

# India's rural financial system : does it support pro-poor innovation?

## Citation for published version (APA):

Sonne, L. (2010). *India's rural financial system : does it support pro-poor innovation?* UNU-MERIT, Maastricht Economic and Social Research and Training Centre on Innovation and Technology. UNU-MERIT Working Papers No. 039

## Document status and date:

Published: 01/01/2010

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.umlib.nl/taverne-license](http://www.umlib.nl/taverne-license)

## Take down policy

If you believe that this document breaches copyright please contact us at:

[repository@maastrichtuniversity.nl](mailto:repository@maastrichtuniversity.nl)

providing details and we will investigate your claim.



**UNITED NATIONS  
UNIVERSITY**

**UNU-MERIT**

**Working Paper Series**

**#2010-039**

**India's Rural Financial System: Does it Support Pro-Poor  
Innovation?**

**Lina Sonne**



***India's Rural Financial System:  
Does it Support Pro-Poor Innovation?***

Lina Sonne

UNU-MERIT

***Abstract***

*From the perspective of poverty alleviation, socially relevant, or pro-poor, rural innovation is of particular interest in a country like India since it is in rural areas that most of the poor live. Pro-poor innovation in rural areas is more likely to occur through small-scale ventures and entrepreneurs than industrial research and development. The Indian banking system does not support such rural pro-poor entrepreneur-based innovation efficiently. Instead a pioneering alternative financing sector has been emerging recently. There are three broad categories of organisations in this sector: grassroots innovators and incubators, micro venture capital firms, and small-scale financiers. This paper considers why the core of India's financial system, its banking sector, does not support rural entrepreneur-based innovation. It ends by discussing the emerging alternative financing sector at the periphery which, on the other hand, appears able to do so.*

**Keywords:** Pro-poor finance, finance innovation, finance entrepreneurship, financial innovation, rural finance, India, India's financial system.

**JEL Codes:** G21, O16, O31, R51

I am grateful to Robin Cowan for helpful suggestions and comments. I am also thankful to the participants of seminars given at IIT-Bombay and IGIDR, Mumbai, India that commented on a previous version of this paper. Financial and research support provided by the Learning INnovation Knowledge (LINK) network, Hyderabad, India is gratefully acknowledged.

\* UNU-MERIT, Keizer Karelplein 19, 6211 TC, Maastricht, The Netherlands, email: [sonne@merit.unu.edu](mailto:sonne@merit.unu.edu)

**UNU-MERIT Working Papers**  
**ISSN 1871-9872**

**Maastricht Economic and social Research and training centre on Innovation and Technology,  
UNU-MERIT**

*UNU-MERIT Working Papers intend to disseminate preliminary results of research carried out at the Centre to stimulate discussion on the issues raised.*

## **1. Introduction**

It is well established that innovation spurs economic growth and is central to development. The Millennium Development Goals' (MDG) Science Technology & Innovation (STI) Task Force of concluded that "science, technology and innovation underpin every one of the goals. It is inconceivable that gains can be made in health and environmental concerns without a focused science, technology and innovation policy"(Juma and Yee-Cheong, 2005:16). Earlier, the Human Development Report of 2001 (UNDP, 2001) had highlighted how new technologies affect developing countries whilst the 1999 World Development Report (WDR) emphasised the knowledge gap between rich and poor countries (WB, 1999). Of particular interest, in a country like India, is rural innovation (Edquist, 1997, Freeman, 1987, Hall et al., 2003, Lundvall, 1992, Spielman, 2005)<sup>1</sup>, since it is in rural areas that most of the poor live (WB, 2008).<sup>2</sup> Pro-poor innovation in rural areas is more likely to occur through small-scale ventures and entrepreneurs than industrial research and development. This paper therefore takes the view that pro-poor entrepreneur-based innovation (PEBI) is essential to the continuous development of, and poverty alleviation in, rural areas by creating employment, increasing income and providing improved goods and services. Little has been written on how such innovation should be financed<sup>3</sup>. Using the case of India, this paper focuses on the ability of India's financial system to support rural PEBI.

India has a relatively deep financial system. However, despite an impressive infrastructure including a huge bank branch network, rural areas suffer from a lack of financial services and most poor do not have access to finance. Decades of "social banking" have failed to even out the distribution of financial services and today there is a noticeable bias towards urban areas. Combined with reduced small-scale credit advances and accounts in rural areas, this would suggest that there is a financing gap and formal credit has failed to support socially relevant rural innovation and entrepreneurship

This paper, finds that in place of bank finance, an alternative sector has been emerging. There are three broad, categories: firstly, those supporting grassroots innovation either as incubators for rural entrepreneurs or inventors, or by themselves innovating at the local level; secondly there are small-scale financial organisations similar to microfinance but with expanded services that support rural projects and entrepreneurs; thirdly there are micro venture capital funds that support ventures providing improved services, products or employment for the rural poor.

The next section will explore how India compares with other emerging economies, before considering how the financial system has evolved. Thereafter, the paper will discuss disparities between rural and urban banking services. Finally, the paper studies the alternative financing sector currently emerging before highlighting some of its attributes.

---

<sup>1</sup> Here innovation is defined as the continuous process of upgrading using new knowledge or the new combination of existing knowledge, that is new to the local area (Hall, 2003; Spielman, 2005). The innovation process thus emerges from a system of actors whose interactions, behaviour and patterns of learning are conditioned by institutions (Freeman, 1987; Lundvall, 1992; Edquist, 1997).

<sup>2</sup> As noted in the WDR (2008) which is focussed on rural and agricultural development through innovation.

<sup>3</sup> Much has of course been written about rural finance in general (Adams, 2004; Von Pischke, 1991; Zeller, 2003) and recently about micro finance in particular (Robinson, 2001; Helms, 2006).

## 2. Indian Banking: an International Comparison

The soundness and depth of a country's financial system has a clear impact on economic growth and poverty alleviation. In fact, "deep and efficient financial markets promote investment and total factor productivity through growth through their role in selecting and monitoring projects; diversifying risks; reducing asymmetries of information; improving resource allocation; and encouraging the optimization of scale, time frame and technology" (Kumar et al., 2005:2). Although the size of India's financial system in absolute terms does not impress next to other large countries such as China or Brazil (see table below), it compares well with other emerging economies. For instance, India's financial assets in nominal terms amount to USD 430 billion which is more than Malaysia at USD331 billion and Mexico at USD 386 billion. Nevertheless, as figures are from 2000, the total assets of India's financial system are likely to have improved relative to other countries since then. Taking into account the low GDP per capita, India's financial system appears deep compared to other emerging economies. Whilst in Mexico the total financial assets amount to 68% of GDP, in India the equivalent figure is 93%. The Indian equity market stands up well in comparison with other emerging economies both in terms of market capitalization and value traded relative to GDP.

