

'URBAN BIAS' IN THE FLOW OF FUNDS AND DEPOSIT MOBILISATION: EVIDENCE FROM KARNATAKA, INDIA

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1. Introduction

It is argued that the availability and judicious utilisation of funds are prerequisites for the development process of a region. Since credit is assumed to provide command over resources and facilitates to meet the needed liquidity, expansion of institutional provision of funds has been a central concern of planners and development economists. The instruments of mobilisation of financial resources in terms of savings and deployment of credit by financial institutions have been, therefore, widely adopted to exploit the development potential of the area. On the whole, the primary purpose of various policy measures introduced by the Indian government since independence has been to improve the banking facilities across the regions (rural and urban) in terms of branch expansion, deposit mobilisation and deployment of credit.

In addition to the government policy, factors that are likely to influence bank branch expansion in a particular geographical area include the level of economic activity, infrastructural development, urbanisation and the existence of other financial institutions. Chhipa and Sagar (1981) argue that the volume of deposits in a region, by and large, depends on the branch network, income, and banking habit. Elsewhere, it is stated that state income, number of bank offices, and bank advances are major determinants of bank deposits in almost all the states and national as a whole (Shaban and Bhole, 2002). Deployment of credit, on the other hand, depends not only upon factors governing the supply of credit but also on factors influencing the demand for it (Sahu et al, 2004). In other words, the flow of fund is influenced by both supply (lenders' willingness to extend credit facility) and demand side factors (capacity to take a loan). Since these factors vary across the regions/states, the development of commercial banking (i.e., bank branch expansion, deposit mobilisation and volume of bank advances) may be uneven across different regions.

Against this background, this paper examines the progress in the number of bank branches, quantum of deposits and credit flow in rural and urban areas in Karnataka. With population of 52.85 millions, the State accounts for 5.1 per cent of India's population. In 2001, the Human Development Index of the State was 0.478 as against national average of 0.472. Thus, Karnataka is one of the middle States in the country in terms of human development. On the other hand, the State is placed eighth in terms of per capital income at current prices. The State has been the pioneer in economic planning and development. In terms of Decentralisation Index, the studies place Karnataka

at the top in the country. The government has been offering attractive packages of incentives and concessions to promote industry and services. As a result, the State has been in the forefront of technology, electronics, telecommunications and information.

The analysis in this paper has been carried out with the help of secondary data for the period 1986 to 2002-03. This period has been divided into two sub-periods. The period 1986 to 1991-2 has been considered as the pre-reform period, while 1992-3 to 2002-03 as reform period. Such a sub-period-wise analysis becomes important in terms of contrasting policies, which governed bank branch expansion, the deposit mobilisation and flow of credit. Until 1991, the banks were expected to play a social role in the provision of credit to the priority sectors, groups or regions. Such a role was considered to be necessary to support the activities that were considered to be either socially beneficial or inherently riskier, and to the borrower groups that were likely to be marginalised in the credit market (Kohli, 1997). On the whole, the emphasis in the credit provisioning was to meet the targets at the expense of the quality of credit and viability of the banking system. The policies initiated since 1991 stipulated that while targets fixed in relation to different sectors or sub-sectors/social class should be given the due importance, the viability of the banking system in its lending operations, at the same time, should not be neglected. Before the reforms were initiated, deposit mobilisation was given considerable importance and the performance of managers was assessed in terms of deposit mobilisation. What type of influence did these contrasting policies have on the flow of credit and deposit mobilisation in the state as a whole and between rural and urban areas? This question has been discussed with the help of secondary data bringing in space and time dimensions.

The analysis in this paper is limited to only scheduled commercial banks¹ as the time series data are available for these financial institutions. Temporal analysis in a state, which recently witnessed bifurcation of districts, necessitates the reorganisation of data according to old districts. Prior to 1996, there were 20 districts in the state of Karnataka. During the period 1996 to 1998, seven more districts were carved out of six districts. In this paper, the data have been organised for 20 districts to have comparability in the analysis over a period of time.

¹ The scheduled commercial banks consist of State Bank of India and its associates, Nationalised Banks, Regional Rural Banks, and other Scheduled Commercial Banks.

The progress in banking during the pre and post reform periods has been analysed across the sub-regions in the state. The state is divided into four administrative regions of coastal, south, north and central Karnataka. The paper, however, categorises the 20 districts into highly developed, developed, backward and highly backward groups² on the basis of average per-capita net district income under the assumption that higher the per-capita income, higher is the development. Such a categorisation will also help in analysing the variation in the mobilisation and deployment of resources (deposits and credit) between rural and urban areas across the districts. Highly developed and developed districts typically consist of regions with plantation crops, higher proportion of irrigation, high cropping intensity, and cultivation of commercial crops. These districts also consist of larger proportion of urban population and workforce in non-agricultural activities. In contrast, the backward and highly backward districts are typically semi-arid and rain-dependent. Growing inferior cereals and cash crops, a large proportion of the workforce is dependent on cultivation and wage labour in agriculture.

2. Growth of Banking in Rural and Urban Areas of Karnataka

One of the policy measures initiated in 1991 was to close down the loss making bank branches. Let us examine how this policy measure affected the progress of banking network in rural and urban areas. There were 4,429 branches of scheduled commercial banks in Karnataka during the triennium ending with 1992-93. The total number of bank branches increased to 4,876 during the triennium ending with 2002-03. Thus, there was a net addition of 447 bank branches in 12 years beginning with 1990-91. A growth in the number of bank branches was not uniform across the rural and urban areas. The number of bank branches in urban areas³ increased from 2,041 to 2,674 during the period of 1990-91 to 2002-03. The bank branches in rural areas,

² Bangalore (Urban), Kodagu, Dakshina Kannada, Chikmagalur and Bangalore (Rural) come under the category of highly developed districts, while Shimoga, Mysore, Bellary, Belgaum and Uttara Kannada fall under the category of developed districts. The districts of Dharwad, Bijapur, Mandya, Chitradurga and Tumkur form the backward group. Finally, Hassan, Kolar, Gulbarga, Raichur, and Bidar come under the category of highly backward districts.

