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Dynamics of Access to Rural Credit in India: Patterns and Determinants

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Abstract

The study has analysed the changes in structure of rural credit delivery and inclusiveness of rural credit flow across states and social groups, along with identification of factors that influence the choice of credit source. The study is based on the unit level data of Debt and Investment Survey carried out by NSSO during 1992 (48th round), 2003 (59th round) and 2013 (70th round). The structure of credit system has been assessed in terms of access of rural households to different credit outlets, share of formal credit institutions, availability of credit, and interest rate. The determinants of rural households' choice for credit sources have also been studied. The study has found that the structure of credit market has changed over time and the share of institutional credit has increased. The initiatives taken by the government have paid off and the flow of institutional credit to rural areas has increased significantly even in real terms. The indicators of financial inclusion have shown a sign of improvement. However, regional disparity and presence of informal agencies in the disbursement of rural credit is still persistent. Rural households' access to institutional credit is influenced by a number of socio-economic, institutional and policy factors. In our analysis, the education, caste affiliation, gender and assets ownership have been found to influence the rural households' access to institutional credit significantly. A concerted effort and appropriate policy reform are required to make rural households' access to institutional credit neutral to caste, class and regions.

Keywords: Rural credit, access, institutional, equity, determinants

JEL Classification: Q10, Q14, G21, O13

Introduction

Credit has been conceived to play a crucial role in fostering rural development in India. Since long, the policy makers have been expressing concern for transforming the credit delivery mechanism to enhance the rural households' access to institutional credit. The first state intervention in rural financial markets was motivated by the findings of the All India Rural Credit

Survey (Gorwala Committee, 1954) which showed that institutional credit¹ accounted for only seven per cent of the borrowings of rural households in 1951-52 (Mahajan *et al.*, 1996). Since then, several initiatives have been taken to strengthen the mechanisms for institutional credit delivery system.

The major milestones in improving the rural credit include acceptance of Rural Credit Survey Committee

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¹ The public sector banks, co-operative society banks, commercial banks and regional rural banks are the major institutional sources of credit.

Report (1954), nationalization of major commercial banks (1969 & 1980), establishment of Regional Rural Banks (RRBs) (1975), establishment of National Bank for Agriculture and Rural Development (NABARD) (1982), the financial sector reforms (1991 onwards), Special Agricultural Credit Plan (1994-95), launching of Kisan Credit Cards (KCCs) (1998-99), Doubling Agricultural Credit within three years (2004), Agricultural Debt Waiver and Debt Relief Scheme (2008), and the *Jan Dhan Yojana* (2014) (Kumar *et al.*, 2010; Economic Survey, 2014-2015).

Simultaneously, several other measures like establishment of Lead Bank Scheme, direct lending for the priority sectors, banking sector's linkage with the government-sponsored programmes targeted at the poor, Differential Rate of Interest Scheme, the Service Area Approach, the SHG-Bank linkage programme, Special Agricultural Credit Plans, and Rural Infrastructure Development Fund (RIDF) schemes were introduced to enhance the flow of credit to the rural sector. These initiatives have had a positive impact on the flow of rural credit. However, the inadequacy of rural credit especially to agriculture continues to remain a big challenge. The persistence of money lenders in the rural credit market is also often fiercely debated in the policy discourses in India. But, most of the discussions on the issue of rural credit are, by and large, swayed by perceptions and empirical validation of the changes taking place in the rural credit market is often lacking. Also, empirical studies on the characteristics of borrowers from institutional sources are few and the factors which determine the choice of credit sources have not received much attention among the academia and policymakers. An empirical analysis of rural credit delivery at the micro level and determinants for access to institutional credit would be useful in understanding the behaviour of borrowers. This will also help in reorienting the credit policies and programmes for a better credit flow.

In this backdrop, the present study was undertaken to analyse (i) changes in the structure of rural credit delivery system, (ii) inclusiveness of rural credit flow across states and social groups, and (iii) factors that influence the choice of credit source.

Data and Methodology

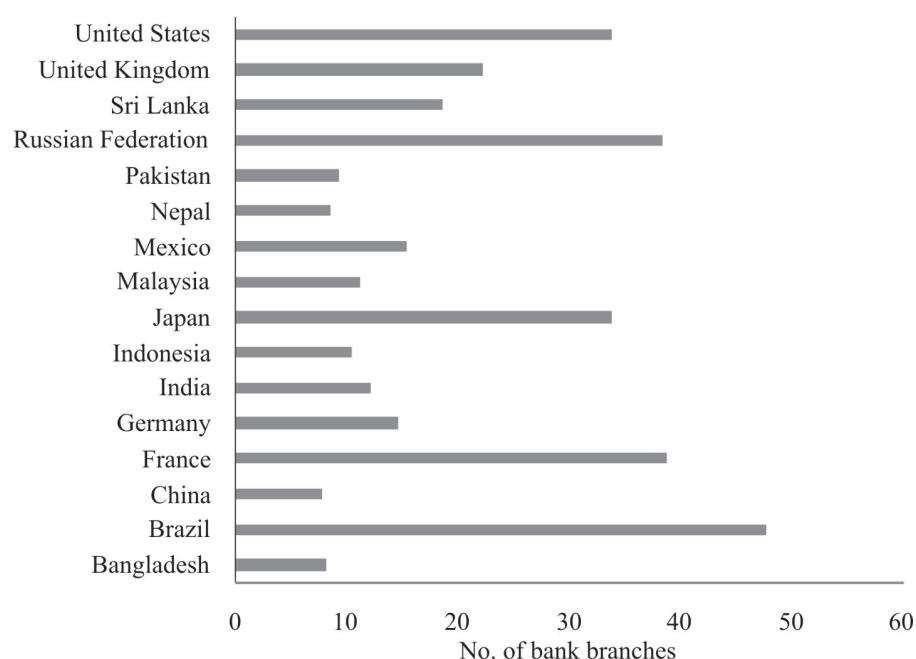
The study is based on the unit level data of Debt and Investment Survey carried out by National Sample