**Table 1 Depth of financial markets: an international comparison (year 2000)**

	GDP per capita 1999 (USD)	Total Financial Assets (USD m)	Equity Mkt Cap /GDP (%)	Equities Value Traded/ GDP (%)	Total Financial Assets / GDP (%)	Private Credit/ GDP (%)
Brazil	4350	780739	39%	17.0%	139.7%	50.9%
Mexico	4440	386366	24.7%	7.9%	68.3%	32.3%
India	440	437293	34.2%	104.7%	92.8%	36.4%
China	780	2153717	42.5%	66.8%	199.4%	128.9%
Malaysia	3390	331302	146.5%	65.5%	370.9%	144.8%
Korea	8490	1091499	64.7%	233.1%	267.0%	140.3%

(Source: Kumar, 2005)

Equally, India can count an impressive number of formal financial institutions- both in urban and rural areas. The financial system in India is bank heavy and as such banks play a particularly important role in providing finance in the economy. Apart from private and state owned banks there are cooperative banks which are particularly important in rural areas, a huge post office network providing savings facilities, as well non bank financial institutions such as savings societies and credit societies like primary agricultural credit societies (PACS) that have a vast network in rural areas (Basu et al., 2005).<sup>4</sup> Here too, India compares well with other countries as shown in the table below. For instance, whilst the average bank branch in India covers 44 km<sup>2</sup>, in the US a branch would cover an area of 177 km<sup>2</sup>, in Mexico 236 km<sup>2</sup> and in Brazil a vast 470 km<sup>2</sup>. Even in terms of population per branch,

<sup>4</sup> Scheduled Commercial Banks include private and public banks as well as the rural regional banks (RRB). Cooperative banks operate at the state or district level whilst PACS are local. According to Basu and Srivastava (2005): 32000 RRB and SCBs, 14000 Cooperative Banks, 98000 PACS & 154000 post office branches

India does of course, with its huge number of citizens, cover larger amount of people per branch than other countries.

However, if cooperative bank branches are taken into account the population per branch stands at 12800 (according to Basu and Srivastava, 2005) which puts India on a par with Indonesia and Mexico. This would suggest that India's deep financial system is complimented by a far reaching and well developed financial infrastructure. It is worth noting that the Indian financial system is influenced by a very high level of Government ownership of banks. Government owned bank assets amount to a staggering 80% of total as compared with 55% in Brazil, 43% in Indonesia, 25% in Mexico and only 15% in the Philippines (Basu, 2006).

**Table 2 Rural branch networks: an international comparison**

	Area / Branch (km <sup>2</sup> )	Population/ Branch
Japan	6	1959
France	22	2331
India	44	14888
Indonesia	110	12547
US	117	3568
Mexico	236	11924
Brazil	470	9331
Chile	535	10727
(Source: Kumar, 2005)		

Despite such promising figures, a closer inspection reveals that a large share of the population still has no access to formal finance.

That formal credit is more difficult to obtain in rural areas is confirmed by the National Sample Survey (NSS) round in 2003 which indicates that whilst 75% of households access formal credit in urban areas, only 57% of rural households do likewise. Instead, moneylenders still play a significant role, providing about 30% of credit in rural areas. Furthermore, the bundle of services provided by rural bank branches tends to be much inferior to urban bank branches (Basu, 2006).

**Table 3 Origin of rural and urban credit**

Credit Agency	Rural	Urban
Government	2.3%	7.6%
Co-operatives	27.3%	20.5%
Commercial Banks	24.5%	29.7%
Insurance	0.3%	3.5%
Other Financial Institution	2.0%	11.0%
Other	0.7%	2.9%
All institutional agencies:	57.1%	75.2%
Landlord	1.0%	0.2%
Agricultural Moneylender	10.0%	0.9%
Professional Moneylender	19.6%	13.2%
Traders	2.6%	1.0%
Friends and Relatives	7.1%	7.6%
Others	2.6%	1.9%
All informal agencies:	42.9%	24.8%
(Source: (NSSO, 2005)		

That more than 40% of the rural population should not have access to formal finance in a country that has as deep and wide a system as India does is related to how the financial system has evolved in India.

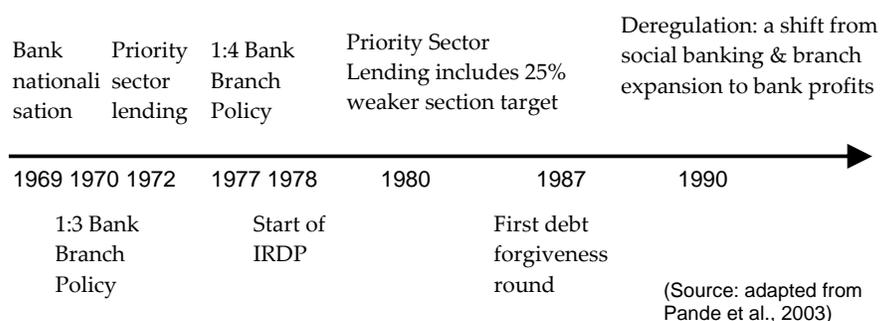
Together with the Reserve Bank of India (RBI) the Government policy set the strategy for India's banking system and the financial system has evolved through various phases since independence. Immediately after independence the vast majority of India's rural population had no access to formal finance, instead moneylenders including landowners and traders would provide credit at usurious interest rates, trapping the poor in a never ending debt cycle (Shah et al., 2007).<sup>5</sup> The 1954 report on the 1951 all India Rural Credit Survey (AIRCS) concluded that the poor still had very little access to formal credit. In fact less than 9% of rural credit was provided by the formal financial system, less than 1% of rural credit was provided by commercial banks, 70% of credit came from moneylenders whose average annual rate of interest was above 20%, and there was a strong positive correlation between land ownership and access to credit (Burgess and Pande, 2003, Burgess et al., 2004, Shah et al., 2007). The 1954 AIRCS report therefore recommended that the Government and the Reserve Bank of India (RBI) policy should make banks provide credit for the rural population in order to allow them to adopt new technologies and to reduce importance of moneylenders.

---

<sup>5</sup> There had been attempts at addressing the issue already through legislative intervention against usurious rates and for the provision of low interest loans which had little impact. The colonial administration had set out to copy the, in Europe successful, cooperative credit movement in India with the Cooperative Credit Societies Act in 1904 and the Cooperative Societies Act in 1912. However, due to the pervasive caste system, and the strong socio-economic divisions in society that followed, the cooperatives never fully worked. Further Government Acts dealing with usurious rates and indebtedness made little headway (Shah et al, 2007; Burgess and Pande, 2003).

### 3. Social Banking

In response to the lack of formal finance available to the poor, the Government and RBI pursued a so-called “social banking” strategy of aggressively pushing banks to provide financial infrastructure and services to rural areas, in particular to the most disadvantaged groups. This was done: 1) by expanding the number of financial intermediaries in rural areas, 2) through directed lending and 3) through subsidized credit. To oversee the expansion of rural finance, the Government set up the National Bank for Agriculture and Rural Development (NABARD), whilst it created the State Bank of India (SBI) in 1955 from the nationalised Imperial Bank of India to expand the branch network and increase agricultural lending.



**Figure 1 Timeline of social banking**

Despite such measures, commercial lending in rural areas remained very limited during the 50’s and 60’s. Commercial bank lending amounted to 2.4% of total and most of that small lending still went to the relatively better off such as plantation owners or agro-processing units (Shah et al., 2007). By 1961, only 50% of towns and none of the villages had a commercial bank. With such abysmal results, the Government went ahead with a nationalisation drive of 14 commercial banks in 1969.

