Bank Deposits in India: Analysis of Regional and Inter-Temporal Variations

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Abstract

The paper focuses on evaluation of flows of deposits into banks, which is the base of investment (credit capital), resulting in accentuation of regional inequalities in Indian banking industry. Growth of bank deposits is a function of growth of income/GDP/SDP. Banks' deposits are treated as an indicator of economic development in general and development of banking industry in particular. The paper determines the changing levels and consequent trend of growth of deposits in 32 states and Union territories of India. The distributed lag regression modeling with partial adjustment specification is used to evaluate the impact of lagged deposits and SDP on banks' deposits. The study covers the period of 11 years from 1995 to 2005. Empirical results show SDP as the main determinant, though current deposits are influenced by previous year's deposits. Multi-collinearity makes SDP non significant determinant of deposits for some states, while lagged deposits emerge as non-significant determinants of current deposits in some other states. On the whole, distributed lag model furnishes satisfactory results.

Introduction

The theory of capital structure emphasizes loan rather than equity capital as the base of financial health of industry. Therefore, loan capital in general and bank credits in particular play pivotal role in the growth of business in general and private business in particular. Deposits are the base of credit creation by banks. Therefore, this paper focuses on bank deposits and their relation with income and its growth in 31 states of India. Growth of bank deposits is a function of growth of per capita income/GDP/SDP. Therefore, bank deposits are treated as an indicator of economic development in general and development of banking industry in particular. Hence, regional differences of bank deposits may be considered as an indicator of regional differences of economic growth.

Banks have been operating for more than a century in India and are now an inseparable part of both rural and urban economies. The banks, especially cooperative banks, in rural areas are assumed to cater mainly to the banking needs of rural economy in general and supply of institutional credit to agricultural and related activities in particular. Banking in rural India has, however, been an exclusive concern of public sector banks, since private sector has been shying away from operating in rural areas. Besides, public sector banks cater banking needs of the masses, while private banks, both domestic and foreign have

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Author is grateful to the anonymous referees for comments and suggestions for improving the text and contents of the paper. Author alone is responsible for any errors/mistakes still remaining in the paper.

merged as caterers of class banking. Urban public and private banks cater to the banking needs of urban economy, which are more diverse in nature and much greater in magnitude than those of rural economy (1 Cf. RBI, 2006b). Policy makers have been aligning the operations and governance of Indian banking industry with internal and external environment in which Indian operates in globalized scenario after the adoption of NEP in 1991. Besides the credit needs of corporate, banks have to meet the needs of middle and lower income groups, many among whom are engaged in small and medium business and trade; but SMES are spread across the length and breadth of the country, including metropolitan areas semi-urban and urban areas. Rural areas, semi-urban and small sized urban areas have inadequate banking services. Private banks, both Indian and foreign, are concentrated in metros and big cities to cater to the banking needs of the upper income groups. Mass banking needs continue to be the exclusive responsibility of public banks by default on the part of private sector banks.

Mobilization of Deposits

Mobilization of deposits is one of the essential functions of banks. Deposits, in fact, are the pivot of bank's business operations. But deposits depend on savings which accrue from income and profits. Higher savings culminate in greater deposits; while greater deposits enable banks to create greater quantum of credit, which raises the level of business operations of banks on the one hand, and contribute to the growth of trade and industry on the other. Interest earned on credits is the major source of banks' income, while interest payment to depositors is an important item of cost of banking operations. Transformation of small amounts of deposits from households, corporate and institutions into astronomically huge amounts of money for investment, is an important function of banks (See, for details, Prakash, S. 2005, 2003).

Magnitude of deposits depends on savings which, in turn, depend on income of the people and state domestic product of states. Deposits also depend on corporate profits and surpluses of institutions/organizations. Corporate houses and other institutions, both public and private, are operators of funds in bulk, including deposits and bank credits/loans. High income and high profits/surpluses result in high savings, which lead to growth of banks' deposits.

Banks' deposits depend on (i) cash people, corporate and institutions have in hand, and (ii) preference/need for liquidity. Demand for liquidity plays an important role both at micro and macro levels; it promotes standard of living at micro level and promotes growth of economy and its business at macro level. Liquidity crunch limits growth of the economy and its business on the one hand, and it acts as a bottleneck which households face in different income and price situation in the economy. Classical economists recognized only transaction needs of the people as the base of demand for liquidity. But Keynes postulated that people's demand for liquidity arises from three different type of monetary needs/motivation: (i) Transaction needs; (ii) Precautionary needs; and (iii) Speculative needs. All three needs operate as the stimulus of different kinds of want for money. These needs/motives are briefly explained hereunder.