³ It includes metropolitan, urban and semi-urban area.

however, declined from 2,388 to 2,202 during this period. Consequently, the proportion of rural bank branches in the total bank offices declined. The number of scheduled commercial bank branches per one lakh of population⁴ had declined in both rural and urban areas. However, the decline in rural areas was rapid from 9 branches per one lakh of population in the triennium ending with 1992-93 to 6.3 in the triennium ending with 2002-03.

Table 1: Growth of Bank Branches in Rural and Urban Areas of Karnataka

Triennium ending with	Number of bank branches			Bank branches per lakh population		
	Rural	Urban	All	Rural	Urban	All
1992-93	2,388 (53.9)	2,041 (46.1)	4,429 (100)	9.0	16.6	11.4
1995-96	2,294 (50.6)	2,241 (49.4)	4,535 (100)	7.9	16.1	10.6
1998-99	2,227 (47.3)	2,484 (52.7)	4,711 (100)	7.0	15.7	9.9
2002-03*	2,198 (44.9)	2,694 (55.1)	4,892 (100)	6.2	14.7	9.1

Notes: 1) Figures in the parentheses represent percentages.

2) * Four years figure.

Sources: Reserve Bank of India (various issues of Banking Statistics from 1991 to 2003)

Government of India (1991 and 2001)

The policy of closing down loss-making bank branches has thus had differential impact across rural and urban areas in Karnataka. The net impact of the policy measure was the lower density of branches of scheduled commercial banks in rural areas. The declining density of bank branches in rural areas not only indicates growing rural urban disparity in banking facility at reasonable distance in the state but also hardship to people in rural areas in accessing banking services especially credit⁵.

⁴ We have estimated the population figures for the remaining years with the help of extrapolation method using the data from 1991 and 2001 censuses to calculate the number of bank offices per lakh of population. These population figures have been used wherever required in the study.

⁵ The Gupta Committee (1998), however, recommended that a bank could lend to borrowers outside the service area if they choose to do so. In this context, one can argue that there is a possibility of accessing banking facility by rural dwellers from urban bank branches and urban dwellers from rural bank branches. Since data on these aspects is not available, the amount mobilization of deposits and credit deployment has been considered on the basis of location of the bank branches.

Table 2: Mobilisation of Deposits in Rural and Urban Areas in Karnataka

Triennium ending with	Amount of deposits (Rs. crores)			Per-capita deposits (in Rs.)		
	Rural	Urban	All	Rural	Urban	All
1992-93	1,972 (17.0)	9,619 (83.0)	11,591 (100)	744	7,808	2,986
1995-96	3,100 (15.7)	16,589 (84.3)	19,689 (100)	1,068	11,883	4,581
1998-99	4,901 (15.2)	27,437 (84.8)	32,338 (100)	1,542	17,342	10,381
2002-03*	7,905 (13.2)	51,829 (86.8)	59,734 (100)	2,235	28,295	11,127

Notes and sources: Same as in Table 1

In comparison with the share of bank branches, bank deposits and bank credit in rural areas have been very small (Tables 2 and 3). The share of rural areas in total bank deposits and credit in Karnataka remained low throughout the period. The urban centres accounted for 83 per cent to 86 per cent of the total bank deposits and 80.7 per cent to 84.5 per cent of the total outstanding bank credit in the state during the entire period starting from 1990-91 to 2002-03 (Table 3). The Credit Deposit Ratio (CDR) for rural areas first declined from 83.1 per cent to 66.5 per cent from the financial year triennium ending with 1992-93 to 1998-99 and it increased to 70.3 per cent during the financial years 2000-03. Interestingly, the CDR was more in rural areas as compared to urban areas during most of the financial years. However, even in the years of high CDR in rural areas, the share of credit in rural areas to total credit had remained very small throughout the period. The per-capita deposits and credit had increased in both rural and urban areas during the entire period. It may be noted that the rate at which the per-capita deposits and credit had increased in urban areas was not the same in rural areas.

Table 3: Deployment of Credit in Rural and Urban Areas in Karnataka

Triennium ending with	Amount of Credit (Rs. Crores)			Per-capita Credit (in Rs.)		
	Rural	Urban	All	Rural	Urban	All
1992-93	1,638 (19.3)	6,831 (80.7)	8,469 (100)	618	5,545	2,182
1995-96	2,251 (17.0)	11,027 (83.0)	13,278 (100)	776	7,898	3,089
1998-99	3,284 (15.0)	18,684 (85.0)	21,968 (100)	1,033	11,809	4,614
2002-03*	5,579 (15.1)	31,463 (84.9)	37,042 (100)	1,578	17,177	6,900

Notes and sources: Same as in Table 1

3. Growth in Deposits and Credit

This section presents an analysis of the growth rates⁶ on deposit mobilisation and deployment of credit. Table 4 provides the annual average growth rates on credit flow and deposits mobilisation in rural and urban areas of different districts in Karnataka for two sub-periods, viz., 1986 to 1991-92 and 1992-93 to 2002-03. The key findings emerging from this analysis are:

- The growth rates of credit in rural areas of all the districts were high during the period 1992-93 to 2002-03 as compared to the period 1986 to 1991-92. However, the backward and highly backward categories of districts registered a higher growth rate in credit deployment during the period 1992-3 to 2002-03 as compared to the categories of developed and highly developed districts. This was because of a very low level of credit in the initial years.

- The growth rate of deposits in the rural areas of highly developed and developed categories of districts was high during the reform years as compared to the pre-reform period. The trend was exactly opposite in the backward and highly backward districts. In other words, the growth rates of deposits were high during the pre-reform period as compared to reform years. This can also be attributed to a low level of deposits in the base year.

