissa saving rate declined from 1961-62 to 1971-72.¹⁰

An attempt to examine the date on growth rate of per capita agricultural real income (based on triennium average) along with saving rate reveals the following facts. Out of the four states (Bihar, Kerala, Madhya Pradesh and Maharashtra), which showed decline in real per capita income, saving rate declined in Bihar, while it remained unchanged in the remaining three states. Saving rate in the rapidly growing state of Punjab remained around 12 per cent. As against this, in Gujarat, which recorded a compound growth rate of 1.73 per cent per annum of per capita agricultural income (at 1960-61 prices), saving rate increased substantially - from an average level of 5.09 per cent in 1961-62 to a high level of 9.73 per cent in 1971-72. In this connection it is to be noted that in Gujarat net income generated in agriculture and allied activities (at constant prices) reached an unprecedented peak level in 1971-72, recording an annual compound growth rate of 5.8

per cent over the previous peak.¹¹ It has been pointed out that cultivators in Gujarat show a high propensity to benefit from shift in the crop-mix in favour of high-valued crops (Alag, 1980).¹² One might expect that this would lead to a shift in the saving function. However, with only two point data at our disposal, we are not in a position to comment on whether this increase in average propensity to save observed in Gujarat (or change in average propensity to save in any other state for that matter) implies a shift in saving function or it merely represents phenomenon specific to that year.

The cumulative outcome of the afore-mentioned changes in the saving rates in different states was a decline in the all-India saving rate. Moreover, these changes had led to changes in relative positions of the states observed in these two years. In order to analyse the changes in relative positions of states as regards saving rates, we have grouped them into three categories. While group 1 contains states with high saving rate, group 2 comprises states with average saving rate, i.e., states which have registered saving rates in the range of ± 1 percentage point around all-India saving rate. Group 3 constitutes low saving rate states.

From the grouping of the states given in Table 4.11 we may draw certain conclusions. First, four states, viz., Punjab, Karnataka, Uttar Pradesh and Kerala maintained

their position as states with high saving rate in both the years whereas Orissa continued to be the state with a low saving rate. APS in Bihar, Maharashtra and Madhya Pradesh remained at average level. Secondly, Tamil Nadu, with a high saving rate in 1961-62, has shifted to average saving rate group and was below the all-India average in 1971-72 because of the fall in the state's APS. In contrast, Gujarat emerged as a state with a high saving rate in 1971-72. The position of Andhra Pradesh changed from the second to the third group. Thus it became a state with a low saving rate in 1971-72. Rajasthan, Jammu and Kashmir and West Bengal, on the other hand, have moved up to the second group in 1971-72 from the third group in 1961-62. The shift in the positions of Rajasthan and Jammu and Kashmir was not caused by increases in their saving rates but was a result of decline in the all-India saving rate. Maharashtra, which was below the all-India average, had shifted to the position of above all-India average without much change in its APS for a similar reason.

Another noteworthy feature that is manifest by the change in saving rates in different types of assets is that average propensity to save in physical assets as well as informal financial assets had declined while average propensity to save in formal financial assets had gone up. This was observed for all fractile groups and for most of the states (Table 4.12). This leads us to an examination

of the composition of saving which is taken up in the next section.

4.3 FACTORS DETERMINING CHANGES IN COMPOSITION OF SAVING

The composition of saving of cultivator households is principally governed by its decision regarding distribution of its total saving in various forms. Decisions to save in different assets are interdependent. In general, the factors that determine saving in physical assets (i.e. investment) and financial assets are level of income of the cultivator household, relative rates of real return on these assets, degree of risk of return involved for different types of assets and other characteristics of assets such as marketability and liquidity. In fact, the last two factors influence risk as well as return on the assets.

Whenever there is a rise in real rate of return on any particular asset (adjusted for risk), ceteris paribus, it would result in increased acquisition of that form of asset. On the other hand, holdings of all assets would go up with increase in the level of income of a household, ceteris paribus. Further, increase in financial assets can be in two forms, viz., formal and informal. The type of facilities providing financial instruments (such as, spread of bank branches) and improvement in their services determine the saving held in the form of formal financial assets. Furthermore, how much of the increase in financial saving

Table 4.12: Rates of Saving in Physical Assets and Gross Financial Assets in Different States, 1961-62 and 1971-72

(Percentages)

State	Saving in Physical Assets		Saving in Financial Assets						Total Financial		Total Savings	
	1961-62	1971-72	Formal	1961-62	1971-72	Informal i.e. Direct Lendings to Cultivators	1961-62	1971-72	Informal i.e. Direct Lendings to Non-Cultivators	1961-62	1971-72	1961-62
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Andhra Pradesh	8.96	3.50	0.81	1.28	12.90	3.77	1.59	0.61	15.30	5.66	24.26	9.16
Assam	-	4.45	-	1.22	-	0.28	-	0.04	-	1.54	-	5.99
Bihar	7.94	4.66	0.85	2.48	8.13	2.73	0.78	0.28	9.81	5.49	17.75	10.15
Gujarat	11.86	11.12	2.67	2.16	3.98	0.80	0.18	0.13	6.83	3.09	18.01	14.61
Jammu and Kashmir	10.10	3.66	0.27	0.78	4.24	2.16	0.02	-	4.53	2.94	14.63	6.60
Karnataka	13.42	11.04	2.03	1.83	10.96	7.11	0.92	0.56	13.91	9.50	27.33	20.54
Kerala	8.71	5.65	1.86	5.62	7.56	1.39	0.07	0.03	9.49	7.03	18.20	12.68
Madhya Pradesh	7.83	8.10	0.28	0.55	8.70	1.97	0.97	0.30	9.95	2.82	17.78	10.92
Maharashtra	9.33	8.29	0.81	1.38	6.32	3.20	0.39	0.15	7.52	4.73	16.85	13.02
Orissa	5.51	2.49	0.10	0.43	2.22	1.59	0.38	0.10	2.70	2.12	8.21	4.61
Punjab*	10.63	10.21	2.00	2.08	11.03	3.44	2.36	1.25	15.39	6.77	26.02	16.98
Rajasthan	9.59	8.49	0.95	1.20	14.11	4.53	0.75	0.24	15.81	5.97	25.40	14.46
Tamil Nadu	9.62	6.03	1.71	1.70	14.62	5.20	1.66	0.92	17.99	7.82	27.61	13.85
Uttar Pradesh	10.47	10.02	0.90	1.30	8.66	3.90	1.17	0.64	10.75	5.84	21.20	15.86
West Bengal	2.72	3.15	0.78	1.93	5.13	2.21	0.45	0.18	6.36	4.32	9.08	7.47
All-India	11.87	8.88	1.08	1.61	8.01	1.35	2.51	0.59	11.60	3.55	23.47	12.43

* Inclusive of Haryana.

N.B.: 1) Compiled from Tables 3.44, 3.45, 3.46 and 3.47.

2) Rates of Saving in Col. (2) and (3) are based on saving in physical assets (net of sales).

3) Rates of Savings in Col. (6) to Col. (9) are based on saving in the form of direct lendings gross of repayments.

would be in the form of informal financial assets would crucially depend upon the demand for loans by the borrowers.

Over time, rates of return on various assets and income will be varying. The pace of growth of saving in various forms depends upon how each of these forms of saving respond to changes in the structure of return on various physical and financial assets and also the rise in income. To illustrate this point let us suppose that expansion of irrigation raises the rate of return on farm investment (assuming everything else remains unchanged) by removing land constraint, i.e. by making double cropping possible. Incidentally, investment in irrigation reduces the risk associated with the investment on the farm to some extent. Given his market expectations, a cultivator purchases physical asset immediately if his savings permit him to do so. Hence, his income position improves subsequently and saving in both forms, i.e. physical and financial assets, increase as a result. However, a cultivator with low level of saving may decide to hold savings temporarily in financial assets awaiting better conditions for purchase of physical assets in future. For example, his prospects of receiving a loan for purchase of physical assets improve because of increased deposits with the bank - or increased saving in the form of informal financial assets.

Against this background we now set out to explain

the changes in composition of saving of rural cultivator households. However, it may be reiterated that since our data relate to two points of time, we may be able only to suggest some factors that might have brought about the changes in saving composition.. Let us first summarise the major findings on composition of gross saving which is attempted in the next section..

4.3.1 Level and Composition of Gross Saving of the Rural Cultivator Households

Over the period 1961-62 to 1971-72 gross (cash) saving of rural cultivators in the country rose from Rs. 1,042.60 crores to Rs. 1,632.55 crores (Table 3.36). Gross saving in physical assets increased from Rs. 568.29 crores in 1961-62 to Rs. 1,171.67 crores in 1971-72 while gross saving in financial assets registered a decline in absolute terms between the two years from Rs. 474.31 crores to Rs. 461.03 crores. However, acquisitions of formal financial assets increased from Rs. 78.20 crores to Rs. 290.02 crores between 1961-62 and 1971-72, while informal financial assets, i.e. direct lendings by rural cultivators recorded decline in absolute terms of the order of Rs. 225.05 crores (from Rs. 396.11 crores in 1961-62 to Rs. 171.06 crores in 1971-72).

The fractile group-wise data presented in Tables 3.42 and 3.43 show that, for all fractile groups, saving in physical assets increased in absolute terms but at different rates. Likewise, the absolute level of financial saving was

higher in 1971-72 than in 1961-62 in case of the first four fractiles; however, for the uppermost fractile it showed a decline. The data reveal that while the level of formal financial assets increased at all levels, quantum of informal lendings fell in 1971-72. The decline in informal lendings was sharp in the case of the top fractile group and consequently the level of total financial saving fell in 1971-72 for that group.

At the state level, the absolute level of saving in physical assets increased in all the states except Andhra Pradesh, Jammu and Kashmir and Orissa (Tables 3.46 and 3.47). In Jammu and Kashmir and Orissa, the decline was observed only when receipts from sales are netted out from capital expenditures. So far as saving in formal financial assets is concerned, the decline was noticed in 1971-72 over 1961-62 in case of Andhra Pradesh, Madhya Pradesh, Rajasthan and Tamil Nadu whereas it remained unchanged in Assam and Gujarat. In the remaining states, the level of financial saving showed an increase.

The disparate growth of these items of saving over the period resulted in a change in composition of saving of cultivator households. The situation at all-India level in this regard can be seen from the information presented in Table 4.13.

The share of physical assets in the total saving rose from 54.51 per cent in 1961-62 to 71.77 in 1971-72.

Between the two categories of financial assets, the share of saving in formal financial assets increased from 7.5 per cent to 17.96 per cent while that of the informal category sharply declined from 37.99 per cent to 10.47 per cent between the two years.

At fractile group level, shares of both forms of saving, viz., physical and formal financial assets, increased for the upper three fractile groups (see Table 4.14). As regards bottom 20 per cent of the cultivator households, a fall in the share of informal financial assets in the total was accompanied by a fall in the share of physical assets but a substantial rise in the formal financial assets. The increase in the share of formal financial assets in total gross saving was nearly five-fold between 1961-62 and 1971-72.

A comparison of cultivator households' saving composition in different states at the two points of time indicates that in as many as eleven states, the share of physical assets in total gross saving increased (Table 4.15). However, the rate of change was different in different assets. While the level of gross saving remained more or less the same in Gujarat, in Andhra Pradesh and Bihar the change was marginal. In other states, the change ranged from 4.65 percentage points in Karnataka to 27.10 percentage points in Madhya Pradesh. We notice a change of substantially higher order, ranging between 21 percentage points to 24

Table 4.13: Percentage Distribution of Gross Saving in Physical and Financial Assets of Rural Cultivator Households: All-India, 1961-62 and 1971-72.

(1)	1961-62		1971-72	
	A (2)	B (3)	A (4)	B (5)
I. <u>Gross Saving in Physical Assets</u>				
1. Farm Business	58.14	58.30	52.39	51.09
2. Non-farm Business	4.11	4.82	6.34	7.03
3. Residential Construction	34.25	32.64	31.43	30.40
4. Durable Household Assets	3.50	4.24	9.84	11.48
5. Total Physical (1+2+3+4)	100.00	100.00	100.00	100.00
II. <u>Gross Saving in Financial Assets</u>				
6. Formal		16.49		62.90
7. Informal (i.e. Direct lendings)		83.51		37.10
i) to Cultivators		9.52		5.41
ii) to Non-cultivators		73.99		31.69
8. Total Financial (6+7)		100.00		100.00
9. Gross Saving in Physical Assets as a Percentage to Total Gross Saving		54.51		71.77
10. Saving in Formal Financial Assets as a Percentage of Total Gross Saving		7.50		17.76
11. Saving in Informal Financial Assets as a Percentage of Total Gross Saving		37.99		10.47

(Contd.)

Table 4.13: (Contd.)

	(1)	(2)	(3)	(4)	(5)
12. Total Financial Saving as a Percentage of Total Gross Saving			45.49		28.23

N.B.: 1) A is based on saving estimates inclusive of cash as well as kind expenditure on physical assets while B is based on saving estimates which include only cash expenditures on physical assets.

**Table 4.14: Percentage Distribution of Gross Saving of Rural Cultivator Households:
Fractile Groups, 1961-62 and 1971-72.**

Fractile Groups Uses (1)	0-20		20-40		40-60		60-80		80-100		All Fractiles	
	1961- 62 (2)	1971- 72 (3)	1961- 62 (4)	1971- 72 (5)	1961- 62 (6)	1971- 72 (7)	1961- 62 (8)	1971- 72 (9)	1961- 62 (10)	1971- 72 (11)	1961- 62 (12)	1971- 72 (13)
1. <u>Physical Invest- ment Expenditure</u> (Cash)												
a) Farm Business	64.03	52.10	72.93	62.14	73.35	64.74	73.62	63.44	68.89	64.71	70.44	64.83
b) Non-farm Busi- ness	2.56	3.75	2.30	3.43	2.42	5.12	2.86	3.51	4.18	6.71	3.53	5.57
c) Residential Construction	29.25	34.35	21.60	24.87	20.85	20.89	19.62	24.40	21.70	20.88	21.45	22.31
d) Durable House- hold Assets	4.16	9.80	3.17	9.56	3.38	9.25	3.90	8.65	5.23	7.70	4.58	8.29
2. Total (a+b+c+d)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
3. <u>Financial Saving</u>												
e) Formal (Gross)	22.76	78.88	32.87	83.59	22.33	69.70	15.31	71.52	15.52	56.68	16.49	62.90
Informal (i.e. Direct lendings)												
f) to Non-Cultiva- tors	8.78	3.07	7.66	2.38	8.84	4.43	9.67	4.16	9.64	6.32	9.52	5.41
g) to Cultivators	68.46	18.05	59.47	14.03	68.83	25.87	75.02	24.32	74.84	37.00	73.99	31.69
4. Total (e+f+g)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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(Contd.)

Tsble 4.14: (Contd.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
5. Gross Physical Saving as Percentage of Total Gross Saving		82.67	74.10	82.59	83.00	78.51	84.07	71.91	78.42	59.20	76.15	65.20	77.93
6. Gross Formal Financial Saving as a Percentage of Total Gross Saving		3.94	20.43	5.72	14.21	4.80	11.10	4.30	15.43	6.33	13.52	5.74	13.88
7. Informal Financial Saving as a Percentage of Total Gross Saving		13.39	5.47	11.69	2.79	16.69	4.83	23.79	6.15	35.47	10.33	29.06	8.19
8. Total Financial Saving as a Percentage of Total Gross Saving		17.33	25.90	17.41	17.00	21.49	15.93	28.09	21.58	41.80	23.85	34.80	22.07

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N.B.: 1) Direct lendings are net of recoveries of loans.

2) Physical investment expenditures are gross of sales as well as expenditures on current repairs.

3) Compiled from Tables 3.42 and 3.43.

Table 4.15: State-wise Distribution of Gross Saving in Physical Assets and Financial Assets, 1961-62 and 1971-72

(Percentages)

State	Saving in Physical Assets as a Percentage of Total Gross Saving		Saving in Gross Financial Assets as a Percentage of Total Gross Saving					
	1961-62 (2)	1971-72 (3)	Formal		Informal		Total Financial	
			1961-62 (4)	1971-72 (5)	1961-62 (6)	1971-72 (7)	1961-62 (8)	1971-72 (9)
(1)								
Andhra Pradesh	36.94	38.21	3.33	13.98	59.73	47.81	63.06	61.79
Assam	50.32	74.30	22.22	20.32	27.46	5.38	49.68	25.70
Bihar	43.08	45.92	4.93	24.41	51.99	29.67	56.92	54.08
Gujarat	63.45	64.11	14.28	14.80	22.27	21.09	36.55	35.89
Jammu and Kashmir	69.05	55.42	1.86	11.77	29.09	32.89	30.95	44.58
Karnataka	49.11	53.76	7.63	8.90	43.26	37.34	50.89	46.24
Kerala	47.88	44.52	10.20	44.27	41.92	11.21	52.12	55.48
Madhya Pradesh	44.04	71.14	1.59	5.09	54.37	20.77	55.96	25.86
Maharashtra	55.36	63.67	4.83	10.60	39.81	25.73	44.64	36.33
Orissa	67.09	53.86	1.24	9.41	30.67	36.73	31.91	46.14
Punjab*	40.84	64.14	7.70	11.02	51.46	24.84	59.16	35.86
Rajasthan	37.77	58.72	3.73	8.33	58.50	32.95	62.23	41.28
Tamil Nadu	34.85	43.50	6.21	12.31	58.94	44.19	65.15	56.50
Uttar Pradesh	49.20	63.02	4.25	8.20	46.55	28.78	50.80	36.98
West Bengal	29.99	42.17	8.57	25.79	61.44	32.04	70.01	57.83
All-India	53.00	58.68	4.89	14.10	42.16	27.22	47.00	41.32

(Contd.)

Table 4.15: (Contd.)

* For 1971-72 inclusive of Haryana.

N.B.: 1) Compiled from Tables 3.46 and 3.47.

2) In each row Col.(2) + Col.(8) = 100 and
Col.(3) + Col.(9) = 100.

3) Saving in physical assets are not of sales.

percentage points, in Assam, Punjab and Uttar Pradesh. In three states, viz., Jammu and Kashmir, Orissa and Kerala, the share of physical assets in the total saving declined. Out of these, Jammu and Kashmir and Orissa showed an increase in the share of informal financial saving in total gross saving. In Kerala, the fall in the share of physical assets as well as in informal financial assets was made good by a rise in saving in formal financial assets. In fact, in almost all the states, saving in formal financial assets as a percentage of total gross saving went up in varying degrees. The highest increase of 34 percentage points was recorded by Kerala, followed by Bihar (19.43 percentage points) and West Bengal (17.22 percentage points). In Assam, the share of saving in formal financial assets, which was well above the all-India level (nearly by four and half times) in 1961-62, declined by two percentage points in 1971-72.

4.3.1.1 Composition of Formal Financial Saving

The data on composition of saving in formal financial assets at all-India level are furnished in Table 3.35. They show that while the shares of change in currency holdings, deposits in commercial banks and small savings increased, the share of deposits in co-operative banks, insurance premiums and provident fund contributions decreased. In terms of growth of different components of formal financial assets, small savings registered the highest (five-fold) growth whereas deposits in commercial banks quadrupled from

1961-62 to 1971-72. Deposits in co-operative banks, on the other hand, increased three times over the level of 1961-62. It is also to be noted that the rate of growth of provident fund contributions was equivalent to the growth of wages from non-farm activities.

4.3.1.2 Composition of Physical Assets

A comparison of composition of cultivator households' investment in physical assets in 1961-62 and 1971-72 from the data presented in Table 4.13 reveals that at the all-India level the share of expenditure on farm physical assets as well as on residential construction in total capital expenditure declined while the shares of investment in non-farm business and durable household assets increased.

A more or less similar pattern of change in composition of physical assets is observed for all fractile groups (see Table 4.14). Thus, the relative importance of farm investment in the asset portfolio had declined while that of non-farm business investment and expenditure on durable household assets increased for all fractile groups. This implies relatively more equitable distribution of investment expenditures in residential construction, durable household assets and non-farm business assets in 1971-72 as compared to 1961-62. This is evidenced from the decline in the Gini coefficients (i.e. concentration ratios computed from Lorenz curves) of these distributions in the two years (see Table 3A.18). However, the concentration ratio for durable

household expenditure fell from 0.6420 (in 1961-62) to 0.4816 (in 1971-72) indicating a shift towards relatively more equitable distribution than of residential construction. The concentration ratio for the distribution of the latter declined from 0.5284 in 1961-62 to 0.4630 in 1971-72. In contrast, the distribution of non-farm investment showed no change in percentage shares of bottom two fractile groups and the top-most fractile group while redistribution was noticed in case of the middle two classes, viz. 40-60 and 60-80. As a result, Gini coefficient of the distribution declined only marginally.

The state level data regarding composition of physical assets given in Table 4.16 show that in twelve states the percentage share of farm investment in total investment expenditure declined in 1971-72 over 1961-62. However, the order of decline varied among these states. It ranged between 4.7 percentage points for Gujarat to 28.4 percentage points for Assam. In case of Assam, investment in durable household assets registered the fastest growth rate and as a result its share in total physical assets rose by 15 percentage points. On the contrary in two states, viz. Maharashtra and Punjab, farm investment became relatively more important while in West Bengal its share remained more or less unchanged.

However, it is important to note that our estimates pertain to expenditures on capital assets. Thus, so far as

Table 4.16: Composition of Cash Expenditure on Physical Assets by Rural Cultivator Households in Different States, 1961-62 and 1971-72

State (1)	Farm Business		Non-farm Business		Residential Construction		Durable Household Assets	
	1961-62 (2)	1971-72 (3)	1961-62 (4)	1971-72 (5)	1961-62 (6)	1971-72 (7)	1961-62 (8)	1971-72 (9)
Andhra Pradesh	78.87	69.44	0.72	6.05	18.35	13.59	2.06	10.92
Assem	71.57	43.20	2.60	8.11	21.07	29.17	4.76	19.52
Bihar	52.66	38.57	3.16	16.61	33.63	33.02	10.55	11.86
Gujarat	75.75	71.05	2.42	2.97	17.32	19.44	4.51	6.54
Jammu and Kashmir	56.62	50.60	1.56	4.33	33.44	28.98	8.38	16.09
Karnataka	80.18	70.67	1.32	6.95	15.11	14.91	3.39	7.47
Kerala	49.31	42.60	8.32	11.06	36.03	38.23	6.34	8.11
Madhya Pradesh	76.51	69.52	1.01	3.43	17.68	19.78	4.80	7.27
Maharashtra	70.39	73.57	7.71	7.84	18.60	12.70	3.30	5.89
Orissa	63.76	53.11	1.97	9.51	28.87	27.83	5.40	9.55
Punjab*	73.77	77.70	1.42	3.37	19.25	12.81	5.56	6.10
Rajasthan	74.08	60.01	2.47	1.94	19.88	25.54	3.57	12.51
Tamil Nadu	79.45	75.23	4.02	5.20	14.14	12.92	2.38	6.65
Uttar Pradesh	66.27	58.61	5.52	3.10	23.07	29.98	5.14	8.31
West Bengal	58.77	57.54	5.15	5.99	32.99	29.21	3.09	7.26
All-India	70.44	63.83	3.53	5.57	21.45	22.31	4.58	8.29

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(Contd.)