Transaction Motive

The need for money for transactions arises from the gap between the time of receipt of income and time when money is needed for expenditure. Income is received only periodically- weekly, monthly or even annually (bonus/dividend) rather than daily. Money is needed for expenditure on goods and services daily. For example, salaried people get their salary after the end of the month; besides, they do not spend entire income in one go on first day of the new month. They hold some money with themselves for purchase of food, shelter, clothing, and for payment of taxes, electricity bills, children's fees, transport, communication, health, entertainment, several other services and sundry items. Experience makes people know the amount of money they need for meeting requirements of transactions relating to their planned as well as unplanned or contingency expenditure. In fact, a definite part of income represents committed expenditure of households and institutions. But households' demand for money/liquidity is a function of their level of living and disposable income. However, aggregate/macro transaction demand for money is a function of net national income. But the level of living itself depends on disposable income of the household. So broadly, transaction demand for money may be treated as a function of disposable income. But the nominal disposable income may be distinguished from real disposable income. But the current transaction are to be made at prevailing prices in the market. So, nominal rather than real disposable income comes into reckoning; the function may be expressed as follows:

$$TDM_t = f(Y_t) \quad (1)$$

TDM_t denotes transaction demand for money/liquidity and Y_t refers to nominal income at time t. The regression model may be expressed as follows:

$$TDM_t = \beta_0 + \beta_1 TDM_{t-1} + \beta_2 Y_t + U_t \quad (2)$$

This is a distributed lag model with partial adjustment specification which is elaborated in ensuing part of the paper. Lagged value occurs as a pre-determined variable in relation 2 in order to account for committed part of expenditure out of current income and this part depends on past demand for liquidity. Habit, inertia, frictions and ignorance etc. account for the inclusion of the lagged value of the dependent variable as a determinant in regression models.

Precautionary Demand for Liquidity

People hold a part of their income liquid as a precaution to cater to contingency and unforeseen emergency, or even as a sheer habit. Some expenditure arises due to unforeseen and unpredictable events like sickness, theft, loss of job, accidents, death, arrival of guests, festivals, birth days, anniversary, etc. People hold some idle cash balances with them for meeting unforeseen eventualities. Like transaction demand for money, precautionary demand for money is also closely related to the nominal disposable income. The regression function of this relationship is shown below:

$$PDM_t = \alpha_0 + \alpha_1 PDM_{t-1} + \alpha_2 Y_t + V_t \quad (3)$$

PDM_t is precautionary demand for liquidity.

Speculative Demand for Liquidity

Keynes seems to have assumed that all people hold a part of their income as idle cash balances for speculative purposes. Speculative demand for money is linked to people's desire to take advantage of the changes in stock market. IT may, however, be noted that all people of any country do not directly invest in equities. Besides, a large proportion of investors in stocks invest for long term rather than speculative gains. Therefore, demand for liquidity for speculation is not universal in nature; it is confined only to a small fraction of total population.

Many middle income group households invest in mutual funds for getting returns higher than those available from fixed return assets. Some persons do invest in shares to make capital gain by selling the same at prices higher than purchase prices. If, however, market slumps, then, such investors also incur losses. Those persons, who hold idle cash balances for investing in units of mutual funds or shares etc. under uncertainty about returns, demand liquidity for speculation. Speculation involves elements of uncertainty and risk.

Speculative demand for money is not irrational. Persons, having income in excess of amounts needed for transaction and precautionary demand for money, have three options: (i) hold idle cash balances in expectation of favorable change in stock market, (ii) invest in income yielding assets like bank or company fixed deposits, NSCs, Kissan/Indira Vikas Patras, NSS, PPF/PF, real estate, gold or commodity markets or equities. Some of these options are fixed return options while other lines of investment offer variable returns on investment of the same amount. Variable returns carry risks, which has to be reckoned and borne. But most people avert risk and desire safety and security for investment. Majority of such people deposit their savings in banks.

Credit Creation by Banks

Banks use major proportion of deposits in accounts of varying duration for credit creation. Loans are advanced for different purposes to individuals, societies, NGOs, corporate, and institutions/organizations. Corporate take huge amounts as loan capital as compared to individuals. Banks charge interest from the debtors, and pay interest to depositors. The difference between the lending interest rates and rates of interests on deposits accrue to the banks as income.

