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Financial Liberalisation And Determinants of Profitability of Commercial Banks in India

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Abstract

Financial liberalisation efforts since 1991 have made perceptible impacts on the profitability of commercial banks in India with varying levels between public and private sectors. One of the objectives of the reform measures is to influence and change in the trends of determinants of profitability of banks towards the attainment of higher levels of profit. The said objective of the reform has been fulfilled. However, the higher profitability of public sector banks is achieved at the altar of negative premium on social obligations.

Key words: financial liberaliation, commercial banks, profitability

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Introduction

The financial sector particularly the banking sector in India has been in the vortex of dynamic structural transformation consequent to the implementation of comprehensive reforms initiated since 1991 as part of globalisation, privatisation and liberalisation of the economy. These reform measures were implemented on the backdrop of financial repressive regime characterised by directed credit flow, control of interest rate structure, built-in-cross subsidisation, excessive preemption of deployable resources through statutory reserves, spatial and quantitative restriction (branch licensing/new lines of business), control of type of investment to be made by banks, etc. Consequent upon these regulations, nation was able to attain the enshrined social objectives of banks, but at the cost of financial and economic viability condensed in efficiciency, productivity and profitability. The thrust on enhancing the profitability of banking operation is a prominent goal behind all structural reform measures along with making the banking sector in India globally competent. Thus, the changing trends and pattern of profitability of banks is a touchstone for evaluating the impact of financial liberalisation measures.

The paper has been divided into five parts. The first part deals with the concepts, objectives and methodology of the study. The second part reveals the major threads of banking sector reforms and its thrust on profitability. This section also condenses the literature review on the major determinants of the profitability of banks in the Indian context. The third part highlights the trends on profitability during the post reform period as compared to pre reform period. The trends in determinants of profitability of banks are also examined here. The last part summarises the findings of the study.

Part I

1.1 The concept of profit and profitability in banking sector

The profit of banking concern can be measured in accounting and economic sense. In accounting term, the profits of banks are calculated by deducting the actual interest cost and other costs from total earnings[1]. This concept does not estimate risks involved (solvency risks) in the banking business and does not make allowance for opportunity cost on equity possessed by the banks[2]. Economic profit may be defined as accounting profit adjusted for solvency cost and opportunity cost on capital and reserve. In Indian context, the operating and net profits (estimation possible since 1992 after giving provision for non performing assets) of banks are

estimated, in which the former stands for accounting nomenclature and latter for economic definition to a larger extent.

Profitability is the profit earning capacity of a product, plant, process or an undertaking by relating profit to acceptable factors such as income, assets etc.[3]

1.2 Objectives and methodology

The important objectives of the paper are:

(1) To evaluate the trends in profit and profitability during pre and post financial liberalisation reform in India among various bank groups.

(2) Identify the trends and direction of determinants of profitability between various groups of commercial banks during post liberalisation period as compared to pre reform period

The impact of financial liberalisation on profitability of banking sector in India is evaluated with respect to scheduled commercial banks which comprises of public sector banks (including SBI and its associates, nationalised banks and regional rural banks), private banks and foreign banks. In the present study, the impact of financial sector reforms on the profitability of banks are done after grouping the scheduled commercial banks into: (1) State Bank of India and its associates (SBI), (2) Other Nationalised Banks (NB), (3) Other Scheduled Commercial Banks i.e., privately owned domestic banks (OSB) and (4) Foreign Banks (FB). The first two groups are public sector banks and the last two represent the private sector.

The period of study is from 1969-2009. The period is classified into two sub periods: 1969-1991 and 1992-2009. The first period signifies the pre reform period (ie, financial repression era) and the second period refers the financial liberalization period. In the empirical analysis, the pre reform period is again sub-divided into first phase of nationalisation of banks (1969-1979) and the second phase of bank nationalisation (1980-1991). Similarly the post reform period is classified again into first phase of implementation of Narasimham Committee recommendation (1992-1999) and the second phase of Narasimham Committee recommendation (2000-2009).

Profitability of bank groups are measured in terms of (1) profitability per unit of income, (2) profitability per unit of deposit, and (3) profitability per unit of total assets. The selected determinants of profitability are: credit to priority sectors, investment to total assets, capital intensity (fixed capital to labour), and liquid assets to total assets, market share, labour

composition, branch composition and deposit mix. These firm specific factors are affected by the policy measures adopted by the monetary authority and - the changes in direction of the above mentioned factors reflect the impact of policy measures. Two multiple regressions are run with respect to the determinants of profitability. In the first regression all specific factors are taken as independent variables and profitability as the dependent variable to find out the determinants of profitability. In the second regression, the independent variables of the first regression are treated as dependent variables with time and product of time and dummy variable as independent variables to examine the impact of banking reforms on these variables that determine profitability.

1.3 Sources of Data

The data used for the study have been collected mainly from various publications of Reserve Bank of India, which include Annual Report, Statistical Tables Relating to Banks in India, Banking Statistics, Report on Currency and Finance and Report on the Trend and Progress of Banking in India; National Accounts Statistics of Central Statistical Organisation, - Economic Survey Government of India, and data published by the Indian Banks' Association.