- This suggests that the high growth rate of either credit or deposits in rural areas of backward districts can be attributed to a low level of credit and deposits in the base year. However, it is not necessary that the area of a district, which has a lower growth rate, will have a less volume of deposit mobilization and deployment of credit. The area of a district with lower growth rate might have begun their deposit mobilization and deployment of credit at a large volume at an early stage, so that it may already have more volume of credit disbursement and collection of deposits and further expansion of credit and deposit at the same rate is difficult. Thus, one has to be careful, in deriving inference from this table.

⁶ The growth rate has been calculated by using the semi-log model such as $\ln Y_t = \beta_1 + \beta_2 t + \mu_t$ where t is the time period, β_1 and β_2 are parameters and μ_t is the disturbance terms and Annual Average Growth Rate = (antilog of the estimated $\beta_2 - 1$) $\times 100$.

- The growth rate of total credit was always less than that of deposits in rural and urban areas of all categories of districts during the pre-reform period. This was true in the case of highly developed and developed categories of districts during the reform years. Interestingly, this does not hold good in the case of backward and highly backward categories districts during the second sub-period, where the growth rate in credit was more than that of deposits in both rural and urban areas.

- It is evident that the growth rate (Group total) of credit in urban area was always higher than the rural area across the sub-periods and districts. This suggests that, in most of the districts, the rate at which credit was disbursed in urban areas was quite high as compared to rural areas. This further suggests that the bankers were giving preference on lending to urban activities.

- The high growth rate of group total credit in rural areas of backward and highly backward categories of districts compared to other two categories of districts can be attributed to the domination of supply-led approach credit policy in the backward areas.

Table 4: Annual Average Growth Rates (%) of Credit and Deposits by Districts and Population Groups

Districts	1986 to 1991-92				1992-93 to 2002-03			
	Rural		Urban		Rural		Urban	
	Credit	Deposit	Credit	Deposit	Credit	Deposit	Credit	Deposit
Highly developed								
Bangalore (Urban)	31.0	13.1	14.9	15.9	9.1	14.8	20.7	21.5
Kodagu	10.8	14.5	5.8	13.3	18.8	13.5	20.3	13.8
Dakshina Kannada	6.1	11.9	9.8	13.0	15.7	15.8	14.0	18.0
Chikmagalur	11.0	11.9	11.8	12.4	19.3	15.7	20.1	13.6
Bangalore (Rural)	16.9	16.8	10.0	12.0	12.3	23.8	12.5	15.8
Group Total	12.6	12.6	13.9	15.3	13.8	15.6	19.9	20.7
Developed								
Shimoga	12.7	13.7	9.0	11.0	11.8	14.5	13.2	15.5
Mysore	8.1	13.8	13.0	11.0	13.3	14.1	15.6	16.3
Bellary	11.7	15.8	9.5	12.1	15.1	15.0	18.6	15.5
Belgaum	5.5	10.4	12.0	13.6	13.5	11.4	16.6	15.7
Uttara Kannada	6.1	13.2	10.5	13.6	14.5	17.0	14.2	16.7
Group Total	8.4	12.6	11.0	12.2	13.2	14.1	15.5	15.9
Backward								
Dharwad	8.9	14.7	8.9	12.3	14.0	15.8	19.1	16.8
Bijapur	10.8	19.1	9.5	12.4	18.4	18.3	19.8	17.2
Mandya	14.6	12.0	10.3	8.5	13.2	12.9	15.6	15.4
Chitradurga	10.8	15.8	12.2	13.9	20.2	18.7	16.7	17.7
Tumkur	13.0	16.8	10.2	13.2	11.8	10.3	16.9	16.2
Group Total	11.0	15.6	9.7	12.4	15.5	15.0	18.0	16.8
Highly backward								
Hassan	14.4	17.3	11.1	9.3	15.7	12.5	16.4	15.5
Kolar	13.7	19.1	8.2	12.2	10.9	13.9	15.0	13.0
Gulbarga	11.5	21.6	12.8	16.4	18.0	16.8	15.3	16.0
Raichur	9.7	20.3	18.2	14.3	13.7	10.9	17.7	16.6
Bidar	15.8	21.6	14.3	16.3	15.6	16.3	12.9	15.0
Group Total	12.4	19.1	12.8	13.6	14.1	13.5	15.7	15.2
Karnataka	11.1	13.9	12.8	14.2	14.0	14.9	18.8	19.2

Source: Reserve Bank of India (various issues of *Banking Statistics* from 1986 to 2003)

4. Share in Credit and Deposits

Since the analysis of annual average growth rate explains the direction of its movement in absolute volume from one point of time to other, it may be difficult to understand the relative position of one variable with other. In our special case, the

growth rates of credit and deposits in rural and urban areas may not explain the relative position of these areas over a period of time. In order to know the relative position of rural and urban areas, the share in credit and deposits from the corresponding total has been calculated for each district (Table 5).

Table 5: District and Population Group-wise Relative Share (%) in Credit and Deposits