Imbalance in Regional Development of Banking Industry

Before nationalization f commercial banks in 1969, there was regional imbalance in the development of banking industry in India. Industry was almost exclusively dominated by private sector banks, which were concentrate mostly in developed states; and even within developed states, banks preferred highly populated urban centers. Small cities, towns, semi-urban locations and villages went without or inadequate banking facility. After nationalization of 14 private commercial banks in 1969, public sector banks operated under government mandate to spread out the branches in different states and regions within states. Rural branch expansion and priority sector landing became the instruments of policy to provide direction to public sector bank operations for inclusive growth of the industry. However, imbalance in deposit mobilization and advance of credit by banks in developed and relatively less developed states of India still persists. Inadequacy of demand for loan capital in less developed states facilitates transfer of financial resources of less to more developed states. Consequently, resources raised in less developed states through bank deposits are used for credit creation for use in more developed states. This further accentuated developmental cleavage between more and less developed states over the years. This hypothesis, if empirically valid, may lead to surmise that the banks have failed in their mission to reduce the inequalities of development among the Indian states.

It is paradoxical that regional growth theory postulates transfer of human and material resources from less to more developed states rather than emphasize the opposite directional transfers. Besides, the theory of regional development, distinguishing center and periphery, pole and enclave of backwaters, does not embody transfer of financial resources of less to more developed states through the banking industry. Public policy makers have also been oblivious of this phenomenon. The findings of this study will sharpen our understanding about this phenomenon.

Objective of the Study

The basic objective of the paper is to determine the degree of regional inequalities of development among the 32 states and union territories of India. Second objective of the study is to determine the degree and direction of relationship between deposits and SDP of states.

Sources of Data

The study covers a period of period of 11 years from 1995 to 2005 for which state wise requisite data are available and accessible from Website of Reserve Bank of India and Economic Survey. The difficulty in data accessibility arose from the need of matching the SDP and banks' deposits for year on year basis.

Investment Flows and Inequalities of Growth

Given India's size and diversity, it is unrealistic to expect that all states will grow at the same rate, or all sectors will be equally developed. Some states and sectors within them may grow more rapidly than others. Some states are better placed with regard to factor endowments, which have also conferred on them the advantage of early historical start than others to explore, seize and exploit opportunities of development; such states also have comparative advantage in utilizing benefits of new policy initiatives, globalised environment and capitalize their already achieved level of development. Low development level and relative lower growth rates of SDP of states like Rajasthan, Uttar Pradesh, Madhya Pradesh and Odissa still pose challenge of development. Less developed states' more rapid growth is warranted for them to catching up the leading states of growth. Continuation of low growth rates of SDP of several states, having almost one third of Indian population, while rest of the country forges ahead on high growth path of per capita SDP, has serious social, political and economic implications. Both poverty and prosperity are indivisible. Besides, low growth of some states

lowers the growth of the entire economy. It is therefore, necessary to increase the rate of growth of per capita SDP of states lagging behind in development. Reduction of regional inequality of development requires the less developed and poorer states to grow more rapidly than the Indian economy. Even if such states grow at a rate, equal to the national average, currently prevailing inequalities of development will persist.

We postulate that priority state lending by banks, like priority sector lending will reduce the regional inequalities of development. This will also entail the utilization of total deposits raised by banks in lagging state within these states. A relevant question is why do banks keep more money with RBI than mandatory requirement. Another aspect of banking operations relates to higher interest being charged from small and budding entrepreneurs have to pay rates than rates paid by big business houses. Incidentally, three big business houses alone accounted for Rs. 57000 crore NPAs in nineties. Studies of recovery of cooperative loans have revealed that small borrowers seldom default.

Methods/Models of Empirical Analysis

Two regression models are used: simple bi-variate regression model and distributed lag model. Step-wise regression approach, as suggested by Klein (1965) is preferred to detect possible multi-collinearity in multiple distributed regression model. Distributed Lag Model (DLM) with partial adjustment specification is preferred to other econometric models; DLM is an augmented form of auto-regression model. Past studies have found auto-regression models to better explain and predict the behavior of economic time series than complicated macro-econometric models (See, Harvey, A.C., 1984, Gujarati and Sangeetha, 2006).

Simple Two Variables Model

The following regression model of banks'deposits, Y_t as a function of SDP, Xt is specified for estimation by OLS:

$$Y_t = \beta_? + \beta_1 X_t + \varepsilon_t \quad (4)$$

ε_t is random error.