Survey Organization (NSSO) during 1992 (48th round), 2003 (59th round) and 2013 (70th round). The Debt and Investment survey, generally carried out once in 10 years, provides information on different dimensions of rural finance. The survey also provides information on several household characteristics such as ownership of assets, social and demographic variables, households' association with networks such as self-help groups, cooperatives, etc. Further, this dataset enables analysis from the borrowers' side and therefore this information is more reliable. The structure of credit system has been assessed in terms of access of rural households to different credit outlets, share of formal credit institutions, availability of credit, and interest rate. The determinants of rural households' decision for borrowing and their access to institutional credit have also been analysed by using 70th round NSSO data. A two-step analysis was conducted to explain the rural households' decision to borrow and their access to institutional credit. These steps included a simple probit to assess the households' decision to borrow, followed by application of McFadden's Choice model, using conditional probit model. Mills ratios for the decision to borrow were then computed and introduced as additional explanatory variables into the next step to assess the choice of credit sources.

Results and Discussions

Structure of Rural Credit Markets

India has a vast network of financial institutions to lend rural credit. The 1970s and 1980s witnessed a rapid expansion of India's financial system in the rural areas. Following nationalization of major banks in 1969, the Commercial Banks (CBs) were mandated to open rural branches. The number of rural branches increased from 1833 in 1969 to 30,186 in 1985; it continued to expand (except during 1990s) and today, India has about 47,000 rural branches of Commercial Banks and Regional Rural Banks, besides branches of cooperative banks and primary cooperative societies. Due to this vast expansion of rural banks network, India compares favourably with other developing countries in terms of banking infrastructure. The average population served per commercial bank branch is lower in India compared to China, but higher as compared to most of the developed countries (Figure 1). However, the physical availability of bank branches has been improving over time.



Source: *World Development Indicators 2015*. World Bank, Washington, DC

Figure 1. No. of bank branches per 100,000 adult population in different countries

The existence of an informal credit market alongside a formal institutional credit market has been recognized as a key feature of rural credit market in developing countries and attracted continuous attention in the literature of development economics (Guirking, 2008; Conning and Udry, 2007; Hoff and Stieglitz, 1990). In India, considerable efforts were made to enhance the flow of institutional credit in rural areas since Independence. These efforts have enhanced the share of institutional sources of credit from 9 per cent in 1951 to 56 per cent in 1992 (Kumar *et al.*, 2007). During 1990s, several measures were taken to liberalize the Indian economy and reforms were also initiated in the financial sector. The main focus of financial sector reforms was on restoring profitability of banks and ensuring implementation of prudential norms. The financial sector reforms, however, decelerated the growth of agricultural credit and the share of institutional credit increased only marginally to 57 per cent in 2003 at the national level (Table 1). This alarmed the policy makers and in 2004, the Government of India embarked on an ambitious plan of doubling the agricultural credit in 3 years. Since then, the flow of credit to rural areas has been increasing and in 2013, the share of institutional credit rose to 61 per cent

(Figure 2). However, the informal credit, which is often exploitative, still persists and its persistence in spite of vigorous efforts to promote financial inclusion, is puzzling. The persistence of informal credit² has serious implications and raises many questions on the functioning of institutional credit mechanism.

The borrowing in absolute terms by rural households has increased from ₹ 980 in 1992 to ₹ 4850 in 2013, more than five-times, registering an annual growth rate of 7.5 per cent, which is quite significant. However, the trends and patterns of growth in credit are not uniform across the states and the inter-state variations in disbursement and growth of credit are glaring. The share of institutional credit in the rural areas has increased enormously in several states, but in some states like Andhra Pradesh, Bihar, Jharkhand, Manipur and Rajasthan, it continues to be low and was less than 50 per cent in 2013 (Table 1).

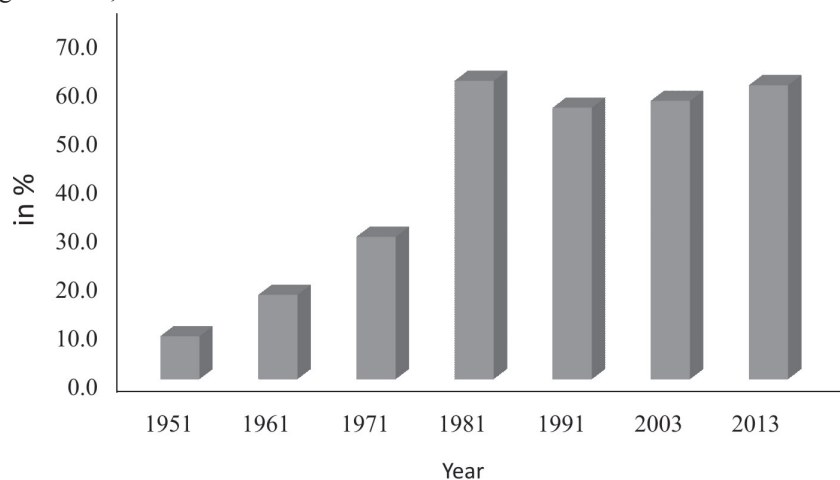
In majority of the states, the share of institutional credit accounted for 50-75 per cent in 1992 and 2013. A few states — Kerala, Meghalaya, Arunachal Pradesh, Uttarakhand, Himachal Pradesh, Mizoram and Sikkim — registered an impressive performance and institutional credit accounted for more than 75 per cent

² Private moneylenders, large landowners, traders, relatives and friends, etc. constitute the informal or non-institutional sources of credit.