Table 4.16: (Contd.)

* For 1971-72 Punjab figures are inclusive of Haryana.

N.B.: 1) Compiled from Tables 3.46 and 3.47.

2) In each row Col.(2) + Col.(4) + Col.(6) + Col.(8) = 100
and Col.(3) + Col.(5) + Col.(7) + Col.(9) = 100.

3) Figures are not adjusted for sales and current repairs.

livestock is concerned, the estimates refer only to purchase of livestock. Hence they do not fully represent net additions to livestock. If net additions to livestock are also taken into account, the composition of total fixed capital formation (excluding durable household assets) by rural households indicate that the proportion (in percentage terms) of farm investment at current prices registered a significant increase - from 45.8 per cent in 1961-62 to 61.1 per cent in 1971-72. While the share of non-farm business assets remained constant, the share of expenditure on residential construction showed a decline. (See Roychoudhury Uma, et.al. 1981). Although the above data refer to gross additions to physical stocks by all rural households, the pattern is likely to be similar for cultivators who account for more than seventy per cent of rural households.

Another point to be noted is that within farm business, rate of increase of capital expenditure on agricultural implements and machinery, expenditures on construction of irrigation sources, farm houses and orchards and plantations accelerated. (See Table 4.17). A relatively faster increase in the share of agricultural implements and machinery indicates spread of mechanisation in agriculture.¹³ This interpretation finds support from the findings of a study of tangible wealth and asset composition by Krishna Raj and Roychoudhury (1980). Their findings are: (1) Stock of

Table 4.17: Cash Expenditure by Rural Cultivators on Individual Items of Farm Business Assets, All-India, 1961-62 and 1971-72.

S.No.	Items	1961-62		1971-72	
		Aggregate Expenditure (Rs. Crores)	Percentage Share in total Expenditure	Aggregate Expenditure (Rs. crores)	Percentage Share in total Expenditure
(1)	(2)	(3)	(4)	(5)	(6)
1.	Purchase of Land	117.7	(18.80)	201.99	19.44
2.	Purchase of Land Rights	5.9	(0.94)	6.30	0.61
3.	Reclamation of Land	18.2	(2.91)	18.48	1.78
4.	Bunding and other Land Improvements	55.9	(8.93)	85.82	8.26
5.	Orchards	6.90	(1.10)	30.03	2.89
6.	Wells	44.7	(7.14)	101.57	9.78
7.	Other Irrigation Resources	5.6	(0.89)	32.08	3.09
8.	Farm Houses and Grain Golas	18.2	(2.91)	47.94	4.61
9.	Agricultural Implements and Machinery	71.2	(11.37)	216.76	20.86
10.	Livestock	278.0	(44.41)	292.25	28.13
11.	Other Capital Expenditure	3.7	(0.59)	5.74	0.55
12.	Total	626.0	(100.00)	1038.95	(100.00)

Sources: 1) REI, AIRDIS: 1961-62, REI Bulletin, Vol.19 (June 1965).

2) REI, AIRDIS: 1971-72, 1977.

agricultural machinery and equipment (observed in the data from quinquennial Livestock Census) increased at a rate of more than 6 per cent per annum during two decades, 1951-72. As against this, livestock grew at a low rate of 1 per cent and non-residential building stock increased at a still lower rate of 0.6 per cent per annum. (2) The composition of equipment underwent a radical transformation characterised by a decrease in the share of traditional items, e.g., wooden ploughs, persian wheels, bullock-driven cane crushers and very small oil-crushers and an increase in the relative share of modern equipment including iron ploughs, oil and electric pumps, tractors, power crushers.

In conclusion, diversion of funds informal lending activities to formal financial assets as well as physical assets is observed at all levels. Among fractile groups a notable exception was the bottom fractile group for which growth of saving in formal financial assets was faster than the growth of saving in physical assets. Thus, the share of physical assets fell and consequently the share of formal financial assets rose.

At the state level, the following exceptions to the general pattern observed at the all-India level were noticed. In Kerala, for instance, a relative fall in the proportion of informal lendings was associated with a decline in the share of physical assets and with an increase in the share of formal financial assets. In Assam, the reverse of this

was observed, i.e., saving in physical assets increased at a faster rate than in formal financial saving. Thus, the share of formal financial assets in total gross saving decreased whereas the share of saving in physical assets increased. However, among the other physical assets the highest growth was witnessed in case of durable household assets. On the other hand, there was disinvestment in case of farm assets. In Orissa and Jammu and Kashmir, a fall in the share of physical assets was made good by a rise in the shares of both forms of financial assets. Thus, substitution between physical and financial assets was noticed. Another noteworthy exception was Gujarat which exhibited no change in the composition of saving.

As regards the growth of different items of formal financial assets, the highest growth was recorded by small savings followed by deposits in commercial banks and shares of and deposits in co-operative banks.

Lastly, the composition of farm equipment changed in favour of assets embodying higher productive modern technology.

An explanation of the afore-mentioned changes in saving composition may be sought in terms of the two pronounced changes that had come about in rural sector during the decade under consideration: Change in input structure in the agricultural sector and spread of financial institutional facilities in rural areas. First, during

this period expansion of irrigation in most parts of the country and introduction of high yielding varieties of cereal seeds soon after the mid-sixties in certain parts of the country increased the productivity of land.¹⁴

Moreover, commodity terms of trade also changed in favour of agriculture for all crops in all the states till 1968-69 (Rath, 1985). This turned agriculture into a more remunerative business.

At the same time, technological changes necessitated employment of larger quantum of funds for meeting working capital requirements (labour, fertilizers, electricity charges etc.) as well as fixed capital purchases (electric pumps, tractors, threshers, harvest combines, etc.). This, coupled with limited saving capacities of the cultivator households, led them to resort to loan finance to a greater extent. The main source of credit in rural sector i.e. private moneylenders, was considered to be not adequate and dependable for meeting this need by the Reserve Bank of India's Rural Credit Survey Committee (RBI, 1954). The committee recommended that co-operatives should be strengthened and enabled to supply credit to cultivators and thereby facilitate the process of growth and expansion of agricultural sector. In addition to co-operatives one more source of credit was introduced into the field, viz., commercial banks after nationalisation of major banks in 1969.

The aforesaid changes in policy were reflected in an increase in the volume of extensions of credit by institutional agencies. The total volume of loans advanced increased from Rs. 292.40 crores in 1961-62 to Rs. 831.98 crores in 1971-72.

Turning now to the second factor, we may note that, as a result of the various changes which have occurred in rural sector including the rising incomes of certain classes of rural population, the commercial banks found it increasingly worthwhile to open branches in rural and semi-urban centres to tap the growing deposit potential. (RBI, 1969). The spread of banking facilities to unbanked areas gathered momentum under the Lead Bank Scheme introduced in 1969. (RBI, 1981).

Thus, the increase in acquisition of formal financial assets may be attributed to the increased level of income in general and to commercial banks' sustained drive for deposits in particular. The deposits in rural and semi-urban branches of commercial banks, newly opened as well as old, showed a rising trend. However, the rise of deposits in the case of newly opened branches was more pronounced (RBI, 1969).

Other factors which have also contributed to the increase in saving in formal financial assets are growth of business of co-operatives, greater governmental efforts to attract deposits (RBI, 1977) and growth of wage employment in organised sector (which was instrumental in increasing

provident fund contributions).

It needs to be emphasised here that the growth in deposits and shares of co-operative banks mainly came in the form of increased shares in PACS and deposits in CCBs (Table 3.31). Saving in the form of shares of PACS by farm households increased from Rs. 9.76 crores in 1961-62 to Rs. 15.04 crores in 1971-72, whereas deposits in CCBs went up to Rs. 36.53 crores in 1971-72 from a level of Rs. 7.89 crores in 1961-62. This growth mainly came from four states, Maharashtra, Tamil Nadu, Uttar Pradesh and Gujarat. As against this, the growth of deposits in PACS was not impressive in spite of their large organisational spread. (They increased from Rs. 3.05 crores in 1961-62 to Rs. 5.47 crores in 1971-72). The Report of Banking Commission has highlighted the fact that 'most of the agriculturists preferred to invest their savings, in the absence of a branch of a bank nearby, either with the Post Office or with businessmen and traders with whom they had dealings; they did not like to keep them with the primary credit societies'. (GOI, 1972, p.153). However, exception of the State of Kerala to this generalisation may be noted. In Kerala, growth of deposits with PACS has been fast. This has been attributed to traditional banking habits, high literacy rates and high density of population (RBI, 1969). However, a more important factor seems to be the superior quality of services and confidence enjoyed by PACS among public of Kerala as

noted by the RBI's Committee to Review Arrangements for Institutional Credit for Agriculture and Rural Development - CRATICRAD (RBI, 1979). This Committee expressed the view that 'the experience of Kerala should be a guiding example to be emulated by other states' (RBI, 1981, p.130).

A number of factors which explain the decline in absolute volume of direct lendings by cultivators may be noted here. Firstly, the expansion of the network of financial institutions which might have facilitated substitution of formal for informal forms of financial saving. Secondly, the increased rate of return on land could have induced the cultivator—moneylenders, especially medium and large farmers, to divert funds to agriculture from moneylending. Thirdly, fall in demand for funds from borrowers as a result of expansion of volume of institutional loans might have caused the decline in lendings by cultivators.

However, it seems that while the first two factors provide plausible explanation of decline in direct lendings by cultivators, the third does not. Let us illustrate this with the available data on change in the composition of loans advanced by non-institutional agencies. We have already seen that, besides cultivator-moneylenders, moneylenders belonging to non-cultivator class (traders and PML) also provide loans to cultivator households. The data presented in Table 3.25 indicate that at all-India level the amount advanced by cultivator-moneylenders decreased while advances of non-

cultivator moneylenders increased from 1961-62 to 1971-72. Such a shift in favour of non-cultivator money-lenders can be understood if there is a differential in the rate of interest charged or in terms and conditions on which loans are advanced by these two classes of moneylenders. But no substantial differences in terms, i.e. rate of interest as well as purpose for which loans are advanced or lendings, are evidenced in the unpublished data available from RBI's AIRDIS, 1961-62. It is, thus, possible that the cultivator moneylenders might have invested in their agriculture or other activities rather than lend funds to others. This interpretation may be further supported by the fact that in the class of cultivator moneylenders while loans by A/L declined, loans by landlords increased. It is easy to see that the change in opposite direction noticed in the advances made by these two credit agencies is based on the same criterion.

We have noted earlier in section 4.2 that the rate of saving in informal financial assets at all-India level fell from 5.46 per cent in 1961-62 to 0.95 in 1971-72. Since informal lendings are heavily concentrated in the top asset-value class (nearly 70 per cent is the top-most fractile in both the years, see Table 3A.18) the sharp decline in saving rate in this form of financial asset is evidenced in the case of this class. For this class, informal lendings as a percentage of income decreased from

12.19 per cent in 1961-62 to 3.83 per cent in 1971-72 (see Table 4.10).

Since no rise in the rate of physical investment (which is exclusive of inventories) or rate of saving in formal financial assets was noticed and repayment/income ratio had somewhat declined, either increase in average propensity to consume of cultivator households or increased inventories could have caused such a fall. However, as we do not have data on inventories for these households, it is not possible to ascertain whether it is the increase in inventories or the rise in consumption that caused this fall.

So far we have analysed the composition of gross saving of rural cultivator households. Another important aspect that remains to be investigated is the nature of net financial flows on capital account of the cultivator household sector.¹⁵ It has been noted in the second chapter that if a sector's investment (i.e. saving in physical assets) exceeds its own saving then it has to borrow from other sectors for financing its investment. Consequently, inflow of funds is seen on the capital account of the borrowing sector. On the contrary, in the case of a surplus sector their own savings exceed their investment and there is an outflow of funds from that sector. We investigate this aspect of the issue in the next section.

4.4 NET FINANCIAL FLOWS

In principle, the magnitude and direction of financial

flow (i.e. outflow/inflow) on capital account of the sector is determined by a mix and balance of the following factors: (i) rate of return on investment, (ii) capital-output ratio, and (iii) own savings, (iv) supply of funds. Moreover, these factors themselves are significantly influenced by the nature and pace of technological and organisational changes. For example, introduction of technique involving a higher capital-output ratio requires larger funds and if saving capacity remains the same it would necessitate borrowings and consequent inflow of funds. Similarly, as mentioned earlier in this chapter, change in technology may raise expected rate of return on investment and this may induce greater saving and investment which, in turn, may lead to high level of income. One point that needs mention here is that the incremental capital-output ratios associated with agriculture are large perhaps due to diminishing returns associated with it. If this situation is coupled with low saving rates, net transfers of resources into agriculture become inevitable.

However, actual financial flows that take place in practice are determined also by nature of and coverage by financial institutions. For instance, in the absence of availability of institutional finance, cultivators are forced to take recourse to non-institutional loans which is a high cost source of finance. If it is not found profitable to borrow at that rate of interest, increased rate of return may not bring about inflow of funds into the sector.

Likewise, larger availability of institutional finance at relatively low rates would induce big cultivators whose saving levels exceed their investment plans to borrow for investment purpose and diversify the portfolio in favour of durable household assets or informal lendings. Thus supply constraints and demand preferences induced by availability of low cost funds play an important role in determining the magnitude of actual financial flows.

In sum, the direction of financial flows is governed among others, by the interactions between level of saving and investment. Thus it may be possible to identify various possible situations that cause either inflow or outflow depending upon either high or low saving and investment status of the sector.

These situations may now be summarised. Firstly, if high investment rate is associated with low saving rate then there would be inflow of funds into the sector. This situation is mentioned above. Secondly, a high investment rate accompanied by a high saving rate may lead to inflow or outflow depending upon the relative magnitudes of the two. For instance, a situation in which the level of investment is higher than the level of saving would necessitate inflow of funds. Contrary to this, if saving level exceeds the investment level there will be an outflow of funds. Thirdly, a high saving level and low investment level will result in outflow of funds. Fourthly, in a

situation where both saving and investment are low, there will be an outflow if saving exceeds investment. Wheress inflow would occur if saving falls short of investment.

Against this background, we propose to examine the magnitude and direction of financial flows on capital account of the rural cultivator Household sector. To this end we analyse the flow of funds at (i) all-India level, and (ii) at state level.

At all-India level, we have estimated time series of net financial flows for the rural cultivator household sector for the period 1961-62 to 1978-79. The series are shown in Table 4.18 and the method employed for estimating the flows is presented in the footnote.¹⁶ However, the all-India picture is determined by the position of different states in this regard. But the data on financial flows at state level have been estimated only for the two bench-mark years. Hence the state level analysis pertains only to these two points of time.

4.4.1 Net Financial Flows: All-India

In this section we first analyse the data on net financial flows for the two bench-mark years, i.e. 1961-62 and 1971-72 for which complete information is available. Next, an analysis of time series data on net inflow of funds to farm household sector is attempted. However, for the years other than 1961-62 and 1971-72 no information on cultivator households' investment in physical assets and its

repayment of loans to the government sector is available. Because of the latter, the estimates of net inflow are likely to have an upward bias.¹⁷

4.4.1.1 Financial Flows: All-India 1961-62 and 1971-72

The data furnished in Table 4.18 indicate that the rural farm household sector was deficit sector in both the years, viz., 1961-62 and 1971-72. The net inflow of funds was of the order of Rs. 85.61 crores and Rs. 224.85 crores in 1961-62 and 1971-72 respectively. Moreover, its proportion (in percentage terms) to saving in physical assets (i.e. investment) increased from 15.06 per cent in 1961-62 to 19.19 per cent in 1971-72, implying greater dependence of the sector on external funds for financing its investment.

This inflow is mainly attributed to the low saving capacities of the farm household sector in both the years.

It should be further emphasised that the inflow observed at the sectoral level does not imply inflow for all the classes of transactors in the sector. However, we do not have disaggregate information and hence are not in a position to comment on it.

Financial Flows at disaggregated level

An examination of financial flows at disaggregative level brings out the fact that there was net outflow of funds through formal financial institutions (i.e. organised part of financial institutions) whereas there was a net

Table 4.18: Net Financial Saving of the Rural Farm Household Sector, 1961-62 to 1978-79

Year	Saving in Formal and Informal Financial Assets								Net Change in Liabilities				Net Financial Saving Col. (9) - Col. (14)	
	Change in Currency Holdings	Life Insurance Premiums	Provident Fund Contribution	Small Savings	Co-operative Shares and Deposits	Deposits in Commercial Banks	Direct Lending to Non-Cultivators	Total Financial Saving	Commercial Banks	Co-operatives	Government	Traders and Non-Cultivator Moneylenders		Net Change in Liabilities from all sources (14)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1961-62	20.23	14.65	7.56	3.60	18.17	13.99	45.18	123.38	4.67	40.31	23	141.08	209.06	- 85.68
1962-63	33.87	16.74	8.39	-0.65	18.85	15.90	42.58	135.68	-	57.50	48	150.48	255.98	-120.30
1963-64	43.62	17.18	9.31	3.09	29.83	18.35	40.12	161.50	-	71.30	51	161.39	283.69	-122.10
1964-65	28.10	17.88	10.33	3.96	24.59	20.84	37.81	143.51	-	59.08	55	172.88	286.96	-143.45
1965-66	61.65	16.47	11.47	6.24	28.55	24.02	35.63	184.03	-	101.46	61	185.39	347.85	-163.82
1966-67	27.83	26.00	12.72	4.05	27.28	27.25	33.58	158.71	-	94.62	68	198.99	361.61	-202.90
1967-68	36.61	27.52	14.12	4.60	47.81	31.36	31.65	193.67	-	133.00	74	213.86	420.86	-227.19
1968-69	63.56	33.71	15.67	1.99	52.83	35.07	29.82	232.65	-	206.01	80	230.06	516.07	-283.42
1969-70	80.92	35.82	17.39	6.74	48.83	40.32	28.10	258.12	-	217.81	87	247.75	552.56	-294.44
1970-71	85.12	40.37	19.30	11.73	51.01	46.96	26.48	280.97	-	185.85	93	267.08	545.93	-264.96
1971-72	103.69	37.68	21.42	18.36	54.98	53.89	24.96	314.98	10.14	188.37	53	288.21	539.72	-224.74
1972-73	161.91	46.94	23.77	44.82	78.01	94.63	23.80	473.88	70.78	239.90	177	284.47	772.15	-298.27
1973-74	195.47	54.39	26.38	13.95	62.31	114.01	22.70	489.21	86.69	142.34	91	280.86	600.86	-111.68
1974-75	4.68	52.19	29.37	33.94	74.29	115.98	21.63	332.08	173.35	197.45	78	277.47	726.27	-394.19
1975-76	79.63	64.60	32.49	30.63	113.27	172.62	20.63	513.87	215.38	202.58	82	274.28	774.24	-260.37
1976-77	289.62	80.18	36.05	44.51	66.08	215.07	19.67	751.18	211.82	433.41	86	271.30	1002.53	-251.35
1977-78	178.70	90.53	40.01	38.63	134.08	326.14	18.75	826.84	455.71	307.23	98	268.30	1129.24	-302.40
1978-79	363.49	104.25	44.40	49.66	157.01	384.71	17.88	1121.40	540.71	332.48	119	265.89	1258.08	-136.68

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N.B.: 1) Except for 1961-62 and 1971-72, the loans from government are not netted out for repayments.

2) For the years 1962-63 to 1970-71 the data on commercial banks' advances to agriculturist was not available.

Sources: 1) RBI, Statistical Statements Relating to Co-operative Movement in India, Various Issues.

2) RBI, Report on Currency and Finance, Various Issues.

3) RBI, Basic Statistical Returns, Various Issues.

4) Tables 3.25 and 3.34.

inflow through informal financial institutions (i.e. unorganised part of money market) in both the years (see Table 4.19). Further, outflow through formal financial institutions as well as inflow through informal financial institutions rose between the two years. But the magnitude of the latter exceeded that of the former. As a result net inflow into the sector as a whole increased.

Another noteworthy feature in regard to flows through informal institutions is that while the lendings of cultivators to non-cultivators declined from the level of Rs. 45.18 crores in 1961-62 to Rs. 24.96 crores in 1971-72, their net borrowings from traders and PML increased from Rs. 141.08 crores in 1961-62 to Rs. 288.21 crores in 1971-72. In this connection it is worth mentioning that traders and PML generally borrow from commercial banks and, in turn, lend the amount to cultivators. To that extent, a rise in advances by these credit agencies reflects increased level of indirect financing by commercial banks and others to the sector.

The data also show that within the class of formal financial institutions, co-operatives and commercial banks exhibited flows in opposite direction. For instance, net outflow of funds was noticed through commercial banks in both the years - of the order of 9.32 crores in 1961-62 and Rs. 43.75 crores in 1971-72. In contrast, net inflow through co-operatives increased from Rs. 22.14 crores in 1961-62 to

Rs. 133.33 crores in 1971-72. Furthermore, the outflow as a proportion of income increased from 0.13 in 1961-62 to 0.24 in 1971-72 while the inflow through co-operatives as a proportion to income also rose from 0.30 in 1961-62 to 0.74 in 1971-72.

The out-flows observed in the case of commercial banks are in accordance with the fact noted by the RBI's All-India Rural Credit Review Committee (1969) that commercial banks mainly acted as agents for transferring funds out of the rural sector.

The increased inflow through co-operatives is a consequence of faster growth in advance accompanied by poor deposit mobilisation by them.

4.4.1.2 Net Financial Flow: All-India, 1961-62 to 1978-79

Turning now to the time series analysis of net financial flows, we may mention that the financial saving component of the series has been estimated using different sets of assumptions. For instance, change in currency holdings of rural households (from which change in currency holdings of rural cultivators' is estimated) are assumed to be one third of the change observed in currency holdings of the aggregate 'Household' sector in the economy. Similarly, in the absence of information on occupation-wise break-up of deposits in CCBs, cultivator households' deposits have been estimated by making an assumption that 60 per cent of total deposits of individuals in CCBs are held by cultivators.