Multiple Regression Function-Distributed Lag Model

Desired Aggregate Bank Deposits, Y^*_t is treated as a linear function of SDP, X_t.

$$Y^*_t = \alpha_? + \alpha_1 X_t + U_t \quad (5)$$

U shows random errors, α_0 and α_1 are the parameters to be estimated by OLS. All classical assumptions of OLS are associated with the procedure of estimation used in the study. It is assumed that actual change in bank deposits is only a fraction of desired change:

$$(Y_t - Y_{t-1}) = ?(Y^*_t - Y_{t-1}) \quad (6)$$

Imperfect foresight, ignorance, bottlenecks, inertia, frictions, and uncertainty about emerging contingencies together make actual change only a fraction of desired change in deposits from the preceding period's level. 0< ?<1 is the coefficient of adjustment of actual to the desired change in deposits to maintain their alignment with the growth of SDP. This assumption brings the lagged value of deposits explicitly into the model as an explanatory factor.

Substitution of Y^*_t from 4 into 3 yields the following relation:

$$Y_t = ?a_\circ + (1-?)\,Yt\text{-}1 + ?\,a_1 X_t + ?U_t \quad (7)$$

The model is specified as follows:

$$Y_t = II_? + II_1 Y_{t-1} + II_2 X_t + V \quad (8)$$

and

$$II_? = ?\alpha_?,\ II_1 = (1-?),\ II_2 = ?\alpha_1,\ V = ?U_t \quad (9)$$

IIs are reduced form parameters which are estimated by OLS. But all the parameters in 8 are indirect OLS estimates. Value of ? is derived from estimated value of II_1: ?=1- II_1. Determination of ? facilitates the determination of values of other structural parameters, α_0 and α_1. Values of U can also be derived from the estimated values of V. Reduced form equation 7 is exactly identified. Indirect Least Squares (ILS) estimates of structural parameters of 8 will be consistent.

Results of Empirical Analysis

However, as a preliminary step model 4 of banks' deposits as a function of states' SDP alone are discussed. State-wise OLS estimates of this model are reported in table 1.

Table 1: State-Wise Estimates of Bank Deposits As a Function of SDP

State	Adj. R^2	â?	â 1	t		F
1. Haryana	0.73	5205.71	0.914	1.55	5.42*	29.45
2. Himachal Pradesh	0.80	1952.63	0.874	2.06	6.50*	42.32
3. Jammu & Kashmir	0.71	3342.25	0.780	2.24	5.10*	26.07
4. Punjab	0.67	16323.6	0.731	2.47	4.71*	22.24
5. Rajasthan	0.76	8339.42	0.816	2.26	5.76*	33.21
6. Chandigarh	0.68	2640.39	0.776	2.21	4.77*	22.82
7. Delhi	0.82	15218.9	1.083	0.95	7.04*	49.69
8. Assam	0.94	908.92	1.035	1.98	12.85*	165.30

9. Manipur	0.91	53.34	1.035	1.64	10.41*	108.4
10. Meghalaya	0.41	3453.38	0.661	1.97	2.83**	8.05
11. Mizoram	0.88	156.86	0.889	2.63	8.86*	78.59
12. Nagaland	0.30	2232.48	0.595	1.98	2.30**	5.29
13. Tripura	0.93	218.75	0.994	2.26	12.15*	147.8
14. Bihar	0.93	2407.78	1.016	1.94	11.70*	137.10
15. Jharkhand	0.92	1797.54	0.986	2.16	11.07*	122.76
16. Orrisa	0.98	253.23	1.122	2.86	29.55*	873.65
17. Sikkim	0.92	7356.74	0.959	2.43	10.94*	119.76
18. Chattisgarh	0.90	3576.49	0.916	2.55	9.58*	91.79
19. Madhya Pradesh	0.93	12726.1	0.920	3.01	11.61*	134.91
20. Uttar Pradesh	0.96	1954.99	1.069	2.27	17.70*	313.6
21. Uttarkhand	0.91	77.59	1.23	0.80	10.75*	115.72
22. Goa	0.82	16629.1	0.882	2.18	6.82*	46.57
23. Guajrat	0.89	10250.8	1.110	0.97	9.19*	84.55
24. Maharashtra	0.42	17532.8	0.812	1.28	2.89**	8.37
25. Andra Pradesh	0.95	7210.24	1.035	2.29	15.04*	226.4
26. Karnataka	0.98	1459.16	1.11	2.77	27.11*	735.4
27. Kerla	0.25	50906.7	0.533	2.11	2.08**	4.35
28. Tamil Nadu	0.67	11176.2	0.834	1.77	4.67*	21.84
29.Pondichery	0.55	12226.1	0.714	2.09	3.63*	13.22

