
Rural Income : Some Evidence of Effect of Rural Credit During Last Three Decades

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The growth of the rural economy is an important driver of the economy as a whole. Sectoral demand matrices substantiate the importance of the rural demand to boost other activities. The present study tries to have some idea about the dynamics of the rural income, primarily caused by the availability of funds. The debate on the cost of rural credit is avoided because the availability of funds as well as the cost of funds during the period of study (1971-72 to 1999-2000) might be conceived as target variables. Simple models tested indicate evidence towards the supply leading approach to rural finance. However, it might be advocated that let the market be encouraged gradually to allocate the rural finance, banking upon the sound rural production base caused by broad activities and rural finance, significantly contributed by the institutional initiatives.

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Introduction

The growth of the rural economy is the important growth driver of the economy as a whole. The variation in rural income causes variations in the demand for products of the industrial as well as services sector. A recent study based on sectoral demand matrices indicated that in 1993-94, one unit rise in agricultural output was likely to increase the demand for industrial products by 0.297 unit (*i.e.*, more than three times as compared to 1968-69), while demand

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for services sector increased by around 0.149 unit in 1993-94 as against 0.035 unit in 1968-69.

The present study tries to analyse the dynamics of the rural income, primarily caused by the availability of funds. The debate on the cost of rural credit is avoided because the availability of funds as well as cost of funds might be considered as target variables. The study is divided into three sections. Section I tries to present some information regarding the Reserve Bank of India's initiatives towards the flow of funds to the rural sector, till the creation of the NABARD in 1982. Thereafter, the NABARD has been deeply involved in facilitating rural credit availability. Section II covers some discussion on developments of key macro variables of the rural sector during last three decades namely, rural nominal income, the Reserve Bank's assets as loans and advances for the rural sector, institutional credit for agricultural and allied activities, crop area and crop yields. Section III provides results of empirical tests in order to have some evidence of effects of rural credit and other factors on the rural income dynamics during 1971-72 to 1999-2000. Simple regression models are attempted. Concluding observations are given in section IV.

Section I

The Reserve Bank's Initiatives towards Rural Credit : An Historical Perspective

As a key sector of the Indian economy, Reserve Bank of India has historical allocated a key priority to the agricultural credit delivery. The Reserve Bank of India Act, 1934 envisaged a special developmental role for the Reserve Bank in the sphere of agricultural credit with responsibility, in particular, for financing seasonal operations and the marketing of crops.

The Rural Banking Enquiry Committee (Thakurdas Committee, 1950) stressed the importance, for an efficient system of agricultural finance, of a sound co-operative credit structure capable of developing close relations with the Bank. The Reserve Bank followed up the Rural Banking Enquiry Committee with the informal conference.

Following the conference's recommendation, the Reserve Bank decided to organise a Rural Credit Survey and constitute a Standing Advisory Committee on Agricultural Credit.

The All-India Rural Credit Survey, commissioned in August 1951, covered seventy-five districts around the country. Eight villages in each were chosen for the survey, which was based on a sample of fifteen households from each of the selected villages, with a view to recommend practicable policies for the future on rural credit. The survey was completed during November 1951 - July 1952, under the committee of Direction, headed by A. D. Gorwala. Dr. D. R. Gadgil was one of members of the committee. The Report was submitted in August 1954.

The survey was struck by the utter insignificance of co-operatives in providing rural credit. 'Positive and deliberate' measures rather than 'small administrative, functional or other changes' were required to ensure the success on co-operative credit institutions and enable them to become self-supporting. The State's tendency in the past had been to 'over-administer and under - finance' the co-operative movement, but the Report pointed out the need for an integrated system of co-operation and rural credit. The Report envisaged a key role for the Reserve Bank of India in coordinating the proposed network of co-operative institutions and for its Agricultural Credit Department in over seeing their functioning. The Reserve Bank would occupy a 'strategic position' in the co-operative credit sector, while other principal participants would play a major role in rural co-operation, *viz.*, co-operative economic activity and the training of co-operative personnel.

Since cooperative credit institutions depended on the banking system for a number of services, there was a need for positive State association with a defined sector of commercial banking. The Report thus recommended the creation of the State Bank of India through the statutory amalgamation of the Imperial Bank of India and the major State associated banks to undertake an expeditious programme of banking expansion, particularly in the rural areas. The Reserve

Bank was expected to manage the Imperial Bank's passage to State ownership.