Table 1. Amount and share of institutional borrowings in different states of India: 1992, 2003 and 2013

State	Average amount of borrowing (₹ /ha at 1993-94 prices)			Share of institutional credit (%)		
	1992	2003	2013	1992	2003	2013
Andhra Pradesh	1970	6448	6801	25.6	37.5	41.6
Arunachal Pradesh	143	90	554	56.5	78.4	80.0
Assam	330	723	1001	45.0	46.4	71.5
Bihar	536	1646	4710	51.2	23.5	28.9
Chhattisgarh	299	864	1199	74.4	57.3	64.6
Gujarat	780	2608	2380	74.7	75.7	65.2
Haryana	1097	6974	4181	52.7	61.8	61.0
Himachal Pradesh	1859	4591	10765	60.3	57.2	85.2
Jammu & Kashmir	692	1326	4147	42.8	82.7	72.5
Jharkhand	215	1769	1542	94.4	90.9	44.9
Karnataka	740	2907	5378	62.8	62.5	53.6
Kerala	5893	35857	76421	81.8	81.6	79.2
Madhya Pradesh	564	1662	1872	57.8	62.3	62.0
Maharashtra	936	2347	2890	77.1	78.1	71.5
Manipur	224	1426	827	53.2	7.8	33.7
Meghalaya	49	185	397	91.9	38.1	79.7
Mizoram	144	334	734	68.2	84.5	92.0
Nagaland	225	1278	551	72.8	71.3	65.3
Odisha	298	1784	2542	70.2	69.3	63.0
Punjab	2359	10179	8718	59.3	53.8	62.1
Rajasthan	550	1247	3137	30.3	38.7	46.1
Sikkim	395	2117	6309	98.6	75.8	96.1
Tamil Nadu	3857	14987	16638	61.9	46.6	62.2
Tripura	1066	3308	2290	84.0	74.0	61.6
Uttar Pradesh	721	2171	3814	54.8	53.6	60.7
Uttarakhand	1924	1315	8881	29.0	53.9	80.0
West Bengal	1155	3072	6373	55.5	48.6	51.5
All-India	980	3356	4850	55.7	57.1	60.3

Data Source: Unit level data on Debt and Investment Surveys, 48th (1992), 59th (2003) and 70th (2013) rounds. National Sample Survey Organization, New Delhi



Source: All India Rural Credit Survey, RBI; All India Debt and Investment Surveys, NSSO

Figure 2. Share of institutional credit in rural borrowings in India, 1951-2013

of the total rural credit. More details on borrowing from institutional and non-institutional system are given in Annexure Tables 1 and 2.

Between 1992 and 2013, the compound annual growth rates of institutional rural credit varied from 2.1 per cent in Tripura to 13.3 per cent in Sikkim. The other states which registered double digit growth included Uttarakhand (12.3%), Madhya Pradesh (12.2%), Jammu & Kashmir (11.1%), Rajasthan (10.3%) and Himachal Pradesh (10.0%). The growth in non-institutional rural credit varied from 11.2 per cent in Uttarakhand to 21.4 per cent in Jharkhand. The

other states which recorded more than 10 per cent growth in credit from non-institutional sources were Bihar (12.3%), Karnataka (10.5%), Kerala (13.0%), Meghalaya (14.6%), Odisha (11.3%) and Sikkim (18.4%) (Table 2).

Financial Inclusion

The financial inclusion is a pre-requisite to promote inclusive and sustainable growth. India's record even after six decades of efforts to promote financial inclusion is not very impressive, it has 104th position in the ranking of 176 countries. Though financial

Table 2. Compound annual growth rates of institutional and non-institutional borrowings: 1992 to 2013

State	CAGR (%) in credit/ha			CAGR (%) in credit/capita		
	Institutional	Non-institutional	Total	Institutional	Non-institutional	Total
Andhra Pradesh	8.2	4.6	5.8	8.2	4.7	5.9
Arunachal Pradesh	8.0	2.7	6.4	8.8	3.8	7.3
Assam	7.4	2.1	5.2	7.1	1.7	4.8
Bihar	7.5	12.3	10.4	4.3	8.8	7.0
Chhattisgarh	5.8	8.1	6.5	3.1	5.4	3.8
Gujarat	4.6	6.8	5.2	3.6	5.8	4.2
Haryana	7.0	5.3	6.3	4.2	2.6	3.5
Himachal Pradesh	10.0	3.6	8.3	8.4	2.0	6.7
Jammu & Kashmir	11.1	4.9	8.5	7.8	1.8	5.3
Jharkhand	5.7	21.4	9.4	2.5	17.0	6.0
Karnataka	8.7	10.5	9.4	7.1	9.0	7.9
Kerala	12.2	13.0	12.4	10.3	11.2	10.5
Madhya Pradesh	5.9	5.1	5.6	4.1	3.3	3.8
Maharashtra	4.9	6.3	5.3	3.8	5.2	4.1
Manipur	3.9	7.8	6.1	3.8	7.5	5.9
Meghalaya	9.3	14.6	10.0	8.4	10.5	8.7
Mizoram	9.2	1.1	7.7	9.2	1.4	7.8
Nagaland	3.6	5.3	4.2	2.9	4.7	3.3
Odisha	9.7	11.3	10.2	7.5	9.0	8.0
Punjab	6.4	5.8	6.1	5.7	5.1	5.5
Rajasthan	10.3	7.0	8.2	8.0	4.7	5.9
Sikkim	13.3	18.4	13.4	9.8	15.5	9.8
Tamil Nadu	6.9	6.8	6.9	5.8	5.7	5.8
Tripura	2.1	7.8	3.5	2.3	8.2	3.8
Uttar Pradesh	8.4	7.2	7.9	5.7	4.6	5.2
Uttarakhand	12.3	1.2	7.2	10.5	-0.4	5.5
West Bengal	7.7	8.5	8.1	4.4	5.2	4.8
All-India	7.9	7.0	7.5	6.1	5.2	5.7
Coefficient of variation (%)	34.9	62.1	30.9	40.6	66.7	31.6

Data Source: Unit level data on Debt and Investment Surveys, 48th (1992), 59th (2003) and 70th (2013) rounds. National Sample Survey Organization, New Delhi

inclusion can be measured in several ways and different indicators can be estimated to assess the status of inclusiveness of institutional rural credit system. Here, we have analysed the inclusiveness of the institutional credit in terms of participation of smallholders and socially disadvantaged groups in the flow of institutional credit to the rural area.

