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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 worsened as the reforms progressed. The paper argues that as bankers consider deposits a means for security, easy and attractive deposit schemes should be introduced in rural areas. This not only enhances the creditworthiness of rural dwellers but also ensures them 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.

JEL Classification : E51

Key Words : Urban Bias, Credit Deposit Ratio, Net Flow of Funds, Access to Credit

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I

Introduction

The availability and judicious utilisation of funds spearheads 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. A series of policy initiatives introduced by the Indian government since independence continued to give impetus to the banking facilities across rural and urban areas in terms of branch expansion, deposit mobilisation and deployment of credit.

Besides government policies, factors likely to influence expansion of bank branches in a particular geographical area include (i) the level of economic activity, (ii) infrastructural development, (iii) urbanisation and (iv) the existence of other financial institutions. Chhipa and Sagar (1981) state that the volume of deposits in a region, by and large, depends on the

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branch network, income, and banking habit. Elsewhere, it has been suggested that income of the state, number of bank offices, and bank advances are major determinants of bank deposits in almost all the states and nation as a whole (Shaban and Bhole 2002). Deployment of credit, on the other hand, depends not only upon factors governing its supply but also on factors influencing its demand (Sahu *et al* 2004). Since these factors vary across the regions/states, the development of commercial banking (i.e., expansion of bank branches, deposit mobilisation and volume of bank advances) may not be uniform.

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 a 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 capita income at current prices. Due to its pioneering role in economic planning and development, Karnataka enjoys the top slot in Decentralisation Index in the country. The government has been offering an attractive package of incentives and concessions to promote industry and services, which has pushed the State 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 2002-3. 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 2002-3 as reform period[1]. Such a sub-

[1] Because of difficulty in collecting data, we could not maintain the same duration of time during pre and post reform periods in our analysis. This may have some impact on growth rates and averages. However, this can be treated as the limitation of the study.

period-wise analysis is significant because of the 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 envisaged to support the activities that were considered to be either socially beneficial or inherently riskier, and to the borrower groups likely to be marginalised in the credit market (Kohli 1997). On the whole, emphasis on the credit provisioning was target oriented, often at the cost of the quality of credit and viability of the banking system. The financial sector reform launched 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. Earlier, 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 banks[2] as the time series data are available for these financial institutions. 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 reorganised for 20 districts to have comparability in the analysis over a period of time.

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.

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

The paper, however, categorises the 20 districts into highly developed, developed, backward and highly backward groups on the basis of average per-capita net district income under the assumption that higher the per-capita income, higher is the development[3]. 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 across regions consist typically of plantation crops, higher proportion of irrigation, high cropping intensity and cultivation of commercial crops. These districts are mainly urban in character and the workforce is engaged in non-agricultural activities. In contrast, the backward and highly backward districts are typically semi-arid and rain-dependent, where inferior cereals and cash crops are grown and a large proportion of the workforce is dependent on cultivation and wage labour in agriculture.

II

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. In this section we deal with as to how this policy measure affected the progress of banking network in rural and urban areas. In Karnataka, the total number of scheduled commercial banks rose from 4429 to 4876 during the triennium ending with 1992-93 to 2002-03. This shows that there was a net addition of 447 bank branches

[3] Bangalore (Urban), Kodagu, Dakshina Kannada, Chikmagalur and Bangalore (Rural) come under the category of highly developed districts, while Shimoga, Mysore, Bellary, Belgaum and Uttar 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.

in 12 years beginning with 1990-91. However, the period did not witness uniform growth across the rural and urban areas. While the number of bank branches in urban areas[4] increased from 2,041 to 2,674 during the period of 1990-91 to 2002-03, those in rural areas, however, declined from 2,388 to 2,202 during this period. Consequently, the proportion of rural bank branches from the total declined. The number of scheduled commercial bank branches per one lakh of population[5] had declined in both rural and urban areas. However, the rate of such a decline had been higher in the rural areas. This is substantiated by the fact that there were 9 branches per one lakh population in rural areas in the triennium ending with 1992-93. The corresponding figure reduced to 6.3 branches per one lakh population in the triennium ending with 2002-03.

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 but also hardship to people in rural areas in the state while accessing banking services especially credit[6].

[4] It includes metropolitan, urban and semi-urban area.

[5] 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.

[6] 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 of deposits mobilization and credit deployment has been considered on the basis of location of the bank branches.

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)

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

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

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 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.