The RBI restructured the banking system considerably closing down a larger number of banks and subsequently expanding the branch network with a bias towards rural and un-served areas. By 1970, the RBI demanded that for each branch opened in an area already served by banks, the bank needed to open three branches in un-served areas and six years later that ratio had increased to four branches in un-served areas for one new in an existing area. To further increase rural finance, the RBI created the Rural Regional Banks (RRB) in 1976. These were expected to provide credit and other financial services to small scale entrepreneurs, artisans and farmers. As a result the number of branches expanded rapidly from 1443 RRB’s to 35000 by 1990, towns or villages with a bank rose from 1000 to 25000 (Shah et al., 2007) and rural credit was surging.

Two further reasons for the sharp increase in rural credit were NABARD’s refinance scheme for commercial, state and rural banks to encourage rural lending and saving, as well as priority sector lending. In the early 1970’s the RBI introduced the policy of prioritising lending to certain parts of society and by 1975 the target was set at 33% (to be achieved 1980) which was extended to 40% of total lending in 1979. In 1980 the policy was further enforced by demands that 16% (up to 19% by 1985) had to be lent to the agriculture sector whilst

another 10% were earmarked for the “weaker sections”, i.e. the scheduled castes and tribals<sup>6</sup> (Burgess and Pande, 2003). The RBI introduced fixed interest rate ceilings on credit for prioritised borrower and the weaker section had a maximum interest rate ceiling of 4%, whilst the RRB’s and commercial banks charged a flat rate of 9% on other priority sector loans.

Alongside the policy interventions in bank lending as stipulated by the RBI, the Government ran state funded large scale development programmes such as the Integrated Rural Development Programme (IRDP). The IRDP was introduced in 1978 to offer cheap credit for the rural poor to alleviate poverty by making available new sorts of income generation through credit provision. It was rolled out fully in India two years later. By 1987, four million households had take part in the programme (Shah et al., 2007) but millions of poor defaulted which resulted in the first of several official debt forgiveness rounds by the Government, in 1989. Not only had it made defaulters out of millions of poor who therefore would no longer have access to the formal credit system, but the IRDP was responsible for 40% of total losses of rural banks by 1988 (RBI, 1995 in Shah et al., 2007). By the end of the 1980’s there was little credit discipline left (with only half of loans outstanding being recovered) and corruption and political interference had become the norm.

The IRDP had put further pressure on the banking system which was already straining under interest rate ceilings and priority sector lending requirements and banks were crumbling under the huge debts that they were incurring.

In 1991 the Government of India set up a review of the credit system under the Committee on the Financial System, in 1991 (called the Narasimkam committee after its chairman). The committee recommended liberalisation of the economy and that directed credit should be phased out (Shah et al., 2007). It was clear that the banks were simply not profitable due to the terms they were lending at. This was a shift in economic policy from centralised economic decision-making to market orientation and higher private involvement and initiative as rural financial institutions now needed to become commercially sound, cost-effective and more professional (Satish, 2004). The financial liberalisation of the 1990’s thus saw the end of social banking and bank expansion ceased in, as yet, un-banked areas.

#### ***4. India’s Formal Financial System Today***

Today, rural India suffers from a more serious lack of finance than urban India (Bose, 2004, Shah et al., 2007, Misra, 2008, Ramesha, 2003).<sup>7</sup> Using data on scheduled commercial banks (SCB) and rural regional banks (RRB) this section will examine the disparity between rural and urban banking. Since SCB’s do not publish separate data on the performance of their rural branches, this analysis rests on the assumption, made in Basu (2006) that RRB’s can be used as a proxy for rural branches of SCB’s. Furthermore, cooperative banks, although forming a large part of the rural branch network, are not included in the analysis due to lack of data. Again cooperative banks are assumed to be less profitable and provide fewer services than SCB’s (Basu, 2006) so for the purpose of depicting the difference in bank

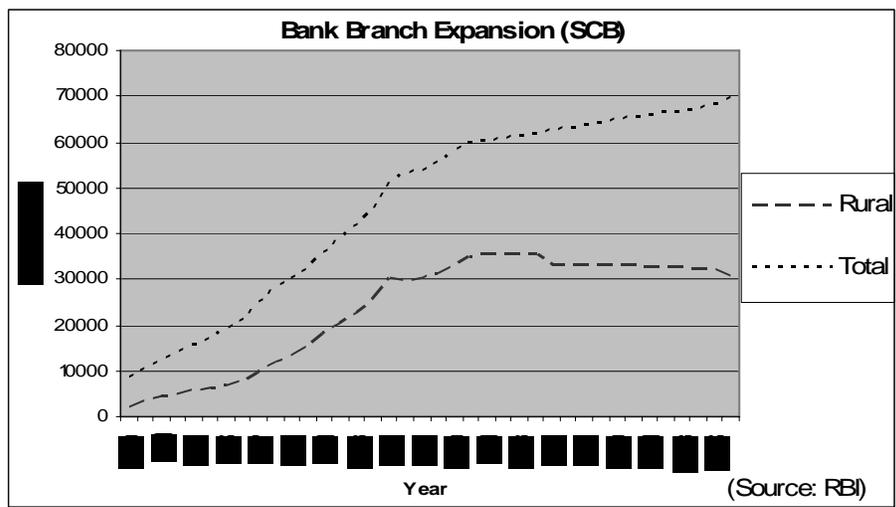
---

<sup>6</sup> Scheduled castes are made up of lower castes and those that were “casteless” and formerly known as untouchables, whilst tribals, or adivasis do not belong to the caste system.

<sup>7</sup> For a review of rural finance in India see Shah et al. (2007) and Basu (2006); for RRB’s see Bose (2004) and Misra (2008); and for cooperative banks Ramesha (2003).

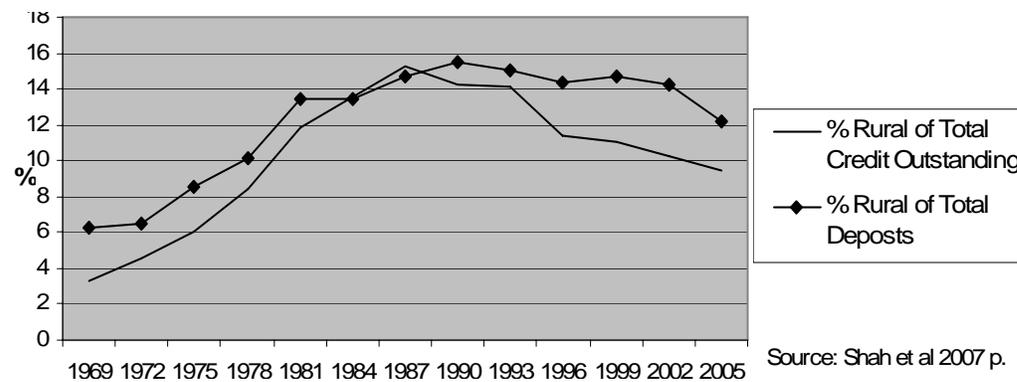
performance and credit availability between rural and urban areas, the omission does not have a major impact on the analysis.