**Significant at 0.01 probability level; ** Significant at 0.05 probability level.*
Source: Own Calculation

The function fits the data of 29 out of 32 states and union territories well. The coefficient of determination is highly significant in all cases. The critical value of F is 4.21 for 0.01 probability level. The proportion of total change in Banks' deposits, explained by the function, ranges from a minimum of 25% for Kerala to 98 percent for Karnataka and Odisa. Besides, the explained proportion of variation ranges from 90 to 96 percent of the total change in deposits; Explained proportion of variation ranges from 67 to 89 % for another 11 states; leaving only 5 states for which explained proportion of variation is between 25 to 55 percent. A point to be noted is that these proportion of explained variation are based on adjusted R2 rather than un-adjusted value of the coefficient of determination. All the coefficients attached to SDP are statistically significant; 4 coefficients are significant at 0.05 and 25 coefficients are significant at 0.01 probability level. These results provide very strong evidence to support the thesis that banks' deposits are a function of states' SDP.

Results of remaining 3 states, for which the model does not fit the data well, are reported below in table 2. These results imply that the banks' deposits in these states are affected much more by factors other than SDP.

Table 2: States for which Banks' Deposits are not significantly affected by SDP

State	**Adj. R^2**	**Coefficients**		**t**		**F**
		$\hat{a}_0$	$\hat{a}_1$			
Arunachal Pradesh	0.17	2019.01	0.115	14.65	1.77	3.15
West Bengal	0.20	29633.5	0.492	2.15	1.90	3.62
Andman & Nikobar	0.09	82403.1	-0.128	1.33	-0.32	0.151

(Source: Own Calculations)

Arunachal Pradesh, West Bengal & Andman & Nikobar are the states and union territory where SDP does not significantly affect banks' deposits. In regression analysis, if either of the two variables included in the model does not show adequate variation, regression coefficient may be statistically not-significant and some time even negative. If we accept a probability greater than 0.05 for West Bengal and Arunachal Pradesh, the coefficient of SDP emerges as significant. Andaman and Nicobar is an outlier of the data base. Thus, on the whole, we have overwhelming empirical evidence to support the thesis that SDP is the main determinant of banks' deposits in the states.

Results of Distributed Lag Model

As a part of step-wise regression model, inclusion of lagged value of deposits of previous year is designed to detect multi-collinearity and to assess the relevance of the additional variable as an explanatory factor. Besides, it facilitates the evaluation of hypothesis of partial adjustment of current deposits to SDP of the state. Presence of serious multi-collinearity makes significant regression coefficients not-significant and/or positive into negative coefficients. Besides, if the additional variable is not redundant or superfluous as an explanatory factor, then its inclusion in the model will invariably raise the value of the coefficient of determination. An important property of R2 is that it is a non-decreasing function of number of explanatory variables in the model; as the number of regressors increases, R2 almost invariably increases, its constancy or nominal change indicates the redundancy of the variable as a determinant of the dependent variable. The partial coefficients of multiple regression also reveal which of the independent factors influences the value of the dependent variable relatively more. These facets are in addition to the assessment of the validity of distributed lag model in this study.

Distributed Lag Model 7 has been estimated by OLS for all states separately. Results are reported in table 3 given below:

Table 3: State-wise Results of Distributed Lag Model

State	Adj. R^2	Coefficients			t			F
		II_0	II_1	II_2				
1.Haryana	0.82	-1532.07	0.257	0.345	-0.38	0.82	2.35*	24.93
2.Himachal Pradesh	0.87	-108.69	0.078	0.517	-0.09	0.23	2.48*	36.43
3.Rajasthan	0.86	-7418.86	0.157	0.410	-1.21	0.62	2.87*	34.10
4.Chandigarh	0.78	1891.45	0.300	0.804	1.79	1.17	2.19*	18.69
5.Delhi	0.89	-42315.6	0.032	2.666	-1.59	0.07	2.47*	41.98
6.Arunachal Pradesh	0.91	1809.78	0.001	0.249	35.43	0.04	8.71*	52.74
7.Assam	0.96	-1081.12	0.386	0.159	-1.23	1.44	2.51*	134.29
8.Manipur	0.97	-50.75	0.208	0.118	-1.85	1.17	4.89*	204.55
9.Tripura	0.95	-228.87	0.040	0.281	-1.16	0.10	2.47*	118.91
10.Sikkim	0.99	-5416.26	-0.15	51.67	-3.37	-1.23	9.63*	716.61
11.Chattisgarh	0.97	-724.85	0.208	0.512	-0.61	1.33	4.80*	169.94
12.Madhya Pradesh	0.95	-21697.6	0.812	0.968	-1.59	0.62	2.60*	114.02
13.Uttarkhand	0.93	-521.04	0.569	0.076	-1.34	1.32	1.58	68.86
14.Goa	0.97	4669.87	-0.10	10.29	1.45	-0.73	7.61*	199.94
15.Gujarat	0.96	-40347.6	0.083	1.194	-2.85	0.31	4.02*	121.79
16.Maharashtra	0.70	-71266.4	-0.19	0.523	-2.33	-0.51	3.07*	12.86
17.Andra Pradesh	0.98	-21923.5	0.062	0.511	-2.73	0.23	3.76*	285.58
18.Tamil Nadu	0.80	-16536.9	0.020	0.418	-1.41	0.05	2.59*	21.25

**Source: Own Calculations*

First we look at the values of coefficient of determination. ALL these coefficients of determination are statistically significant. The value of the coefficient of detemiantion ranges from 0.70 for Maharastra to 0.99 for Sikkim. A comparison of the values of the coefficient of determination of this model with those of the previous model reveals that (i) inclusion of lagged deposits as an explanatory variable in the function has brought about substantial improvement in the explanatory power of the function relative to that of the single explanatory function except for 2 states which showed the maximum value of 0.98 in the preceding model; (ii) improvement in the value of the coefficient of multiple determination ranges from 2 to 74; maximum increase being shown for Arunachal Pradesh which had an extremely low value of the coefficient in the previous model; (iii). An interesting feature of the change in the value of R2 for these states is that the higher the value of the coefficient in the original function, lower is the improvement in its value on the introduction of lagged deposits as an additional pre-determined variable, and smaller the initial value of the coefficient, greater is the increase in its value in second function. The improvement in values of the coefficient of multiple determination implies that in none of these cases lagged deposits is a superfluous variable as an explanatory factor. However, the coefficient of lagged deposits is not significant in any of these 18 states. In view of the essential nature of lagged deposits as a determinant, non-significance of its coefficients is attributable to the presence of serious multi-collinearity. This inference is supported by the results for other 8 states (table 4). It is rational to think that since current deposits depend on SDP, there is significant correlation between current SDP and lagged savings/deposits. Several decision making agents decide to save more out of current income in anticipation of higher income in next period, or vice versa. Some even make purchases on hire and purchase basis, which commits their future income to current expenditure, resulting in forced savings in futute (See, Prakash, Shri, 2010, Prakash, S. and Baghati, Arvind, 2008). However, the coefficient of SDP retains its significance for all these states; the coefficient of SDP for these states was significant in earlier function also. These results suggest that SDP is the major determinant of banks' deposits.

As against the above 18 states, coefficient of lagged deposits emerges statistically significant while the coefficient of SDP loses its significance for these states. These results lend further support to our inference that the coefficient of regression coefficient attached to lagged deposits has emerged non-significant due to presence of serious multi-collinearity. The results are reported in table 4 which is given below:

Table 4: States for which Lagged Deposits are Statistically Significant

State	Adj. R^2	Coefficients			t			F
1. Jammu & Kashmir	0.68	3155.74	0.772	0.021	1.58	4.53	0.15	11.63
2. Mizoram	0.87	161.99	0.892	-0.01	1.97	8.24	-0.09	34.98
3. Nagaland	0.22	2649.79	0.610	-0.16	1.66	2.22	-0.39	2.47
4. Bihar	0.93	1225.4	0.765	0.138	-0.29	2.69	0.93	67.97
5. Jharkhand	0.93	367.13	0.690	0.122	0.29	3.09	1.43	69.66
6. Orrisa	0.98	-172.76	0.924	0.019	-0.40	4.62	1.01	438.07
7. Uttar Pradesh	0.96	-2370.85	0.845	0.043	-0.35	2.41	0.65	146.95
8. Karnataka	0.98	1665.54	1.126	-0.004	0.516	4.51	-0.06	327.06

*(*Source: Own Calculations)*

Value of adjusted R^2 has remained unchanged for Karnataka as it has a very high value of 0.98 in previous function also. For all other states, the value of R^2 has increased appreciably. But addition of another explanatory factor makes the coefficient of SDP not significant. Only Nagaland is the state where previous year's deposits are statistically significant but overall equation is not statistically significant.