III

Growth in Deposits and Credit

This section provides the annual average growth rates[7] (Table 4) on credit flow and deposit mobilisition 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

[7] 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 β_2-1) x 100.

compared to the pre-reform period. The trend was exactly opposite in the backward and highly backward districts. For these districts, a high growth rate of deposits during the pre-reform period could be because of a low level of deposits in the base year.

- A 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. But it does not conclusively prove 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.
- 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. But in backward and highly backward districts during the second sub-period, 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 leading to the observation 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
Dahshina Kannada	6.1	11.9	9.8	13.0	15.7	15.8	14.0	18.0
Chikmaga-lur	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)

IV

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 the case under discussion, 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. To understand the same, the share in credit and deposits from the corresponding total has been calculated for each district (Table 5).

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 had gone 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 in almost all the districts. In other words, on an 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. A reverse trend also presents the same pattern i.e., a decline in the share of deposits leads to a decline in the share of credit. This suggests that deposit mobilisation is one of the important factors that influence the flow of funds.

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
Dahshina Kannada	27.5	31.1	72.5	68.9	24,9	28.0	75.1	72.0
Chikmaga-lur	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)

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 less than that of 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.

V

Credit Deposit Ratios in Rural and Urban Areas

Thus, if the share in credit is greater than the share in deposits, does it indicates 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. A clearer picture emerges if we calculate the CDR, which 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. Table 6 presents district and population group-wise such differences in CDR for Karnataka during the period 1986 to 2002-03.

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
Dahshina 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)

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 it has not remained 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 and in 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 the periods.
- Based on CDR, it is observed that the rural area suffered less in terms of drain of resources against their urban counterparts.

VI

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. So, an appropriate step 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 credit 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 a very few cases like Dakhina 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 had worsened, indicating thereby that, the credit agencies had been disbursing less and less credit out of deposits mobilised by them in rural areas. Evidently, thus in case of rural areas there was a net outflow of funds through the banking channels. It may be interesting to see where rural deposits were channelised? Was it 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 a flight of deposits from the rural to urban areas.

Table – 7

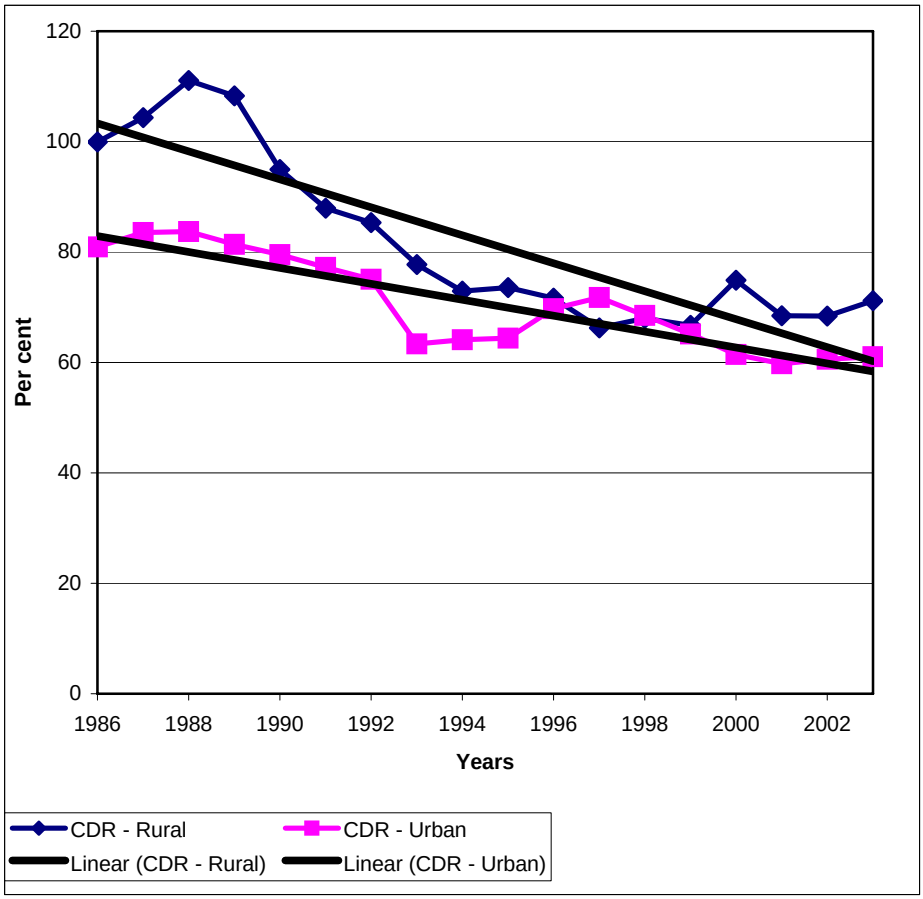
District and Population Group-wise Net Flow of Credit (%)

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
Dahshina 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)

It is also evident that the net outflow of funds from the rural areas of highly developed and developed categories districts were 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. The declining trend of CDR (Figure 1) in rural and urban areas endorses this observation. 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.