That India's bank branches grew exponentially due to the earlier bank expansion programme is clear from the graph below. It highlights the focus on rural bank branches as part of the Government's effort to expand banking into rural un-banked areas. However, since the 1990's that rural bank expansion ceased, even reducing the number of branches in rural areas as some banks were allowed to close loss-making branches. There is now a clear difference in bank expansion in rural and urban areas with banks much more likely to open new branches in towns and cities. It is particularly evident that since the end of social banking policies, rural branches, as a percentage of total, has decreased quite rapidly.



**Figure 2 Branch expansion of scheduled commercial banks**

Furthermore, the growth of rural credit and deposit out of total credit and deposit has decreased since 1990, as depicted below. What is most striking is the sharp decrease in rural credit as a percentage of total credit. In addition it is noteworthy that rural areas used to have a higher rate of credit out of total than deposits but since 1990 a shift has taken place and deposits as a percentage of total have been higher of the two.



**Figure 3 Share of rural credit and deposit of total**

In other words, the credit ratio has decreased more rapidly than the deposit ratio.

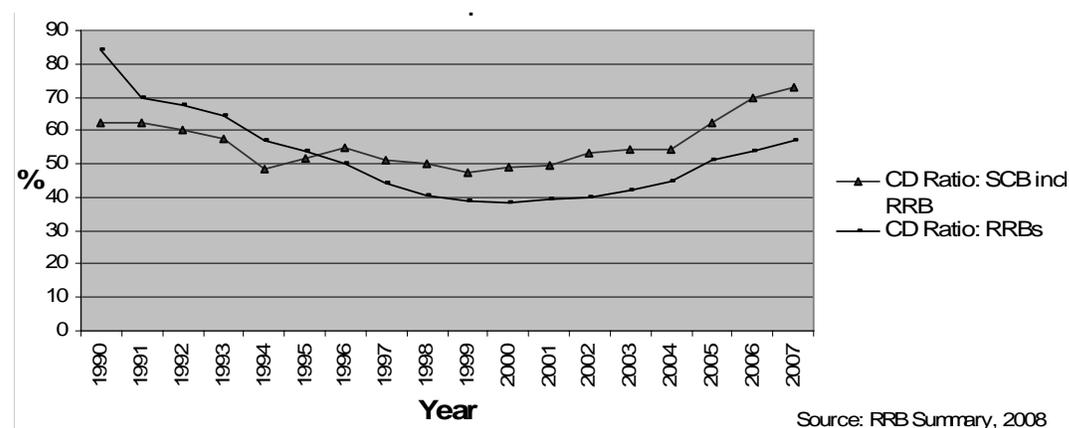
**Table 4 Scheduled commercial bank data on credit and deposits**

	Rural of all SCB branches (%)	Rural of Total Credit Outstanding (%)	Rural of Total Deposits (%)
1990	58.20%	14.20%	15.50%
1993	56.30%	14.10%	15.00%
1996	51.20%	11.40%	14.40%
1999	49.30%	11.00%	14.70%
2002	47.80%	10.20%	14.20%
2005	46.90%	9.50%	12.20%

(Sources: RBI, 2008, Shah et al., 2007)

Furthermore, it is clear from the table above that in 1990 deposits as a percentage of total, roughly equalled credit in rural areas with rural of total credit outstanding at 14.2% and rural deposits of total deposits at 15.5%. Whilst by 2005 there were considerably more deposits made of total at 12.2% than credit, at 9.5%, as a percentage of total in rural areas. In other words, there is not only a lack of expansion of rural branches and rural credit but there has in addition been a change in the flow of rural deposit and credit from a point where deposits were flowing to rural credit to a point where much of the deposits appear to be flowing out of rural areas.

This bleak picture is further enforced by the credit deposit ratio which is an indication of the amount deposit used for credit purposes. A high CD ratio can indicate a certain level of stability of the source of funding for banks. In addition it could indicate that much of the bank's funds stemming from deposits have been used for the purpose of credit advancement as opposed to other banking business.



**Figure 4 Credit/deposit ratios of scheduled commercial banks and rural regional banks**

India has in general seen relatively high CD ratios, although it did decrease in the 1990's. Furthermore, despite an improved CD ratio, it is far lower in rural areas, considering the RRB's CD ratio of below 60% compared to SCB's corresponding ratio which is above 70%. In fact the gap appears to be widening between the two ratios despite recent measures.

Thus, to recapitulate, there has been a sharp decrease in rural credits as a percentage of the total. This credit out of total has fallen more rapidly than rural deposits out of total since after 1990 the percentage of rural deposits of total is larger than credit of total.

Furthermore, this change in flow of rural credits and deposits has moved from a situation in 1990 where rural deposit and credit percentages out of total were roughly equal to today where the fall in rural credit of total to 9.5% is much sharper than deposits of total which today stand at 12.2%. This is further confirmed by CD ratios that are 10% lower in rural areas than in urban areas, suggesting that rural deposits are flowing out of rural areas into non-rural credit. There are three explanations for this changing flow of funds. Firstly, after the green revolution there was a general shift in development focus from rural areas and small-holder agriculture to urban based manufacturing by the government in India as well as elsewhere. Trade and tax policies effectively discriminated against agriculture as due to an urban bias (Lipton, 1977, Lipton and Eastwood, 2000)<sup>8</sup> whilst the expectation that the withdrawal of state-originated credit would be offset by an influx of private funds did not materialise (WB, 1986). Secondly, the end of social banking and the new emphasis on business profits made banks look to alternative revenue sources. Banks found a substitute to advancing funds for credit as a profitable business: investment. With few incentives to take on lending, banks, including the RRBs, began investing large amounts in Government bonds in order to meet profit targets. This was also how the relatively high and stable levels of credit flow to priority sector lending were achieved. However, since a recent injection of funds in the rural credit system and a curb on such investments, the CD ratios have increased again in the last few years. Finally, the low CD ratio until recently is in part due to the lacklustre performance by banks' lending business, as evidenced by non-performing assets (NPAs) of rural regional banks in comparison with SCBs. Again, SCB's do not provide separate NPA data on their rural branches, but assuming that RRB's are a proxy for rural branches of SCBs it can be seen that despite a major reduction of NPA's over time, the percentage of NPA's in rural banks is substantially higher than in urban banks.

**Table 5 Gross non-performing assets of total assets (%) of SCBs and RRBs**

	SCBs	RRBs
1996	7.0%	34.0%
2001	4.9%	18.3%
2004	3.3%	12.6%
2007	1.5%	6.5%
(Sources: NABARD, 2008, RBI, 2008)		

What this discussion suggests is that rural branches and banks appear to be doing significantly worse than their urban counterparts. They are in a worse shape in terms of unprofitability and undercapitalization, whilst NPA's constitute a much larger share of total

---

<sup>8</sup> Lipton (1997) argued that there was a clear urban bias that placed rural areas at a distinct disadvantage. The two gaps that already existed in income and output as well as efficiency of capital were widening. This was due to a cycle that started with low capital availability which caused low productivity in rural areas as farmers were unable to invest in improved production tools and techniques. This in turn resulted in low rural income which in turn lowered the capacity to save in rural areas. Of course low savings resulted in low capital availability. This gap was further widened by urban biased policies that suppressed rural prices in order to keep prices low in urban areas. The end effect, according to Lipton (1997), was that resources were transferred from rural to urban areas, and from the poor to the relatively less poor. More recently this rural/urban price differences have reduced, however the urban bias remains in the significantly larger public investments in goods, services and infrastructure in urban areas (Lipton and Eastwood, 2000).

rural bank assets than urban which suggests that many loans are unprofitable and should perhaps not have been sanctioned. Basu (2006) shows that in rural areas, up to 30% of rural regional banks are unprofitable, whilst a staggering 65% are undercapitalised. Scheduled commercial banks do not provide separate statistics for their rural branches, but if, as Basu (2006) suggests, it is true that RRBs is a close proxy for the state of rural bank branches or SCB's, these are high numbers.