Districts	1986 to 1991-92				1992-93 to 2002-03			
	Rural		Urban		Rural		Urban	
	Credit	Deposit	Credit	Deposit	Credit	Deposit	Credit	Deposit
Highly developed								
Bangalore (Urban)	4.4	3.8	95.6	96.2	1.8	2.3	98.2	97.7
Kodagu	64.1	57.5	35.9	42.5	65.0	58.8	35.0	41.2
Dakshina Kannada	27.5	31.1	72.5	68.9	24.9	28.0	75.1	72.0
Chikmagalur	52.7	51.1	47.3	48.9	49.6	54.3	50.4	45.7
Bangalore (Rural)	46.6	32.4	53.4	67.6	47.9	40.2	52.1	59.8
Group Total	12.2	13.2	87.8	86.8	7.9	10.0	92.1	90.0
Developed								
Shimoga	25.7	25.5	74.3	74.5	25.6	25.4	74.4	74.6
Mysore	20.5	13.2	79.5	86.8	16.7	12.4	83.3	87.6
Bellary	26.8	23.1	73.2	76.9	28.2	23.1	71.8	76.9
Belgaum	30.9	20.5	69.1	79.5	25.4	16.6	74.6	83.4
Uttara Kannada	33.8	28.7	66.2	71.3	34.4	30.0	65.6	70.0
Group Total	26.2	20.3	73.8	79.7	23.8	19.0	76.2	81.0
Backward								
Dharwad	26.3	11.9	73.7	88.1	21.6	11.9	78.4	88.1
Bijapur	36.9	23.5	63.1	76.5	39.0	27.0	61.0	73.0
Mandya	54.3	43.9	45.7	56.1	56.0	45.1	44.0	54.9
Chitradurga	32.1	23.8	67.9	76.2	35.7	25.4	64.3	74.6
Tumkur	43.6	35.2	56.4	64.8	42.7	27.8	57.3	72.2
Group Total	34.9	22.7	65.1	77.3	34.0	22.8	66.0	77.2
Highly backward								
Hassan	41.8	37.4	58.2	62.6	46.0	35.3	54.0	64.7
Kolar	47.7	29.9	52.3	70.1	47.7	32.2	52.3	67.8
Gulbarga	28.3	17.3	71.7	82.7	31.9	19.8	68.1	80.2
Raichur	37.0	29.2	63.0	70.8	28.4	22.5	71.6	77.5
Bidar	36.0	22.3	64.0	77.7	43.0	26.9	57.0	73.1
Group Total	38.2	27.5	61.8	72.5	38.0	26.9	62.0	73.1
Karnataka	20.0	17.1	80.0	82.9	15.5	14.2	84.5	85.8

Source: Reserve Bank of India (various issues of Banking Statistics from 1986 to 2003)

Comparison between rural and urban areas with respect to their relative shares in credit and deposits, for the state as a whole, reveals that these shares declined in

rural areas while in urban areas it went up over a period of time. However, this situation is not uniform across the districts in the state. One of the important findings that emerge from Table 5 is that the share in credit and deposits move in the same direction in both rural and urban areas. This finding holds good for almost all the districts. In other words, on average, whether it is rural or urban area, where the share of deposits has gone up, the share of credit has also gone up over a period of time. Alternatively, for the area, where the share of deposits has declined, the share of credit has also declined. This suggests that deposit mobilisation is one of the important factors that influence the flow of funds

The analysis of share in credit and deposits in Table 5 also indicates that, even if the relative share of credit deployed in the rural areas has declined in some districts from the first to the second sub-periods, it has been larger than the share of deposits mobilised from these areas. Opposite to this, except the urban areas from Bangalore (U), Dakshina Kannada, and Chikmagalur districts, the share of credit has always been less than the share in deposits for the rest of the districts. The higher share of credit compared to deposits in the rural areas could be attributed to the provisioning of directed lending and the implementation of various central and state governments sponsored schematic finance under poverty alleviation and employment generation programmes.

5. Credit Deposit Ratios in Rural and Urban Areas

One of the important issues that emerge from the above discussion is that if the share in credit is greater than the share in deposits, can we say that there is no flight of deposits from one area to another or elsewhere? Even if the above condition is satisfied, it is quite possible that there will be flight of deposits from one area to other. Thus, in order to understand the situation, it is necessary to calculate the CDR. The CDR indicates how far the resources mobilised in a given area are being utilised in the same area, and what part of those resources are being taken away from the area (Rangarajan, 1982). In other words, it serves as one of the indicators, which show the extent of drain of resources from which a given geographical area suffers. Table 6 presents district and population group-wise differences in CDR for Karnataka during the period 1986 to 2002-03. The major points that emerge from Table 6 are as follows:

- As expected, there have been significant differences in CDR across the districts and population groups at different points of time. The CDR varied between as low as 56 per cent to as high as 148 per cent in rural areas, while in urban areas it varied within the range of 47 per cent to 121 per cent during the period 1986 to 1991-92.

- The CDR for the rural areas in certain districts has been more than 100 per cent, though such districts have not been the same in all the reference years. Out of 20 districts, in the case of 13, the CDR in rural areas was more than unity during the first sub-period. However, it continued for only 4 districts during the second sub-period.

- Except the urban areas of Chikmagalur, the CDR has invariably declined both in rural and urban areas for all the districts from the first to the second sub-period. Besides, except the urban areas of Chikmagalur, and the rural areas of Bellary, Dharwad, Chitradurga and Raichur, the CDR was less than unity during 1992-93 to 2002-03.

- On an average, the CDR was more in rural areas as compared to urban areas during both periods

- Based on CDR, it is observed that the rural area suffered less in terms of drain of resources against their urban counterparts.

Table 6: District and Population Group-wise Credit Deposit Ratio (%)

Districts	1986 to 1991-92		1992-93 to 2002-03	
	Rural	Urban	Rural	Urban
Highly developed				
Bangalore (Urban)	102.3	88.8	54.6	72.1
Kodagu	80.6	60.9	72.5	55.5
Dakshina Kannada	56.3	67.1	32.9	38.6
Chikmagalur	99.4	93.3	95.6	115.4
Bangalore (Rural)	132.1	72.4	66.7	48.7
Group Total	77.6	84.5	52.1	67.4
Developed				
Shimoga	113.5	111.9	72.2	71.3
Mysore	127.0	74.8	77.6	54.9
Bellary	148.2	121.5	106.1	81.1
Belgaum	95.6	55.0	78.1	45.8
Uttara Kannada	59.7	47.1	39.9	32.7
Group Total	105.2	75.4	72.7	54.6
Backward				
Dharwad	162.2	61.0	109.8	53.9
Bijapur	108.3	56.8	84.1	48.6
Mandya	107.1	70.4	76.4	49.2
Chitradurga	134.7	88.9	113.9	69.7
Tumkur	93.2	65.5	87.1	45.1
Group Total	119.9	65.6	93.7	53.8
Highly backward				
Hassan	92.5	76.9	93.0	59.4
Kolar	127.9	59.8	87.3	45.4
Gulbarga	124.7	66.1	90.4	47.4
Raichur	130.1	91.4	109.2	79.8
Bidar	119.1	60.9	94.2	45.9
Group Total	116.7	71.6	93.9	56.2
Karnataka	96.9	79.5	70.3	63.3

Source: Reserve Bank of India (various issues of *Banking Statistics* from 1986 to 2003)

6. Net Flow of Funds in Rural and Urban Areas

One can examine the extent of drain of resources in terms of the Credit Deposit Ratio (CDR), but one of the limitations of the CDR is that it ignores the absolute difference in the level of deposits and credit disbursed. Therefore, an appropriate measure to ascertain the flow of funds would be to compute the net flow of funds into the area. Net flow of funds has been defined as the absolute difference between the cre-

dit and deposits and expressed as a proportion of the total deposits mobilised in the area.