Saving in the form of deposits in commercial banks for the period 1971-72 to 1978-79 are estimated using the information available for the year 1982. We may now summarise the main findings that emerge from the analysis. The findings are, of course, subject to the limitations of estimates outlined above.

The data presented in Table 4.13 reveal that the farm household sector was a deficit sector throughout the period 1961-62 to 1978-79 which covered the period of Third Plan, three Annual Plans and Fourth and Fifth Plans. However, no persistent trend is observed in the series of inflow of funds into the sector. In absolute terms, the inflow increased till 1972-73 at the trend growth rate of 11 per cent per annum. Both the components of net financial flows, i.e. saving in financial assets and net change in liabilities increased at the same trend growth rate of 11 per cent per annum. However, from 1973-74 to 1978-79, net inflows fluctuated between Rs. 111.68 crores to Rs. 394.19 crores. However, for four out of six years they were less than the level of 1972-73. The decline in net inflow of funds during the period 1973-74 to 1978-79 (i.e. from the last year of fourth plan till the end of fifth five year plan) is due to higher growth of financial assets which increased at the trend rate of 23 per cent per annum as against a trend rate of growth of 16 per cent per annum showed by net change in liabilities. The high growth of financial assets was mainly

caused by the growth of commercial bank deposits which rose at the trend rate of 27 per cent per annum. As against this, the annual trend growth of co-operative deposits was 18 per cent.

Relationship between net inflow of funds
and saving in physical assets

It is already mentioned that the time-series data on cultivator households' savings in physical assets are not available. However, time-series of gross fixed capital formation in agriculture and allied activities (private sector) is available from the CSO's NAS. Since farm investment constitutes a major portion of cultivator households' saving in physical assets, we may express the inflow of funds as a ratio of gross fixed capital formation in agriculture in order to examine the trend in the dependence of the sector on external funds for financing its investment. These proportions are presented in Table 4.19. From this table we find that the aforesaid ratio varied between 20 per cent and 30 per cent from 1961-62 to 1972-73. However, the coefficient of variation of this ratio was very low (viz. 13 per cent), and for most of the years it varied between 24 per cent to 28 per cent. On the contrary, it was distinctly lower during Fifth Plan period than during the earlier period, implying a reduction in the dependence of the sector on external sources of funds for financing its investments.

To sum up, during the period 1961-62 to 1972-73 net

Table 4.19: Net Inflow of Funds to the Rural Farm Household Sector as a Percentage of Gross Fixed Capital Formation in Agriculture: All-India, 1961-62 to 1978-79.

Year	Net Flow of Funds (Rs. crores)	Gross Fixed Capital Formation in Agriculture (Private Sector) at current prices (Rs. crores)	Net Flow of Funds as a Percentage of GFCF in Agriculture (Col. (2)/Col. (3)) x 100
(1)	(2)	(3)	(4)
1961-62	- 85.68	393	-21.80
1962-63	-120.30	438	-27.47
1963-64	-122.19	480	-25.46
1964-65	-143.45	566	-25.34
1965-66	-163.82	657	-24.93
1966-67	-202.90	747	-27.16
1967-68	-227.19	882	-25.76
1968-69	-283.42	913	-31.04
1969-70	-294.44	1,047	-28.12
1970-71	-264.96	1,102	-24.04
1971-72	-224.74	1,248	-18.01
1972-73	-298.27	1,425	-20.93
1973-74	-111.68	1,633	- 6.89
1974-75	-394.19	1,813	-21.74
1975-76	-260.37	2,103	-12.38
1976-77	-251.35	2,734	- 9.19
1977-78	-302.40	2,967	-10.19
1978-79	-136.68	3,523	- 3.88

(Contd.)

Table 4.19: (Contd.)

- Sources: 1) Figures in Col. (2) are taken from Table 4.18.
- 2) Figures in Col. (3) are taken from GOI, National Accounts Statistics, CSO, Various issues.

inflow to the farm household sector and gross fixed capital formation in agriculture increased pari passu. After 1972-73, the latter continued to increase while the former declined. The decline in the volume of net inflow to the sector was due to a faster rise in cultivator households' saving in financial assets (mainly in the form of deposits in commercial banks) than net change in liabilities of the sector.

In this connection it needs to be noted that net real income from agriculture registered the highest growth rate (3.59 per cent) during the Fifth Plan period. (For the earlier period, viz., 1961-62 to 1972-73 it was 2.04 per cent per annum.) Thus, the observed high growth of saving in financial assets during the Fifth Plan may be attributed to the high growth of agricultural income during this plan. However, it may be noted that the efforts on the part of the commercial banks to mobilize rural deposits (along with Regional Rural Banks as additional agency introduced into the field) might also have contributed to the observed growth in deposits in these banks during this period.

4.4.2 Net Financial Flows: State-wise

The data on State-wise financial flows presented in Tables 3.37 and 3.38 reveal considerable variation across the States. For instance, four states - Assam, Bihar, Kerala and West Bengal - showed outflow of funds in both the years. On the contrary, Gujarat, Madhya Pradesh, Maharashtra, Orissa

and Rajasthan exhibited an inflow in both the years. Three States, viz., Punjab, Tamil Nadu, and Uttar Pradesh, which witnessed an outflow from the farm household sector in 1961-62, attracted inflow of funds on capital account in 1971-72. Finally, in three states, viz., Andhra Pradesh, Jammu and Kashmir and Karnataka, the direction of net financial flows changed. These states showed outflow in 1971-72 as against inflow in 1961-62.

In order to analyse the state-wise pattern of net financial flows, we have cross-classified the states into high or average or low saving/investment status. For this two independent classifications of states, one according to the saving rate, and the other with regard to investment rate, into these three groups are required. Such type of classification of states according to saving rate is given in Table 4.11. Similar classification of states with respect to investment rate is presented in Table 4.20. The cross classification of the states according to saving rate and investment rate based on the information contained in these two tables is shown in Table 4.21.

The findings that emerge from this analysis are as under. Firstly, out of four states which exhibited outflow of funds in both the years, Kerala had high saving rate and low investment rate while Bihar had average saving rate and average investment rate in both the years. Assam, on the other hand, belonged to average saving rate and low

Table 4.20: States Ranked in Descending Order of Productive Investment Rates of Rural Cultivator Households, 1961-62 and 1971-72

	1961-62		1971-72	
	State	Productive Investment Rate (as % of Income)	State	Productive Investment Rate (as % of Income)
(1)	(2)	(3)	(4)	(5)
Group 1 (High Investment Rate States)	Karnataka	10.03	Gujarat	8.20
	Gujarat	9.67	Punjab*	8.19
	Tamil Nadu	7.50	Karnataka	7.93
	Maharashtra	7.17	Maharashtra	6.13
	Punjab	7.05		
	Uttar Pradesh	6.91		
Group 2 (Average Investment Rate States)	Andhra Pradesh	6.32	Madhya Pradesh	5.40
	Rajasthan	6.32	Tamil Nadu	5.30
	Madhya Pradesh	5.77	All-India	4.12
	All-India	5.50	Rajasthan	4.02
	Jammu and Kashmir	5.22		
Group 3 (Low Investment Rate States)	Kerala	3.94	Kerala	2.48
	Orissa	3.01	Andhra Pradesh	2.33
	Bihar	2.88	Assam	2.01
	West Bengal	1.10	Bihar	1.34
			Jammu and Kashmir	1.32
			West Bengal	1.30
			Orissa	1.04

* Inclusive of Haryana.

N.B.: Prepared from Col.(3) and Col.(4) of Table 4A.1.

Table 4.21: Classification of the States According to Saving Rate and Productive Investment Rate, 1961-62 and 1971-72

	High Investment	Average Investment	Low Investment
<u>1961-62</u>			
High Saving	Punjab (32.49)	-	Kerala (22.27)
	Karnataka (-24.55)		
	Uttar Pradesh (6.71)		
	Tamil Nadu (3.38)		
Average Saving	Maharashtra (-44.64)	Andhra Pradesh (-13.22)	Bihar (5.16)
		Madhya Pradesh (-19.45)	
Low Saving	Gujarat (-119.26)	Rajasthan (-70.72)	Orissa (-12.17)
		Jammu and Kashmir (-79.31)	West Bengal (2.79)
<u>1971-72</u>			
High Saving	Punjab (-132.88)	-	Kerala (137.77)
	Karnataka (11.40)		
	Gujarat (-68.80)		
	Uttar Pradesh (-3.93)		
Average Saving	Maharashtra (-32.99)	Madhya Pradesh (-59.87)	Bihar (37.38)
		Tamil Nadu (-30.33)	Jammu and Kashmir (19.66)
		Rajasthan (-106.64)	Assam (33.74)
			West Bengal (52.52)
Low Saving	-	-	Andhra Pradesh (10.82)
			Orissa (-14.24)

N.B.: Figures in parentheses are net financial flow* into/out of the farm household sector. Negative sign implies inflow of funds while positive sign means outflow of funds. Figures of net financial flow are taken from Tables 3.37 and 3.38.

* Average per household.

investment group in 1971-72. For 1961-62 the saving/investment rates for Assam were not available. The fourth state in this group, viz., West Bengal was low saving low investment state in 1961-62 but shifted to average saving and low investment status in 1971-72. This shift has taken place since APS in West Bengal increased in 1971-72 compared to 1961-62 without much change in its productive investment rate in these two years. Moreover, in West Bengal, Kerala and Bihar net financial saving (outflow of funds) as a proportion of total saving increased in 1971-72 in comparison to 1961-62. Thus, a larger proportion of the sector's saving flowed out of the sector in these three states. Further, with unchanged APS (as in Kerala) or increased APS (as in West Bengal) this implies that outflow as a proportion of income increased in these two states in 1971-72 over 1961-62. In case of Bihar as investment rate declined at a faster pace than saving rate, the outflow (i.e. net financial saving) as a proportion of income increased in 1971-72 over 1961-62.

Secondly, five states, viz., Gujarat, Madhya Pradesh, Maharashtra, Rajasthan and Orissa had inflow into the farm household sector in both the years. Out of these, Orissa was low saving and low investment state in both the years. Thus, in the case of Orissa, fund flow into the sector was required to finance even the low level of investment. As against this, in case of Madhya Pradesh saving as well as

investment rates were average in both the years, while Maharashtra had average saving rate but high rate of investment. The state of Rajasthan belonged initially (in 1961-62) to low saving and average investment status. As we have mentioned earlier in section 4.2 all-India saving rate declined in 1971-72. As a result, Rajasthan moved to the average saving status retaining its average investment status in 1971-72. In Gujarat, the saving rate was low and investment rate was high in 1961-62. In 1971-72, with the rise in its saving rate, the state shifted to high investment/high saving status but continued to draw funds from outside sectors. Incidentally, Maharashtra and Gujarat were among those states which traditionally had been in the forefront of the co-operative movement in the country. The relatively high level of supply of institutional loans (at lower cost) might have facilitated higher level of investment in these states inspite of their status as average/low saving rate in 1961-62.

Thirdly, three states, viz., Punjab, Uttar Pradesh and Tamil Nadu, transferred funds out of the sector in 1961-62 but turned into states drawing funds from other sectors in 1971-72. Two states viz., Punjab and Uttar Pradesh were high saving and high investment states in both the years. The state of Tamil Nadu, on the other hand, experienced a fall in its saving rate in 1971-72 and slid to average saving/investment status from high saving/

investment status. The change in the direction of funds flow in the case of Punjab and Uttar Pradesh follows from the fact that cultivators in Punjab and in some parts of Uttar Pradesh responded to the new technology which came mainly in the form of HYV of wheat. The new technology being capital-intensive required larger funds. Even a high level of saving was inadequate for meeting this requirement; hence, these states had to depend upon outside sector for the required funds.

A fourth set of states, contains Andhra Pradesh, Jammu and Kashmir and Karnataka. The position of these states changed from inflow to outflow from 1961-62 to 1971-72. Out of these, Andhra Pradesh experienced a decline in saving as well as investment rate and, as a result, its status changed from average saving/investment to low saving/investment. The state of Karnataka had high saving and high investment in both the years. However, a shift in sources of funds in favour of cultivator moneylenders was noticed in this state. Correspondingly there was a decrease in the importance of traders and moneylenders. This substitution of one type of informal credit agency (viz., cultivators) for the other type of agency (viz., non-cultivators) for funds probably explains the change in the position of Karnataka (see Appendix Table 4A.2).

The above analysis has enabled us to indentify the possible situations of saving/investment status which had

resulted in either inflow or outflow of funds. However, two points may be noted:

(i) There is considerable variation among regions within the states. But as our analysis is at the state level, it does not bring out the nature and characteristics of each region.

(ii) Secondly, it is not possible to relate the flow of funds to growth of the sector since our data pertain to cross-section at two points of time. Moreover, this type of analysis would require going further into the composition of investment, level of irrigation and institutional factors like land distribution, marketing facilities etc. Further, given the multiple factors which play their role in determining the level of development it is difficult to uniquely relate the level of development with either inflow or outflow for a state.

Before we conclude this chapter, let us recapitulate the main aspects of analysis in this chapter. We have analysed growth of income, saving and their composition. The nature of net financial flows has also been analysed. One more important aspect remains to be analysed : that is, the nature of demand function for funds (i.e. a gross flow into the sector). We have dealt with this issue in the next chapter.

Footnotes

1. Data presented in Table 3.15 indicates that the proportion of rural workers to total workers engaged in unorganised sector of other services has gone down from 0.74 in 1961 to 0.58 in 1971.
2. During the decade 1960-61 to 1970-71, production of gross agricultural commodities increased at the trend rate of growth of 2.1 per cent per annum while productivity per cropped area increased by 1.6 per cent per annum (see Ch. H. Rao 1974).
3. Alagh's cross sectional analysis of patters of growth of foodgrains brings out the fact that during the decade of Sixties foodgrains growth is primarily explained by factors such as spread of irrigation or multiple cropping in some states (viz., Karnataka, Madhya Pradesh, Bihar and West Bengal) whereas in other states, viz., Punjab, Haryana and Utter Pradesh it was due to water-seed-fertilizer technology (Alag, 1980).
4. Trend growth rates of total agricultural income for the decade turn out to be significant only in the case of five states, Gujarat (3.15), Karnataka (2.96), Kerala (2.66), Orissa (8.01) and West Bengal (2.04). For Punjab and Haryana time series of income estimates are available 1965-66 onwards. The growth rates for the period 1965-66 to 1971-72 is very high in both the

states. For remaining states the growth rates are insignificant.

5. Results of introduction of new varieties of wheat were most spectacular in the case of irrigated wheat. For instance, in Ludhiana district where 85 per cent of wheat cultivation is done under irrigated conditions, productivity increased from 1,336 kg. per ha. in 1960-61 to 3,310 kg. in 1971-72. Punjab as a whole showed a remarkable increase in productivity of wheat during the same period, the productivity per hectare having increased from 1,207 kg. in 1960-61 to 2,238 in 1970-71 as against an all India average of 1,307 kg. in the latter year (GOI, 1976).
6. However, it needs to be noted that the trend growth rate which is estimated by fitting regression to time series data has standard error and is not strictly comparable with annual growth rate of population which is computed using population at two points.
7. Prof. Rath (1972) has pointed out that during sixties growth of gross agricultural production was 3.2 per cent per annum in Orissa. Out of this growth rate, 1.8% was accounted for by per acre yield and 1.4% may be attributed to extension of area. On this background, a rate of growth of income of around 8% compounded per annum (trend rate) is hard to believe.
8. It has been mentioned in Chapter III that two types

of saving estimates, viz., A and B are derived at all-India level in the study (see footnote of Table 3.36). In the case of type 'A', estimates of saving in physical assets pertain to the aggregate of cash and kind expenditures. Type 'B' estimates of saving in physical assets refer to cash expenditures. In the discussion in the text of this chapter we have used type 'A' estimates of saving since state-level estimates of saving are derived in this manner.

9. The data presented in Table 3A.17 indicate that while the distribution of income from self-employment in non-agricultural activities has shifted in favour of the top class. However, non-agricultural income constitutes only 7 per cent of total income. Hence, the shift in distribution of non-farm income is not likely to change the overall distribution of income.
10. Some case studies conducted in different parts of the country indicate that rural saving rate in better irrigated, new technology regions was higher while in poorer, drier and less dynamic regions it was lower. For instance, average saving rate for the famous high technology district of Ludhiana in Punjab State in the first five years of introduction of HYV seed of wheat (1966-67 - 1970-71) was found to be between 22 and 35 per cent (Kalhon et.al 1972). In

Ahmednagar district, a sugarcane growing region in the State of Maharashtra, average propensity to save was estimated around 35 per cent during the period 1969-70 to 1971-72 (Khare, 1977). Similarly, in the well-endowed district of Coimbatore in Tamil Nadu State of South India, the saving rate on a sample of 30 farms (with 40 per cent irrigation ratio) averaged 10 per cent on small and medium farms and 17.8 per cent on large farms (Rajagopalan and Krishnamoorthy 1969). In contrast the average (net) saving rate was found to be only 2.2 per cent for a set of 72 farms in the Hoogly district of West Bengal State in 1970 (Chakravarti 1970).

Average saving rate of a state is a linear aggregation of the saving rates in different regions in a State. If high saving phenomenon is restricted only to certain regions, this does not show up in average saving rate for the state.

11. No information is, however, available on how the distribution of income in Gujarat has changed over the period. If change in asset ownership is taken as its proxy-indicator, the distribution shows no change. For example, the shares of assets of lowest 50%, top 25% and top 10% of the cultivator households at end-June 1961 and end June 1971 were as follows.

	<u>Lowest 50%</u>	<u>Top 25%</u>	<u>Top 10%</u>
1961-62	14.5%	64.5%	40.0%
1971-72	15.4%	63.6%	39.2%

12. For instance, shift in cropping pattern alone accounted for 3.09 percentage points of the annual compound growth rate of 4.5 per cent of crop output in Gujarat during the period 1951-54 to 1958-61. There was a large shift of area away from millets to higher valued crops during this period (see Minhas, B.S. and Vaidyanathan, A. 1965).
13. This is supported by the data from the RBI's AIRDIS (1961-62), AIDIS (1971-72), AIDIS (1981-82) on asset composition. These data indicate that the share of value of agricultural implements and machinery in total value of assets held by cultivator households at end-December 1962 increased from 1.3 per cent in 1961-62 to 1.8 per cent at end-June 1971. When the stock of agricultural implements and machinery is deflated by national income deflator for this asset, the compound growth rate works out to 5.5 per cent per annum. The stock grew at a faster rate of 8.03 per cent per annum during the decade 1971 to 1981. As a result, its share in total value of assets rose to 2.6 per cent at end-June 1981.
14. For the country as a whole the proportion of

irrigated area to gross sown area increased from 18 per cent in 1960-61 to 23 per cent in 1971-72. In the states of Gujarat, Maharashtra and Madhya Pradesh, proportion of area under irrigation was low initially, grew at a faster rate than for the whole country. In Punjab, Haryana and Uttar Pradesh where the proportion of area under irrigation was high initially registered also a high growth rate. The proportion of area under HYV of wheat increased from 4.2 per cent in 1966-67 to 30.3 per cent in 1968-69 while that of rice increased from 2.5 per cent to 7.3 per cent between these two years.

15. In the literature on development economics there is a controversy regarding timing and direction of net resource transfers (which is a composite of factor income transfers and saving transfers) into agriculture in early stages of development (see Kellor, 1973). Some have expressed the view that large saving transfers into agriculture are necessary to promote the growth of the sector which facilitates process of industrialization. An exactly opposite view has been expressed by others. However, the desired direction as well as magnitude of saving flows in each developing country depend upon situations prevailing in that economy. For instance,

it was found that in Japan savings outflow from agriculture made a significant contribution to industrialization while in India inflow of funds into the sector was observed. It has been argued that this inflow was essential to promote agricultural growth without which industrialization would have run into serious bottlenecks (see Mody, Mundle and Raj K.N., 1981).

16. The methods of estimating rural cultivator households' financial saving and change in liabilities for the period 1962-63 to 1970-71 and 1972-73 to 1978-79 are as follows.

Financial Saving

The estimates of financial saving of rural cultivator households in the form of currency holding, life insurance premiums, small savings, deposits in commercial banks and shares of and deposits in co-operative banks are derived using same data sources and more or less similar procedures as those employed for obtaining the estimates for the years 1961-62 and 1971-72 (see Section 3.6.1).

In the case of life insurance premiums, share of rural households has been assumed to be 30 per cent for the period 1962-63 to 1970-71 while 25 per cent for the period 1971 onwards. Entire deposits in rural branches of commercial banks are

attributed to rural households in sixties. However, 1971-72 onwards only 82 per cent of the total deposits in rural branches of commercial banks have been attributed to rural households.

For the years 1962-63 to 1970-71, the shares of cultivator households in all these assets (except life insurance premiums) in saving of rural households are derived using an implicit growth rates between the observed afore-said shares in 1961-62 and 1971-72. Whereas in the case of insurance premiums the share observed in 1971-72 is assumed to hold good for the entire period.

The series of saving in/^{the}form of provident fund contributions and net change in lendings are constructed using the growth rate implicit between 1961-62 and 1971-72.

Net Change in Liabilities

Commercial bank outstandings of direct finance to cultivators are available from BIRs for the period after 1973. Outstandings for the period 1973 are carried backward to 1972 using the growth rate of outstandings between 1973 to 1980. The estimates of net change in liabilities are derived as:

$$\text{Outstandings}(t+1) - \text{Outstanding}(t)$$

Net change in liabilities of cultivator households from PACs, PLDB, CCBs are derived from

RBI's Statistical Statements Relating to Co-operative Movement in India. Figures of Government finance to agriculture are taken from RBI's Report on Currency and Finance.

The series of net change in liabilities from traders and PML has been estimated by linear interpolation using the growth rate implicit between 1961-62 and 1971-72.

17. As a matter of fact, when repayments to government are netted out, even the sign of net financial flows is likely to change for the years which had small inflow or outflow.