The Reserve Bank prepared a draft-bill, approved by the Board in February, 1955, which among other things, authorised it to make long-term loans to State Governments to subscribe to the share capital of co-operative institutions and to central land mortgage banks, and set up the proposed special funds. The bill also provided for a third Deputy Governor to have exclusive responsibility of rural credit. The bill was passed into law on May 8, 1955. The National Agricultural Credit (Long-term operations) Fund was created in 1955 and the Reserve Bank was authorised to specify from time to time, the purposes for which, it would make medium-term loans. Over the years such loans were made to finance a wide range of investments relating to the rural sector.

The State Bank of India was created in July 1955 in order to give a boost to direct flow of funds of the banking system into certain neglected, but important, sectors of the economy such as agriculture and allied activities and spread banking facilities in rural areas. The flow of funds to the rural sector increased over the years. However, the demand for productive investment in the rural sector was not fully met.

In 1960, the Committee on Co-operative Credit (Vaikunth Lal Mehta Committee) advised examining the possibility of using P. L.480 funds to finance long-term productive investment in agriculture. Consequently, the Reserve Bank and the Government began to think to create a specialised agency to finance agricultural investment. It was thought that the demand for agricultural credit might require the establishment of some specialised institutions, which would ultimately relieve the Reserve Bank of its function so far as rural finance and agricultural credit was concerned. The Agricultural Refinance Corporation Bill, 1962 received the President's assent in March 1963. The Corporation under the chairmanship of D. G. Karve, the then Deputy Governor, started its operation in Bombay on July 1, 1963. The Corporation took up a wide range of activities of the rural

sector for refinance / direct loans / subscriptions to fully guaranteed debentures of eligible institutions covering central land mortgage **banks**, State cooperative banks, scheduled commercial banks (share holders of the corporatives), and co-operative societies under the approval of the Reserve Bank.

The High-Yielding Varieties Programme (or HYVP) was launched during *Kharif* 1966-67, as part of the new agricultural strategy towards achieving self-sufficiency in food by 1970-71. The Bank, for its part, assured the State Governments that the programme would not be allowed to suffer. Special credit limits would, if necessary, be sanctioned to co-operative banks. However, the demand for credit was poor and was found to be mainly due to cultivators' resistance to new practices, lack of proper motivation and orientation amongst extension staff, and reduced operational efficiency of central co-operative banks and primary societies.

In July 1966, the All India Rural Credit Review Committee (Venkatappiah Committee) was formed to review the progress made in the supply of credit for intensive agricultural production and marketing from all the institutional sources including commercial banks, working of the crop loans system, progress of rural branches of commercial banks and coordination between different agencies involved in rural credit. The Committee submitted its report in July 1969 and admitted that co-operatives would have to be strengthened but it had no hesitation in highlighting that they should be all the better, and the farmer would be better served, if other institutions coexisted with them in healthy competition. In other words, the adoption of the multi-agency approach as the most feasible and appropriate response to the credit requirements of agriculture and allied activities was recommended.

The adoption of 'social control' as a policy measure in 1968 helped the Reserve Bank to motivate the commercial banks into the area of agriculture and rural credit on a significant scale. The National Credit Council, constituted in December 1967 recognised the importance of the commercial banks' role as complementary to co-operative initiatives.

The nationalisation of the 14 major commercial banks in July 1969 helped the orientation of commercial banks lending policies and procedures to meet the requirements of the priority sectors of the economy with due attention to the financing needs of the small farmers. The multi-agency approach covered the Lead Bank Scheme, which provided, boost to the improved flow of funds to agriculture sector through the organised credit channels. Agriculture sector got the place of importance in the priority sector lending. Realistic targets for deposits for central cooperative banks were attempted. The borrowing needs, consequently from the Reserve Bank were met at differential rates of interest (concessional rate usually being a few basis points below the Bank rate). By mid-1977, the scheme of financing primary agricultural credit societies was in operation in 12 States, 24 commercial banks through 604 branches had taken over 343 societies for financing, however, over the years, it was found that the experience with the working of the scheme was in general not satisfactory.

In the context of the large finance gap, the commercial banks, Regional Rural Banks (RRBs) and co-operatives were deeply concerned during late 1970s. The system of district credit plans was introduced to meet the credit needs by different agencies. The commercial banks were geared up to fulfil priority sector targets and the target was raised to 40 per cent of their outstanding advances by March 1985. Another target was the attainment of 60 per cent of credit deposit ratio by the banks by March 1985 in respect of rural - semi urban branches separately.