In general, the net flow of funds indicates the volume of deposits mobilisation in terms of credit allocation. Thus, if the share in credit is more than the share in deposits and the net flow of funds is positive in a particular area, it indicates the exhaustion of deposits in terms of the deployment of credit there itself. However, if the net flow of funds is negative, even if the share in credit is more than the share in deposits, it indicates a less utilisation of deposit mobilisation in the provisioning of credit.

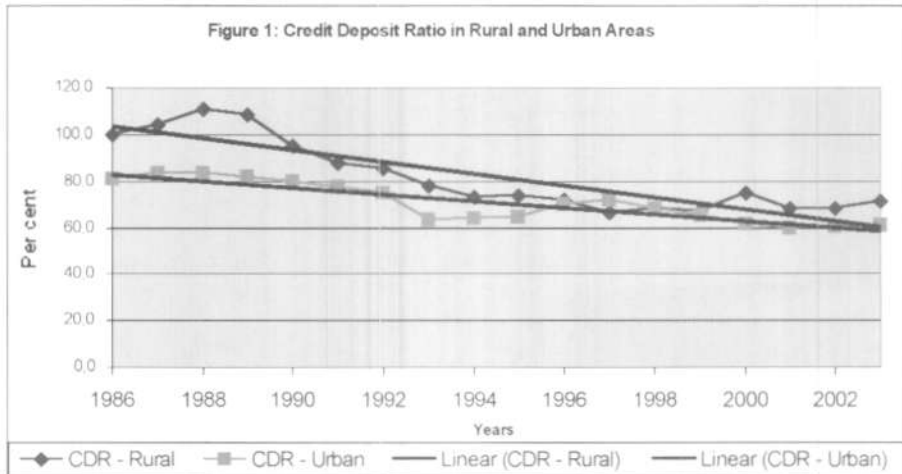
Table 7 demonstrates the net flow of funds in both rural and urban areas. As seen in Table 5, except very few cases like Dakshina Kannada and Chikmagalur during the second sub-period, the share in credit was invariably greater than the share in deposits in rural areas. The net flow of credit was negative in the rural areas of Kodagu, Dakshina Kannada, Chikmagalur, Belgaum, Uttar Kannada, Tumkur and Hassan during the first sub-period i.e., 1986 to 1991-92. Importantly, this situation had spread to many districts over a period of time. For instance, out of 20 districts, 16 were having negative net flow of funds in rural areas from 1992-93 to 2002-03. It was not that rural areas were having only negative net flow of funds but the situation was also aggravating, indicating thereby that the credit agencies had been disbursing less and less credit out of deposits mobilised by them in rural area. It is, therefore, evident that in the case of rural areas there was net outflow of funds through the banking channels. It may be interesting to see where rural deposits were channelised. Were they diverted to urban areas? Since the net flow of credit was negative in the urban areas of almost all the districts, it is difficult to say that there was flight of deposits from the rural to urban areas.

It is also evident that the net outflow of funds from the rural areas of highly developed and developed categories districts was much more compared to the rural areas of backward and highly backward categories districts. Since the net flow of funds was negative in both rural and urban areas, probably, bankers were diverting more and more funds on government and other approved securities. This could also be observed from the declining trend of CDR (Figure 1) in rural and urban areas. However, it is noticed from the linear trend line that the rate of decline in CDR was faster in rural areas compared to urban areas.

Table 7: District and Population Group-wise Net Flow of Credit (%)

Districts	1986 to 1991-92		1992-93 to 2002-03	
	Rural	Urban	Rural	Urban
Highly developed				
Bangalore (Urban)	2.3	-11.2	-45.4	-27.9
Kodagu	-19.4	-39.1	-27.5	-44.5
Dakshina Kannada	-43.7	-32.9	-67.1	-61.4
Chikmagalur	-0.6	-6.7	-4.4	15.4
Bangalore (Rural)	32.1	-27.6	-33.3	-51.3
Group Total	-22.4	-15.5	-47.9	-32.6
Developed				
Shimoga	13.5	11.9	-27.8	-28.7
Mysore	27.0	-25.2	-22.4	-45.1
Bellary	48.2	21.5	6.1	-18.9
Belgaum	-4.4	-45.0	-21.9	-54.2
Uttara Kannada	-40.3	-52.9	-60.1	-67.3
Group Total	5.2	-24.6	-27.3	-45.4
Backward				
Dharwad	62.2	-39.0	9.8	-46.1
Bijapur	8.3	-43.2	-15.9	51.4
Mandya	7.1	-29.6	-23.6	-50.8
Chitradurga	34.7	-11.1	13.9	-30.3
Tumkur	-6.8	-34.5	-12.9	-54.9
Group Total	19.9	-34.4	-6.3	-46.2
Highly backward				
Hassan	-7.5	-23.1	-7.0	-40.6
Kolar	27.9	-40.2	-12.7	-54.6
Gulbarga	24.7	-33.9	-9.6	-52.6
Raichur	30.1	-8.6	9.2	-20.2
Bidar	19.1	-39.1	-5.8	-54.1
Group Total	16.7	-28.4	-6.1	-43.8
Karnataka	-3.1	-20.5	-29.7	-36.7

Source: Reserve Bank of India (various issues of *Banking Statistics* from 1986 to 2003)