Appendix Table

Table 4A.1: Rate of Investment in Productive Physical Assets in Different States, 1961-62 and 1971-72

S. No.	State	(Percentages)					
		Investment in Farm and Non-farm Assets as a Percentage of Total Income				Investment in Fixed Assets in Farm Business as a Percentage of Farm Income	
		Net of Sales		Gross of Sales		1961-62	1971-72
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Andhra Pradesh	6.32	2.33	11.85	3.58	3.38	0.93
2.	Assam	-	2.01	-	2.56	1.93	0.95
3.	Bihar	2.88	1.34	5.90	3.95	1.07	1.01
4.	Gujarat	9.67	8.20	11.04	9.48	5.11	4.60
5.	Jammu and Kashmir	5.22	1.32	6.87	2.85	2.41	1.20
6.	Karnataka	10.03	7.93	14.51	10.79	5.48	3.64
7.	Kerala	3.94	2.48	6.88	3.61	2.10	1.04
8.	Madhya Pradesh	5.77	5.40	7.94	7.27	1.81	2.26
9.	Maharashtra	7.17	6.13	9.33	9.48	3.41	3.88
10.	Orissa	3.01	1.04	4.81	2.42	2.73	0.78
11.	Punjab*	7.05	8.19	11.61	12.56	2.30	4.58
12.	Rajasthan	6.32	4.02	11.86	7.29	2.13	2.34
13.	Tamil Nadu	7.50	5.30	13.41	7.10	4.70	3.10
14.	Uttar Pradesh	6.91	5.81	10.50	7.84	1.83	2.22
15.	West Bengal	1.10	1.30	3.02	3.22	0.58	0.81
	All-India	5.50	4.12	9.07	6.26	2.60	2.20

* Inclusive of Haryana.

N.B.: 1) Columns (3), (4), (5) and (6) computed from Tables 3.44, 3.45, 3.46 and 3.47.

2) Estimates of investment in fixed assets in farm business are taken from RBI's AIDIS, 1971-72, 1977.

Appendix TableTable 4A.2: Composition of Loans Borrowed by Rural Cultivator Households from Non-institutional Credit Agencies in Different States, 1961-62 and 1971-72

S. No.	State	1961-62		1971-72	
		Cultivator Money-lenders (3)	Non-Cultivator Money-lenders (4)	Cultivator Money-lenders (5)	Non-Cultivator Money-lenders (6)
1.	Andhra Pradesh	0.83	0.17	0.73	0.27
2.	Assam	0.80	0.20	0.36	0.64
3.	Bihar	0.87	0.13	0.94	0.06
4.	Gujarat	0.26	0.74	0.20	0.80
5.	Jammu and Kashmir	0.43	0.57	0.44	0.56
6.	Karnataka	0.81	0.19	0.91	0.09
7.	Kerala	0.72	0.28	0.72	0.28
8.	Madhya Pradesh	0.74	0.26	0.35	0.65
9.	Maharashtra	0.82	0.18	0.68	0.32
10.	Orissa	0.57	0.43	0.93	0.07
11.	Punjab	0.82	0.18	0.54	0.46
12.	Rajasthan	0.59	0.41	0.39	0.61
13.	Tamil Nadu	0.90	0.10	0.80	0.20
14.	Uttar Pradesh	0.84	0.16	0.74	0.26
15.	West Bengal	0.72	0.28	0.82	0.18
	All-India	0.70	0.30	0.52	0.48

N.B.: 1) Computed from Tables 3.44 and 3.45.

2) Col. (3) + Col. (4) = 100.

Col. (5) + Col. (6) = 100.

CHAPTER VMODELS OF DEMAND FOR LOANS BY RURAL FARM HOUSEHOLDS

In this chapter we shall be analysing the nature of demand for loans from the cultivator households in rural money markets. The demand in these markets mainly originates from the sizeable but heterogenous class of small, medium and big cultivator-households (spread over different agro-climatic regions), to finance various types of expenditures, e.g., consumption, current expenditures and capital investments in both farm and non-farm business. The purposes and sources (e.g. institutional and non-institutional) of borrowings, their absolute levels and compositions vary among the regions and within cultivator households and among different asset groups. Hence, the demand for total loans is analysed at aggregate level (i.e. for all households) and for different fractile groups. Moreover, as the continued dominance of non-institutional finance is the most characteristic or even an intriguing trait of the rural money markets, the borrowing behaviour in these markets is separately analysed.

The relevant cross-sectional data on these aspects are available for the years 1951-52, 1961-62 and 1971-72 from RBI's decennial Debt and Investment Surveys. In the present study, we have analysed these data for two points of time viz., 1961-62 and 1971-72 and compared the structure

of demand for loans at these points.

The chapter contains three sections. Sections 5.1 and 5.2 deals with nature and characteristics of rural money markets. In Sections 5.3, 5.4, 5.5 and 5.6 and 5.7 we present an analysis of the borrowing behaviour of cultivator households. The analysis is done at two levels. First, single equation models for cultivators' demand for total and non-institutional loans are formulated. Second, structural equations models are formulated in order to explore the causal structure between explanatory variables in single equation models.

5.1 THE NATURE OF RURAL MONEY MARKET

The rural money market in India consists of a large number of local markets spread over the rural area. The loan transactions in these markets are mostly localized, i.e., borrower in one region has little contact with the lender in another region. The extremely wide regional variation in the interest rates (partially) testifies this¹ (see Table 5.1).

In these local markets, demand originates from a very large number of small, medium and big cultivators and non-cultivators for financing various types of expenditures such as current consumption expenditure, expenditures on marriage, death ceremonies, purchase of seed, fertilizer, purchase and maintenance of machinery, purchase of cattle, expenditures on building source of irrigation, etc.

Table 5.1: State-wise Variation in Average Rate of Interest on Loans Advance to Cultivator Households, 1961-62 and 1971-72

		Average Rate of Interest (% per annum)				
		Based on State average		Average (simple)	Average (Weighted)	Coefficient of variation
		Highest	Lowest			
Charged by All credit Agencies (R ₂)	1961-62	29.22	7.07	15.48	16.38	0.3865
	1971-72	24.34	10.94	17.49	17.99	0.2525
Charged by Non-institutional Agencies (R _{N1})	1961-62	31.26	10.12	17.80	18.95	0.3496
	1971-72	28.95	14.38	21.05	21.59	0.2414
Charged by 1971-72 Non-institutional Agencies (R _{N1})						
1) Bottom 50% of cultivator households		33.18	15.88	24.32	23.59	0.2425
11) Top 50% cultivator households		27.45	12.12	20.77	16.74	0.2495

Notes: (1) R₂ represents the average rate of interest charged by all credit agencies. The average interest rates are worked out using the borrowings within the various ranges of interest as weights. Interest free loans and loans at unspecified or non-calculable rates of interest have not been considered.

(2) R_{N1} is the average interest rate prevailing in the unorganized rural money market (i.e. the interest rate charged by non-institutional

Table 5.1 (contd.)

credit agencies). For 1961-62 R_{NI} is calculated in similar manner using unpublished data from the RBI's AIRDIS. The method adopted for 1971-72 is explained in the note of Table 5.3.

Sources: (1) RBI, AIRDIS: 1961-62, RBI Bulletin, Vol. 19 (September, 1965).

(2) RBI, AIDIS: 1971-72. 1978.

On the supply side, the nature of rural money market is dualistic. The two segments of the dualistic market are: organized (institutional) and unorganized (i.e. non-institutional).² The organized segment consists of those credit and banking institutions (such as, for example, co-operative banks, commercial banks, regional rural banks and government), which are a part of nationally regulated network operating in rural regions. The unorganized sector, on the other hand, is virtually unregulated and consists of heterogenous class of private moneylenders of different professions and trades.

A large proportion of the cultivator-households have access to both these sources. However, certain classes of cultivators (e.g. a class of medium and large farmers) seem to have a better and greater access to the facilities flowing from organized segment (see Tables 5.2 and 5.3). There was also considerable variation in relative importance of loans from organised segment (in terms of its share in total loans) among states (see Table 5.18). The variability seems to be greater for bottom rungs of the cultivator population than for the upper strata of cultivators. (The coefficient of variation of this variable, viz., proportion of institutional loans to total loans given in Table 5.19 is 0.69 for the former class while it is 0.44 for the latter.)

Over the period 1961-62 to 1971-72, at the all-India level, the institutional loans increased from Rs. 292.40

crores in 1961-62 to Rs. 831.98 crores in 1971-72 while non-institutional loans rose from Rs. 828.79 crores in 1961-62 to 869.49 in 1971-72 (Tables 3.43 and 3.44). As a result of the faster rise in institutional loans, the share of institutional loans in total loans obtained ^{by} rural cultivators went up from 0.26 per cent in 1961-62 to 0.49 per cent in 1971-72. At the same time, increasing concentration of institutional loans in topmost bracket was noticed (Table 3A.17). As we shall see later, this differential access to organized market leads to highly unequal bargaining power of the agents in the market.

Table 5.2: Average Interest Rate Paid on loans by Different Asset Classes of the Cultivator-Households, 1961-62.

Asset class (Value of assets in Rs.)	Average interest rate on loans advanced by		Proportion of institutional loans to total loans
	All credit agencies (R ₂) (2)	Non-institu- tional Agencies (R _{YI}) (3)	
(1)			(4)
Less than 500	16.80	17.78	0.09
500- 1,000	18.38	20.70	0.11
1,000- 2,500	18.84	20.84	0.14
2,500- 5,000	17.32	19.82	0.20
5,000-10,000	15.82	18.39	0.23
10,000-20,000	14.89	17.93	0.29
20,000 & above	10.98	13.39	0.39
All Asset Groups	16.38	18.95	0.26

(Contd.)

N.B.: The method of computing R_{NT} and figures in column 4 is as explained in the Note to Table 4.3.

Sources: 1) RBI, AIRDIS: 1961-62, RBI Bulletin, Vol. 19 (September 1965).

2) RBI, AIRDIS (Unpublished data).

5.2 CHARACTERISTICS OF RURAL MONEY MARKET

There are crucial systematic differences in these two types of credit agencies.

Institutional agencies mostly lend for productive purpose³. For example, co-operatives advance loans for financing current farm business expenditures and farm capital investment. The loans are advanced for different purposes for different periods (e.g. short term loans for current farm business expenditures and medium-and long-term loans for farm capital investments) at different rates of interest. The loans are secured primarily against land. Government finance is available only to certain categories of people and for defined purposes.

The size of loan operations and the rate of interest in organized sphere is administered by the Reserve Bank of India. The rate of interest is more or less uniform over the States.

In contrast, the non-institutional agencies lend for all purposes and do not limit their finance for specific purposes. Nor do they charge different rates of interest for different purposes or different repayment duration i.e. long term or short term.⁴ Most of the loans are advanced

Table 5.3: Average Interest Rate Paid on Loans by Different Asset-Classes of Cultivator Households, 1971-72

Asset-Class (Value of assets in Rs.)	Average Interest rate on loans advanced by		Proportion of institutional loans to total loans (IL/TL)
	All credit agencies (R ₂)	Non-institutional agencies (R _{NI})	
(1)	(2)	(3)	(4)
0-- 500	25.86	26.86	0.11
500-- 1,000	24.86	26.15	0.16
1,000-- 2,500	22.98	24.76	0.24
2,500-- 5,000	21.42	23.33	0.26
5,000-- 10,000	20.44	22.79	0.31
10,000-- 15,000	19.50	22.40	0.40
15,000-- 20,000	17.40	20.97	0.50
20,000-- 30,000	15.58	18.34	0.50
30,000-- 50,000	16.04	19.99	0.55
50,000--1,00,000	14.27	19.21	0.64
1,00,000 and above	12.57	17.08	0.69
All cult. h.h.	17.99	21.59	0.49

N.B.: (1) R_{NI} is calculated as follows:

$$R_{NI} = \frac{R_2 - P \times 9}{1 - P}$$

where P is the proportion of institutional loans to total loans borrowed (excluding the loans borrowed at 'Nil' and unspecified, non-calculable interest-rates).

Table 5.3 (contd.)

- (2) For calculating figures in Column 4 asset group-wise distribution of institutional loans observed in AIDIS, 1971-72 is applied to apportion the all-India estimate of institutional loans from Table 3.25 among the asset groups. Figures of non-institutional loans are taken from AIDIS, 1971-72.

Source: (1) RBI, AIDIS: 1971-72, 1978,

on personal security and against verbal pledge. (The available information from RBI surveys indicates that 93 per cent and 68 per cent of loans advanced by non-institutional agencies to cultivators are advanced on personal security in 1961-62 and 1971-72 respectively). There is a greater flexibility in operation and moneylenders adopt their lending procedures to suit the convenience of the borrowers.

The size of loan operations in unorganized markets and rates of interest in these markets are determined, among others, by local market forces i.e. demand and supply. In these markets, the social and economic structure of rural areas influence both the demand and supply situations and induces certain non-competitive tendencies or traits.⁵ Firstly, competition from moneylenders from outside villages is almost non-existent, since most of the loans are advanced on personal security and often without a real collateral. The intimate knowledge of borrower's 'character and repaying capacity' are therefore of utmost importance. There is very little that escapes from local moneylender's eye relating to the circumstances of his debtors, whereas outside moneylenders do not have this knowledge and this puts barriers to entry of the outside moneylenders.

Secondly, borrowing and lending are often interlocked with production and trading arrangements (e.g. share-cropping, lending against the assurance of selling the produce to the

lender-trader). Thus, the return received by the lender is not only for extending credit but includes also reward to some additional factor input or productive service. This vests with the lender opportunity and potential power to raise or lower the rate of interest that would maximize his own total surplus.⁶ (i.e. income from interest and rent and surplus from trade). The lenders have subjective assessment of own opportunity cost, repaying ability of the borrower and risk of default. This assessment is influenced by their knowledge as a trader and/or as a money-lender.

Incidentally, the elasticity of demand for loans may differ from one economic class to another. This, together with the factors discussed above from the side of supply, facilitates a kind of differential treatment and discrimination in the price (interest) charged among the borrowers.⁷ In Tables 5.2 and 5.3 we have given the data on interest charged by moneylenders to different size-classes of cultivators.

Thus, because of the vulnerable and weak position of borrowers in low asset groups (in particular who borrow mainly for consumption purpose) and a lack of sufficient countervailing alternative appearing from organized segment, the lenders enjoy the power to dictate terms favourable to them, and force them on their 'all or nothing demand curve'.

It has been argued that the monopolistic/oligopolistic

powers of rural moneylenders result in very high interest rates and which are too high than the risk involved warrants (Chandavarkar, 1965). However, quantitative separation of these two elements i.e. risk and monopolistic profit, of interest rate is rather difficult.

5.3 NATURE AND DETERMINANTS OF BORROWINGS

We may now examine the nature of loans, (i.e. their duration and purposes) which are raised from the institutions discussed above. The components of total loans by purpose and duration are summarized below.

Duration \ Purpose:	Productive (Examples)	Non-productive (Examples)
Short-term (upto 15 months)	Purchase of inputs e.g. fertilizers, seeds, maintenance expenditure, payment of wages, etc.	Current consumption
Long-term (including medium term loans)	Purchase of produc- -tive assets, live- stock, machinery (e.g. tractor, diesel en- gine) reclamation of land, digging of wells, construction of farm houses, etc.	Expenses on account of marriage, death ceremonies, educa- tion, litigation, etc.

N.B. : It is already mentioned that institutional agencies advance primarily productive loans (short-term as well as long-term), whereas non-institutional agencies advance both productive as well as non-productive loans; but do not charge different interest rates for productive and non-productive loans.

The above classification of total loans may, perhaps conceal the inter-relatedness and overlap that we wish to point out here. The long-term productive loans may raise the current cash requirement; e.g., the use of a pumpset requires additional current expenditure on diesel or electricity. Similarly, a change in the technique of cultivation will also change the requirement of current and capital credit. For instance, as has been noted in the fourth chapter, introduction of HYV increases the use of irrigation, fertilizer and energy consumption. Thus, the level of working capital requirement rises resulting in increased demand for short-term credit.

Another intriguing overlap between short-term productive and non-productive loans arises in the case of subsistence family farming. The demand for consumption loans is partly for the payment of 'imputed wages' (which they themselves pay and receive). Thus, the demand in those seasons when they employ themselves on their farms appears simultaneously productive and 'non-productive'! There, of course, exists demand for loans to meet other non-wage (current) input purchases, e.g., seed, bullock services, and pesticides, etc. It may also be noted that this very segment is most subject to distress sales that takes place immediately after harvest. Thus, a price-fall adversely affects their expected income.

This inter-relationship between short-term productive

and non-productive loans render the distinction between the two purposes somewhat difficult. Hence, it seems more appropriate to look upon credit for these items, as a kind of lumpsum accommodation to fill up the gaps in outlay which cannot be met from the cultivators' own resources during the non-income period between any two harvests. Precisely, due to this difficulty in separating these two types of loan requirements, separate analysis of demand for productive loans and non-productive loans becomes impossible.

5.4 THE LEVEL AND COMPOSITION OF BORROWINGS

The data presented in Table 5.4 show considerable inter-state variations in per household loans borrowed by the rural cultivator-households. The loan requirements for productive and non-productive purposes also differ from State to State.

The propensity to borrow for productive and non-productive purpose also differs among different asset-size-classes of cultivator households. The data in Table 5.5 indicate that the proportion of loans for productive purposes increases as we move up the asset (value) class. The tendency of loans for family expenditure is in the opposite direction.

5.4.1 Factors Affecting the Level of Loans

The loans (whether for the purpose of capital or consumption expenditure) are raised because internal sources

Table 5.4: Level and Composition of Total Loans Borrowed by Cultivator Households: State-wise, Purpose-wise, 1961-62 and 1971-72

(1)	Percentage of Loans Borrowed						Average per household Loans	
	Productive		Family Expenditure		Others		(Rs.)	
	1961-62	1971-72	1961-62	1971-72	1961-62	1971-72	1961-62	1971-72
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Andhra Pradesh	39.9	44.1	39.7	45.3	22.2	10.6	275.9	206.56
Assam	39.6	31.6	56.5	43.9	3.9	24.5	35.8	30.91
Bihar	28.2	23.8	60.1	57.6	11.7	18.6	102.5	68.21
Gujarat	43.6	46.1	51.7	43.7	4.7	10.2	370.3	306.45
Jammu and Kashmir	15.7	27.2	82.2	60.5	2.1	12.3	154.4	178.27
Karnataka	43.1	36.3	40.4	49.1	11.5	14.6	323.3	307.81
Kerala	28.7	29.0	59.7	51.1	11.6	19.9	203.7	143.55
Madhya Pradesh	44.2	46.1	45.4	45.5	10.4	8.4	169.4	200.81
Maharashtra	65.0	54.2	31.5	42.1	3.5	3.7	220.9	250.60
Orissa	45.4	23.4	49.6	52.4	5.0	24.2	54.9	60.16
Punjab	35.3	46.0*	57.5	40.8*	7.2	13.2*	365.1	973.16*
Rajasthan	36.7	23.2	57.2	68.6	6.1	8.7	389.4	407.98
Tamil Nadu	50.5	52.9	31.2	37.9	18.3	9.2	297.8	285.98
Uttar Pradesh	40.6	37.9	45.1	52.0	14.3	10.1	167.5	166.57
West Bengal	40.0	37.3	55.0	51.4	5.0	11.3	143.9	127.59
All India	42.3	40.4	46.6	48.6	11.1	11.0	205.4	207.16
Co-efficient of Variation	0.2686	0.2758	0.2453	0.1597	0.6150	0.4348	0.5057 0.5048**	0.8636 0.5114**

N.B. : * Including Haryana.

** Excluding Punjab and Haryana.

The category 'Others' comprises loans borrowed for financing expenditures on litigation, repayments of debt, financial investment, any other purpose, more than one purpose, purpose not specified.

Source: (1) RBI, AIRDIS: 1961-62, RBI Bulletin, Vol. 19 (September 1965).

(2) RBI, AIDIS: 1971-72, 1978.

Table 5.5: Level and Composition of Total Loans Borrowed by Different Classes of Rural Cultivator Households; All-India, Purposewise, 1961-62 and 1971-72

Class of Cultivators	Percentage of Loans Borrowed						Average per Household Loans (Rs.)	
	Productive		Family Expenditure		Others		1961-62	1971-72
	1961-62	1971-72	1961-62	1971-72	1961-62	1971-72	1961-62	1971-72
I	26.3	23.4	64.2	65.6	9.5	11.0	59.5	63.0
II	31.1	21.7	59.0	66.1	9.9	12.2	98.0	96.5
III	36.7	31.1	53.5	57.5	9.8	11.4	155.3	143.0
IV	47.7	46.3	43.9	43.0	8.4	10.7	378.5	353.9
All Classes	42.3	40.4	46.6	48.6	11.1	11.0	205.4	207.6

N.B.: The composition of the four classes of cultivator households in terms of asset values is as follows:

Class	Asset Value in (Rs.)	
	1961-62	1971-72
I	0-1000	0-2500
II	1000-2500	2500-5000
III	2500-5000	5000-10000
IV	5000 and above	10000 and above

Sources: (1) RBI, AIRDIE: 1961-62, RBI Bulletin, Vol.19 (September 1965).
 (2) RBI, AIDIE: 1971-72, 1978.

fall short of the total requirements. The time-lag between expenditure and receipt of incomes necessitates borrowings of current types. On the other hand, capital investment undertaken will be, as far as possible, financed from past accumulated savings or current saving and the shortfall is made good by raising loans paying the going rate of interest.

The cultivator-household's current expenditures are often unavoidable and therefore have low interest elasticity. In case of borrowing for investment expenditure, a comparison of the expected rate of net return on it with rate of interest to be paid on the funds borrowed for financing the investment will be made in deciding the borrowings. Needless to elaborate, the rate of return must be at least adequate to cover the interest payment. Thus, the rate of interest is negatively related to the demand for loans.

The role of savings in relation to the quantum of borrowings deserves some important observations. However, we shall discuss the nature of this relationship in section 5.4.3.

Thus, along with the desired levels of investment expenditures, the rate of interest and savings may be taken as the primary determinants of borrowing decisions. All those other factors that enter in ascertaining desired increment to the capital stock (e.g. expected growth in output or change in size and pattern of current spendings, uncertainties, changes in relative prices of agricultural

and non-agricultural commodities, seasonal and cyclical fluctuations and expectations) are likely to influence borrowings indirectly.

Non-productive loans comprise loans for current consumption and for expenditure on certain selected items such as ceremonies, litigation or education. A borrowing household would endeavour to retain its level of current consumption somewhere between past minimum and lowest threshold, and thereby avoid loan amount to the extent possible. In case of expenditure on afore-mentioned special items, the spendings often involve social considerations such as status, education or other unavoidable expenses such as litigation charges, ceremonial expenses. These expenditures are often unavoidable and involve large sums, and, therefore, the household's own funds may prove to be inadequate. Therefore, in order to capture influence of this variable distinctly, we include it as a separate variable.