The Reserve Bank of India appointed a Committee to Review Arrangements for Institutional Credit for Agriculture and Rural Development, chaired by B. Sivaram, former Secretary of the Ministry of Agriculture, Government of India in 1979. The report was submitted in 1981 and recommended the setting up of a National Bank for Agriculture and Rural Development (NABARD). The NABARD came into existence in July 1982. All major rural credit related works from the Reserve Bank of India were shifted to the NABARD. Works relating to the urban-cooperative banks remained with the Reserve Bank. A

new Department as Rural Planning and Credit Department (RPCD) was set-up in the Reserve Bank, to look into the broad rural credit policies of the Reserve Bank as a part of over all monetary management of the economy for price stability with sustainable growth of the economy.

The Reserve Bank so, far devoted its attention to provide necessary credit to rural sector for boosting agricultural growth directly and indirectly through many institutions. It might be indicated that the Reserve Bank of India provided short-term and medium-term loans to State co-operative banks, for agricultural production and marketing activities. medium-term loans were provided out of the National Agricultural Credit (LTO) Fund. Long-term finance was provided to the State Governments and Land Development Banks through LTO Fund for contribution to the share capital of cooperative societies and to rural debentures of Land Development Banks (LDBs). Reserve Bank also contributed to the ordinary debentures of LDBs by way of general funds. Besides, the Reserve Bank contributed to the resources of agriculture refinance corporations.

Section II

Some Quantitative Analysis of Rural Credit

After the creation of NABARD, attempts were diverted effectively to consolidate the multi-agency flows of funds to the rural sector for generating effective use of funds to the growth of the agricultural sector (Table 1).

Table 1 : Select Growth Indicators : Average

	1980-81 to 1989-90	1993-94 to 2002-03
1. Real GDP (% change)	5.80	6.00
2. Agricultural Production (% change)	5.2	0.4
3. Foodgrains production (million tonnes)	146.5	203.23

Source: Annual Report, 2002-03, RBI.

It would be useful to indicate the dynamics of the gross domestic product contributed by the agriculture and allied activities over a long period. Rural income in nominal terms increased significantly over the years of latest three decades (Table 2).

National Rural Credit (Stabilisation) Fund and National Rural Credit (LTO) Fund were earlier designated as National Agricultural Credit (Stabilisation) Fund and National Agricultural Credit (LTO) Fund, respectively, and were maintained by the Reserve Bank of India prior to the formation of NABARD on July 12, 1982. These Funds were transferred to NABARD on September 10, 1982. Balance as on August 14, 1981 was Rs. 1025 crore in NRC (LTO) Fund and Rs. 365 crore in NRC (stabilisation) Fund. However, NABARD's resources are augmented by the line of credit from the Reserve Bank of India - the facility which was enjoyed by the Agricultural Refinance and Development Corporation (ARDC), before the creation of NABARD. The Reserve Bank's assets in the form of loans and advances to State co-operative banks were Rs. 306 crore in 1971 and raised to Rs. 891 crore in 1982. After the creation of NABARD, financial needs of State co-operative banks were mainly attended by the NABARD. Some flow

**Table 2 : Gross Domestic Product
(At current prices : New Series Base : 1993-94)**

(Rs. '000 crore Rounded)

Year	Agriculture and Allied Services	Agriculture	GDP at factor	Agriculture and Allied Services as % of GDP
1970-71	19.5	18.4	42.7	47.00
1974-75	31.6	29.5	71.3	—
1979-80	40.2	36.6	108.9	39.00
1980-81	50.6	46.3	130.2	—
1981-82	56.9	51.8	152.1	—
1984-85	78.3	71.3	222.3	—
1989-90	136.9	124.4	438.0	30.0
1990-91	159.8	145.7	511.0	—
1994-95	278.8	255.2	917.1	—
1999-2000	462.0	422.4	1762.0	26.00
2000-2001	478.5	435.1	1917.7	—
2001-2002	522.6	473.4	2094.0	—

Source : Handbook of Statistics on the Indian Economy, RBI, 2002-03.

of credit to the state co-operative banks from the Reserve Bank of India however, continues. In 1983, loans and advances outstanding to the State co-operative banks were only Rs. 57 crore and over the years, the amount declined to nil in 1998 before rising further to Rs. 35 crore in 2002. RBI's loans and advances outstanding to ARDC / NABARD were Rs. 95 crore in 1976 and increased significantly to Rs. 1,152 crore in 1983. The outstanding loans and advances of NABARD increased to Rs. 6,500 crore in 2002 (Table 3).