Whilst rural branch expansion is much slower with many branches having closed or merged, those that operate tend to offer inferior services and technology compared to urban branches. Furthermore, the credit flow to small-scale borrowers from RRB's has been decreasing since the mid 1990's with credit falling 6.7% between 1996 and 2003.<sup>9</sup> This is particularly noteworthy for two reasons: firstly, the RRB's have, historically, had as their special remit to serve the rural poor, a majority of who borrowed up to Rs25000, and secondly, the decline in small-scale credit has occurred despite a re-classification of "small loans" from below Rs25000, up to Rs200,000. This change can be traced to policy changes in the 1990's when RRB's, were able to participate in other bank business outside of the priority sector lending which had constituted its main target group. The RRB's were allowed to spend up to 60% of their credit on non target groups and increased the number of profitable banks from 24 out of 196 in 1990 to 164 of 196 in 2004 (Bose, 2004). The profitability was mainly due to non-credit activities and by 2003 interest from loan advances amounted to only 37% of total income despite a wider range of clients than previously, compared to interest on investment which amounted to 52% of total income. It was not only the RRB's policy of investing in their target groups under priority sector lending that got diluted to include richer and more profitable clients as well as investment activities. The priority sector lending policy itself was radically widened. Rather than a narrow focus on agriculture, small non farm sector business, artisans and weaker sections, it was broadened to include investments in venture capital and larger investments in small-scale industries classified as those whose investment in plant and machinery does not exceed Rs10,000,000.<sup>10</sup> The result was not simply a flow of credit away from rural to semi-urban or urban areas, but also a flow of credit away from the poor and the micro and small-scale entrepreneurs. That finance poses a real problem for entrepreneurs is confirmed by the 2006 World Bank Enterprise survey which found that finance was most likely to be a constraint among Indian enterprises employing 10 staff or less and /or operating in traditional sectors (WB, 2006). Again this would be particularly likely to be the case in rural areas. If the average small scale firm faces such constraints, it is reasonable to assume after the assessment of rural banking, that rural entrepreneurs, and crucially rural innovation, face much tougher financial constraints.

To suggest that banks (and bank managers) are simply unwilling to provide finance to innovative entrepreneurs in rural areas is too simple an answer. Firstly, some of this inability of banks to support new ventures can be explained as inertia and risk aversion. Banerjee, Cole and Duflo (2005), believe that there is considerable inertia in bank lending and use quantitative analysis to show that this is likely due to incentive issues having its roots in the perception that lending to growth enterprises and other unconventional or risky customers would increase the likelihood of being investigated for bad loans, if the client defaults, as well as laziness and risk aversion. In fact, Nair (2006) finds that there is a serious lack of compliance with priority sector lending requirements and that this is likely due to the

---

<sup>9</sup> Bose, 2004, quoting RBI data.

<sup>10</sup> RBI: Priority Sector Lending guidelines

low threat that non-compliance fines pose.<sup>11</sup> Secondly, the banking system is constructed in such a way that new and innovative initiatives at the local level are de facto discouraged because of the bureaucratic, hierarchical and inflexible nature of the system. This results in a risk averse and self protecting system where financing for unconventional or atypical investments or clients like the rural poor is difficult to obtain. Thirdly, the focus in recent years on profit maximisation by banks together with a widening of priority sector lending definitions have resulted in banks moving away from the prioritised sections to those that are “safer” and more profitable. Finally, the poor as clients are considered risky by the banks because of the risk of default of rural households who live on the margin. However, microfinance has made substantial progress in proving that the poor are indeed bank worthy clients (Yunus, 1999).

Investments in small innovative firms and entrepreneurs are considered risky because there is an information gap. This lack of expertise and knowledge on the part of the bank results in the banks being unable to adequately assess such potential clients. In addition, the amounts required are often small which, according to the banks, increases the transaction costs in relation to the loan and potential bank profit. There is thus a need to narrow this information gap by obtaining information that such arm’s length finance as banking cannot do as well as decrease the transaction costs. The next section will go on to look at alternatives to rural bank finance.

### ***5. An Alternative Financial Sector<sup>12</sup>***

Outside of the bank system, the Government could be expected to provide rural finance schemes, where gaps exist and this is also the case in India. There are several schemes especially focussed on agriculture-related innovation such as the Ministry of Rural Development’s Council for Advancement of People’s Actions and Rural technology (CAPART) which runs an ‘Advancement of Rural Technologies (ARTS) scheme. There are also schemes for rural poor women such as the ‘Women in Science and Technology’ scheme by the Department for Science and Technology that provide subsidised credit (without additional input or assistance) for e.g. machinery, fertilizers or seeds. However, schemes rarely support entrepreneurs outside of the microfinance remit which, as has already been noted, is generally not conducive to enterprise growth or innovation. In fact, in recent years, microfinance and in particular micro-credit based SHG-bank-linkage models have become immensely popular with government as well as financial apex institutions such as NABARD and SIDBI. The result has been that most discussions surrounding rural and pro-poor entrepreneurship and innovation rarely move beyond microfinance. At the other end of the spectrum, there are Government schemes that provide finance and support for innovation and entrepreneurship. However, generally the focus is on high-technology innovation and larger scale projects than the entrepreneur-based innovative activities that take place in rural areas. Examples of these schemes are the Department of Scientific and Industrial Research’s Technopreneur Promotion Programme (TePP). However, within TePP there is a Micro

---

<sup>11</sup> In fact some banks prefer paying the fine for non-compliance to risking taking higher losses from providing loans under the priority sector lending schemes.

<sup>12</sup> This section is based on data that was gathered during a field study in preparation for a PhD on financing pro-poor entrepreneur-based innovation in rural India, at UNU-MERIT, the Netherlands. The field work was financed and supported by the Learning INnovation Knowledge (LINK) network, Hyderabad, India.

Technopreneurship Support programme (TS) which invests up to Rs75000. Additionally, the related Council of Scientific and Industrial Research (CSIR) also focuses mainly on R&D but offers a Technologies for Rural Sector Fund. Nevertheless, the programme most relevant to rural innovation is the Department for Science and Technology's Science and Society programme focussed on technologies for rural livelihood. In addition DST set up the National Innovation Fund (NIF) in 2000. NIF has on the one hand been involved in setting up the Honeybee Network and the grassroots incubator GIAN together with SRISTI and IIM Ahmedabad. On the other it has worked with the apex institution SIDBI to set up a Micro Venture Innovation Fund (MVIF) in 2004, though its outreach has been limited so far. However, the problem with these programmes apart from the extensive bureaucracy involved, is that they are one-off project funds that are available for a set period and do not stretch beyond the implementation of an intervention. Since some government schemes are involved in assisting innovation and entrepreneurship and these are included in the discussion below.