The above discussion of the determinants of demand for total loans suggests that demand for total loans depends on rate of interest (R), savings (S), capital expenditure (CE) and family expenditure (FE) on selected items and can be summarized in the following functional relation.

$$TL = f(R, S, CE, FE) \quad \dots \quad (5.1)$$

5.4.2 Method of Estimation

Assuming linearity, the following demand function is

estimated by applying OLS.

Model I (For All Cultivator Households)

$$TL = \beta_1 + \beta_2 R_2 + \beta_3 CE + \beta_4 FE + \beta_5 S \quad \dots \quad (5.2)$$

where R_2 represents the average of the rate of interest charged by all different credit agencies (i.e. institutional and non-institutional) for all types of borrowings and for all purposes, CE measures per capita expenditure on purchase of land, livestock, implements and machinery, construction of farm houses and irrigation sources, land improvements and capital expenditures on other items, FE stands for average family expenditures on selected items (nature of its constituents are already mentioned above), and S denotes savings of the cultivator-households.

We have attempted to explore this relationship with the State level cross sectional data for the years 1961-62 and 1971-72. States differ substantially in their geographical, occupational conditions, level of economic development in general and development of financial institutions in particular. Moreover, as a result of unweighted totalling, the State level aggregates are likely to be excessively dominated by behavioural tendencies of upper asset groups. Therefore, we have estimated the relationship for different fractiles of cultivator households for the year 1971-72 for which the data are available. But the non-availability of data on certain variables by asset groups compels us to modify the specification of the model

so that it will be consistent with the currently available data. The specification of the demand equation for different fractile groups is as follows:

Model II (For Fractile Groups of Cultivators)

$$(a) \quad TL = \alpha_1 + \alpha_2 CE \quad \dots \quad (5.3)$$

$$(b) \quad TL = \alpha_1 * + \alpha_2 * R_2 + \alpha_3 * CE \quad \dots \quad (5.4)$$

Equation 5.3 is estimated for top and bottom 10 per cent, 25 per cent and 50 per cent of the cultivator-households whereas equation (5.4) is estimated for top and bottom 50 per cent of the households.

5.4.3 Nature of Data Used

Some observations on the nature of data used are in order.

Rate of Interest

Since there are legal stipulations on the maximum rate of interest allowed to be charged, the rates of interest that are reported in the survey are often understated. Besides, the reported rates of interest (i.e. nominal rate of interest) may fail to represent the 'effective' rate of interest for two reasons.

Firstly, moneylenders disburse a loan amount much lower than what is recorded in the loan document. Hence, the nominal rates of interest are, in effect, lower than the 'effective' interest-rate paid by the borrowers.

Secondly, as mentioned earlier, transactions in land, labour and loan markets are interlocked and when all these

market transactions are considered together, the actual implicit rate of interest that would be operating cannot be easily gauged.

Saving

The variable 'saving' represents the total saving of the cultivator households in the region as a whole (i.e. the saving of the lending households plus the saving of the borrowing households). A rise in the savings of the borrowing households implies a rise in 'owned funds' and hence reduction in demand for loans, ceteris paribus. On the other hand, if the saving of the surplus households rise, it will not have any direct impact on the quantum of borrowings. Hence we cannot predict the direction of relationship between saving and demand for loans because of the nature of the data.

5.4.4 Results of Demand Equation for Total Loans

The results of the demand equations 5.2 and 5.3 and 5.4 are presented in Tables 5.6, 5.7, 5.9, 5.10.

Model I (aggregate level : equation 5.2)

Except capital expenditure, all the variables are insignificant for the year 1961-62. The marginal propensity to borrow (MPB) with respect to capital expenditure in farm business (i.e. size of estimated coefficient of CE) is significant at (at 1% level) in both the years, i.e. 1961-62 and 1971-72 and its magnitude remains almost unchanged. But the MPB with respect to saving and the rate of interest are

Table 5.6: Correlation Matrix Between Total Loans, Rate of Interest, Capital Expenditure in Farm Business, Family Expenditure and Saving: All Cultivator Households, 1961-62 and 1971-72

		TL	R ₂	CE	FE	S
TL	1961-62	1	-0.649979	0.901175	0.648455	0.674452
	1971-72	1	-0.636072	0.912834	0.524077	0.506703
R ₂	1961-62		1	-0.565992	-0.414796	-0.411985
	1971-72		1	-0.430700	-0.358038	-0.535783
CE	1961-62			1	0.708575	0.849614
	1971-72			1	0.677698	0.613416
FE	1961-62				1	0.790858
	1971-72				1	0.554002
S	1961-62					1
	1971-72					1

N.B.: For 1971-72 the co-relation coefficients are for fourteen States, i.e., excluding Punjab and Haryana.

Table 5.7: Estimated Demand Function for Total Loans: All Cultivator Households, 1961-62 and 1971-72

Year (1)	Constant (2)	R ₂ (3)	CE (4)	S (5)	FB (6)	R ² (7)	\bar{R}^2 (8)	F (9)
1961-62	30.2904	-	1.4422* (0.1921)	-	-	0.8121	-	56.1857*
1971-72	16.1719	-	1.5484* (0.2004)	-	-	0.8332	-	59.9424*
1961-62	26.9536	-	1.4195* (0.2836)	-	0.0181 (0.1613)	0.8123	-	25.9682*
1971-72	86.9644	-	1.7460* (0.2684)	-	-0.2202 (0.1977)	0.8503	-	31.2401*
1961-62	113.3950	-3.7979 (2.576)	1.2556* (0.223)	-	-	0.8409	0.8144	31.7121*
1971-72	207.0744	-8.7977** (3.9836)	1.3395* (0.198)	-	-	0.8845	0.8635	42.1190*
1961-62	110.8939	-3.7926 (2.691)	1.2397* (0.301)	-	0.0129 (0.015)	0.8410	0.7976	19.3941*
1971-72	288.1918	-9.0797** (3.609)	1.5527* (0.241)	-	-0.2381 (0.166)	0.9042	0.8755	31.4614*
1961-62	112.2381	-3.2669 (2.533)	1.6677* (0.380)	-0.4838 (0.366)	-	0.8626	0.8251	23.0194*
1971-72	316.8139	-11.9471** (3.933)	1.5164* (0.200)	-0.3747*** (0.193)	-	0.9157	0.8904	36.2080*

Table 5.7 (contd.)

* Significant at 1 per cent.

** Significant at 5 per cent.

*** Significant at 10 per cent.

N.B. : (1) Figures in parentheses denote standard errors of the estimates.

(2) Demand Function for 1971-72 is estimated excluding the States of Punjab and Haryana.

insignificant in 1961-62 but these turn out to be statistically significant in 1971-72. However, MPB with respect to family expenditure is insignificant in both the years and yield a wrong sign in 1971-72.

The step-wise inclusion of the rate of interest and saving improves the \bar{R}^2 in both the years but inclusion of the variable of family expenditure, on the contrary, reduces it marginally in 1961-62. Thus, the variable family expenditure appears to be statistically superfluous. However, this may not be taken to imply that theoretically family expenditure is insignificant in explaining the variation in total loans and hence the model should be respecified to exclude this variable. The reason for family expenditure turning out to be statistically superfluous can be explained in terms of the dominance of the capital expenditure which alone explains a major portion of the variation explained by these two variables in total loans (see Table 5.8).

Table 5.8: Decomposition of the R^2 of the Estimated Demand Function for Total Loans With Capital Expenditure in Farm Business and Family Expenditure as Explanatory Variables

Year	Variation explained by CE in FB	Variation explained by FE	Total Variation explained by FE and CE in FB.
1961-62	0.80	0.01	0.81
1971-72	0.95	-0.12	0.83

Model II (fractile-group level: equation 5.3)

The important finding that has emerged from the equations in model II(a), (equation 5.3) is that the marginal requirement to borrow for the purpose of capital expenditure is lower for borrowers in upper asset groups than for those in lower asset groups. The difference between the estimated co-efficient for the classes at the two extreme ends of the distribution (i.e. bottom and top 10 per cent) is statistically significant.

The results of the demand function, with rate of interest and capital expenditure as explanatory variables, (equation 5.4) indicate that capital expenditure is a significant variable for both the classes, (see Table 5.11). However, the rate of interest turns out to be significant (at 10 per cent level) only in the case of top 50 per cent of the households. The insignificance of this variable in the case of bottom 50 per cent of the households is due to the larger proportion of non-productive loans in the total loans raised by these households. As it has been already mentioned, the non-productive loans are expected to be inelastic with respect to interest rates.

Table 5.9: Marginal Propensity to Borrow With Respect to Capital Expenditure of Different Fractions of Cultivator-Households, 1971-72

Sub-group of cultivator-households	Constant	MPB with respect to CE	R ²	Elasticity at the mean level
Bottom 10%	23.8399	2.6919* (0.739)	0.5248	0.7124 (0.195)
Bottom 25%	39.4882	1.4355** (0.622)	0.3072	0.5555 (0.242)
Bottom 50%	28.0750	1.8482* (0.427)	0.6095	0.7782 (0.277)
Top 50%	14.5292	1.4533* (0.163)	0.8688	0.9646 (0.108)
Top 25%	26.8385	1.2871* (0.172)	0.8239	0.9522 (0.127)
Top 10%	135.7800	1.0208* (0.217)	0.6475	0.8268 (0.173)
All Cultivator Household	16.1719	1.5484* (0.200)	0.8327	0.9398 (0.122)

* Significant at 1 per cent.

** Significant at 5 per cent.

N.B.: Figures in parentheses are standard errors of the estimates.

Table 5.10: Correlation Matrix Between Total Loans, Rate of Interest and Capital Expenditure in Farm Business: Top 50 per cent and Bottom 50 per cent of the Cultivator Households, 1971-72

Variables		<u>TL</u>		<u>R₂</u>		<u>CE</u>	
		A	B	A	B	A	B
TL	Top 50%	1	1	-0.6454	-0.9064	0.9321	0.9429
	Bottom 50%	1	1	-0.5223	-0.7389	0.7787	0.8041
R ₂	Top 50%	-	-	1	1	-0.4815	-0.8825
	Bottom 50%	-	-	1	1	-0.3570	-0.6385
CE	Top 50%	-	-	-	-	1	1
	Bottom 50%	-	-	-	-	1	1

N. B.: Correlation coefficients presented under heading 'A' are for fourteen States, i.e. excluding the States of Punjab and Haryana while those under 'B' are for twelve States, i.e. excluding the States of Punjab, Haryana, Jammu and Kashmir and Kerala.

Table 5.11: Marginal Propensity to Borrow with Respect to Capital Expenditure and Rate of Interest: Top and Bottom 50 Per Cent of the Cultivator-Households, 1971-72

Sub-groups of cultivator-households	Constant	R ₂	CE	R ²
Bottom 50%	150.8622	- 2.9266 (1.938)	1.6080* (0.4363)	0.67
Top 50%	279.2669	-13.2640*** (6.146)	1.2837* (0.163)	0.91
All Cultivator households	207.0745	- 8.7978** (3.980)	1.3395* (0.198)	0.88

* Significant at 1 per cent,

** Significant at 5 per cent

*** Significant at 10 per cent.

N.B.: Figures in parantheses are standard errors of the estimates.

5.5 TOWARDS STRUCTURAL EQUATIONS MODEL

The insignificance of the coefficients of the rate of interest and saving in 1961-62 viewed together with high R² and high standard errors of the coefficients in both the years suggest the presence of multicollinearity between the explanatory variables (see Table 5.6).

In this context, let us briefly consider and examine the inter-relationships between the independent variables. A rise in saving of the borrowing households for example, increases the availability of internal funds, thereby reduce

the interest-rate by shifting downward the demand curve for external funds provided that the supply curve is not perfectly elastic. Similarly, a rise in savings of the surplus households shifts the supply curve of loanable funds rightwards and, demand remaining constant, causes the interest rate to decline. This reduction in the rate of interest implies decrease in the cost of external funds as well as in the opportunity cost of owned funds, thereby making capital expenditure more attractive and raising its level. Similarly, because of increased savings, a high level of capital expenditure can be achieved. This increased level of capital expenditure results in increased demand for loans.

Thus, savings affect the demand for total loans directly as well as indirectly through the interest-rate and the capital expenditure. Likewise, the linkage between the interest rate and demand for total loans is generated through the direct link between the cost of external funds i.e. interest rate and the demand for funds and its indirect link through capital expenditure.

In a single equation model, all these indirect links are not revealed; moreover, it in fact distorts the results and what we get are only the direct impacts of the explanatory variables on the dependent variable. Therefore, insignificance of the coefficients in a single equation model may be either due to such distortions it suffers from multicollinearity

and interactive simultaneity or because indirect impact is more significant than the direct impact.

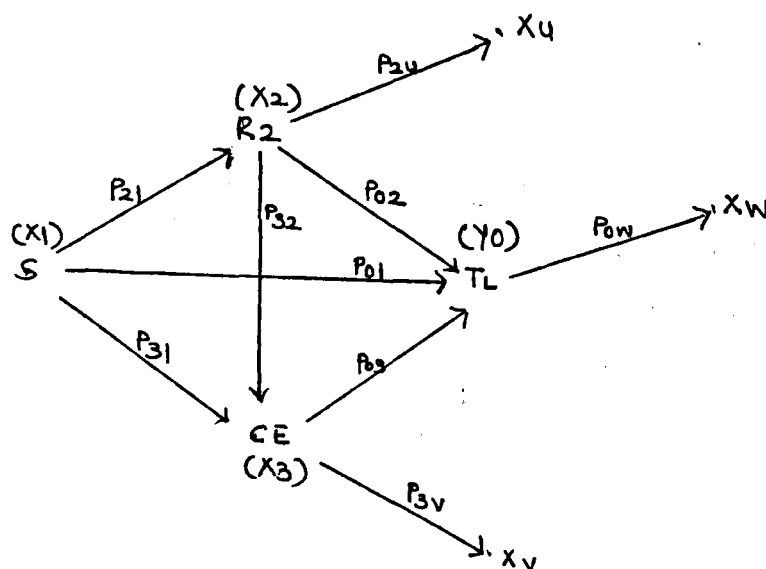
In order to explore this causal structure between the explanatory and dependent variables, structural equation models are formulated. These models when formulated in terms of standardized variables are called 'path models'. The path models enable us to quantify the direct and indirect linkages between the explanatory and dependent variables and bring out their relative importance in the overall relationship.

5.5.1 The Path Models

The causal ordering of the explanatory variables in the single equation models (models I and II) suggested by the above discussion, is presented in the following path diagrams and set of equations. The direct paths from each explanatory variable to each variable dependent on it are indicated by one way arrows.

Model III (For All Cultivator-Households)

The Path Diagram

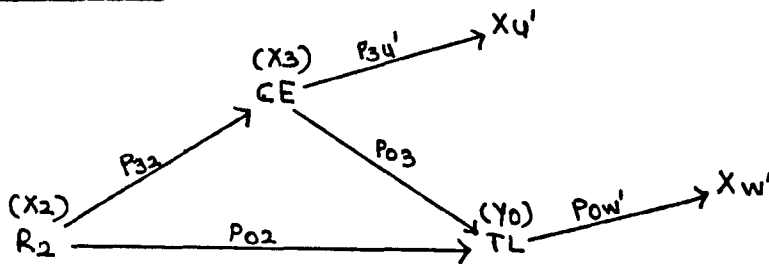


Set of equations

$$X_2 = f(X_1) \quad ; \quad X_2 = P_{21}X_1 + P_{2u}X_u \quad (5.5)$$

$$X_3 = f(X_1, X_2) \quad ; \quad X_3 = P_{31}X_1 + P_{32}X_2 + P_{3v}X_v \quad (5.6)$$

$$Y_0 = f(X_1, X_2, X_3); \quad Y_0 = P_{01}X_1 + P_{02}X_2 + P_{03}X_3 + P_{3w}X_w \quad (5.7)$$

Model IV (For Top and Bottom 50 Per Cent of the Cultivator-Households)The Path DiagramSet of equations

$$X_3 = f(X_2) \quad ; \quad X_3 = P_{32}X_2 + P_{3u'}X_{u'} \quad (5.8)$$

$$Y_0 = f(X_2, X_3); \quad Y_0 = P_{02}X_2 + P_{03}X_3 + P_{0w'}X_{w'} \quad (5.9)$$

In the above set of equations, each variable is standardized and P_{ij} 's are symbols for path coefficients where the first subscript identifies the dependent variable, whereas the second subscript identifies that variable whose direct effect is measured by the path coefficients (e.g. P_{21} measures the direct impact of savings (X_1) on the rate of interest (X_2)). X_u' , X_v' , X_w' , X_u , and X_w , are error terms which are assumed to be uncorrelated with any of the immediate determinants of the dependent variables to which they pertain. It is also assumed that they are uncorrelated with each other.

Two points are worth noting here. Firstly, both these models are fully recursive models i.e. without self feedback of the variables.

Secondly, in each of the models there is only one exogenous variable (i.e. the variable causally prior to all the explanatory variables), e.g., saving in model III and rate of interest in model IV. We shall see later that the direct and indirect linkages between saving and the demand for total loans in model III and between the rate of interest and the demand for loans in model IV add up to the correlation coefficients between saving and total loans and rate of interest and total loans respectively.

5.5.2 Method of Estimation and Interpretation of the Path Coefficients

The path coefficients in the models are estimated by applying ordinary least square regression method to the equations in the model sequentially.⁸

As indicated earlier, the estimated path coefficients quantify the direct linkages between the variables. The indirect linkages can be calculated by tracing direct paths from the common antecedent variable.

We now present the measurement of indirect linkages between the variables in models III and IV.

Model III

Indirect Path	Measure of indirect links
(S) (R ₂) (TL)	
X ₁ → X ₂ → Y ₀	P ₀₂ P ₂₁
(S) (CE) (TL)	
X ₁ → X ₃ → Y ₀	P ₀₃ P ₃₁
(S) (R ₂) (CE) (TL)	
X ₁ → X ₂ → X ₃ → Y ₀	P ₀₃ P ₃₂ P ₂₁
(R ₂) (CE) (TL)	
X ₂ → X ₃ → Y ₀	P ₀₃ P ₃₂

Thus, the total linkage between saving and demand for total loans is generated by four distinct causal links - one direct and three indirect - measured by

- P₀₁ - direct link between S and TL
- P₀₂P₂₁ - indirect link through R₂
- P₀₃P₃₁ - indirect link through CE
- P₀₃P₃₂P₂₁ - indirect link through R₂ in turn through CE.

The sum of the above-mentioned linkages is equivalent to the correlation coefficient r₀₁ i.e., between S and TL. The proof is as follows.

Since the variables are standardised

$$r_{01} = \frac{1}{n} \sum_{i=1}^n (X_1 Y_0) \quad (5.10)$$

Substituting for Y₀ from equation 5.7

$$r_{01} = \frac{1}{n} \sum_{i=1}^n X_1 (P_{01} X_1 + P_{02} X_2 + P_{03} X_3 + P_{3w} X_w) \quad (5.11)$$

$$= P_{01} + P_{02} r_{12} + P_{03} r_{13} \quad (5.12)$$

But $r_{12} = P_{21}$, and

$r_{13} = P_{31} + P_{32}P_{21}$ (see footnote 8)

$$r_{01} = P_{01} + P_{02} P_{21} + P_{03} P_{31} + P_{03} P_{32} P_{21} \quad (5.13)$$

The direct and indirect linkages between the rate of interest and demand for loans are given by P_{02} and $P_{03}P_{32}$ (through CE) respectively.

Model IV

Indirect Path

Measure of indirect link

(R_2) (CE) (TL)

$X_2 \longrightarrow X_3 \longrightarrow Y_0$

$P_{03}P_{32}$

Thus, the total effect (r_{02}) of the interest-rate on total loans is a composite of its direct effect i.e. P_{02} and its indirect effect through capital expenditure i.e. $P_{03}P_{32}$ and is equal to the correlation coefficient between R_2 and TL.

5.5.3 Results of the Path Models III and IV

The results of the path model III (Table 5.12) emphasize the fact that saving and rate of interest are related to total loans through capital expenditure. In 1961-62, though the direct path between saving and total loans and rate of interest and total loans are insignificant (this was the finding of the single equation model), indirect impacts of these variables operating through capital expenditure are statistically significant. In 1971-72 both the direct as well as indirect effects of these variables

Table 5.12: Estimated Path Coefficients of the Path Model (III): All Cultivator Households, 1961-62 and 1971-72

Year	Path Coefficients					Residual Path	
	P ₂₁	P ₃₁	P ₃₂	P ₀₁	P ₀₂		P ₀₃
1961-62	-0.4119 (0.2527)						0.9112
1971-72 A	-0.5858** (0.2339)						0.8104
B	-0.6512** (0.2399)						0.7589
1961-62		0.7424* (0.1434)	-0.2602*** (0.1434)				0.4711
1971-72 A		+0.5065*** (0.2763)	-0.1825 (0.2763)				0.7758
B		0.3041*** (0.1586)	-0.7297* (0.1586)				0.3793
1961-62				-0.2840 (0.2053)	-0.1770 (0.1314)	1.0422* (0.2270)	0.3704
1971-72 A				-0.2504*** (0.1215)	-0.3527* (0.1093)	0.8974* (0.1122)	0.2887
B				-0.2515*** (0.1372)	-0.3959*** (0.1841)	0.7699* (0.2069)	0.2769

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* indicates significant at 1 per cent, ** indicates significant at 5 per cent, *** indicates significant at 10 per cent.

N.B.: 1.(A) Results for 14 States i.e. excluding Punjab and Haryana.

(B) Results for 12 States i.e. excluding Jammu and Kashmir, Kerala, Punjab and Haryana.

2. Figures in parentheses are standard errors of the path coefficients.

Table 5.13: Path Model (III): Direct and Indirect Effects of Saving on Capital Expenditure, on Total Loans and Rate of Interest on Total Loans: All Cultivator Households, 1961-62 and 1971-72

Variables	Type of Effects	1961-62	1971-72 A	1971-72 B
S on CE	Direct	0.7424	0.5065	0.3041
	Indirect through R ₂	0.1072	0.1069	0.4752
	Total	0.8496	0.6134	0.7793
S on TL	Direct	-0.2840	-0.2504	-0.2515
	Indirect:			
	i) through R ₂	0.0729	0.2066	0.2578
	ii) through CK	0.7737	0.4545	0.2341
	iii) through R ₂ in turn through CE	0.1117	0.0959	0.3658
	Total	0.6743	0.5066	0.6062
R ₂ on TL	Direct	-0.1770	-0.3527*	-0.3959
	Indirect through CK	-0.2712	-0.1638	-0.5618

N.B.: Computed from Table 5.12.

i.e. saving and interest rates are significant.