Figure 1: Credit Deposit Ratio in Rural and Urban Areas



VII

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 to 57.6 by 1999-2000 to 2002-03. In other words, on an average, one among every eleven persons in the rural areas had access to credit during the former period. However, one among every seventeen of them had access to credit during the latter period. The non-agricultural loan account 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 an alarming rate in rural areas against their urban counterparts. This shows that the people in the countryside often lacked access to institutional credit. Aryeetey (1996) points out that many small potential borrowers had never actively sought formal credit, for they generally tend to perceive 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		
	Agri-culture	Non-agri-culture	Total	Agri-culture	Non-agri-culture	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)

VIII

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. This shows an increasing gap between two segments over a period of time. From the above table it is evident that 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
Dahshina 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 with 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

as 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 urbanisation 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 with 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., higher the level of development, higher is 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.

IX

Determinants of Credit Flow

It is clear from the available studies that regions in India that are economically backward have less access to institutional credit than those which are not (Reddy 2001). Also, the growing difference in per-capita credit flow between urban and rural areas is attributed to a higher supply

of credit in the former as against the latter. Here, an attempt has been made to examine the determinants of credit flow in rural and urban areas. Hence, per-capita credit availability (PCA) in rural and urban areas is considered to be dependent variable in the respective model. The *a priori* model on the determinants of flow of credit has been specified with the following variables.

(a) Per-capita deposit (PD)

From the supply side, the flow of credit is said to be dependent upon the lender's assessment of creditworthiness of the borrower. This creditworthiness is directly proportionate to the level of deposits that the borrower maintains with the bank. 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.

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

It has already been established 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 years[8]. 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 affected. 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

[8] 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.

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[9]. 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 terms[10]. The basic framework for using the pooled regression model can be specified as

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

There are *k* regressors in X_{it} excluding the constant term. The individual effect, α_i which 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 takes 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:

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

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

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

[10] It is possible to allow the slopes to vary across the districts. However, it requires considerable complexity in the calculation.

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 Langrange 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 applied 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 statistics indicates that the fixed effect model is appropriate. Thus, the hypothesis that the individual effects are not correlated with the other regressors in the model can be rejected. Hence, of the two alternatives considered, the Fixed Effect Model appears as a better choice for the interpretation. This 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 determinants 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 larger the volume of per-capita deposit, 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 an increase of a rupee in per-capita deposit will lead to an increase of 0.37 rupee in per-capita credit obtained in rural areas. In the urban areas, however, an increase of a rupee in per-capita deposit will lead to an increase of 0.51 rupee in per-capita credit obtained. Thus, the same size of net addition in per-capita deposit leads to more pumping of credit in urban areas, which suggests that the flow of institutional credit is relatively urban biased.

The coefficient for the density of bank branches per 10,000 population in rural areas (DBB) is negative and significant, which means that, an increase of one unit in the DBB leads to a decrease of Rs.1,639 in the per-capita credit. The negative sign of DBB can be attributed to the perception among bankers that the rural lending is fraught high risk. Therefore, an increase in the number of bank branches will not lead to an enhanced supply of credit in rural areas. Moreover, banks advance loans only to those who offer a lower risk and better security (Sahu *at al* 2004). As mentioned earlier the number of agricultural and non-agricultural loan accounts per 1,000 population had been declining in rural areas (Table 8). So, the mere existence of financial institutions does not guarantee that people in the rural areas will benefit from banks in the matter of finance. 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	0.83
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	0.91

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).

X

Conclusions

The analysis on the flow of funds and deposits mobilisation suggests that financial institutions had a distinct urban bias 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 alarming feature is 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 uniform 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 issues' in rural areas. And this may include provision of infrastructure, marketing, access to line department for

technology support, etc. Without extending such supports, the mere existence of financial institutions alone may not prove beneficial to the rural people.

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