In recent years an alternative financial sector has been emerging outside of the mainstream financial system which appears to, to some extent be making up for the lack of bank finance for innovative entrepreneurs in rural areas. Although microfinance is the best known type of non-bank finance and is flowing to rural areas, it does not necessarily support innovative entrepreneurship. A reason for this is the small amounts of the loans, often not amounting to more than Rs 10,000. Additionally, microfinance institutions do not provide many other add-on services that make them different to banks, and often prefer proven business models to new kinds of investments that innovation finance would support.

On the other hand, the seed fund sector, which is to a large extent urban based, invests especially in innovative young ventures. However, much of such funding is spent on high-tech firms. Nevertheless to get an idea of the size of the sector, using measurements of the above sources of finance, it is estimated that microfinance was worth around Rs219,610,000,000 according to Sa-Dhan figures (including NABARD sponsored initiatives), whilst the seed funding sector was estimated to be worth around Rs1220-1,700,000,000 in 2006 (Dutz and Dahlman, 2007). Of course out of the seed funding sector only a very small amount reaches rural projects and entrepreneurs.

Despite its current size, this alternative financial sector is of interest because of the way in which it appears to overcome information asymmetries and perceived risks in order to invest in innovative entrepreneurs, and by extension innovation, that banks appear unwilling or unable to support. It is noteworthy that the organisations in this alternative finance sector provide different kinds of financial and non-financial services to different kinds of rural entrepreneur-based innovation. They are in other words recognising the heterogeneity of rural innovation and therefore provide complementary services that form an eco-system of financial support. This is quite a change from both MFI's and banks that instead have a tendency to provide similar models of support for the same range of customers. There are essentially three types of organisations: Government sponsored programmes and council schemes, private for profit investors and NGO's generally aiming towards sustainable operations but often with some way to go. These three organisational forms can be broadly categorised as firstly micro venture capital, secondly grassroots innovators and incubators, and finally small-scale finance providers.

**Table 6 Examples of alternative sources of finance for rural pro-poor entrepreneur-based innovation**

Alternative Sources of Finance	Gov't	NGO	Private
Innovation Initiatives			
DST's Technology Information, Forecasting & Assessment Council (TIFAC)'s Home Grown Technology Programme (HGTP)	v		
DST's Science & Society Programme	v		
Council of Scientific & Industrial Research (CSIR)	v		
Department of Scientific & Industrial Research's Techno-entrepreneurs Promotion Programme (TePP) & Technology Development & Demonstration Programme (TDDP)	v		
National Innovation Fund	v		
Grassroots Innovation Augmentation Network (GIAN)	(v)	v	
Society for Research & Initiatives for Sustainable Technologies & Institutions (SRISTI)		v	
Villgro (formerly RIN)		v	
Honey Bee Network		v	
Aavishkaar			v
Acumen			v
Micro Innovation Venture Fund (MIVF)	v		
Small-Scale Sustainable Infrastructure Development Fund (S3IDF)		v	
Ashoka		v	
ICICI Ventures			v
SIDBI Schemes including Micro Venture Innovation Fund (MVIF)	v		
BASIX		(v)	v
SKS		v	

(Adapted from Singh Dhingra, 2007, in Dutz and Dahlman, 2007)

### 5.1. Micro Venture Capital

Entrepreneurs are often technical experts and arms' length investors such as banks have problem in understanding the risks and possibilities in such investments which is where intermediaries such as venture capital have a role to play. These financial organisations either have in-house or access to experts able to assess risks involved, and an ability to take firm specific risk that banks avoid.

Venture capital is an important source of finance for new companies in developed countries and in India the sector has grown exponentially in the last few years. There have been plenty of domestic and international funds investing in urban high-tech growth enterprises in India. This bias towards larger investment amounts and already proven business models is partly due to the high transaction costs inherent in such investments. These costs are a major hindrance for early stage VC finance as the costs as a percentage of profit is much larger. Early stage finance, comprising seed funding of up to USD1,000,000

and start-up capital of USD2-3,000,000, make up a small part of the industry. In 2005, early stage finance accounted for 4-6% of the total volume of venture capital, or 13% of the total number of deals (Dutz and Dahlman, 2007).

The Government is involved in early stage finance through the government sponsored early stage VC funds created in the 1990's that invest in the range of USD 0.5million-USD3million. Nevertheless, these funds still invest mainly in ventures that are already developed compared to those of the rural innovative entrepreneurs this paper is considering. However, as noted above there is a fund that was set up in 2004 by the DST's National Innovation Fund together with SIDBI called the Micro Venture Capital Fund to bridge the financing gap for micro enterprises. However, the impact appears to be negligible, both on the financing gap and the policy towards the sector. SIDBI is in addition involved with another venture fund for SME's called SIDBI Ventures though this funds much firms much larger than what this paper is concerned with. So despite several venture funds, it seems government and apex institutions are not able to breach the financing gap.

An alternative to the early stage VC financing is the smaller seed funding stage comprising business angels such as Band of Angels and Seed Fund (Dutz and Dahlman, 2007). However, such investments are done on a small scale and generally out of reach for the rural innovative entrepreneurs. Generally, 'angels' are private investors that are not officially organised in associations. However, seed funding is closer to the funding requirements of entrepreneur-based innovation as regards the amount financed, the risk investors are willing to bear and the flexibility in terms that they may agree to.

Micro venture capital finance makes up a very small part of seed funding with only two or three funds currently in operation. The funds that do operate a dual bottom line approach to venture capital such as Acumen, Seedfund and Aavishkaar combine funding models of classical VC but adapted to maximise social as well as financial sides. The funds provide hands-on non financial support alongside the financial investment. Such funds manage to operate in the alternative financing areas and take larger risks than classical VC, expect lower returns and expect these returns to take longer to materialise. To mitigate risk, this type of fund is often heavily involved in managing the investee companies, tend to take a large shareholding and sit on the board. The funds use different instruments or a different combination of instruments than VC, for example royalty rather than equity, equity debt hybrids or offer loans on top of the non-debt investment.

## 5.2. Grassroots' Innovators and Incubators

At the grassroots level, there are two types of rural innovation support models that support innovation and existing knowledge, practices and resources. Firstly, there are organisations that themselves identify issues in rural areas that can be solved with the help of new and appropriate technology or new innovative ways of organising production, reaching markets or using natural resources. Such organisations essentially innovate for the poor. Basing their work on needs and problems of the poor and the resources at hand, these organisations create new technologies or adapt existing technologies. In addition they provide extensive non-financial support in implementing small-scale business models in, for example, fruit processing. This kind of model needs grants for the early stages of preliminary studies and setting up projects, forming groups and building up the local institutions. However, as the intervention matures it is managed by the poor themselves and sustained through profits from sales revenue, whilst bank loans are accessed (with the help of the organisation) for

additional scaling up and investment. The Government's Department of Science and Technology is involved in grassroots innovation support through its Science and Society Programme, whilst non-governmental organisations include, for example, those connected through the All India People's Science Network, and Delhi based Centre for Technology Development.