One more important finding is that while the magnitude of direct impact of the variable S on TL remained unchanged, its indirect impact through capital expenditure in farm business was reduced from 0.77 in 1961-62 to 0.45 in 1971-72. This has happened because of the diversification of saving portfolio away from farm investment in many states as noted in the fourth chapter.

Table 5.14 shows that for bottom 50 per cent of the households, rate of interest does not influence the demand for total loans either way, i.e. directly or indirectly through capital expenditure. On the contrary, this variable significantly affects the demand for loans directly as well as indirectly through its relation with capital expenditure in the case of top 50 per cent of the households.

Another prominent feature of both these models is the significant residual paths observed for interest-rate function. This implies that a large part of the variation in R_2 is due to the variables not included in the function. We shall return to this point in the next section.

5.6 DEMAND FOR NON-INSTITUTIONAL LOANS

In this section we turn to the analysis of demand for loans from non-institutional agencies (i.e. from unorganized market). It is already mentioned in Section 5.2 that the supply of institutional loans as well as interest-rate charged by these agencies are administered and regulated

Table 5.14: Estimated Path Coefficients of the Path Model (IV): Bottom 50 per cent and Top 50 per cent of Cultivator Households, 1971-72

Year	Bottom 50% of the households				Top 50% of the households			
	P ₃₂	Path coefficients		Residual Path	P ₃₂	Path coefficients		Residual Path
		P ₀₂	P ₀₃			P ₀₂	P ₀₃	
1971-72								
A	-0.3570 (0.2690)			0.9341	-0.4815*** (0.2530)			0.8764
		-0.2800 (0.1762)	0.6787* (0.1762)	0.5703		-0.2559** (0.0936)	0.8039* (0.0936)	0.2844
B	-0.6385* (0.2434)			0.7696	-0.8825* (0.1487)			0.9421
		-0.3808 (0.2126)	0.5609** (0.2126)	0.5173		-0.3354 (0.1972)	0.6469** (0.1972)	0.2933

* Significant at 1 per cent
 ** Significant at 5 per cent
 *** Significant at 10 per cent

N.B.: 1) Figures in parentheses are standard errors of the estimates.

2) A : For all States (excluding Punjab and Haryana).

B : For twelve States, i.e., excluding Punjab, Haryana, Jammu and Kashmir and Kerala.

Table 5.15: Path Model (IV): Direct and Indirect Effects on Demand for Total Loans, Bottom 50 per cent and Top 50 per cent of Cultivator Households, 1971-72

Variables	Type of effects	Bottom 50 per cent of the households		Top 50 per cent of the households	
		A	B	A	B
R ₂ on TL	Direct	-0.2800	-0.3808	-0.2559	-0.3354
	Indirect through CE	-0.2423	-0.3581	-0.3895	-0.5709
Total		-0.5223	-0.7389	-0.6454	-0.9063
CE on TL	Direct	-0.6787	-0.5609*	-0.8039	0.6469

N.B.: 1) A : excluding Punjab and Haryana.

2) B : excluding Punjab, Haryana, Jammu and Kashmir and Kerala.

3) Calculated from Table 5.14.

heavily whereas the free market forces are more apparent in the unorganized part of the rural money market. Thus, demand for loans from non-institutional agencies deserves a separate investigation.⁹

In what follows we have formulated a single equation model of the demand function for non-institutional loans and then the structural equations model (path model) explicating the causal structure between the explanatory variables in the single equation model.

5.6.1 Factors Affecting the Demand for Non-institutional Loans

The demand for non-institutional loans (NIL) depends upon the rate of interest, capital expenditure in farm business, family expenditure, household's saving and the availability of institutional finance.

The nature of relationship between the first four variables and the demand for NIL is similar to their relationship with the demand for total loans which is discussed above in Section 5.3. So far as the availability of institutional finance is concerned it is generally believed that the higher supply of institutional loans in the rural money market affects the demand for NIL inversely. However, if the quantum of loans required increases at a faster rate than the supply of institutional credit (internal funds of the borrowers remaining constant), then the cultivators will have to rely on non-institutional sources to fill in

the gap, hence the demand from these agencies will increase. Thus, demand for NIL will be negatively related to the share of institutional loans to total loans.

However, if we consider the asset-groups within the cultivator-households, the intensity of this impact will vary considerably between these groups; that is, the impact is expected to be more intense in the case of upper asset groups for the following reasons. Firstly, as already indicated the access of each of these groups to institutional credit is different (see Tables 5.2 and 5.3). Further, the greater the access, the larger is the impact of the supply of institutional loans on the demand for NIL, level of saving remaining ^{the} same. Secondly, in the case of surplus households, loans from these two (i.e. institutional and non-institutional) sources are substitutes for both productive as well as non-productive uses. The increased availability of institutional loans (IL) releases own funds from productive use (for which the institutional loans are made available) for meeting non-productive expenditures like family expenditure and thus reduces the demand for this purpose from non-institutional sources. Such a shift in the use of own funds in favour of family expenditure seems natural and rational. Thus, the competitiveness of IL and NIL for both these purposes reinforces the negative impact of IL on NIL, and thereby makes the association between these two variables strong and also increases the

size of the impact of IL on the demand for NIL. On the other hand, in the case of deficit households, though the increased flow of IL reduces the demand for loans from non-institutional agencies for meeting capital and current business expenditures, the credit requirement for financing family expenditures, (which are large and unavoidable) remains unfulfilled and hence the demand for loans for these purposes is not affected. Moreover, non-productive loans constitute a larger proportion of total non-institutional loans raised by these households. If this proportion varies markedly between states, the association between the supply of IL and the demand for NIL is likely to be distorted to a greater extent.¹⁰

Thus, due to these two reasons explained above, the impact of availability of institutional loans is stronger in the case of households in upper asset groups than households belonging to the lower asset groups.

5.6.2 The Demand Function for Non-institutional Loans

The above discussion may be summarized in the following functional form:

$$NIL = f(R_{NI}, CE, FE, S, \frac{IL}{TL})$$

where NIL : Demand for non-institutional loans,

R_{NI} : Average rate of interest charged by non-institutional agencies,

CE : Capital expenditure in farm business,

FE : Family expenditure,

S : Saving of the cultivator-households, and

$\frac{IL}{TL}$: Proportion of institutional loans to total loans.

An attempt is made to examine this relationship with the state level cross sectional data (in per household terms) for the years 1961-62 and 1971-72. The credit needs from non-institutional agencies show a great amount of variation between states (see Table 5.16). The development of financial institutions in different states also differs markedly (see Tables 5.17 and 5.18) between the states.

The demand functions that have been estimated are (1) for all cultivator-households for 1961-62 and 1971-72, and (2) separately for bottom and top half of the cultivator-households for 1971-72 for which the data are available. Given the availability of data, the models for fractile groups are suitably modified. The linear specification of these demand functions are as given below.

Model V (For All Cultivator-Households)

$$NIL = B_0 + B_1 R_{net} + B_2 CE + B_3 FE + B_4 S + B_5 \frac{IL}{TL} \quad (5.14)$$

Model VI (For Top and Bottom 50 Per Cent of the Households)

$$NIL = \beta_0^* + \beta_1^* R_{net} + \beta_2^* CE + \beta_3^* \frac{IL}{TL} \quad (5.15)$$

5.6.3 Results of Models V and VI

Model V (equation 5.14)

The important findings that have emerged from the estimated demand equation 5.14 (see Tables 5.19 and 5.20)

Table 5.16: State-wise Variation in the Per Household Demand for Non-institutional Loans: All Cultivator Households, 1961-62 and 1971-72

State	1961-62	1971-72
1. Andhra Pradesh	234.09	182.24
2. Assam	33.40	26.21
3. Bihar	98.63	61.66
4. Gujarat	267.94	154.27
5. Jammu and Kashmir	129.56	167.88
6. Karnataka	229.85	243.64
7. Kerala	147.47	69.16
8. Madhya Pradesh	136.78	156.24
9. Maharashtra	116.51	118.02
10. Orissa	43.34	41.37
11. Punjab	314.08	-
12. Rajasthan	365.68	387.72
13. Tamil Nadu	236.15	193.39
14. Uttar Pradesh	130.04	132.57
15. West Bengal	31.40	101.51
Mean	174.328	145.4157
Standard Deviation	92.8859	90.0139
Coefficient of variation	0.5328 0.6155*	0.6190

* Excluding Punjab.

Source: Tables 3.44 and 3.45.

Table 5.17: State-wise Variation in the Proportion of Institutional Loans to Total Loans: All Cultivator Households, 1961-62 and 1971-72

S.No.	State	1961-62	1971-72
1.	Andhra Pradesh	0.15	0.29
2.	Assam	0.07	0.25
3.	Bihar	0.04	0.30
4.	Gujarat	0.28	0.73
5.	Jammu and Kashmir	0.16	0.11
6.	Karnataka	0.29	0.39
7.	Kerala	0.27	0.73
8.	Madhya Pradesh	0.19	0.44
9.	Maharashtra	0.47	0.72
10.	Orissa	0.21	0.56
11.	Punjab	0.14	
12.	Rajasthan	0.06	0.11
13.	Tamil Nadu	0.21	0.51
14.	Uttar Pradesh	0.22	0.33
15.	West Bengal	0.09	0.23
	All India	0.26	0.49
	Mean	0.1936	0.4071
	Standard Deviation	0.1104	0.2080
	Coefficient of variation	0.57 0.57*	0.51

* Excluding Punjab.

N.B.: Computed from Tables 3.44 and 3.45.

Table 5.18: State-wise Variation in Proportion of Institutional Loans to Total Loans (Bottom 50 Per Cent and Top 50 Per Cent of the Cultivator Households), 1971-72

S.No.	State	Bottom 50%	Top 50%
1.	Andhra Pradesh	0.13	0.34
2.	Assam	0.00	0.37
3.	Bihar	0.07	0.36
4.	Gujarat	0.27	0.84
5.	Jammu and Kashmir	-	-
6.	Karnataka	0.31	0.41
7.	Kerala	0.45	0.81
8.	Madhya Pradesh	0.20	0.51
9.	Maharashtra	0.44	0.81
10.	Orissa	0.26	0.51
11.	Rajasthan	0.08	0.13
12.	Tamil Nadu	0.30	0.56
13.	Uttar Pradesh	0.14	0.41
14.	West Bengal	0.17	0.25
	Mean	0.2169	0.4854
	Standard Deviation	0.1323	0.2141
	Coefficient of variation	0.61	0.44

N.B. : Computed from fractile group-wise distributions of total loans and institutional loans. These fractile distributions are derived by reading off Lorenz Curves fitted to asset groupwise distribution in each state.

are summarized below.

In both the years, the share of institutional finance in rural money market has significant negative impact on the loans demanded from non-institutional agencies.

Another variable that has shown significant impact over the demand for non-institutional loans is capital expenditure in farm business. However, the value of its coefficient has declined over the decade.¹¹ This decline in the marginal propensity to borrow with respect to capital expenditure from non-institutional sources viewed together with the finding of unchanged marginal propensity to borrow from all sources (finding of the estimated demand function of total loans) reflects the fact that the increased availability of institutional loans per unit of capital expenditure over the decade has reduced the cultivator household's dependence on non-institutional sources.¹²

Family expenditure on selected items has turned out to be insignificant in both the years. The strong association between capital expenditure in farm business and the demand for non-institutional loans has overshadowed the impact of this variable in 1961-62¹³, whereas its insignificance in 1971-72 is due to observed multicollinearity between these variables (see Table 5.19)¹⁴.

The marginal propensity to borrow with respect to saving and the rate of interest which are statistically insignificant in 1961-62, exhibit statistically significant

Table 5.19: Correlation Matrix Between Non-institutional Loans, Proportion of Institutional Loans to Total Loans, Saving, Rate of Interest, Capital Expenditure in Farm Business and Family Expenditure: All Cultivator Households, 1961-62 and 1971-72

		NIL	IL/TL	S	RNI	CE	FE
NIL	1961-62	1	-0.049560	0.583796	-0.658360	0.844864	0.654766
	1971-72	1	-0.340527	0.101594	-0.495352	0.609187	0.612467
IL/TL	1961-62		1	0.304252	-0.412424	0.237238	0.010682
	1971-72		1	0.303407	-0.306399	0.225517	-0.222434
S	1961-62			1	-0.499834	0.849398	0.790858
	1971-72			1	-0.560460	0.613416	0.554002
RNI	1961-62				1	-0.676356	-0.429284
	1971-72				1	-0.466105	-0.379763
CE	1961-62					1	0.708538
	1971-72					1	0.678615
FE	1961-62						1
	1971-72						1

N.B.: For 1971-72 the correlation coefficients are for fourteen States, i.e. excluding Punjab and Haryana.

**Table 5.20: Estimated Demand Function for Non-Institutional Loans:
All Cultivators Households, 1961-62 and 1971-72**

Year	Constant	IL/TL	S	RNI	CE	FE	R ²	\bar{R}^2	F
1961-62	25.9905	-	-	-	1.1378* (0.1993)	-	0.7138		32.4427*
1971-72	46.4491	-	-	-	0.6075** (0.2289)	-	0.3750		7.203**
1961-62	10.0960	-	-	-	1.0302* (0.2805)	0.0863 (0.1593)	0.7359	0.6918	16.7187*
1971-72	-38.6144	-	-	-	0.3580 (0.3047)	0.2706 (0.2235)	0.4479	0.3475	4.4619**
1961-62	187.6649	-298.3227** (126.594)	-	-4.8305 (2.8191)	0.9186** (0.3074)	0.0277 (0.1453)	0.8303	0.7624	12.2319*
1971-72	292.4919	-292.4175*** (144.800)		-4.3601 (4.88)	0.8364*** (0.4529)	-0.1501 (0.3169)	0.7644	0.6597	7.5071*
1961-62	171.5071	-260.1212*** (120.898)	-0.4320 (0.3527)	-3.8540 (2.749)	1.3432* (0.3871)	-	0.8519	0.7927	14.380*
1971-72	330.1526	-199.7781** (67.0149)	-0.4038*** (0.1790)	-7.0195** (2.9918)	0.8385* (0.1788)	-	0.8270	0.7501	10.759*

* Significant at 1 per cent
 ** Significant at 5 per cent
 *** Significant at 10 per cent.

M.B.: 1) Figures in parentheses are standard errors of the estimate.

2) Demand function for 1971-72 is estimated excluding the States of Punjab and Haryana.

impact on the dependent variable in 1971-72.

The differential pattern of the demand suggested by the estimated demand equations for the fractile groups may be outlined now (for results, see Tables 5.21 and 5.22). The capital expenditure in farm business is significant in explaining the variation in the demand for NIL for both upper as well as lower half of the cultivators. However, the top 50 per cent of the cultivators require less amount of NIL per unit of capital expenditure than the bottom 50 per cent of the households even though the marginal requirement to borrow of the two groups from all sources does not differ (finding of the total loans function). This finding once again brings out the fact that a larger availability of institutional finance per unit of capital expenditure for the upper rungs of the cultivator population reduces their dependence on non-institutional sources.¹⁵

The rate of interest and the share of IL exhibit significant negative impact on the demand for NIL loans only in the case of upper sections of the population.

The statistical insignificance of the rate of interest in the case of poor households is due to the fact that a larger proportion of loans of these households are for family expenditure and this demand does not respond to interest rate changes.

The impact of the share of IL on the demand for NIL is insignificant in the case of these households. The

Table 5.21: Correlation Matrix Between Non-Institutional Loans, Proportion of Institutional Loans to Total Loans, Rate of Interest and Capital Expenditure in Farm Business: Top 50 per cent and Bottom 50 per cent of the Cultivator Households, 1971-72

		NIL	$\frac{IL}{TL}$	R_{NI}	CE
NIL	A	1	0.075880	-0.492804	0.773073
	B	1	-0.467842	-0.410530	0.540310
IL/TL	A		1	-0.330245	0.111597
	B		1	-0.424228	0.314892
R_{NI}	A			1	-0.392099
	B			1	-0.693701
CE	A				1
	B				1

- N. E. :** 1) Correlation Coefficients are for thirteen States, i.e. excluding Punjab, Haryana and Jammu and Kashmir.
- 2) A : Correlation coefficients for Bottom 50 per cent of Cultivator Households.
 B : Correlation coefficients for Top 50 per cent of cultivator households.

**Table 5.22: Estimated Demand Function for Non-institutional Loans:
Top 50 per cent and Bottom 50 per cent of Cultivator Households,
1971-72**

Sub-groups of cultivator Households	Constant	IL/TL	RNI	CE	R ²	F
Bottom 50 per cent of the households	91.9827	-34.8014 (82.769)	-2.3538 (1.718)	1.2890* (0.386)	0.6464	5.484**
Top 50 per cent of the households	23.8028	514.6660* (103.524)	-10.1311*** (5.030)	0.4584** (0.177)	0.8116	12.923*

* Significant at 1 per cent,

** Significant at 5 per cent,

*** Significant at 10 per cent.

N.B.: 1) Figures in parentheses are standard errors of the estimates.

2) Demand functions are estimated excluding the States of Punjab, Haryana and Jammu and Kashmir.

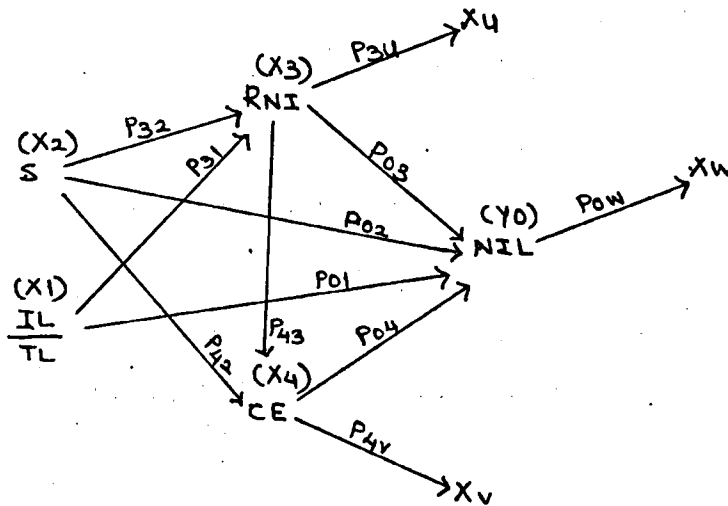
factors that distort the association between these two variables are already explained above.

5.7 THE PATH MODEL FOR NON-INSTITUTIONAL LOANS

We now turn to an examination of the inter-relationship between the explanatory variables in the above single-equation models. First, the structural equations models (path models) indicated by this inter-relationships are presented in the following path diagrams and the set of equations. Next follows the discussion of these causal ordering.

Model VII (For All Cultivator-Households)

Path Diagram



Set of equations:

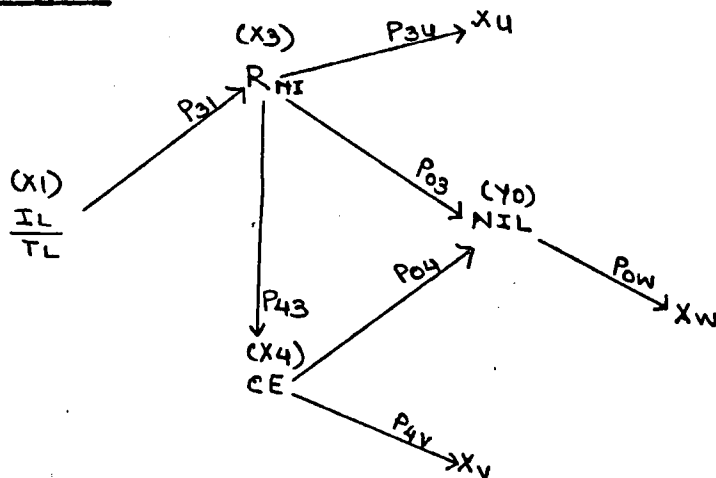
$$X_3 = f(X_1, X_2) \quad ; \quad X_3 = P_{31}X_1 + P_{32}X_2 + P_{3u}X_u \quad (5.16)$$

$$X_4 = f(X_2, X_3) \quad ; \quad X_4 = P_{42}X_2 + P_{43}X_3 + P_{4v}X_v \quad (5.17)$$

$$Y_0 = f(X_1, X_2, X_3); \quad Y_0 = P_{01}X_1 + P_{02}X_2 + P_{03}X_3 + P_{04}X_4 + P_{0w}X_w \quad (5.18)$$

Model VIII (for Top 50 and Bottom 50 per cent of the Cultivator-Households)

Path Diagram



Set of equations

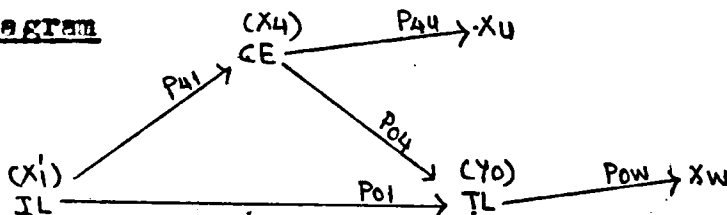
$$X_3 = f(X_1) \quad ; \quad X_3 = P_{31}X_1 + P_{3u}X_u \quad (5.19)$$

$$X_4 = f(X_3) \quad ; \quad X_4 = P_{43}X_3 + P_{4v}X_v \quad (5.20)$$

$$Y_0 = f(X_1, X_3, X_4) \quad ; \quad Y_0 = P_{01}X_1 + P_{02}X_2 + P_{04}X_4 + P_{0w}X_w \quad (5.21)$$

Model IX (For Top and Bottom 10 per cent and 50 per cent of the Cultivator Households)

Path Diagram



Set of equations

$$X_4 = f(X_1') \quad ; \quad X_4 = P_{41}X_1' + P_{4u}X_u \quad (5.22)$$

$$Y_0 = f(X_1', X_4) \quad ; \quad Y_0 = P_{01}X_1' + P_{04}X_4 + P_{0w}X_w \quad (5.23)$$

The specification of the variables is as follows:

$$X_1 = \frac{IL}{TL}$$

$$X_1' = IL$$

$$X_2 = S$$

$$X_3 = R_{NI}$$

$$X_4 = CE$$

$$Y_0 = NIL$$

Here it is necessary to note three points

(1) In model ^{VII}(i) there are two exogenous variables X_1 and X_2 . There is no causal relationship between these two variables, but the correlation between them is due to the relationship between saving and total loans and saving and capital expenditure which are related to institutional loans.