7. Urban Bias in Access to Credit

The number of loan accounts per 1,000 population at a particular point of time has been used as a proxy to assess the access to credit. There were 94.8 accounts per 1,000 population in rural areas during the period 1990-91 to 1992-93. However, the same reached 57.6 by 1999-2000 to 2002-03. In other words, on average, out of 1,000 population in rural areas, one among every eleven persons had access to credit during the former period. However, one among every seventeen rural persons had access to credit during the latter period. Importantly, the non-agricultural loan accounts per 1,000 population also declined in rural Karnataka. This shows a decline in the access to institutional credit facility by rural population. This declining trend in the access to institutional credit by rural population, from the lender's point of view, could be attributed to a shift from the service-oriented approach to security-oriented approach, a shift of emphasis in granting bank loans from 'credit worthiness of purpose' to 'credit worthiness of borrowers' and a shift from 'mass' banking to 'class' banking.

In the case of non-agricultural loans, per 1,000 population, there were 160.7 accounts in urban areas as against 41.8 accounts in rural areas during the period 1990-91 to 1992-93. The number of non-agricultural loan accounts reduced to 23.6 and 143.2 in rural and urban areas respectively for the same size of referred population during 1999-2000 to 2002-03. Hence, access to non-agricultural loans has been shrinking at a higher rate in rural areas against their urban counterparts. This shows that the people in the countryside often lacked access to institutional credit. Aryaete (1996) argues that many small potential borrowers had never actively sought formal credit and this was attributed to the perception that bank credit was not available to them. This might be adversely affecting them in undertaking and obtaining good return from on-farm, off-farm and non-farm activities.

Table 8: Number of Loan Accounts per 1,000 Population in Karnataka

Triennium ending with	Rural			Urban		
	Agriculture	Non-agriculture	Total	Agriculture	Non-agriculture	Total
1990-91 to 1992-93	53.1	41.8	94.8	66.6	160.7	227.3
1993-94 to 1995-96	44.0	32.1	76.1	49.3	113.2	162.4
1996-97 to 1998-99	37.1	26.7	63.8	36.2	108.7	144.8
1999-2000 to 2002-03*	34.0	23.6	57.6	31.2	143.2	174.3

Note: * Four-year figure

Source: Reserve Bank of India (various issues of *Banking Statistics* from 1991 to 2003)

8. Growing Difference in Per-capita Credit Availability between Rural and Urban Areas

Table 9 provides the difference in per-capita credit availability between rural and urban areas. It is observed that the difference in per-capita credit between rural and urban areas had been increasing over a period of time. The increasing difference in credit availability could be seen in three different ways. This might be due to either a rapid decline in per-capita credit in rural areas as compared to urban areas or the opposite or a constant per-capita credit in the rural areas with an increasing per-capita credit in the urban areas. However, empirical evidence does not support the first and the last situation. Thus, the growing difference in per-capita credit availability between urban and rural areas has been taking place due to more pumping of credit in former area as compared to the latter.

Table 9: Difference in Per-capita Credit Availability (in Rs.) between Rural and Urban Areas

Districts	1990-91 to 1992-93	1993-94 to 1995-96	1996-97 to 1998-99	1999-2000 to 2002-03
Highly developed				
Bangalore (Urban)	7,156	11,509	21,995	31,380
Kodagu	3,335	6,012	10,037	17,232
Dakshina Kannada	6,977	8,283	11,288	15,844
Chikmagalur	4,321	7,254	12,614	14,945
Bangalore (Rural)	1,571	2,002	2,727	3,014
Group Total	8,007	12,266	19,272	27,200
Developed				
Shimoga	3,962	4,313	5,849	8,572
Mysore	3,888	4,999	7,355	10,935
Bellary	2,630	3,902	4,990	6,406
Belgaum	3,062	4,051	5,600	7,876
Uttara Kannada	2,467	2,915	3,953	4,854
Group Total	3,329	4,252	5,910	8,360
Backward				
Dharwad	2,132	2,861	4,183	6,930
Bijapur	1,642	2,117	3,161	5,135
Mandya	1,536	1,812	2,558	4,521
Chitradurga	2,252	2,895	3,931	5,510
Tumkur	1,979	2,655	3,648	4,901
Group Total	1,984	2,612	3,725	5,822
Highly backward				
Hassan	3,231	3,854	5,794	9,622
Kolar	1,215	1,473	2,205	3,091
Gulbarga	2,221	2,547	3,317	4,186
Raichur	3,017	3,308	5,607	8,153
Bidar	1,804	2,063	2,529	2,912
Group Total	2,225	2,546	3,737	5,222
Karnataka	4,927	7,122	10,776	15,599

Source: Reserve Bank of India (various issues of *Banking Statistics* from 1991 to 2003)

This result also corroborates our previous findings of Table 5 that urban areas take on an average a lion's share (about 80 to 85 %) from the total amount of credit disbursed. Hence, it can be argued that urbanisation is a factor of industrialisation and development of commercial and trade centres, probably attracting more banking activities in the form of branch expansion, advances to various industrial, commercial and trading activities, on the one hand, and mobilisation of more deposits from these activities, on the other hand. Elsewhere it is argued that a rise in the degree of urbani-

sation pushes per-capita credit up from its average value possibly more than it pushes per-capita deposits. An increase in the number of bank offices relative to population pushes per-capita deposit up more than it pushes per-capita credit (Basu, 1980). This finding also corroborates the output presented in Table 2 and 3, where the per-capita urban deposit has gone up from rupees 7,808 to rupees 28,295 (i.e. 3.62 times) and the per-capita credit has increased from 5,545 rupees to 17,177 rupees (3.1 times). In other words, although both per-capita credit and deposits have increased in urban areas, there is a rapid increase in per-capita deposits than the per-capita credit availability.

The growing difference in per-capita credit availability between rural and urban areas is not uniform across the districts. This difference shows a positive association with the level of development, i.e., the higher the level of development, the higher the difference in per-capita credit availability between rural and urban area and vice-versa (Table 9). It is thereby indicating that the urban areas of developed category districts can attract more institutional credit as compared to the urban areas of less developed districts.