There is a predominance of landless, marginal and smallholders in rural households in India. In 2013, they together accounted for about 93 per cent of the total rural households (Table 3). The ratio of their share in institutional credit and households has increased from 0.72 in 2003 to 0.84 in 2013, indicating a trend towards equity in the disbursement of institutional credit. The

institutional credit mechanism in rural areas seems to have been promoting equity and encouraging smallholders' access to formal credit. The ratio of their share in credit and population shows that the disbursement of rural credit has become more equitable in most of the states. The performance of Bihar, Chhattisgarh, Uttarakhand, Gujarat and Jammu & Kashmir has been noteworthy in this regard. However, the smallholders' access to institutional credit has deteriorated in a few states like Arunachal Pradesh and Madhya Pradesh during 2002-2013.

The social group identity is intricately related with economic outcomes in developing countries like India. In rural India, the historically entrenched caste system

Table 3. Share of landless, marginal and smallholders in total households and credit, 2003 and 2013

State	Share in households (%)		Share in institutional credit (%)		Ratio of shares in institutional credit and households	
	2003	2013	2003	2013	2003	2013
Andhra Pradesh	93.5	88.8	71.1	72.7	0.76	0.82
Arunachal Pradesh	87.2	91.5	80.2	77.4	0.92	0.85
Assam	96.2	95.8	85.8	88.8	0.89	0.93
Bihar	97.2	98.7	69.4	89.2	0.71	0.90
Chhattisgarh	83.3	90.5	44.0	71.5	0.53	0.79
Gujarat	84.9	79.3	49.1	54.4	0.58	0.69
Haryana	86.3	82.3	59.3	56.8	0.69	0.69
Himachal Pradesh	96.5	98.3	90.7	97.7	0.94	0.99
Jammu & Kashmir	93.1	97.0	70.1	95.4	0.75	0.98
Jharkhand	97.7	99.2	96.1	95.8	0.98	0.97
Karnataka	87.5	87.2	54.5	71.1	0.62	0.82
Kerala	99.1	99.5	93.7	97.5	0.94	0.98
Madhya Pradesh	81.1	78.3	37.6	33.4	0.46	0.43
Maharashtra	84.5	78.1	58.5	59.0	0.69	0.76
Manipur	98.7	98.7	99.1	97.9	1.00	0.99
Meghalaya	93.3	97.6	80.1	97.6	0.86	1.00
Mizoram	93.0	92.0	91.1	87.8	0.98	0.95
Nagaland	98.8	98.9	84.9	86.9	0.86	0.88
Odisha	95.7	97.3	89.2	94.0	0.93	0.97
Punjab	86.7	83.7	38.7	35.0	0.45	0.42
Rajasthan	77.8	79.6	47.0	56.5	0.60	0.71
Sikkim	97.4	97.6	99.5	97.0	1.02	0.99
Tamil Nadu	96.5	97.8	79.4	94.5	0.82	0.97
Tripura	99.8	99.8	97.5	99.7	0.98	1.00
Uttar Pradesh	93.6	94.8	66.6	77.4	0.71	0.82
Uttarakhand	96.6	97.8	85.1	94.8	0.88	0.97
West Bengal	98.8	99.7	97.7	99.2	0.99	0.99
All-India	91.6	92.9	65.7	76.7	0.72	0.84

Data Source: Unit level data on Debt and Investment Surveys, 59th (2003) and 70th (2013) rounds. National Sample Survey Organization, New Delhi

has significant influence on the economic status of people of different strata. Another dimension of financial inclusion is the participation of weaker sections of society in the institutional rural credit as there is still a high correlation between caste and socio-economic status in India. Recognizing the caste-based socio-economic disadvantages as a major constraint, the government policies are designed to alleviate this by providing a level playing field in several areas.

To promote financial inclusiveness in the rural areas, the first All India Rural Credit Survey Committee Report recognized the socio-economic status as a key factor to improve access to rural finance and a slew of measures have been intended to enhance the share of vulnerable sections of society in the institutional credit. Though policy perspectives continue to emphasize improvement in the financial inclusion for the socially and economically disadvantaged sections of society, a key question is whether such discriminations have vanished or not? To seek answer to this question, we have first analysed the participation of different social groups in institutional credit vis-à-vis their share in population. Our results reveal that the participation of scheduled caste (SC) and scheduled tribe (ST) households is significantly lower than their population in most of the states. At all-India level, their participation is less than 50 per cent of their share in population. The situation is relatively better in Madhya Pradesh and Punjab.

In the North- Eastern states, the wide spread inequity in distribution of rural credit may be attributed to the direct relationship between caste and assets including land holdings. Though there has been some improvement in their access to formal credit, the speed of improvement seems to be slow. The ratio of their share in credit and population has improved only from 0.44 in 2003 to 0.49 in 2013. Our finding is consistent with earlier studies. For instance, Kumar (2013) has observed that banks discriminate between borrowers on the basis of their caste in the provision of agricultural credit. Our results reveal that concerted efforts are still required to increase the access of SC and ST households to formal rural credit market. (Table 4). The participation of other backward castes (OBCs) in formal credit market is consistent with their share in population and they do not seem to be discriminated.

Structure of Interest Rates

The continuance of informal credit market in the rural areas is attributed to several factors that include minimal formalities, fast disbursement, geographical and personal proximity, and flexibility in repayment. All these factors induce the rural households to borrow from informal sources. But, several studies have reported about charging of extremely high interest rates by the non-institutional sources.

The state-wise interest rates on institutional and non-institutional borrowings are reported for the years 1992, 2003 and 2013 in Table 5. On average, the annual interest rate on institutional credit in rural India was 12.5 per cent in 1992 which increased to 13.4 per cent in 2003, but declined to 11.1 per cent in 2013, with some variations across states. Contrary to this, the average interest rates charged by the non-institutional agencies varied from 24 per cent to 28 per cent during this period. Thus, the interest rates charged by non-institutional sources have been found to be more than two-times between 1992 and 2013. Further, a wide variation is seen in the interest rates charged by non-institutional agencies across states. For instance in 2013, the interest rate charged by non-institutional sources was the highest in Bihar (46.7%), followed by Manipur (39.6%), Odisha (27.5%), Madhya Pradesh (27.3%), Karnataka (24.3%), Andhra Pradesh (23.8%), Uttar Pradesh (23.7%), Sikkim (22.7%), and West Bengal (22.6%). In some states, the rate of interest is quite low also (Table 5).