A second type of grassroots organisations acts as incubators for rural entrepreneurs with exciting ideas. Here too limited financial support is provided as well as the facilities to test an idea, to build a prototype, to research markets and to establish a network of contacts. The focus is on creating a viable venture around the new product or service. There are essentially two forms of organisations involved in rural incubation: governmental and non-governmental. The Department for Science and Tehnology has been involved in rural innovation through its incubator Grassroots Innovation Augmentation Network (GIAN) together with IIM Ahmedabad. DST was also involved in the Honey Bee Network which collects and documents new rural inventions and the Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI). SRISTI is in addition involved in GIAN. On an international level, the World Bank has recently started incubator programmes in India through its InfoDev initiative though it focussed specifically on (pro-poor) incubation in the ICT related area.

### 5.3. Small-scale Finance Organisations

There are two types of financial organisations that provide small-scale entrepreneur support. Firstly there are microfinance institutions.<sup>13</sup> As noted previously, microfinance amounts are often too small to be used for the intended (productive) purposes, such as upgrading an existing venture, as well as for their lack of non financial support. This is where rural small scale growth entrepreneurs face a severe financial constraint. However, some MFI's, notably BASIX, a livelihood finance provider, and SKS, are using financing models that go beyond the traditional microfinance funds to support small-scale entrepreneurs as an alternative investment opportunity in rural areas. These MFI's provide larger grants coupled with non-financial support for rural ventures that promise increased employment opportunities for the poor. Already established in rural areas, MFI's have an advantage in local networks and understanding the risks of a potential investment.

Outside of the microfinance movement, there are other organisations involved in financing rural entrepreneurs or infrastructure in villages, often with a specific remit such as environmental sustainability. Financial organisation such as S<sup>3</sup>IDF work together with local NGO's to provide basic infrastructure services in rural areas and train local entrepreneurs to take charge of the projects or services. Although finance is the primary service, the organisations provide additional services to link the technology with finance, suppliers and markets in order to root the technologies or projects in the local community. S<sup>3</sup>IDF is also a good example of an organisation that uses different kinds of financial instruments, such as credit risk guarantees in order to encourage banks to lend to local entrepreneurs.<sup>14</sup> Another

---

<sup>13</sup> The most common microfinance model in India is the Self-Help-Group (SHG) model in which credit is lent to a small self-formed village group. A reason for the strong prevalence and popularity of the SHG model is that it relies on the already existing rural banking system which was already well built up in rural areas (Basu and Srivastava 2005).

<sup>14</sup> S<sup>3</sup>IDF provides a bank with a credit risk guarantee of 25% of the value of the loan in order to lower the perceived risk of the entrepreneur so that the bank is willing to lend.

example is Ashoka, a worldwide organisation with an office in India that supports entrepreneurs with socially relevant ideas, and builds general capacity through its research on pro-poor entrepreneurship.

## **6. Conclusion**

This paper found that the Indian banking system does not efficiently support rural pro-poor innovation. Though there is finance in the system and even credit specifically allotted to the rural poor and to entrepreneurs, banks are unwilling to lend. Instead, there is a decrease of credit in rural areas and a decrease in credit towards small and micro enterprises. In fact, the paper suggests that there is a flow of credit from rural to urban areas. Even where schemes are in place to specifically provide credit for the rural poor or entrepreneurs banks often prefer non-compliance. Alternatively, their funds flow towards what they perceive to be the least risky alternative such as investments in government funds or the largest enterprises allowed under priority sector lending rules.

There are several funds set up by the government to deal with the financing gap but so far they have had little impact. Instead an alternative financing sector has been emerging recently. There are three broad categories of organisations in this sector: grassroots innovators and incubators, micro venture capital firms, and small-scale finance providers. The discussion of the alternative financing sector suggests that there is a move away from microfinance and self-help groups as the solution to rural pro-poor finance among these organisations. Instead the focus is on how to support rural ventures, entrepreneurs and innovation. An eco-system of different innovation support has sprung up- including finance, rather than exclusively relying on finance as a means to support entrepreneur-based innovation. There is a recognition at these periphery organisations that there are different kinds of needs in rural areas. For example, those involved in grassroots innovation support work differently to those supporting innovation through micro venture capital. These organisations are, in other words, supporting rural innovation at different extremes, for different kinds of entrepreneurship with different mechanisms or instruments of support. Together they complement each other and form a system of complementary financial support. Finally, what these organisations have in common is an integrated approach to support which includes both financial and non-financial assistance.

Further researcher could explore this alternative financial sector to better understand how it operates and what the possibilities for scaling up operations would be, whilst retaining the flexibility that make them operational at present.

## References

- Banerjee, A, Cole, S and Duflo, E (2005) Bank Finance in India. In Tseng, W and Cowen, D (eds) *India's and China's Recent Experience with Reform and Growth*. (pp 138-). London: Palgrave Macmillan for the IMF
- Basu, P (2006) *Improving Access to Finance for India's Rural Poor*. Washington D.C.: The World Bank
- Basu, P, Srivastava, P and World Bank. South Asia Regional Office. Finance and Private Sector Development Unit. (2005) *Scaling-up microfinance for India's rural poor*. Washington, D.C.: World Bank South Asia Region Finance and Private Sector Development Unit
- Bose, S (2004) Regional rural banks: the past and the present debate.
- Burgess, R and Pande, R (2003) Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment. *Discussion Paper No. DEDPS/40, London School of Economics and Political Science, August*.
- Burgess, R, Pande, R and Wong, G (2004) Banking for the poor: Evidence from India. *LSE Working Paper*. London: London School of Economics
- Dutz, MA and Dahlman, C (2007) *Unleashing India's innovation: toward sustainable and inclusive growth*. Washington: World Bank
- Edquist, C (1997) *Systems of innovation : technologies, institutions and organizations*. London: Pinter
- Freeman, C (1987) *Technology policy and economic performance : lessons from Japan*. London ; New York: Pinter Publishers
- Hall, A, Clark, N, Sulaiman, R, Sivamohan, MVK and Yoganand, B (2003) From Measuring Impact to learning Institutional lessons: an innovation systems perspective on improving the management of international agricultural research. *Agricultural Systems* 78: 213-241
- Juma, C and Yee-Cheong, L (2005) *Innovation: Applying Knowledge in Development*. London: Task Force on Science, Technology and Innovation, UN Millennium Project
- Kumar, A, Beck, T, Campos, C and Chattopadhyay, S (2005) Assessing financial access in Brazil *World Bank Working Papers*. Washington: the World Bank
- Lipton, M (1977) *Why poor people stay poor; a study of urban bias in world development*. London: Temple Smith
- Lipton, M and Eastwood, RK (2000) Rural-urban dimensions of inequality change. *UNU-WIDER Working Paper*. Helsinki: United Nations University-World Institute for Development Economics Research
- Lundvall, B-ê (1992) *National Systems of Innovation : Towards a Theory of Innovation and Interactive Learning*. Pinter Publr, s,
- Misra, BS (2008) *Regional rural banks in India: past, present and future*. Delhi: Atlantic Publishers
- NABARD (2008) NABARD Database on rural finance. National Bank for Agriculture and Rural Development
- Nair, TS (2006) Financial Intermediation for Rural Development: Exploring the Role and Contribution of Commercial Banks. In Indian Institute of Banking and Finance (ed) *Readings on Financial Inclusion*. New Delhi: Taxmann Publications
- NSSO (2005) Household Assets Holding, Indebtedness, Current Borrowings and Repayments of Social Groups in India. *NSS 59th Round (January- December, 2003)*.