Therefore, the direct and indirect impacts of each of these variables do not add up to their respective correlation coefficients with the demand for NIL (i.e. correlation between X_1 and Y_0 (r_{01}) and X_2 and Y_0 (r_{02}), since part of r_{01} and r_{02} constitute the terms generated by correlation between X_1 and X_2 .¹⁶

(2) Secondly, in models (VII) and (VIII), the direct path from $\frac{IL}{TL}(X_1)$ to $CE(X_4)$ is expected to take zero value and therefore it has been omitted. Hence, the models become unsaturated and overidentified.¹⁷

(3) Thirdly, in model (IX), the variable representing the availability of institutional finance is specified in absolute terms (i.e. in per capita terms). This is because our purpose is to trace that aspect of relationship between

the size of institutional loans and the demand for NIL which is indirect and operates through capital expenditure in farm business.

Direct and Indirect Linkages
(Inter-relationships Between the Variables)

The manner in which saving, rate of interest and capital expenditure in farm business influence each other and, in turn, affect the demand for total loans (of which non-institutional loans constitute a sizeable proportion) is already discussed in section 5.4.1. The direct link between the proportion of institutional loans and the quantum of loans raised from non-institutional agencies is also elaborated in this section while discussing the specification of the demand equation for NIL.

The important causal linkage that remains to be discussed here is between the share of organized segment in the rural money market and the rate of interest charged by the non-institutional credit agencies in unorganized market. The share of institutional loans to total loans affects the non-institutional rate of interest in the following manner.

Firstly, the increased flow of institutional finance introduces competition in rural money market by operating alternate source of credit with lower rate of interest. This increased competition results in a more elastic demand curve faced by the rural moneylenders and thereby reduces some of their monopoly power. The monopoly profits are reduced and the rate of interest falls. The impact of this

competition on R_{NI} is expected to be more intense in the case of rich households who can easily shift to this alternate source of credit since they possess the collateral required to obtain the loans.

Secondly, the increased supply of institutional loans improves the liquidity position of the rural moneylenders who can take greater advantage of this facility because of their better creditworthiness and occupying a position of power in these institutions (i.e. co-operatives). This shifts the supply curve of loanable funds rightwards in unorganized market. The demand remaining constant, this shift is likely to reduce the rate of interest in these markets.

Such a lowered rate of interest will induce larger farm investments which require larger funds. If the supply of institutional loans and owned funds are not rising fast enough, these larger investments will lead to increased demand from non-institutional sources.

To sum up: the share of institutional loans to total loans in rural money market influences directly the demand for non-institutional loans as well as the rate of interest charged by these agencies. The rate of interest, in turn, affects the capital expenditure which is directly related to the demand for non-institutional loans.

5.7.1 Results of Path Models

Model VII:

The results of the path model for all cultivator-households are presented in Table 5.23. In the case of the variables - saving, rate of interest and capital expenditure - the findings are similar to the findings of the path model for total loans. (This is due to the fact that a sizeable proportion of the total loans is accounted for by the non-institutional loans.) For example, in 1961-62, though the direct relationship between saving and NIL as well as the rate of interest and NIL has turned out to be insignificant statistically (as it turns out in the case of the single equation model), their (i.e. saving to rate of interest) direct relationship with capital expenditure in farm business is significant. Thus, these two variables (S and R_i) exert their impact on the demand for non-institutional loans indirectly via capital expenditure in farm business (which has shown a significant direct relationship with the demand for NIL). In 1971-72, saving influenced the demand for NIL both directly as well as indirectly through investment in farm business. However, the interest rate, which shows a significant (direct) negative impact on the demand for non-institutional loans, does not exhibit significant influence on capital expenditure in farm business. However, when the two outlier states - Jammu and Kashmir and Kerala - are excluded, this path

**Table 5.23: Estimated Path Coefficients of the Path Model (VII):
All Cultivator Households, 1961-62 and 1971-72**

Year	Path coefficients								Residual path
	P ₃₁	P ₃₂	P ₄₂	P ₄₃	P ₀₁	P ₀₂	P ₀₃	P ₀₄	
1961-62	-0.2869 (0.2392)	-0.4125 (0.2392)							0.8219
1971-72	0.1445 (0.2583)	-0.6192** (0.2583)							0.8176
A	-0.6311*** (0.2959)	-0.2200 (0.2959)							0.5959
1961-62			0.6823* (0.1408)	-0.3353** (0.1408)					0.4396
1971-72			0.5135*** (0.2704)	-0.1783 (0.2704)					0.8416
B			0.4994** (0.178)	-0.4978** (0.178)					0.4484
1961-62					-0.3009** (0.1333)	-0.3026 (0.2345)	-0.2580 (0.2660)	0.9989* (0.2742)	0.3846
1971-72 C					-0.4613** (0.1473)	-0.4565** (0.1925)	-0.4077** (0.1647)	0.8431* (0.1712)	0.4170

* Significant at 1 per cent, ** Significant at 5 per cent, *** Significant at 10 per cent.

N.B.: 1) A : Excluding Jammu and Kashmir, Maharashtra, Orissa, Rajasthan, Punjab and Haryana.

B : Excluding Jammu and Kashmir, Kerala, Punjab and Haryana.

C : Excluding Punjab and Haryana.

2) Figures in parentheses are standard errors of the path coefficients.

Table 5.24: Path Model (VII): Direct and Indirect Effects of Saving on Capital Expenditure and Total Loans, Proportion of Institutional Loans to Total Loans, 1961-62 and 1971-72

Variables	Type of Effects	1961-62	1971-72
S on CE	Direct	0.6823	0.5135
	Indirect through R_{NI}	0.1383	0.1104
$\frac{IL}{TL}$ on CE	Indirect through R_{NI}	0.0962	0.0257
$\frac{IL}{TL}$ on NIL	Direct	-0.3009	-0.4613
	Indirect:		
	i) through R_{NI}	0.0740	0.0589
	ii) through R_{NI} in turn through CE	0.0961	0.0217
S on NIL	Direct	-0.3026	-0.4565
	Indirect:		
	i) through R_{NI}	0.1064	0.2524
	ii) through CE	0.6815	0.4329
	iii) through R_{NI} in turn through CE	0.1382	0.0931

N.B.: Computed from Table 3.23.

Table 5.25: Estimated Path Coefficients of the Path Model (VIII): Bottom 50 per cent and Top 50 per cent of Cultivator Households, 1971-72

Percentiles of Cultivator households	Path coefficients			Residual Path
	P ₂₁	P ₃₂	P ₀₁ P ₀₂ P ₀₃	
Bottom 50%	-0.3302 (0.2724)			0.9439
Top 50%	-0.4242*** (0.2190)			0.9056
Bottom 50%		-0.3921 (0.2655)		0.9199
Top 50%		-0.6987* (0.2065)		0.7154
Bottom 50%			-0.0837 (0.1865) -0.2524 (0.2015) 0.6835* (0.1914)	0.7520
Top 50%			-0.7946* (0.1446) -0.3815*** (0.1919) 0.5240** (0.1831)	0.4342

* Significant at 1 per cent
 ** Significant at 5 per cent
 *** Significant at 10 per cent

N.B.: Equations are estimated excluding States of Punjab, Haryana and Jammu and Kashmir.

Table 5.26: Path Model (VIII): Direct and Indirect Effects of Proportion of Institutional Loans to Total Loans on Non-institutional Loans, 1971-72

Variable	Type of Effect	Bottom 50 per cent	Top 50 per cent
$\frac{IL}{TL}$ on CE	Indirect	0.1295	0.2964
$\frac{IL}{TL}$ on NIL	Direct	-0.0837	0.7946
	Indirect:		
	i) through R_{NI}	0.0833	0.1618
	ii) through R_{NI} in turn through CE	0.0835	0.1553

N.B.: Computed from Table 3.25.

Table 5.27: Estimated Path Coefficients of the Path Model (IX): Bottom 10 per cent, Bottom 50 per cent, Top 50 per cent and Top 10 per cent of Cultivator Households, 1971-72

Fractile Groups of Cultivator Households	P ₄₁	P ₀₁	P ₀₄	Residual Path
Bottom 10%	0.0980 (0.2872)			0.9952
		0.2698*** (0.1510)	0.7841* (0.1510)	0.5206
Bottom 50%	0.4169 (0.2623)			0.9093
		0.0289 (0.2006)	0.7614* (0.2006)	0.6318
Top 50%	0.7606* (0.1874)			0.6492
		-1.0201* (0.2459)	1.2814* (0.2459)	0.5530
Top 10%	0.7366* (0.1952)			0.6763
		-0.8967** (0.3368)	0.7585** (0.3368)	0.7890

* Significant at 1 per cent
 ** Significant at 5 per cent
 *** Significant at 10 per cent

N.B.: 1) Figures in parentheses are standard errors of the coefficients.

2) Path model is estimated excluding the States of Punjab and Haryana.

Table 5.28: Decomposition of the Total Impact of Institutional Finance on the Demand for NIL (i.e. r_{01})

Type of effect	Fractiles of the Cultivator Households				
	Bottom 10%	Bottom 50%	Top 50%	Top 10%	All Groups
Direct	0.2698	0.0289	-1.0202	-0.8967	-0.7683
Indirect through CE	0.0768	0.3174	0.9747	0.5587	0.8498
Total (r_{01})	0.3466	0.3463	-0.0455	-0.3380	0.0815

becomes significant.

Another finding of the model is that the variable IL/TL does not significantly affect the rate of interest charged by non-institutional agencies. This insignificant relationship between IL/TL and the non-institutional rate of interest needs explanation. In what follows we have attempted to provide an explanation for this.

An examination of the scatter of IL/TL and the rate of interest charged by non-institutional agencies indicates that some states are outliers (e.g. in 1961-62 Maharashtra and in 1971-72 Jammu and Kashmir, Maharashtra, Orissa and Rajasthan) which distort the correlation between IL/TL and rate of interest charged by non-institutional agencies.

The outliers can be explained in terms of other explanatory variables which are the candidates for inclusion in the interest rate function but are not included in the

specification of the interest rate function in the present study. These excluded variables are opportunity cost of lender's money, risk and liquidity premium, administrative cost etc. (see Pani, P.K., Bottolmey, 1975). For example, though the share of institutional loans in Maharashtra is of the same order in 1971-72 as that in Kerala,¹⁸ the level of the rate of interest in unorganized markets is much higher in the former than in the later. The difference between the rate of interest in unorganized rural money markets in these two states may be explained to some extent with the help of following facts.

	Kerala	Maharashtra
Average rate of interest prevailing in unorganized money market (1971-72)	14.65	24.10
Proportion of net area irrigated to net area sown (1972-73)	21	9
Average rainfall (in milli metres)	3070	998
Proportion of gross cropped area to gross sown area	135	105
Per acre income from agriculture (1971-72) at current prices (Rs.)	1,813.02	240.15
Ratio of borrowing to income (1971-72)	0.07	0.17
Ratio of debt to assets (1971-72)	0.03	0.05

The facts from the information given above indicate that firstly, the risk associated with loans advanced to

rural households is expected to be higher in Maharashtra than in Kerala. This is because Maharashtra falls in the dry belt with relatively less irrigation whereas Kerala belongs to the wet belt, with relatively better irrigation facilities. Thus, agricultural production in Maharashtra is exposed to greater risk because of hazards of weather as compared to Kerala. Also because of dry farming conditions in the state, low yielding traditional varieties of crops like jowar, bajra, dominate the cropping pattern in Maharashtra. As a result, the per acre agricultural income in Maharashtra was a little less than one-tenth of that of Kerala. Moreover, the debt burden (defined as either the ratio of debts to assets or borrowing to income) is greater in Maharashtra than in Kerala. Thus, rural lenders in Maharashtra tend to charge higher risk premium on the loans. This partly explains the difference between the interest rates in the rural money markets in these two states.

Secondly, due to multiple cropping pattern as indicated by higher proportion of gross cropped area to gross sown area and greater degree of commercialization in Kerala, demand for funds is spread throughout the year and there exists greater scope for trading and moneylending with relatively stable and rapid turnover of funds throughout the year. This, in turn, keeps the interest rates down.

If the specification of the equation of rate of

interest in the path model is corrected to include the left out variables, the equation may yield expected results.¹⁹ Moreover these omitted variables have an important role to play in explaining the variation in the rate of interest charged by non-institutional agencies as indicated by the sizeable residual path of this equation in both the years (see Table 5.23).

However, we have not attempted to estimate the interest rate function with improved specification in the present study for the following reasons. Firstly, we are constrained by the limited number of observations and secondly, these left out variables are not related to other variables in the model i.e. capital expenditure in farm business, saving and non-institutional loans. Thus, even if these variables are excluded from the model our aim to trace the direct and indirect relationships between the variables in the model will not be affected.

Model VIII:

The results of the path models for bottom 50 per cent and top 50 per cent of the cultivator-households indicated the following distinct pattern of relationship (Table 5.25).

The demand for non-institutional loans of the top 50 per cent of the cultivator-households is affected by the rate of interest directly as well as indirectly via capital expenditure. However, in the case of bottom half

of the population, both these relationships are statistically insignificant.

The share of institutional loans significantly influences the rate of interest charged on the loans advanced by non-institutional agencies to top half of the cultivator-households than to the bottom half. This is because competition in the rural money market introduced by the availability of institutional loans is of greater importance in the case of top half of the cultivators who can easily shift to this alternate source of credit because of their better credit-worthiness.

Model IX

The significant finding of path model IX (Tables 5.27 and 5.28) is that in the case of top 50 per cent and top 10 per cent of the cultivator households, the negative direct impact of the institutional loans on demand for non-institutional loans is greater than its positive indirect impact operating through capital expenditure. In other words, the substitutability of these two sources, i.e. institutional and non-institutional, for the same level of capital expenditure is of greater order than the gap filling role of non-institutional loans when capital expenditure rises at a faster rate than supply of institutional finance. As a result, the total linkage, i.e., the zero order correlation coefficient between institutional loans and the demand for non-institutional loans has worked out to be

negative for these two groups.

Another result of this model that needs explanation is that the direct path from institutional loans to NI loans has a positive sign in the case of bottom rungs of the cultivators though the path coefficient is insignificant. This means that the loans from institutional and non-institutional sources increase even if the level of capital expenditure is held constant. It is essential to note here that the institutional loans are advanced for both capital expenditure and current farm business expenditure. Current expenditure in farm business may increase, requiring more funds from both these sources (i.e. institutional and non-institutional) even though levels of capital expenditures remain unchanged. As the proportion of loans for the purpose of current business expenditure increases in the total loans borrowed from non-institutional agencies, capital expenditures in the farm business cease to represent the factor that controls the total requirement of the external funds. In the case of poor households one may rightly expect that loans borrowed for financing current business expenditure constitute a major proportion of the total institutional loans. This explains the positive sign of the direct path coefficient from institutional loans to non-institutional loans in the case of bottom 10 per cent of the households.

To conclude the chapter, let us briefly summarise

the main findings of the single equation models and structural equations models for cultivator households' demand for loans.

In both the years, capital expenditure in farm business turn out to be the most significant variable explaining variation in demand for TL as well as NIL. On the other hand, the variable 'family expenditure on selected items' is statistically insignificant in both the demand equations. The MPB with respect to saving and rate of interest is insignificant in 1961-62 but turn out to be statistically significant in 1971-72.

The demand for TL as well as NIL by bottom 50 per cent and top 50 per cent of cultivator households is positively related to capital expenditure in farm business. The MPB with respect to capital expenditure in farm business is the same for both these classes in demand equation for TL. Whereas, in the case of demand equation for NIL, the cultivators in upper brackets (i.e. top 50 per cent) require less amount of NIL per unit of capital expenditure.

In both the years the share of institutional loans in total loans exerts significant negative impact on the demand for NIL. However, this variable exhibits significant negative relationship to the demand for NIL only in the case of top 50 per cent of the households.

The results of our path models for TL and NIL emphasise the fact that in 1961-62, though the direct

relationship between saving and demand for loans have turned out to be statistically insignificant, these two variables indirectly exert their impact on demand for loans via capital expenditure in farm business. In 1971-72, saving influenced the demand for loans both directly as well as indirectly via investment in farm business.

Footnotes

1. Besides such market segmentation, the interest rates may, of course, vary between the regions because of differences in opportunity cost, risk, liquidity premium and availability of institutional loans and their share in total loans. For discussion of factors causing variation in interest rates among states in rural money markets, see Pani P.K. (1977).
2. There may be certain linkages between these two segments of rural money markets. For instance, moneylenders may borrow from organized money market and relend the amount in unorganized money markets. The information available in this regard from RBI's All India Rural Credit Survey for the year 1951-52 shows that the main mediators between organized and unorganized money markets were traders. (AIRCS, 1951-52, Vol. 1). However, no information for the recent years is available.
3. Co-operative banks have started advancing consumption loans also in recent years.
4. Even though charging of different interest rates for productive and non-productive purposes may be justified on economic grounds, moneylenders do not charge different interest-rates. In this context it would be useful to cite the following evidence from AIRDIS: 1961-62 (unpublished data).

The available data for the year indicates that the average rates of interest on productive and non-productive loans in rural areas were 11.79 per cent and 16.25 per annum respectively. Most of the loans for productive purpose (70 per cent) were raised from non-institutional sources and against personal security. However, this may not be taken to imply that the non-institutional agencies do charge different interest-rates for productive and non-productive purposes. The difference between the interest-rates is not due to the fact that the non-institutional agencies discriminate between purposes but because they discriminate between the households in different asset classes i.e. charge different rates of interest. In fact, loans for productive purpose are heavily concentrated in upper asset classes which are charged relatively low rate of interest. As a result, when the weighted average (weights being the productive loans in each asset class) of the asset-class-wise interest rates is calculated it works out to be 11.52 per cent per annum.

5. For extensive analytical discussions on economic, social and institutional structure of rural areas in under-developed countries and consequent monopolistic powers of the rural moneylenders, see

U Tun Wai (1957), Dahl (1962), Chandavarkar (1965), Long (1968), and Bottomely (1975).

6. Whether interlinking the transactions in credit and product market, credit and land market strengthens the monopoly power is a debated issue. For theoretical discussions on this issue see Ehaduri, A. (1973), and Bardhan, P.K. (1984).

7. Elasticity of demand for non-institutional loans generally depends upon two factors, viz.,

- i) availability of institutional loans, and
- ii) the purpose for which the loans are borrowed.

Larger the availability of institutional loans, more elastic is the demand curve for non-institutional loans. Secondly, productive purpose loans are elastic with respect to interest while consumption loans are inelastic. Thus, demand for loans of large and medium farmers is more elastic than that of small farmers.

8. The other method of estimating path coefficients is by decomposing the correlation coefficients in the model. When variables are standardised, both these methods yield identical results. The method of decomposition of correlation coefficients involves expressing each of the correlation coefficient in terms of paths leading from common antecedent variable. Since variables are standardised, the

correlation coefficient between any pair of variables

$$is = r_{ij} = \frac{1}{n} \sum_{i=1}^n (x_i x_j)$$

Thus r_{23} can be decomposed as

$$\begin{aligned} r_{23} &= \frac{1}{n} \sum_{i=1}^n (x_2 x_3) \\ &= \frac{1}{n} \sum_{i=1}^n x_2 (P_{31}x_1 + P_{32}x_2 + P_{3v}x_v) \end{aligned}$$

$$\begin{aligned} \text{Since } r_{x_2 x_v} &= 0 \\ &= P_{31}r_{12} + P_{32} \end{aligned}$$

Similarly,

$$r_{13} = P_{31} + P_{32} r_{12}$$

Making use of this result we can decompose correlations between all possible pairs and get the following set of equations

$$r_{12} = P_{21} \quad (1)$$

$$r_{13} = P_{31} + P_{32}r_{12} \quad (2)$$

$$r_{23} = P_{31}r_{12} + P_{32} \quad (3)$$

$$r_{01} = P_{01} + P_{02}r_{12} + P_{03}r_{13} \quad (4)$$

$$r_{02} = P_{01}r_{12} + P_{02} + P_{03}r_{23} \quad (5)$$

$$r_{03} = P_{01}r_{13} + P_{02}r_{23} + P_{03} \quad (6)$$

Thus, if we knew all the correlations co-efficients in the model we could solve them for path coefficients.

However, these equations are nothing but the normal equations of the set of regressions (applied to standardize variables) in Model III

The residual paths are estimated as follows.

$$\text{For } i = j, r_{ij} = \frac{1}{n} \sum_{i=1}^n x_i^2 = 1$$

$$\begin{aligned}
 \text{Thus, } r_{22} = 1 &= \frac{1}{n} \sum_{i=1}^n x_2^2 \\
 &= \frac{1}{n} \sum_{i=1}^n (P_{21}x_1 + P_{2u}x_u)^2 \\
 &= P_{21}^2 + P_{2u}^2 \\
 &\quad \text{for } \frac{1}{n} \sum_{i=1}^n x_1^2 = 1 \\
 &\quad \quad \quad \sum_{i=1}^n x_1x_u = 0 \\
 1 - P_{21}^2 &= P_{2u}^2 \\
 \sqrt{1 - P_{21}^2} &= P_{2u}
 \end{aligned}$$

Similarly,

$$P_{3v} = \sqrt{1 - P_{31}^2 - P_{32}^2 - 2P_{31}P_{32}P_{21}}$$

$$P_{ow} = \sqrt{1 - P_{01}^2 - P_{02}^2 - P_{03}^2 - 2P_{01}P_{02}r_{12} - 2P_{01}P_{03}r_{13} - 2P_{02}P_{03}r_{23}}$$

9. Strictly speaking while modelling borrowing behaviour of the cultivator-households one should formulate separate and simultaneous demand functions for loans from institutional agencies and non-institutional agencies as two market segments. Preferably each must contain the explanatory variable which captures the impact of the other segment of the market. However, such estimation of the demand function is difficult with the available data.
10. If $x = x_1 + x_2$ and if only one part of x e.g. x_1 is correlated with the variable y then $r_{xy} = r_{x_1y}$ if and only if the proportion of x_1 to x is constant for all observations of x . If this proportion varies, then, $r_{xy} \neq r_{x_1y}$. If the divergence between r_{xy} and r_{x_1y} is

larger, larger is the variation in this proportion and larger is the share of x_2 in x . It is not possible to predict the direction of this divergence. The proof of the equality between r_{xy} and r_{x_1y} when x_1 is a constant proportion of x is as follows.

$$r_{xy} = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2}\sqrt{\sum(y-\bar{y})^2}} \quad (1)$$

Since x_1 is a constant proportion of x

$$\frac{x_2}{x_1} = m \quad \text{i.e. } x_2 = m x_1 \quad (2)$$

$$\text{Therefore, } x = x_1 + m x_1 \quad (3)$$

Substituting for x from (3) in (1)

$$\begin{aligned} r_{xy} &= \frac{(x_1 + m x_1 - \bar{x}_1 - m \bar{x}_1)(y-\bar{y})}{\sqrt{\sum(x_1 + m x_1 - \bar{x}_1 - m \bar{x}_1)^2}\sqrt{\sum(y-\bar{y})^2}} \\ &= \frac{(1+m)\sum(x_1 - \bar{x}_1)(y-\bar{y})}{(1+m)\sqrt{\sum(x_1 - \bar{x}_1)^2}\sqrt{\sum(y-\bar{y})^2}} \\ &= r_{x_1y} \end{aligned}$$

However when this proportion varies, $x_2 = m_1 x_1$ and the numerator of the correlation coefficient between x and y is the sum of covariance between x_1 and y and x_2 and y i.e. $\text{cov}(xy) = \frac{1}{n} \sum_{i=1}^n (x-\bar{x})(y-\bar{y})$

$$\begin{aligned} &= \frac{1}{n} \sum_{i=1}^n (x_1 + x_2 - \bar{x}_1 - \bar{x}_2)(y-\bar{y}) \\ &= \frac{1}{n} \sum_{i=1}^n (x_1 - \bar{x}_1)(y-\bar{y}) + \frac{1}{n} \sum_{i=1}^n (x_2 - \bar{x}_2)(y-\bar{y}) \end{aligned}$$

$$\text{where } x_2 = m_1 x_1$$

Thus the magnitude of the difference between r_{xy} and r_{x_1y} mainly depends upon the covariance between $x_2 (=m_1x_{11})$ and y .