The extensive rural credit programs which have been taken over time was expected to break the monopoly power of informal lenders and the interest rates charged by the informal lenders should have declined overtime. However, in spite of the whopping increase in the flow of institutional rural credit, the interest rates charged by the informal sources continued to be exploitative and has sown a stubborn tendency to persist.

The interest rates charged by the money lenders further reveal the extent of exploitation in the rural credit market. The moneylenders are the major sources of informal credit and account for more than 2/3rd of the non-institutional rural credit. The average interest charged by them is more than thrice (37.0%) the interest rate charged by institutional sources (11.0%).

Table 4. Equity in disbursement of institutional credit across social classes in India, 2003 and 2013

State	2003				2013			
	% share of SC & ST in		% share of OBC in		% share of SC & ST in		% share of OBC in	
	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Andhra Pradesh	31.6	17.0	47.5	41.8	37.6	20.4	47.3	45.4
Arunachal Pradesh	86.1	99.2	0.3	0.0	75.7	80.4	0.6	0.0
Assam	22.1	24.0	23.2	17.1	24.9	26.4	30.1	33.2
Bihar	22.3	10.5	58.7	43.6	21.5	5.9	59.8	55.2
Chhattisgarh	50.4	35.5	42.8	54.8	49.7	22.2	47.3	45.5
Gujarat	31.3	14.1	42.3	33.4	31.1	16.4	50.9	38.5
Haryana	26.6	9.9	34.3	32.1	18.9	5.4	35.9	16.8
Himachal Pradesh	28.3	20.5	18.6	20.7	37.8	24.5	18.3	10.1
Jammu & Kashmir	15.2	11.8	13.1	1.1	24.4	16.3	11.4	4.7
Jharkhand	46.3	20.1	42.9	61.9	52.0	22.6	40.8	59.4
Karnataka	27.7	8.9	34.9	22.6	30.6	19.6	47.6	50.3
Kerala	13.1	4.2	55.8	51.4	11.6	13.3	63.2	57.2
Madhya Pradesh	36.8	17.0	42.5	47.8	49.2	16.0	41.1	58.5
Maharashtra	27.7	12.2	34.1	31.0	26.7	15.2	37.3	39.0
Manipur	45.7	34.2	36.5	45.6	55.8	40.0	35.8	45.7
Meghalaya	92.4	93.2	0.3	0.9	95.3	84.9	0.4	3.4
Mizoram	98.8	100.0	1.2	0.0	98.5	100.0	1.3	0.0
Nagaland	95.2	99.6	0.4	0.0	98.8	99.9	0.2	0.0
Odisha	45.5	22.7	39.0	39.5	45.8	25.5	37.9	35.9
Punjab	41.0	7.9	15.1	5.6	44.5	7.0	10.7	13.5
Rajasthan	36.2	27.0	46.2	57.7	41.7	29.9	46.9	54.5
Sikkim	33.5	41.8	31.7	27.8	52.5	79.2	45.2	19.6
Tamil Nadu	26.8	9.2	71.4	87.2	30.0	13.6	67.4	83.8
Tripura	49.1	48.3	20.2	25.9	58.4	49.2	15.5	24.3
Uttar Pradesh	26.8	17.4	53.3	45.4	27.2	12.0	54.9	57.9
Uttarakhand	29.9	31.8	6.9	15.9	27.5	7.3	10.9	10.7
West Bengal	36.8	28.3	5.4	6.1	34.5	24.3	11.0	13.2
All India	31.1	13.8	42.0	41.2	33.1	16.2	43.6	49.1

Data Source: Unit level data on Debt and Investment Surveys, 59th (2003) and 70th (2013) rounds. National Sample Survey Organization, New Delhi

The interest rate charged by the money lenders varied across the states. In 2003, it varied from 1.2 per cent in Jammu & Kashmir to 63 per cent in Manipur and in 2013, it varied from 5.1 per cent in Arunachal Pradesh to 60 per cent in Bihar. In fact, in most of the states, the interest rate charged by the money lenders was more than 30 per cent. The expansion of formal rural credit market has not been able to contain the high interest rates of money lenders (Table 6). The

effective monthly interest rates charged by the moneylenders have been reported to vary from 5 per cent to more than 100 per cent by the earlier studies also (Robinson, 2001).

The high variance in the interest rates charged by the moneylenders may be attributed to the difference in the types of loan, risks in money lending and bargaining power of the borrowers. High transaction

Table 5. State-wise interest rate on institutional and non-institutional borrowings, 1992, 2003 and 2013