Test of Autocorrelation

As time series constitutes the data base of the study, results have been tested for autocorrelation by Durbin-Watson d statistics. The results of autocorrelation test are reported in table 5 given below:

Table 5

S. No.	State / Union Territory	Calculated Value of d and critical values at 1% $d_U = 1.08$ $d_L = 0.55$
1.	Haryana	1.78
2.	Himachal Pradesh	1.66
3.	Jammu & Kashmir	2.1
4.	Punjab	1.76
5.	Rajasthan	2.1
6.	Chandigarh	1.96
7.	Delhi	1.58

8.	Arunachal Pradesh	1.36
9.	Assam	1.52
10.	Manipur	3.42
11.	Meghalaya	1.76
12.	Mizoram	1.94
13.	Nagaland	1.02**
14.	Tripura	1.94
15.	Bihar	2.6
16.	Jharkhand	1.18
17.	Orrisa	2.26
18.	Sikkim	1.66
19.	West Bengal	1.74
20.	Andman & Nikobar	2.42
21.	Chattisgarh	3.1
22.	Madhya Pradesh	2.54
23.	Uttar Pradesh	2.34
24.	Uttarkhand	5.26
25.	Goa	0.26*
26.	Gujrat	0.86**
27.	Maharashtra	1.94
28.	Andra Pradesh	0.9**
29.	Karnataka	3.0
30.	Kerla	1.76
31.	Tamil Nadu	1.86
32.	Pondichery	1.92

(Source: Research Study)

From the above table, it can be infer that (i) autocorrelation test is inconclusive for 3 states, (i) significant auto-correlation is indicated for one state, and (iii) 28 of the 32 states show that the estimated function is free from significant auto-correlation. Therefore, the estimated functions are acceptable for 31 states.

Conclusions

Empirical results show that (i) current deposits are affected both by preceding period's deposits and current SDP of the states; (ii) SDP exercises much greater influence on current deposits than lagged deposits.

These results have some serious policy implications. Less developed states due to low income and savings do not have high bank deposits. The problem of low savings is further accentuated by less than full utilization of less developed states' low deposits within the states due to low demand for investment. This limits the growth of their SDP. It is suggested that banks may be asked to adopt the priority state lending policy on the lines of priority sector lending policy in vogue.

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Appendix 'A'

$Y = \alpha + \alpha_1 x_1$ (Y = deposits, X= Pr. Yr.'s Deposits)

State	Adj. R^2	Coefficients		T		F
Haryana	0.73	5205.71	0.914	1.55	5.42	29.45
Himachal Pradesh	0.80	1952.63	0.874	2.06	6.50	42.32
Jammu & Kashmir	0.71	3342.25	0.780	2.24	5.10	26.07
Punjab	0.67	16323.6	0.731	2.47	4.71	22.24
Rajasthan	0.76	8339.42	0.816	2.26	5.76	33.21
Chandigarh	0.68	2640.39	0.776	2.21	4.77	22.82
Delhi	0.82	15218.9	1.083	0.95	7.04	49.69
Arunachal Pradesh	0.17	2019.01	0.115	14.65	1.77	3.15
Assam	0.94	908.92	1.035	1.98	12.85	165.30
Manipur	0.91	53.34	1.035	1.64	10.41	108.4
Meghalaya	0.41	3453.38	0.661	1.97	2.83	8.05
Mizoram	0.88	156.86	0.889	2.63	8.86	78.59
Nagaland	0.30	2232.48	0.595	1.98	2.30	5.29
Tripura	0.93	218.75	0.994	2.26	12.15	147.8
Bihar	0.93	2407.78	1.016	1.94	11.70	137.10
Jharkhand	0.92	1797.54	0.986	2.16	11.07	122.76
Orrisa	0.98	253.23	1.122	2.86	29.55	873.65
Sikkim	0.92	7356.74	0.959	2.43	10.94	119.76
West Bengal	0.20	29633.5	0.492	2.15	1.90	3.62
Andman & Nikobar	-0.09	82403.1	-0.128	1.33	-0.32	0.151
Chattisgarh	0.90	3576.49	0.916	2.55	9.58	91.79
Madhya Pradesh	0.93	12726.1	0.920	3.01	11.61	134.91
Uttar Pradesh	0.96	1954.99	1.069	2.27	17.70	313.6
Uttarkhand	0.91	77.59	1.23	0.80	10.75	115.72
Goa	0.82	16629.1	0.882	2.18	6.82	46.57
Gujrat	0.89	10250.8	1.110	0.97	9.19	84.55
Maharashtra	0.42	17532.8	0.812	1.28	2.89	8.37
Andra Pradesh	0.95	7210.24	1.035	2.29	15.04	226.4
Karnataka	0.98	1459.16	1.11	2.77	27.11	735.4
Kerla	0.25	50906.7	0.533	2.11	2.08	4.35
Tamil Nadu	0.67	11176.2	0.834	1.77	4.67	21.84
Pondichery	0.55	12226.1	0.714	2.09	3.63	13.22