11. This comparison is based on the demand equation estimated with single explanatory variable - capital expenditure in farm business. This is because though the magnitude of the coefficient of the variable capital expenditure in the multiple regression equation is less in 1971-72 as compared to 1961-62, the difference between these two coefficients is statistically insignificant due to increased standard error of this coefficient in 1961-62 (see Table 5.7).
12. The OLS estimate of the β (slope) coefficient in the linear demand equation for total loans with single explanatory variable is the sum of the OLS estimates of β (slope) coefficients in the demand equations for non-institutional loans and institutional loans, i.e. if following are the demand equations for total loans (equation 1), non-institutional loans (equation 2) and institutional loans (equation 3) with capital expenditure in farm business (x) as explanatory variable.

$$y = \alpha + \beta x \quad (1)$$

$$y_1 = \alpha_1 + \beta_1 x \quad (2)$$

$$y_2 = \alpha_2 + \beta_2 x \quad (3)$$

Then, OLS estimate of β is given by

$$\begin{aligned}\beta &= \frac{\text{cov}(xy)}{v(x)} = \frac{\text{cov}(x_1y_1+y_2)}{v(x)} = \frac{\text{cov}(xy_1)}{v(x)} + \frac{\text{cov}(xy_2)}{v(x)} \\ &= \beta_1 + \beta_2\end{aligned}\quad (4)$$

Though, we have not estimated the demand equation for institutional loans (for the reasons explained earlier), β_2 may be taken to measure the increase in the availability of institutional loans per unit increase in capital expenditure in farm business. Thus β remaining constant, if β_2 increases β_1 naturally falls.

13. That the dominance of the variable capital expenditure in explaining the variation in non-institutional loans has declined over the decade is evident from the decomposed R^2 of the demand function with capital expenditure in farm business and family expenditure as explanatory variables.

Decomposition of R^2

	Due to CE	Due to FE	Due to CE and FE
1961-62	0.6605 (0.8975)	0.0754 (0.1025)	0.7359
1971-72	0.2199 (0.4909)	0.2280 (0.5091)	0.4479

Thus the above decomposition of R^2 indicates that the proportion of total variation explained by capital expenditure has dropped from 90 per cent in 1961-62 to 49 per cent in 1971-72.

14. In fact, because of the multicollinearity between capital expenditure and family expenditure, the

coefficients of both these variables turn out to be insignificant in the equation with capital expenditure and family expenditure as explanatory variables in 1971-72 (see Table 5.20).

15. The following order of zero order correlation coefficients between capital expenditure in farm business and NIL and CE and IL for the different fractiles of the cultivator-households may be instructive in this regards.

Fractile Groups of cultivators	Correlation coefficients (1971-72)		
	CE and NIL	CE and IL	CE and TL
Top 10%	0.0908	0.7366	0.8047
Top 25%	0.3305	0.7574	0.9077
Top 50%	0.5055	0.7605	0.9321
Bottom 50%	0.7731	0.4169	0.7787
Bottom 25%	0.6280	0.0790	0.5542
Bottom 10%	0.8105	0.0983	0.7244

16. The reduced form of model VII gives the total of linkages between $\frac{IL}{TL}$ (x_1) and NIL (y_0) and $S(x_2)$ and NIL (y_0). Thus substituting for x_3 and x_4 in equation 5.17, we get

$$Y_0 = P_{01}x_1 + P_{02}x_2 + P_{03}P_{31}x_1 + P_{03}P_{32}x_2 + P_{04}P_{42}x_2 + P_{04}P_{43}P_{31}x_1 + P_{04}P_{43}P_{32}x_2 \quad (1)$$

Rearranging the terms on right hand side, we have

$$Y_0 = (P_{01} + P_{03}P_{31} + P_{04}P_{43}P_{31})x_1 + (P_{02} + P_{03}P_{32} + P_{04}P_{42} + P_{04}P_{43}P_{32})x_2 \quad (2)$$

The sum of direct and indirect linkages between x_1 and y_0 is given by terms in the first bracket on the right hand side while the terms in the second bracket give the total linkage between x_2 and y_0 .

Since $r_{01} = \frac{1}{n} \sum_{i=1}^n x_{1i} y_{0i}$ and $r_{02} = \frac{1}{n} \sum_{i=1}^n x_{2i} y_{0i}$, it can be

easily seen that r_{01} and r_{02} , when decomposed, constitute the terms generated by the correlation of x_1 and x_2 , besides the terms which give the total linkage between each of these variables and y_0 .

17. In the case of unsaturated models, the method of estimating the path coefficients by decomposing correlation coefficients yields more number of equations than the coefficients that are to be estimated. Hence the model becomes overidentified. One way out to overcome this problem is to estimate the path coefficients by applying Ordinary Least Square method and check whether the path coefficients of left out variables really turn out to be insignificant. (See Kendall, M.G. and O'Muircheartaigh, C.A., 1977).

CHAPTER VI
CONCLUSIONS

In this concluding chapter the main findings of the present study have been summarized. Before we present the findings, it will be useful to briefly recapitulate the objective of the study and approach and method of analysis employed.

6.1 RESTATEMENT OF THE OBJECTIVE OF THE STUDY

The twin objectives of this dissertation have been (a) to compile and estimate, and (b) to analyse Sources-and Uses-of-Funds (SAUF), Statements for an important sector of the economy, viz., the rural farm household sector in India for the two bench mark years, 1961-62 and 1971-72. The SAUF statements are prepared for these two years (i) at aggregate (all India) level, (ii) for different fractiles of the aggregate cultivator population, and (iii) for states.

The farm household sector in the study is confined to the cultivator-households (owner as well as tenants) residing in rural areas. Households reporting land under cultivation of more than or equal to 0.005 acres are defined as cultivator households. The main activity of these households need not be confined to agricultural production.

The SAUF statements are defined to include sources and uses of funds arising out of non-financial transactions on current and capital account and financial transactions.

Flows relating to consumption account and production, both farm as well as non-farm production account, are recorded. The sources side of the SAUF statement comprises net farm income, net non-farm income from self-employment, wages and salaries from non-farm occupations, net transfers coming into the sector and net change in liabilities from institutional and non-institutional agencies. The constituent items on uses side are current consumption, physical investment in farm business residential construction, durable household assets, and saving in formal and informal financial assets. Saving of the sector is derived using balance sheet approach. This is,

$$\text{Saving} = \text{Physical Investment} + \text{Change in Financial Assets} - \text{Net change in Liability.}$$

6.2 METHOD OF ANALYSIS

The analysis of sources and uses of funds of the rural farm household sector primarily focuses upon changes in income, saving, investment and changes in composition of each one of them. The nature and character of net financial flows are also investigated. Since our data relate to two points of time, the former analysis is essentially based on a comparison of the magnitude of the afore-mentioned variables at the two points of time.

Another important aspect that has been investigated relates to demand for loans by cultivator-households. In order to do this, two types of models are formulated :

(i) single equation model for cultivators' demand, non-institutional loans and (ii) structural equations (path) models.

The demand functions for total loans and non-institutional loans are defined as :

$$TL = F (R_2, CE, FE, S) \quad \dots \quad (6.1)$$

$$NIL = F (R_{NI}, CE, FE, S, \frac{IL}{TL}) \quad \dots \quad (6.2)$$

Where TL = Demand for total loans;

NIL = Demand for non-institutional loans;

R_2 = Average rate of interest charged by all credit agencies;

R_{NI} = Average rate of interest charged by non-institutional agencies;

CE = Capital expenditure in Farm business;

FE = Family expenditure on selected items;

S = Saving;

$\frac{IL}{TL}$ = Proportion of institutional loans to total loans.

It is easy to see that causal relationships exist among the explanatory variables (excluding family expenditure) in the above demand functions. For example, capital expenditure is affected by rate of interest and saving. Rate of interest is influenced by saving and the share of institutional loans in total loans. These inter-relationships among explanatory variables have been specified as structural equations models as follows:

$$(a) R_2 = F(S) \quad (6.3)$$

$$CE = F(R_2, S) \quad (6.4)$$

$$TL = F(R_2, S, CE) \quad (6.5)$$

$$(b) R_{NI} = F\left(\frac{IL}{TL}, S\right) \quad (6.6)$$

$$CE = F(R_{NI}, S) \quad (6.7)$$

$$NIL = F\left(R_{NI}, \frac{IL}{TL}, S, CE\right) \quad (6.8)$$

The single equation models are estimated by applying ordinary least square (OLS) technique. The structural equations models are estimated by applying OLS to the standardized variables. The co-efficients of the structural equations models (path co-efficients) enable us to quantify the relative importance of direct and indirect relationships between explanatory and dependent variables in the overall relationship.

The above models have been estimated with state level cross sectional data for the years 1961-62 and 1971-72. For 1971-72 Punjab and Haryana have been excluded because of their extreme values. We have estimated the relationship for different fractiles of cultivator households for the year 1971-72, for which the data are available. But due to the non-availability of data for certain variables, specification of the models for fractile groups have been modified.

6.3 MAIN FINDINGS OF THE STUDY

We now summarise the main findings of the study.

6.3.1 Growth and Composition of Income of Rural Cultivator Households

(1) Per capita real income (from all sources) of cultivators in the economy increased marginally, i.e. at an annual compound growth rate of less than 1 per cent over the decade under consideration. While income from wages and salaries from non-farm occupations (organised sector) recorded the highest annual compound growth rate of 1.96 per cent, non-farm income from self employment increased at the rate of 0.44 per cent per annum. Farm income, on the other hand, rose at the rate of 0.87 per cent per annum. As a consequence of these disparate growth rates, the share of wages and salaries in the total income improved from 7.65 per cent to 8.47 per cent.

(2) Within non-farm income from self-employment, per capita real income from other services was lower in 1971-72 than it was in 1961-62. Further, the growth rate of services sector excluding 'other services' was higher (3.81 per cent per annum) than that of the commodity producing sector (1.52 per cent per annum).

(3) At the fractile group level, the lowest fractile group registered a low growth rate (0.35 per cent per annum) of per household real income. In contrast, income of the topmost fractile group increased at a rate of 1.38 per cent per annum. As a result, the gap between the real income of the extreme fractile groups was slightly widened.

(4) The growth of per capita agricultural and non-agricultural real income showed considerable variation across the states. While Punjab (inclusive of Haryana) recorded the highest growth of agricultural income, the states of Bihar, Kerala, Madhya Pradesh and Maharashtra had negative growth rates of per capita agricultural income in real terms over the decade.

(5) Per capita real income from non-agricultural activities decreased between 1961-62 and 1971-72 in absolute terms in Andhra Pradesh, Bihar, Gujarat, Orissa, Rajasthan, Uttar Pradesh and West Bengal. On the other hand, non-agricultural income increased at a faster rate than agricultural income in the states of Jammu and Kashmir, Kerala and Tamil Nadu. This is of course, reflected in higher share of non-agricultural income in total income in these states.

6.3.2. Saving Behaviour of Cultivator Households

(6) Between the years 1961-62 and 1971-72 average saving rate (APS) of cultivator households decreased from 6.66 per cent to 5.25 per cent at all India level. This is in sharp contrast to the doubling of (from 5.8 per cent to 11.5 per cent) aggregate saving rate of the 'Household' sector in the economy between these two years.

(7) The decline in the average saving rate was witnessed in all the fractile groups, the decline being the sharpest for the uppermost class.

(8) The estimates of APS divulge considerable variation across the states. Four states viz. Karnataka, Kerala, Punjab and Uttar Pradesh maintained their position as high saving rate states in both the years. Moreover the saving rate in these states remained more or less unchanged in the two years. On the other hand, APS in Bihar, Maharashtra and Madhya Pradesh remained near all-India average while Orissa retained its position of low saving rate in both the years. The APS of cultivator households in Gujarat and West Bengal registered significant increase between the two years under consideration whereas it declined in the case of Andhra Pradesh, Tamil Nadu and Orissa.

(9) There appears to be no correlation between average annual growth rate of per capita real income of state and change in its saving rate.

(10) Another noteworthy feature that was manifest is that the average propensity to save in the form of physical assets declined. The average propensity to save in formal financial assets increased while that of informal financial assets decreased considerably. This was observed for all fractile groups and most of the states.

6.3.2.1 Change in Composition of Cross Saving of Rural Cultivator Households

The saving composition of cultivator households underwent following changes over the two year period. The share of physical assets in total saving rose from 54.51 per cent in 1961-62 to 71.77 per cent in 1971-72. Of the

two categories of financial assets, the share of saving in formal financial assets increased from 7.51 per cent to 17.96 per cent while that of the informal category declined sharply from very nearly 38 per cent to about 10 per cent over the two years. Further, it needs to be noted that informal lendings declined in absolute terms in 1971-72 over 1961-62. The diversion of funds from informal lending activities to acquisition of formal financial assets as well as physical assets was observed in almost all the fractile groups and in most of the states. This might have been facilitated by spread of bank branches in unbanked rural areas and caused by increase in the rate of return on productive investment over the decade.

6.3.3 Net Financial Flows: All-India and States

(12) Our time series analysis of net financial flows* indicates that there was net inflow of funds to the rural farm household sector during the decade 1961-62 to 1971-72. Thus, throughout this period the farm household sector was in deficit. In absolute terms, the inflow increased at the trend rate of growth of 11 per cent per annum. However, the gross fixed capital formation in agriculture (private sector) increased at the same pace during the decade under consideration. Thus, net inflow of funds to the sector as a proportion of gross fixed capital formation in agriculture did not change

* Net financial flow is defined as the balance between gross saving in financial assets and net change in liabilities. If gross financial saving exceeds net change in liabilities, there is an outflow of funds from the sector. On the other hand, if the former falls short of the latter then there is an inflow of funds to the sector.

much.

(13) Of the two classes of financial institutions (viz. formal and informal) net inflow through informal financial institutions was observed while there was net outflow of funds through formal financial institutions in the years 1961-62 and 1971-72. It is also observed that within the class of formal financial institutions, commercial banks acted as agents for transferring funds out of the rural farm sector. In contrast, co-operatives transferred outside funds into the rural farm household sector.

(14) The findings that emerged from the cross-section analysis of net financial flows for the two bench mark years may now be outlined:

(a) Four states - Assam, Bihar, Kerala and West Bengal showed outflow of funds in both the years. Furthermore, for the states of Bihar, Kerala and West Bengal the proportion of outflow of funds to saving as well as income increased considerably.

(b) On the contrary, Gujarat, Madhya Pradesh, Maharashtra, Orissa and Rajasthan exhibited inflow in both the years.

(c) Three states, viz. Punjab, Tamil Nadu and Uttar Pradesh which witnessed an outflow from the farm household sector in 1961-62, attracted inflow of funds in 1971-72.

(d) Finally in three states viz. Andhra Pradesh, Jammu and Kashmir and Karnataka, the direction of net financial flows changed. These states showed outflow in 1971-72 as

against inflow in 1961-62.

(15) Our analysis suggests that the inflow or outflow of funds were not uniquely related to the saving investment status of the states. For instance, among the states which showed outflow of funds, Kerala had high saving and low investment while the three north eastern states - Bihar, Assam and West Bengal had average/low saving investment rates.

Like-wise, out of 'inflow states', Orissa was low saving and low investment state while Madhya Pradesh, Maharashtra and Rajasthan were average saving and average investment, and average saving and high investment states, respectively.

Further almost all the states - Punjab, Tamil Nadu and Uttar Pradesh - belonging to the group of high saving and high investment had outflow of funds in 1961-62 and inflow of funds in 1971-72.

6.3.4 Demand for Loans by Rural Cultivator Households

The results of single equation model and structural equations model of borrowing behaviour of rural cultivator-households are summarised below.

6.3.4.1 Single Equation Models

(16) We have estimated alternative demand functions for total loans and non-institutional loans by alternately introducing saving and family expenditure as explanatory variables along with other variables. The general fit of

both these regression equations was quite good for both these functions for the two years as judged by \bar{R}^2 . However, values of \bar{R}^2 for the functions with saving as explanatory variable are larger than for those functions which have "family expenditure" as one of the explanatory variable.

(17) Among the explanatory variables, capital expenditure in farm business turned out to be the most significant one in explaining variation in demand for total loans as well as non-institutional loans in both the years. The magnitude of its co-efficient (marginal propensity to borrow - MPB - with respect to capital expenditure in farm business) remained unchanged between 1961-62 and 1971-72 in the estimated equation of total loans. One expects that this fact coupled with larger availability of institutional finance, would have reduced cultivator households' requirement to borrow from non-institutional sources. Our regression results support this expectation.

(18) Except capital expenditure in farm business rest of the variables are statistically insignificant for the year 1961-62 in both demand equations, viz. total loans and non-institutional loans. As against this, the co-efficients of two more variables, viz. saving and rate of interest turned out to be significant in 1971-72 with appropriate signs. However, MPB with respect to family expenditure is not significantly different from zero in both the years. This is mainly due to dominance of capital expenditure in farm

business which alone explained more than 90 per cent of the total variation explained by both these explanatory variables and collinearity between family expenditure and capital expenditure.

(19) In both the years, the share of institutional loans in rural money market has significant negative impact on the loans demanded from non-institutional agencies.

(20) The results of the estimated demand functions for total loans for different fractile groups indicate that the MPB with respect to capital expenditure in farm business was lower for borrowers in upper asset groups than for those in lower asset groups. The difference between the estimated co-efficients for the classes at the two extreme ends of the distribution (i.e. bottom and top 10 per cent) is statistically significant; however, it is insignificant for bottom and top 50 per cent of the cultivator households.

(21) In the case of the demand function for non-institutional loans, although, capital expenditure in farm business is significant for both upper as well as lower half of the cultivator population, the former groups required less amount of non-institutional loans per unit of capital expenditure than the latter group. This finding brings out the fact that a larger availability of institutional loans for the upper rungs of the cultivator population reduces their dependence on non-institutional sources. Also because of greater access of this class to institutional source, the

share of institutional loans exhibits significant negative impact on demand for non-institutional loans only in the case of this class.

6.3.4.2 Path Models

(22) The results of our path models for total loans and non-institutional loans emphasise the fact that in 1961-62, though the direct relationship between saving and demand for loans on the one hand, and of the rate of interest and demand for loans on the other hand, have turned out to be statistically insignificant, these two variables exert their impact on demand for loans indirectly via capital expenditure in farm business. In 1971-72, saving influenced the demand for loans both directly as well as indirectly via investment in farm business. However, the rate of interest which showed a significant (direct) negative impact on the demand for loans, exhibited a significant influence on capital expenditure only when the two outlier states - Jammu and Kashmir, and Kerala - are excluded.

(23) Our results of direct and indirect impacts of the explanatory variables on the demand for total loans reveal that while the magnitude of direct impact of saving on demand for loans remained unchanged between 1961-62 and 1971-72, its indirect impact through capital expenditure in farm business was reduced from 0.77 in 1961-62 to 0.45 in 1971-72. This has happened because of the diversification of saving portfolio by farm households away from farm investment in

many states as noted earlier in this chapter.

(24) The demand for loans of the top 50 per cent of the cultivator households was affected by the rate of interest directly as well as indirectly via capital expenditure.

However, in the case of bottom half of the cultivator population, both these relationships are insignificant.

(25) The results of our path model for non-institutional loans throw some light on linkages between supply of loans in organised segment of rural money market and demand for loans in unorganised segment of rural money market. We have already mentioned that the share of institutional loans in total loans had significant negative impact on the demand for non-institutional loans (finding of the single equation model). Thus, the direct impact of this variable on demand for non-institutional loans was significant in both the years. However, in the interest-rate function, the coefficient representing the impact of the share of institutional loans in total loans on the rate of interest in the unorganised money rural market has the correct (negative) sign but it is statistically insignificant. Further, the residual path of this function is quite high, indicating that there are other variables which play an important role in explaining the variation in rate of interest charged by non-institutional agencies in addition to the share of institutional loans in total loans.

(26) One significant finding of the path model for

non-institutional loans with capital expenditure and availability of institutional loans as explanatory variables for different fractile groups deserves a special mention. For the cultivator households in upper brackets (i.e., top 50 per cent and 10 per cent of cultivator households), the substitutability between the loans from institutional and non-institutional and non-institutional sources, for the same level of capital expenditure was of the higher order than the gap filling role of non-institutional agencies when capital expenditure rises at a faster rate than availability of institutional finance. As a result, the total linkage, i.e., zero order correlation coefficient between institutional loans and non-institutional loans worked out to be negative in the case of these two classes.

6.4 A CONCLUDING OBSERVATION

A simultaneous examination of real and financial flows is of immense significance for the formulation of policy and flow-of-funds analysis provides a framework which yields such an integrated view.

Our study presents an analysis of SAUF statements (a component of Flow-of-funds account) for rural cultivator-households which is the single-most important category within the household sector. The data used in our study relate to 1961-62 and 1971-72, since these are the only data sets that are available. However, if the requisite data are available for continuous time period, it would be possible to estimate

and analyse the SAUF statements which would throw light on the structure and operations of income and financial flows.

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