Institutional credit (direct and indirect credits from co-operatives, Scheduled Commercial banks, RRBs and Rural Electrification Corporation) for agriculture and allied activities increased many folds during the last three decades. Loans outstanding (short-term and long-term) were around Rs. 2,235 crore at the end of 1971-72 and increased to Rs. 8,252 crore at the end of 1979-80. During this period, institutional credit to rural sector increased by around Rs. 4,580 crore on an annual basis. At the end of 1980-81, loans outstanding were around Rs. 10123 crore and increased to Rs. 35,353 crore at the end of 1989-90. On an annual average, loans outstanding increased by Rs. 21,156 crore. At the end of 1990-91, loans outstanding were around Rs. 37,408 crore and increased to Rs. 10,9816 crore at the end of 1999-2000. On an annual average basis, loans outstanding increased by Rs. 69,777 crore. On annual average basis, loans outstanding increased by 15 times during 1971-72 to 1999-2000. (Table 4).

Table 3 : RBI's Assets

(Rs. crore)

	Loans and Advances to State Co-operative Banks	ARDC / NABARD
1971	306	–
1976	459	95
1982	891	360
1983	57	1152
1998	–	4994
2002	35	6500

Source : Handbook of Statistics on the Indian Economy, RBI, 2002-03.

Table 4 : Institutional Credit For Agriculture and Allied Activities(Rs.crore)
(Rounded figures)

Year	Loans outstanding
1971-72	2,235
1974-75	3,539
1979-80	8,252
1980-81	10,123
1984-85	19,035
1989-90	35,353
1990-91	37,408
1994-95	66,346
1999-2000	1,09,816

Note : Institutions cover co-operatives, scheduled commercial banks, Regional Rural Banks and Rural Electrification Corporation Ltd. Loans outstanding cover short-term and long-term credit direct as well as indirect.

Source : Handbook of Statistics on the Indian Economy, RBI, 2002-03.

It may be noted that the rural nominal income as well as the flow of funds to the rural sector increased significantly during last three decades. The financial support to financial institutions for rural lending from the Reserve Bank of India also increased significantly during the same period.

It might be added that during the last three decades, yield per hectare of foodgrains increased from 872 kg / hectare in 1970-71 to 1704 kg/ hectare in 1999-2000, nearly two times the growth. Area under cultivation of foodgrains increased from 124.32 million hectare in 1970-71 to 131.16 million hectare in 1983-84. Area with some variations in between over the years was around 123.10 million hectare in 1999-2000. The variations in the area of cultivation of foodgrains might indicate some supply response from the non-food grains cultivation. All crop yield index (Base 1981-82) increased by around 1.6 times, while all crop production index increased by nearly 2 times during 1971-72 to 1999-2000. Primary commodity price index (1970-71 = 100) increased by around 10 times while the wholesale price index increased by around 6 times during 1971-72 to 1999-2000. The present exercise is now devoted to get some econometric evidence that the availability of funds also matters to the growth of the rural income in India.

Section III

Empirical Results

Dr. H.T. Patrick in mid 1960s, advocated a distinction between the 'demand-following approach' and the 'supply-leading approach' to financial development, in other words, the causal relationship between finance (credit) and growth (income/output). Demand following thinking stresses that finance is an input subject to potential growth of the sector. Growth / potential growth of any economic activity creates the demand for funds/credit. On the other hand, the availability of funds / credit stimulate / motivate an economic agent to take up the economic activity. This line of thinking advocates the importance of supply leading approach in the nexus between growth and finance. Empirically, the question of causality between funds and growth of the economy / sector is still lively (Misra, 2003). However, in the initial phase of development, in view of the weak role of market, the supply leading approach might be effective to growth proposals. Thus, in this study, the causal relationships between funds and growth are hypothesised in the line of with the supply leading approach. Simple models are specified, considering finance effect, real factors effect, price effect on the rural sector's income and stated below.

$$X = f(\text{RBLA})$$

$$X = f(\text{ICRS})$$

$$X = f(\text{RBLA}, \text{ACAI} / \text{ACYI})$$

$$X = f(\text{RBLA}, \text{ICRS}, \text{ACAI} / \text{ACYI} / \text{ACPI} / \text{WPI} / \text{PCI})$$

Where X stands for Rural Income (RNY)

RBLA	=	RBI 's accommodation to rural sector
ICRS	=	other institutions' accommodation to rural sector
ACAI	=	real factor <i>i.e.</i> , area of cultivation all crops
ACYI	=	another real factor <i>i.e.</i> , yields all crops
ACPI	=	another real factor <i>i.e.</i> , production all crops
WPI / PCI	=	price factor : whole sale price index / primary commodity price Index

All these models are tested by Ordinary least square (OLS) method. Granger's causality test is not attempted. Data cover the period from 1971-72 to 1999-2000. Growth variable is measured by the nominal gross domestic product from agriculture and allied activities. (1993-94 series at current prices). Availability of funds are measured by the Reserve Bank of India's accommodation to rural activities *i.e.* the RBI's assets in loans and advances to State Co-operative Banks and ARDC / NABARD. Institutional credit for agriculture and allied activities is measured by loans outstanding by co-operatives, scheduled commercial banks, RRBs and Rural Electrification Corporation Ltd. Cropping area is measured by the index of area under cultivation of all crops at base, triennium ending 1981-82 = 100. Yield of all crops is measured by index of yield at base, triennium ending 1981-82 = 100. Same type of Index for production is also considered.