State	Interest rate (%/annum)					
	Institutional sources			Non-Institutional sources		
	1992	2003	2013	1992	2003	2013
Andhra Pradesh	13.4	12.8	11.4	25.4	30.9	23.8
Arunachal Pradesh	14.0	5.8	8.9	0.0	4.2	3.9
Assam	7.3	9.7	12.0	1.4	10.5	19.5
Bihar	11.3	11.7	12.7	23.3	36.0	46.7
Chhattisgarh	12.2	13.9	5.4	24.3	27.4	13.6
Gujarat	12.4	12.7	7.8	6.5	8.9	10.8
Haryana	10.2	13.5	8.7	24.5	23.9	21.2
Himachal Pradesh	9.3	11.4	9.9	5.0	3.5	1.1
Jammu & Kashmir	8.7	11.1	11.0	5.7	0.1	0.4
Jharkhand	7.2	8.3	10.8	8.3	18.9	21.4
Karnataka	13.1	14.3	13.1	18.3	25.2	24.3
Kerala	15.3	13.2	12.6	21.3	29.5	17.0
Madhya Pradesh	12.1	12.9	7.5	27.1	29.6	27.3
Maharashtra	13.8	15.1	9.0	14.7	24.8	12.5
Manipur	3.7	25.4	25.1	32.6	51.2	39.6
Meghalaya	12.6	8.5	8.0	0.0	4.1	4.2
Mizoram	5.8	9.5	10.1	0.0	0.2	0.4
Nagaland	9.2	11.9	27.1	1.0	7.9	15.2
Odisha	11.6	13.0	10.7	31.8	41.7	27.5
Punjab	11.6	12.7	9.5	11.5	18.2	12.8
Rajasthan	12.5	13.4	7.8	27.9	22.7	22.7
Sikkim	9.4	9.9	11.4	0.0	13.3	6.7
Tamil Nadu	11.5	15.5	14.2	34.3	35.1	31.6
Tripura	6.9	8.6	11.8	3.9	2.9	15.7
Uttar Pradesh	12.9	12.0	9.5	25.1	26.3	23.7
Uttarakhand	8.1	11.9	10.3	2.3	27.5	8.2
West Bengal	10.2	11.8	13.6	19.3	23.9	22.6
All-India	12.5	13.4	11.1	24.2	28.6	25.1

Data Source: Unit level data on Debt and Investment Surveys, 48th (1992), 59th (2003) and 70th (2013) rounds. National Sample Survey Organization, New Delhi

costs of lending, low lending volumes, high opportunity cost of capital and the absence of legal recourse for loan recovery were amongst the factors that induce the moneylender to keep the interest rates high. These high rates of interest have significant economic and social costs. They, in fact inhibit the growth of borrowers' entrepreneurial ability and in some cases force them to become defaulters. The findings clearly exhibited that the interest charged by informal moneylenders was

exploitative and therefore a stable, reliable and reasonable credit delivery system is a necessity to prevent the exploitation of rural households by the informal moneylenders.

Determinants for Households' Decision to Borrow

The determinants for access to credit, enlisted in Table 7, reveal that the number of members in a family

Table 6. Interest rate and share of money lender in non-institutional credit

State	Interest rate (% per annum)		Share in non-institutional credit (%)	
	2003	2013	2003	2013
Andhra Pradesh	31.9	26.1	81.4	93.1
Arunachal Pradesh	7.7	5.1	31.9	8.2
Assam	29.8	42.8	55.9	34.8
Bihar	51.8	60.1	62.3	66.8
Chhattisgarh	41.1	27.9	58.7	55.6
Gujarat	29.9	37.2	24.8	33.2
Haryana	28.8	26.9	77.6	78.7
Himachal Pradesh	17.1	12.5	11.2	7.5
Jammu & Kashmir	1.2	19.4	4.8	.9
Jharkhand	21.9	59.6	25.6	38.9
Karnataka	40.1	33.4	72.0	65.7
Kerala	42.8	39.6	47.0	53.0
Madhya Pradesh	32.3	32.9	71.5	85.9
Maharashtra	50.6	37.5	40.1	42.3
Manipur	62.7	45.7	70.9	82.9
Meghalaya	17.3	33.0	27.5	13.3
Mizoram	3.9	6.1	18.2	20.4
Nagaland	39.5	45.8	19.8	16.1
Odisha	55.6	42.9	84.5	61.6
Punjab	31.4	26.3	63.5	60.1
Rajasthan	25.7	25.8	71.4	91.4
Sikkim	30.8	23.9	41.8	46.0
Tamil Nadu	41.4	35.3	86.5	87.1
Tripura	23.1	23.7	20.1	15.5
Uttar Pradesh	47.8	52.0	59.1	43.8
Uttarakhand	57.3	31.7	28.8	34.4
West Bengal	53.0	45.0	38.2	47.5
All-India	39.1	37.1	67.3	69.0

Data Source: Unit level data on Debt and Investment Surveys, 59th (2003) and 70th (2013) rounds. National Sample Survey Organization, New Delhi

affects the probability of access to credit in a positive way, i.e. bigger the family, higher are the chances to borrow. Also, with increase in the age of family-head, the chances of family getting access to credit decrease. The male-headed households have been noted to have less access to credit than the female-headed households. The landholding pattern also affects the access to credit. With increase in landholding-size, the access to credit also increases. The access to credit with respect to social groups shows that access to credit of scheduled caste

households is more and of scheduled tribe households is less as compared to general category households. The access to credit of backward classes households is also higher as compared to the general category households.

The access to credit has been found to be influenced by the level of education. The household-heads not having even primary level education, have less access to credit. However, no difference has been observed in

Table 7. Determinants for access to credit in rural India

Dependent variable: Credit (Yes = 1, No = 0)		
Parameter	Coefficient	Standard error
Family size (No.)	0.0809***	(0.00202)
Age of household-head (years)	-0.00135***	(0.000319)
Gender of household-head (Male - 1, otherwise -0)	-0.233***	(0.0128)
Operated land (ha)	0.0859***	(0.00511)
Social group		
ST-1, otherwise-0	-0.215***	(0.0155)
SC-1, otherwise-0	0.0953***	(0.0133)
OBC-1, otherwise-0	0.0376***	(0.0110)
Education level		
Below primary -1, otherwise-0	-0.0333**	(0.0155)
Primary -1, otherwise-0	0.0164	(0.0180)
Secondary -1, otherwise-0	0.0214	(0.0151)
Higher secondary -1, otherwise-0	-0.00719	(0.0186)
Household type		
Agricultural labour-1, otherwise-0	-0.0263	(0.0170)
Other labour-1, otherwise-0	0.00830	(0.0174)
Self-employed in agri-1, otherwise-0	0.147***	(0.0117)
Self-employed in non-agri-1, otherwise-0	0.157***	(0.0181)
Constant	0.174***	(0.0366)
State fixed effect	Yes	
No. of observations	110,800	
LR chi ² (50)	7798.92	
Pseudo R ²	0.0586	
log likelihood	-62664.29	

Note: ***, ** and * indicate level of significance at 1 per cent, 5 per cent and 10 per cent, respectively.

having access to credit when a household-head was primary or secondary passed. Lastly, the type of household did not have a significant difference in access to credit. The households self-employed in agriculture or non-agriculture have higher probability of borrowing. The socio-demographic and household characteristics have depicted a mixed effect on rural households' access to credit.