Appendix 'B'

$Y = \alpha + \alpha_1 x_1 + \alpha_1 x_1$ (Y = deposits, X_1 = Pr. Yr.'s Deposits, X_2 = SDP)

State	Adj. R^2	Coefficients			T			F
Haryana	0.82	-1532.07	0.257	0.345	-0.38	0.82	2.35	24.93
Himachal Pradesh	0.87	-108.69	0.078	0.517	-0.09	0.23	2.48	36.43
Jammu & Kashmir	0.68	3155.74	0.772	0.021	1.58	4.53	0.15	11.63
Punjab	0.74	-2473.7	0.144	0.648	-0.20	0.39	1.76	15.30
Rajasthan	0.86	-7418.86	0.157	0.410	-1.21	0.62	2.87	34.10
Chandigarh	0.78	1891.45	0.300	0.804	1.79	1.17	2.19	18.69
Delhi	0.89	-42315.6	0.032	2.666	-1.59	0.07	2.47	41.98
Arunachal Pradesh	0.91	1809.78	0.001	0.249	35.43	0.04	8.71	52.74
Assam	0.96	-1081.12	0.386	0.159	-1.23	1.44	2.51	134.29
Manipur	0.97	-50.75	0.208	0.118	-1.85	1.17	4.89	204.55
Meghalaya	0.47	1091.41	0.280	1.337	0.47	0.81	1.46	5.60
Mizoram	0.87	161.99	0.892	-0.01	1.97	8.24	-0.09	34.98
Nagaland	0.22	2649.79	0.610	-0.16	1.66	2.22	-0.39	2.47
Tripura	0.95	-228.87	0.040	0.281	-1.16	0.10	2.47	118.91
Bihar	0.93	1225.4	0.765	0.138	-0.29	2.69	0.93	67.97
Jharkhand	0.93	367.13	0.690	0.122	0.29	3.09	1.43	69.66
Orrisa	0.98	-172.76	0.924	0.019	-0.40	4.62	1.01	438.07
Sikkim	0.99	-5416.26	-0.15	51.67	-3.37	-1.23	9.63	716.61
West Bengal	0.22	9026.87	0.286	0.224	0.38	0.89	1.09	2.45
Andman & Nikobar	-0.07	322348.1	-0.19	-242.6	1.37	-0.58	-1.05	0.63
Chattisgarh	0.97	-724.85	0.208	0.512	-0.61	1.33	4.80	169.94
Madhya Pradesh	0.95	-21697.6	0.812	0.968	-1.59	0.62	2.60	114.02
Uttar Pradesh	0.96	-2370.85	0.845	0.043	-0.35	2.41	0.65	146.95
Uttarkhand	0.93	-521.04	0.569	0.076	-1.34	1.32	1.58	68.86
Goa	0.97	4669.87	-0.10	10.29	1.45	-0.73	7.61	199.94
Gujrat	0.96	-40347.6	0.083	1.194	-2.85	0.31	4.02	121.79
Maharashtra	0.70	-71266.4	-0.19	0.523	-2.33	-0.51	3.07	12.86
Andra Pradesh	0.98	-21923.5	0.062	0.511	-2.73	0.23	3.76	285.58
Karnataka	0.98	1665.54	1.126	-0.004	0.516	4.51	-0.06	327.06
Kerla	0.30	6577.95	0.271	1.002	0.158	0.84	1.29	3.17
Tamil Nadu	0.80	-16536.9	0.020	0.418	-1.41	0.05	2.59	21.25
Pondichery	0.59	5678.54	0.333	4.890	0.77	1.00	1.39	8.27