Pearson Correlations : Period 1971-72 to 1999-2000

	WPI	PCI	RBLA	ICRS	ACPI	ACYI
RNY	0.857	0.991	0.961	0.996	0.919	0.894

Notations: RNI = Rural Nominal Income, WPI = Wholesale Price Index

PCI = Primary Commodity Price Index RBLA = RBI 's Loans and Advances for Rural Sector,

ICRS = Institutional Credit to Rural Sector,

ACPI = all crop production ACYI = All Crops Yield Index

It could be observed that Pearson Correlations between Rural Income (RNY) and other variables (financial, real and price) separately are almost all statistically significant. Thus, some models were tested on OLS in level. However, the following model seems to be statistically and also in economic perception for key variables (finance and price), significant.

**Empirical Models (Multiple Variables) during
1971-72 to 1999-2000**

Model A :

$$\begin{aligned} \text{RNY} = & 88967.942 + 10.198 \text{ RBLA} + 3.097 \text{ ICRS} \\ & (3.188) \quad (1.791) \quad (5.565) \\ & - 1090.539 \text{ ACYI} + 132.492 \text{ PCI} \\ & (-3.507) \quad (1.716) \end{aligned}$$

Adjusted R Square = 0.994 Durbin - Watson = 1.904

Note : Bracketed figures refer to t values

Model B :

$$\begin{aligned} \text{RNY} = & 70419.803 + 6.1555 \text{ RBLA} (-1) + 2.807 \text{ ICRS} \\ & (2.620) \quad (1.069) \quad (4.686) \\ & - 954.542 \text{ ACYI} + 183.239 \text{ PCI} \\ & (-3.129) \quad (2.264) \end{aligned}$$

Adjusted R Square = 0.994 Period : 1971-72 to 1999-2000

Durbin - Watson : 1.728

Note : Bracketed figures refer to t values

Model C :

$$\begin{aligned} \text{RNY} = & - 4072.627 + 3.609 \text{ ICRS} + 67.439 \text{ PCI} \\ & (- 0.425) \quad (6.037) \quad (1.035) \end{aligned}$$

Adjusted R square = 0.992

Durbin - Watson : 0.800

Note : Bracketed figures refer to t values

It might be highlighted that finance variables (RBLA, ICRS) and price variable (PCI) had statistically and in economic perception also significant effects on the dynamics of rural sector income (RNY) during 1971-72 - 1999-2000. However, the effect of real variable is puzzling.

Thus, results of some two variable models during 1971-72 to 1999-2000 are reported below.

$$\text{RNY} = - 17434.271 + 70.254 \text{ RBLA}$$

$$(- 1.526) \quad (17.994)$$

Adjusted R Square = 0.920

$$\text{RNY} = 5271.444 + 4.223 \text{ ICRS}$$

$$(1.633) \quad (59.357)$$

Adjusted R Square = 0.992

$$\text{RNY} = - 348799.9 + 3951.017 \text{ ACPI}$$

$$(- 8.339) \quad (12.133)$$

Adjusted R Square = 0.839

Note : Bracketed figures denote t values

$$\text{RNY} = - 56537.203 + 458.160 \text{ PCI}$$

$$(- 9.171) \quad (38.886)$$

Adjusted R Square = 0.982

It might be highlighted that finance variables (RBLA, ICRS) and price variable (PCI) had statistically and in economic perception also significant effects on the dynamics of rural sector income (RNY) during 1971-72 - 1999-2000.

Section IV

Concluding Observations

The Reserve Bank of India's initiatives towards the flow of funds to the rural sector till the creation of the NABARD in 1982 had boosted the base of the supply of rural credit and consequently, helped positively the dynamics of the rural sector's income.

The causal relationship between rural credit and rural income during 1971-72 to 1999-2000 might be cited through partial analysis, which indicates evidence towards the supply leading approach to rural finance. However, it is advocated that let the market be encouraged gradually to allocate the rural finance banking upon the sound rural production base and contributed by the institutional initiatives.

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