9. Determinants of Credit Flow

It is clear from the literature on the subject that regions in India that are economically backward have less access to institutional credit than those which are not (Reddy, 2001). Besides, it is also evident in the analysis that there is growing difference in per-capita credit flow between urban and rural areas, which is attributed to more pumping of credit in the former area against the latter. Thus, what explains credit flow in rural and urban areas? To answer this question, an attempt has been made in this section to examine the determinants of credit flow in rural and urban areas separately. Hence, per-capita credit availability (PCA) in rural and urban areas is considered to be a dependent variable in the respective model. The a priori model on the determinants of flow of credit has been specified with the following variables.

9.1 *Per-capita deposit (PD)*

From the supply side, the flow of credit can be said to be depending upon the lender's assessment as regards the credit worthiness of the borrower. The credit worthi-

ness of the borrower is assumed to be high with the level of deposits. Thus, per-capita deposit has been specified as an important variable that determines the flow of credit. This variable is expected to be positively associated with the per-capita credit availability.

9.2 Density of Bank branches per 10,000 population (DBB)

It is explained in the literature that the problem of mounting overdues, poor quality of lending and recalcitrant attitude of the borrowers contributed to the cumulative losses to formal financial institutions during the pre-reform years⁷. This adversely affected the viability and efficiency of the rural banking system. Therefore, during the reform years and especially after the financial year 1993-94, the loss making bank branches were directed to close down or get merged with their sponsored bank branches. The data show that only rural bank branches have been so far closed down. Thus, with the increasing population size, access to banking facility by the rural population might have come down. Hence, it is important to see the relationship between banking facility and flow of credit. However, the DBB is expected to have positive association with credit flow in rural and urban areas.

Thus, in the model, the dependent variable PCA is a function of the explanatory variables of PD and DBB. The per-capita credit availability (PCA) in the area has been regressed with respective PD and DBB. Since different districts have different characteristics, we have used panel data regression model to capture the individuality. The individual effect is assumed to be constant over time and specific to the individual districts. Hence, differences in the flow of credit across the districts can be captured through differences in constant terms⁸. The basic framework for using the pooled regression model can be specified as

$$Y_{it} = \alpha_i + \beta' X_{it} + \epsilon_{it}$$

⁷ For more detailed discussion on these issues, see Von Pischke, Adams and Donald, 1983; Braverman and Guasch, 1989; Khusro 1989; Rajasekhar and Vyasulu, 1990; Vyasulu and Rajasekhar, 1991; Kahlon, 1991.

⁸ In addition to PD and DBB, there may be many other factors influencing the flow of credit. Because of the difficulty in having the same set of parameters in rural and urban areas, this study concentrated on the above factors.

There are k regressors in X_{it} excluding the constant term. The individual effect, α_i is taken to be constant over time t and specific to the individual cross-section unit i . As it stands, this model is a classical regression model. If we take α_i to be the same across all units, then ordinary least squares provides consistent and efficient estimates of α and β . There are two basic frameworks used to generalise this model. The Fixed Effect approach and Random Effect take α_i to be a group specific constant and group-specific disturbance term in the regression model, respectively. With this background, we have used Fixed and/ Random Effect model to estimate the pooled regression parameters. The estimated equation is as follows:

$$(PCA)_{it} = \alpha_i + \beta_1 (PD)_{it} + \beta_2 (DBB)_{it} + \varepsilon_{it}$$

Based on the least square residuals, in the case of the analysis for rural area, we obtain a Lagrange Multiplier (LM) test statistic of 178.64 which far exceeds the 95 per cent critical value for chi-square with one degree of freedom (3.84). The LM test statistics (543.39), in the case of the analysis for urban areas, also show higher value against 95 per cent critical value for chi-square with one degree of freedom. The high Lagrange Multiplier test statistic indicates that the district specific effects are statistically significant. At this point, we conclude that the classical regression model with single constant term is inappropriate for these data. Keeping the fundamental difference in the two approaches in mind, we have calculated Hausman Test for the Fixed vs. Random Effect model. This is based on the parts of the coefficient vectors and the asymptotic covariance matrices that correspond to the slopes in the model, i.e., ignoring the constant term (s). The test statistics are 18.98 and 6.35 for the analysis of rural and urban areas respectively. The critical value from the chi-square table value with two degrees of freedom is 5.99, which is less than the test value. The Hausman test statistic indicates that the fixed effect model is appropriate. Thus, the hypothesis that the individual effects are uncorrelated with the other regressors in the model can be rejected. Hence, we would conclude that of the two alternatives we have considered the Fixed Effect Model as the better choice for the interpretation, which is reported in Table 10.

Table 10: Result of the Fixed Effect Model (Dependent Variable = PCA)

Variables	Rural		Urban	
	Coefficient	t - ratio	Coefficient	t - ratio
PD	0.37 *	7.63	0.51 *	27.33
DBB	- 1638.95 *	- 3.89	- 1442.65	- 1.23
R – squared	83 per cent		93 per cent	
No. of observation	260		260	
Values of Test Statistics				
Lagrange Multiplier	178.64		543.39	
Fixed vs. Random Effects (Hausman)	18.98		6.35	

Note: * at 1 % level of significance

We briefly sum up the implications of the results obtained. Based on the test statistics, the determinant of per-capita credit availability in rural and urban areas being estimated by Fixed Effect Model is selected for interpretation. The result shows that per-capita deposit in rural (urban) area has positive association with per-capita credit availability in rural (urban) area as expected and significant at 1 per cent level. It suggests that the larger the volume of per-capita deposit, the greater will be the flow of credit by formal financial institutions. However, the flow of credit out of deposits is not uniform across the population groups. The coefficient reveals that one rupee increase in per-capita deposit will lead to 0.37 rupee increase in per-capita credit obtained in rural areas. However, one rupee increase in per-capita deposit will lead to 0.51 rupee increase in per-capita credit obtained in urban areas. It can be, therefore, concluded that the same size of net addition in per-capita deposit even leads to more pumping of credit in urban areas as compared to rural areas. This reveals that the flow of institutional credit is relatively urban biased.