Determinants for Access to Institutional Credit

Table 8 presents a clear picture of the parameters that affect the access to institutional credit in rural India.

The observation on family-size reveals that with increase in family-size, the access to institutional credit decreases. The age of family-head affects the access to institutional sources of credit positively because age denotes experience and better decision-making capacity. The male-headed households are seen to have less access to credit than the female-headed households. The increase in the landholding of a household also increases the access to institutional credit.

The study on relation between different social groups and the access to institutional credit has revealed that scheduled castes and other backward classes have

Table 8. Determinants of access to institutional credit

Dependent variable: Institutional credit (Yes 1 , otherwise 0)

Parameter	Coefficient	Standard error
Family size (no.)	-0.0467***	(0.00371)
Age of household-head (years)	0.0109***	(0.000239)
Gender of household-head (Male - 1, otherwise -0)	-0.191***	-0.0154
Operated land (ha)	0.0301***	(0.00326)
Social group		
ST-1, otherwise-0	0.114***	(0.0161)
SC-1, otherwise-0	-0.239***	(0.00985)
OBC-1, otherwise-0	-0.140***	(0.00750)
Education level		
Below primary -1, otherwise-0	-0.836***	(0.0115)
Primary -1, otherwise-0	-0.759***	(0.0127)
Secondary -1, otherwise-0	-0.582***	(0.0112)
Higher secondary -1, otherwise-0	-0.292***	(0.0138)
Household type		
Agricultural labour-1, otherwise-0	-0.243***	(0.0116)
Other labour-1, otherwise-0	-0.257***	(0.0116)
Self-employed in agri-1, otherwise-0	-0.0995***	(0.0112)
Self-employed in non-agri-1, otherwise-0	-0.166***	(0.0135)
IMR	-1.877***	(0.105)
Constant	1.742***	(0.0964)
State fixed effects	Yes	Yes
No. of observations	225111	
LR chi ² (51)	21913.93	
Pseudo R ²	0.0702	
log likelihood	-145047.17	

Note: ***, ** and * is indicate level of significant at 1 per cent, 5 per cent and 10 per cent level

lower access to institutional credit compared to the general category. On the other hand, scheduled tribes have higher access to institutional credit compared to the general category. The education level of an individual also affects the access to institutional credit. Table 8 reveals that when education level increases from primary to higher secondary, the access to institutional credit also increases, but is less than of a graduate degree holder. The relationship between the type of households and access to institutional credit reveals that all types of households have less access to

institutional credit than the households earning regular salaries. Further, the value of Mills ratio suggests that there are unobserved characteristics that influence both the decision to borrow (first regression) and access to institutional sources of credit (second regression).

Conclusions

The study has revealed that the structure of credit market in rural India has changed over time and the share of institutional credit in borrowing by rural

households has increased. The initiatives taken by the government seem to have paid off and the flow of institutional credit in rural areas has increased significantly in real terms. The indicators of financial inclusion have shown a sign of improvement though the disparity in disbursement of rural credit continues to persist across different states of the country and social groups. The presence of informal agencies in the disbursement of rural credit is still intact though they charge higher interest rates. The access of rural households to institutional credit is influenced by a number of socio-economic, institutional and policy factors. In our analysis, the education, caste affiliation, gender and assets ownership have been found to influence the access of rural households to institutional credit significantly.

The study has some important policy implications. The formal financial institutions should develop more flexible products and services to meet the income and expenditure pattern of different strata of rural households. These institutions should be more proactive in spreading financial literacy to overcome the hurdles posed by the level of education of the prospective borrowers. Further simplification of the procedures of lending is required. Land still remains the predominant form of collateral which constrains the poor rural household's access to credit from formal financial institutions. The recently launched *Jan Dhan Yojana* is expected to improve financial inclusion in the rural areas and such efforts need to be consolidated.

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Annexure Table 1
State-wise amount of institutional and non-institutional borrowings: 1992, 2003 and 2013

(₹ /ha at 1993-94 price)

States	Institutional sources			Non-Institutional sources			All sources		
	1992	2003	2013	1992	2003	2013	1992	2003	2013
Andhra Pradesh	504	2418	2827	1467	4030	3973	1970	6448	6801
Arunachal Pradesh	81	71	443	62	19	111	143	90	554
Assam	148	336	716	181	387	285	330	723	1001
Bihar	275	387	1362	261	1259	3348	536	1646	4710
Chhattisgarh	222	495	774	76	369	424	299	864	1199
Gujarat	582	1976	1551	197	633	829	780	2608	2380
Haryana	578	4308	2552	519	2666	1629	1097	6974	4181
Himachal Pradesh	1121	2624	9167	738	1967	1598	1859	4591	10765
Jammu & Kashmir	296	1097	3008	396	229	1139	692	1326	4147
Jharkhand	203	1609	692	12	160	850	215	1769	1542
Karnataka	465	1817	2884	276	1090	2493	740	2907	5378
Kerala	4819	29270	60500	1073	6587	15921	5893	35857	76421
Madhya Pradesh	326	1035	1160	238	627	712	564	1662	1872
Maharashtra	721	1833	2066	215	513	823	936	2347	2890
Manipur	119	111	278	105	1316	549	224	1426	827
Meghalaya	45	70	316	4	114	81	49	185	397
Mizoram	98	282	676	46	52	59	144	334	734
Nagaland	164	911	360	61	367	191	225	1278	551
Odisha	209	1236	1600	89	548	941	298	1784	2542
Punjab	1398	5478	5414	961	4701	3304	2359	10179	8718
Rajasthan	166	483	1445	383	765	1692	550	1247	3137
Sikkim	390	1605	6064	6	512	245	395	2117	6309
Tamil Nadu	2388	6988	10350	1469	7998	6289	3857	14987	16638
Tripura	895	2449	1410	170	859	880	1066	3308	2290
Uttar Pradesh	395	1164	2313	325	1007	1501	721	2171	3814
Uttarakhand	557	709	7105	1367	606	1776	1924	1315	8881
West Bengal	641	1494	3285	514	1578	3088	1155	3072	6373
All-India	545	1916	2926	435	1440	1924	980	3356	4850
CV (%)	145.1	206.2	236.1	108.2	131.1	152	118.1	168.2	208.4