- New Delhi: National Sample Survey Organisation, Ministry of Statistics and Programme Impact, Government of India
- Ramesha, K (2003) Co-operative banking and financial sector reforms in India- agenda for future research. *International conference on mapping co-operative studies in the new millennium*. Victoria: British Columbia Institute for Co-operative Studies, University of Victoria
- RBI (2008) RBI Database. Mumbai: Reserve Bank of India
- Satish, P (2004) Rediscovering rural finance by retooling the existing institutions. In Ford, C and Waters, E (eds) *Paving the way forward for rural finance*. Madison, WI: USAID and BASIX-CRSP, University of Wisconsin
- Shah, M, Rao, R and Shankar, PSV (2007) Rural Credit in 20th Century India: Overview of History and Perspectives. *Economic and Political Weekly* 42: 1351-1364
- Spielman, DJ (2005) Innovation Systems Perspectives on Developing-Country Agriculture: A Critical Review. *ISNAR Discussion Paper*. International Food Policy Research Institute
- UNDP (2001) Human Development Report 2001. Making New Technologies Work for Human Development.
- WB (1986) World Development Report. New York, : The World Bank
- WB (1999) World Development Report 1998-1999: Knowledge for Development. World Bank
- WB (2006) World Bank Enterprise Survey India. The World Bank Enterprise Analysis Unit, World Bank
- WB (2008) World Development Report 2008- Agriculture for Development. Washington: World Bank
- Yunus, M (1999) *Banker to the Poor: Micro-Lending and the Battle Against World Poverty*. New York: BBS Public Affairs

## The UNU-MERIT WORKING Paper Series

- 2010-01 *Endogenous Economic Growth through Connectivity* by Adriaan van Zon and Evans Mupela
- 2010-02 *Human resource management and learning for innovation: pharmaceuticals in Mexico* by Fernando Santiago
- 2010-03 *Understanding multilevel interactions in economic development* by Micheline Goedhuys and Martin Srholec
- 2010-04 *The Impact of the Credit Crisis on Poor Developing Countries and the Role of China in Pulling and Crowding Us Out* by Thomas H.W. Ziesemer
- 2010-05 *Is there complementarity or substitutability between internal and external R&D strategies?* by John Hagedoorn and Ning Wang
- 2010-06 *Measuring the Returns to R&D* by Bronwyn H. Hall, Jacques Mairesse and Pierre Mohnen
- 2010-07 *Importance of Technological Innovation for SME Growth: Evidence from India* by M. H. Bala Subrahmanya, M. Mathirajan and K. N. Krishnaswamy
- 2010-08 *Economic Adversity and Entrepreneurship-led Growth: Lessons from the Indian Software Sector* by Suma Athreya
- 2010-09 *Net-immigration of developing countries: The role of economic determinants, disasters, conflicts, and political instability* by Thomas H.W. Ziesemer
- 2010-10 *Business and financial method patents, innovation, and policy* by Bronwyn H. Hall
- 2010-11 *Financial patenting in Europe* by Bronwyn H. Hall, Grid Thoma and Salvatore Torrisi
- 2010-12 *The financing of R&D and innovation* by Bronwyn H. Hall and Josh Lerner
- 2010-13 *Occupation choice: Family, Social and Market influences* by Ezequiel Tacsir
- 2010-14 *Choosing a career in Science and Technology* by Ezequiel Tacsir
- 2010-15 *How novel is social capital: Three cases from the British history that reflect social capital* by Semih Akcomak and Paul Stoneman
- 2010-16 *Global Players from Brazil: drivers and challenges in the internationalization process of Brazilian firms* by Flavia Carvalho, Ionara Costa and Geert Duysters
- 2010-17 *Drivers of Brazilian foreign investments – technology seeking and technology exploiting as determinants of emerging FDI* by Flavia Carvalho, Geert Duysters and Ionara Costa
- 2010-18 *On the Delivery of Pro-Poor Innovations: Managerial Lessons from Sanitation Activists in India* by Shyama V. Ramani, Shuan SadreGhazi and Geert Duysters
- 2010-19 *Catching up in pharmaceuticals: a comparative study of India and Brazil* by Samira Guennif and Shyama V. Ramani
- 2010-20 *Below the Radar: What does Innovation in Emerging Economies have to offer other Low Income Economies?* by Raphael Kaplinsky, Joanna Chataway, Norman Clark, Rebecca Hanlin, Dinar Kale, Lois Muraguri, Theo Papaioannou, Peter Robbins and Watu Wamae
- 2010-21 *Much ado about nothing, or sirens of a brave new world? MNE activity from developing countries and its significance for development* by Rajneesh Narula
- 2010-22 *From trends in commodities and manufactures to country terms of trade* by Thomas H.W. Ziesemer
- 2010-23 *Using innovation surveys for econometric analysis* by Jacques Mairesse and Pierre Mohnen
- 2010-24 *Towards a New Measurement of Energy Poverty: A Cross-Community Analysis of Rural Pakistan* by Bilal Mirza and Adam Szirmai
- 2010-25 *Discovery of the flower industry in Ethiopia: experimentation and coordination* by Mulu Gebreeyesus and Michiko Iizuka
- 2010-26 *CSR and market changing product innovations: Indian case studies* by Shyama V. Ramani and Vivekananda Mukherjee

- 2010-27 *How firms innovate: R&D, non-R&D, and technology adoption* by Can Huang, Anthony Arundel and Hugo Hollanders
- 2010-28 *Sure Bet or Scientometric Mirage? An Assessment of Chinese Progress in Nanotechnology* by Can Huang and Yilin Wu
- 2010-29 *Convergence of European regions: a reappraisal* by Théophile T. Azomahou, Jalal El ouardighi, Phu Nguyen-Van and Thi Kim Cuong Pham
- 2010-30 *Entrepreneurship and the National System of Innovation: What is Missing in Turkey?* by Elif Bascavusoglu-Moreau
- 2010-31 *Keeping the eclectic paradigm simple: a brief commentary and implications for ownership advantages* by Rajneesh Narula
- 2010-32 *Brazilian Aerospace Manufacturing in Comparative Perspective: A Brazil/USA Comparison of Output and Productivity* by Daniel Vertesy and Adam Szirmai
- 2010-33 *Economic restructuring and total factor productivity growth: Tunisia over the period 1983-2001* by Sofiane Ghali and Pierre Mohnen
- 2010-34 *Impact of government support on R&D and innovation* by Abraham Garcia and Pierre Mohnen
- 2010-35 *Product, process and organizational innovation: drivers, complementarity and productivity effects* by Michael Polder, George van Leeuwen, Pierre Mohnen and Wladimir Raymond
- 2010-36 *Entrepreneurship Development and the Role of Economic Transition in Entrepreneurial Activities in China* by Ying Zhang and Geert Duysters
- 2010-37 *Pro-Poor, Entrepreneur-Based Innovation and its Role in Rural Development* by Lina Sonne
- 2010-38 *Financing pro-poor entrepreneur-based innovation: A review of existing literature* by Lina Sonne
- 2010-39 *India's Rural Financial System: Does it Support Pro-Poor Innovation?* by Lina Sonne