The coefficient for the density of bank branches per 10,000 population in rural area (DBB) is negative and significant, which means that one unit increase in the DBB leads to 1,639 rupees decrease in the per-capita credit. The negative sign of DBB can be attributed to the perception among bankers that the loans in rural areas are characterised as high-risk. This suggests that even if we increase the number of bank branches, it will not lead to enhanced supply of credit in rural areas. Elsewhere, it is argued that banks advance loans only to those who offer a lower risk and better security (Sahu et al, 2004). It was noted earlier that the number of agricultural and non-agricultural loan accounts per 1,000 population had been declining in rural areas (Table 8). Evidently, the mere existence of financial institutions does not guarantee that rural people will benefit from them. This finding has also been observed by Sarap

(1990) who made a survey of six villages of Sambalpure district of Orissa. In the case of urban areas, the coefficient of density of bank branches per 10, 000 populations is negative but not statistically significant.

Table 11: District Specific Intercepts of Fixed Effect Model

Districts	Rural		Urban	
	Coefficient	t - ratio	Coefficient	t - ratio
Bangalore (Urban)	2610.56 *	4.32	8926.02 *	4.07
Kodagu	5525.37 *	4.82	5464.90	1.38
Dakshina Kannada	1986.29 *	2.48	1120.46	0.27
Chikmagalur	3979.14 *	5.74	9156.54 *	5.08
Bangalore (Rural)	1210.69 *	4.04	1539.69	1.09
Shimoga	1945.02 *	4.44	4467.45 **	2.22
Mysore	1287.30 *	4.20	2976.92	1.44
Bellary	2036.69 *	5.07	4027.70 **	2.49
Belgaum	1113.16 *	4.06	2319.36	0.92
Uttar Kannada	1722.47 *	3.23	1060.37	0.37
Dharwad	1741.02 *	4.81	2498.19	1.28
Bijapur	1560.26 *	4.44	1779.94	1.01
Mandya	1601.43 *	4.36	1891.75	1.10
Chitradurga	1760.87 *	4.79	3074.63 **	1.95
Tumkur	1489.91 *	4.34	1577.44	0.88
Hassan	2259.89 *	4.90	3680.24 ***	1.63
Kolar	1845.19 *	4.53	1058.59	0.33
Gulbarga	1227.92 *	4.24	1337.66	0.97
Raichur	1282.38 *	4.53	4177.47 **	2.34
Bidar	1485.52 *	4.31	1111.54	0.31

Note: * at 1 % level of significance, ** at 5 % level of significance and *** at 10 % level

The intercepts of fixed effect model for 20 districts have been given in Table 11. This difference in intercepts can be attributed to the unique features of each district. Although the evidence supports that the Fixed Effect estimates are generally held to be downward biased estimates of the true effects, it is an improvement over cross-section data estimates (Johnston and Di Nardo, 1997).

10. Conclusions

The analysis on the flow of funds and deposits mobilisation suggests that financial institutions tended to gravitate towards the urban areas after the banking sector reforms were introduced in 1991. Approximately, 55 per cent of the total bank offices, 87 per cent of total deposits and 85 per cent of total credit in the state of Karnataka are concentrated in the urban areas. Importantly, the gap between rural and urban area in terms of flow of credit has been increasing over a period of time. It was found that though the CDR was low in urban compared to rural areas, per-capita credit availability was far higher in the urban areas. Thus, an area may be having a low CDR but that does not necessarily lead to a low per-capita credit. Since the per-capita credit availability in rural areas has been far lower than in the urban areas, enhancing the flow of funds should be given more weightage in rural areas.

It is observed that rural areas were having not only negative net flow of funds but the situation was also aggravating, indicating thereby that the credit agencies were disbursing less and less credit than the deposits mobilised by them. This shows a net outflow of funds through the banking channels from rural areas. Since per-capita deposit positively influences (but not uniformly across the population groups) the flow of credit, we can draw the following three key inferences from this. First, the supply of credit is demand-driven but backed by security. Second, as bankers consider deposit as a proxy for security, easy and attractive deposit schemes should be introduced in rural areas. This not only enhances their creditworthiness, but also facilitates them to obtain more formal credit. Third, other things remaining the same, one unit increase in deposits leads to lower credit flow in rural areas as compared to urban areas. This implies that there is need to address 'other things' in rural areas. The other things may be infrastructure, marketing, access to line department for technology support, etc. Without addressing these constraints, the mere existence of financial institutions does not guarantee that rural people will benefit from them.

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Abstract

Until banking sector reforms were introduced in India in 1991, the emphasis in the credit provision through formal banking system was to meet the targets at the expense of the quality of credit and viability of the banking system. The policies after 1991 stipulated the banks to continue to meet targets on credit to socio-economically deprived sections and sectors. At the same time, banks were asked not to neglect the viability of the banking system. This paper examines the impact of such contrasting policies on the flow of credit and deposit mobilisation in rural and urban areas in Karnataka State, India. It has been found that the formal financial institutions tended to gravitate towards urban areas in the credit provision after the reforms were introduced. During the reform period, rural areas witnessed negative net flow of funds through banking channels. Added to that, the situation aggravated as the reforms progressed. The paper argues that as bankers consider deposits as proxy for security, easy and attractive deposit schemes should be introduced in rural areas. This not only enhances the creditworthiness of rural dwellers but also facilitates them to obtain more formal credit. An important finding is that one unit increase in deposits leads to less credit flow in rural areas as compared to urban areas. This implies that unless the critical infrastructure for the growth is provided in rural areas, the mere existence of financial institutions does not guarantee that rural people will benefit from them.

KEYWORDS: *Urban Bias, Credit Deposit Ratio, Net Flow of Funds, and Access to Credit*