Data Source: Unit level data on Debt and Investment Surveys, 48th (1992), 59th (2003) and 70th (2013) rounds. National Sample Survey Organization, New Delhi

Annexure Table 2**State-wise amount of institutional and non-institutional borrowings: 1992, 2003 and 2013**

(₹ /capita at 1993-94 price)

States	Institutional sources			Non-Institutional sources			All sources		
	1992	2003	2013	1992	2003	2013	1992	2003	2013
Andhra Pradesh	87	290	497	253	483	698	340	774	1195
Arunachal Pradesh	14	17	90	10	5	23	24	21	113
Assam	16	33	72	20	38	29	36	72	101
Bihar	25	26	62	24	83	153	49	109	216
Chhattisgarh	64	102	126	22	76	69	86	178	195
Gujarat	145	384	315	49	123	168	194	507	483
Haryana	183	645	455	164	399	291	347	1044	746
Himachal Pradesh	124	258	730	82	193	127	206	451	857
Jammu & Kashmir	44	130	229	58	27	87	102	157	315
Jharkhand	30	147	51	2	15	63	32	162	114
Karnataka	112	341	510	66	205	441	178	545	952
Kerala	278	1201	2413	62	270	635	339	1471	3048
Madhya Pradesh	104	236	252	76	143	155	179	379	406
Maharashtra	192	387	435	57	108	173	249	496	608
Manipur	13	11	30	12	126	59	25	137	88
Meghalaya	6	10	35	1	17	9	7	27	44
Mizoram	16	51	110	7	9	10	23	60	120
Nagaland	25	84	47	9	34	25	35	119	72
Odisha	30	137	148	13	61	87	43	198	235
Punjab	248	796	838	170	683	512	419	1478	1350
Rajasthan	69	142	372	159	225	436	228	367	808
Sikkim	76	156	590	1	50	24	78	206	614
Tamil Nadu	226	526	776	139	602	472	365	1127	1248
Tripura	39	91	64	7	32	40	46	123	104
Uttar Pradesh	56	121	191	46	104	124	103	225	315
Uttarakhand	49	57	441	121	48	110	171	105	551
West Bengal	54	83	139	43	88	131	96	171	269
All-India	98	254	363	79	191	239	177	445	602
CV (%)	88.4	113.5	125.8	102.7	112.9	103.1	82.6	104.4	110

Data Source: Unit level data on Debt and Investment Surveys, 48th (1992), 59th (2003) and 70th (2013) rounds. National Sample Survey Organization, New Delhi

Annexure Table 3. Indicators for participation of weaker sections in institutional rural credit

State	Ratio of SC&STs' share in institutional credit and population		Ratio of OBCs' shares in institutional credit and population	
	2003	2013	2003	2013
Andhra Pradesh	0.54	0.54	0.88	0.96
Arunachal Pradesh	1.15	1.06	0.00	0.00
Assam	1.09	1.06	0.74	1.10
Bihar	0.47	0.27	0.74	0.92
Chhattisgarh	0.70	0.45	1.28	0.96
Gujarat	0.45	0.53	0.79	0.76
Haryana	0.37	0.29	0.94	0.47
Himachal Pradesh	0.72	0.65	1.11	0.55
Jammu & Kashmir	0.78	0.67	0.08	0.41
Jharkhand	0.43	0.43	1.44	1.46
Karnataka	0.32	0.64	0.65	1.06
Kerala	0.32	1.15	0.92	0.91
Madhya Pradesh	0.46	0.33	1.12	1.42
Maharashtra	0.44	0.57	0.91	1.05
Manipur	0.75	0.72	1.25	1.28
Meghalaya	1.01	0.89	3.00	8.50
Mizoram	1.01	1.02	0.00	0.00
Nagaland	1.05	1.01	0.00	0.00
Odisha	0.50	0.56	1.01	0.95
Punjab	0.19	0.16	0.37	1.26
Rajasthan	0.75	0.72	1.25	1.16
Sikkim	1.25	1.51	0.88	0.43
Tamil Nadu	0.34	0.45	1.22	1.24
Tripura	0.98	0.84	1.28	1.57
Uttar Pradesh	0.65	0.44	0.85	1.05
Uttarakhand	1.06	0.27	2.30	0.98
West Bengal	0.77	0.70	1.13	1.20
India	0.44	0.49	0.98	1.13

Annexure Table 4. Socio-economic status of the rural households

Parameter	Mean	Standard deviation
Family size (No.)	4.82	2.33
Age of household-head (years)	47.55	13.56
Gender of household-head (Male 1, female 0)	0.88	0.32
Operated land (ha)	0.68	1.36
Caste (ST-1, otherwise-0)	0.19	0.39
Caste (SC-1, otherwise-0)	0.18	0.39
Caste (OBC-1, otherwise-0)	0.39	0.49
Caste (Others -1, otherwise-0)	0.24	0.43
Education (Below primary -1, otherwise-0)	0.52	0.50
Education (Primary -1, otherwise-0)	0.13	0.33
Education (Secondary -1, otherwise-0)	0.26	0.44
Education (Higher secondary -1, otherwise-0)	0.05	0.23
Education (Graduate & above -1, otherwise-0)	0.04	0.19
Household type (Agricultural labour-1, otherwise-0)	0.13	0.33
Household type (Other labour-1, otherwise-0)	0.12	0.33
Household type (Self-employed in agri-1, otherwise-0)	0.48	0.50
Household type (Self-employed in non-agri-1, otherwise-0)	0.11	0.31
Household type (Other-1, otherwise-0)	0.16	0.37