Part II

2. Financial liberalisation in India

The multi targeted financial repression policies followed since 1969 with the nationalisation of banks and its consequent negative premium on productivity, profitability, competitiveness and technological upgradation of banking sector in India necessitated the introduction of plethora reform measures during 90's. The initial impetus to reforms in the financial sector came with the submission of two influential committees-Chakravarty committee in 1985[4] and Vaghul Committee in 1987[5]. The more radical First Generation Reforms in banking sector was based on the Narasimham Committee Report on Financial System, set up in November 1991. The recommendations of the first Narasimham Committee Report provided the foundation for reform of the banking system[6] by implementing the prudential norm relating to capital adequacy, asset classification and income recognition norm etc. The second generation reforms have been initiated by following the Second Narasimham Committee Report on Banking

Sector Reforms (1998) with an objective to chart a programme of financial sector reforms necessary to strengthen the Indian Financial Sector to make it internationally competitive. The recommendations of the Committee covers three areas such as (a) strengthening the foundation of banking system through capital adequacy[7] , asset quality of NPAs and directed credit[8] and prudential norms and disclosure requirements[9], (b) to streamlining procedures, upgrading technology and human resource development through strengthening the internal inspection and audit and risk management system and (c) the structural changes in institutional, supervisory and legislative dimensions.

The progress of banking sector reforms since has been quite impressive. Prudential norms on risk weighted capital adequacy requirement, accounting income recognition, provisioning and exposure, - operational autonomy to public sector banks, reduction of public ownership in public sector banks by allowing them to raise capital from equity market upto 49 percent of paid capital, transparent norms for entry of Indian private sector, foreign and joint venture banks and insurance companies and giving permission to banks to diversity product portfolio and business activities were introduced. There have also been measures to enhance the role of market forces by a sharp reduction in pre-emption through reserve requirement, market determined pricing for government securities, disbanding of administered interest rates with a few exceptions and enhanced transparency and disclosure norms to facilitate market discipline. Institutional and legal measures were also executed like setting up of Lok Adalats, debt recovery tribunals, Asset reconstruction companies, settlement advisory committees, Promulgation of securitization and reconstruction of financial assets and enforcement of securities interest (SARFAESI) Act and its subsequent amendment to ensure creditor rights and setting up of credit information bureau for information sharing on defaulters as also other borrowers. Banking sector has also witnessed supervisory measures including establishment of the board for financial supervision as the apex supervisory authority for commercial banks, financial institutions and non-banking financial companies and also the introduction of CAMELS[10] supervisory rating system, and also measures to strengthen corporate governance. Measures related to technology upgradation like setting up of INFINET as the communication backbone for the financial sector and introduction of Negotiated Dealing System (NDS) for screen-based trading in government securities and real Time Gross Settlement (RTGS) system were also put into practice. These radical reforms made a real impact on the profit and profitability of banks in India.

Part III

3.1 Trends in profit

The trends in profit of various groups of banks are evaluated based on operating profit and net profit. Operating profit is the difference between spread and burden of banks[11]. The net profit is computed from the operating profit by subtracting the provisions and contingencies set apart to offset the operational inefficiency, which include the bad debts. Since the items of provisions and contingencies were clearly shown and estimated only from 1992 as a consequence of Narasimham Committee Report, the analysis with respect to net profit is confined to the period of financial liberalisation from 1992.

Table:-1
Operating Profit of Various Bank Groups (in Rs. Crores)

Year	SBI	NB	OSB	FB
1969	12.24	25.19	2.09	8.30
1970	3.23	6.90	2.40	2.63
1971	4.29	8.49	2.23	2.82
1972	4.36	7.55	1.23	3.90
1973	4.66	7.65	1.46	4.20
1974	5.23	10.38	3.08	6.28
1975	6.82	15.25	3.43	4.66
1976	8.79	19.60	4.36	7.39
1977	8.86	15.29	3.49	3.29
1978	9.68	15.86	4.65	5.78
1979	11.14	22.93	2.67	7.80
1980	13.16	27.86	2.87	9.26
1981	16.32	29.54	3.67	14.48
1982	20.32	37.30	4.13	17.01
1983	23.38	37.79	4.11	19.57
1984	25.35	38.01	9.52	27.57
1985	34.14	45.89	7.15	33.77
1986	41.26	102.10	9.84	69.93
1987	47.41	135.31	13.91	85.42
1988-1989	110.74	254.17	9.71	116.76
1989-1990	117.70	194.33	53.35	155.48
1990-1991	277.38	272.21	37.24	146.16
1991-1992	3173.38	2366.91	294.08	1108.67
1992-1993	2263.69	871.69	240.27	498.47
1993-1994	2033.00	1725.68	420.87	1262.30
1995	2583.21	2937.35	730.07	1311.60
1996	3923.23	3645.66	2056.26	1575.94
1997	4457.81	4439.95	1279.06	1969.15

1998	4732.34	5531.19	1816.50	2543.88
1999	4648.05	5929.45	1474.78	1939.61
2000	5919.14	7224.89	2758.70	2753.75
2001	5740.00	8052.00	2848.00	3105.00
2002	8720.00	12956.00	5137.00	3513.00
2003	11231.00	18485.00	7148.00	3722.00
2004	14363.00	25113.00	8211.00	4986.00
2005	15278.00	23463.00	7484.00	4577.00
2006	15061.00	22654.00	9771.00	6840.00
2007	14292.00	27976.00	14052.00	9598.00
2008	17443.00	32864.00	19234.00	14048.00
2009	23411.00	43560.00	24276.00	20096.00

Source:- Source*:-Reserve Bank of India,(various years),* ***Statistical Tables Relating to Banks in India****, Bombay*

The Table:-1 shows the operating profit of various bank groups for the entire period between 1969 and 2009. The operating profit of banks in 1969 is much greater than the trend value for the succeeding years due to initial realignment of banks immediately after the bank nationalisation in 1969. Due to this fact, during the initial years, the index of operating profit of all banks has shown a declining trend compared to the base year 1969. The annual average growth rate of operating profit is given in Table:-2.

Table:-2
Annual Average growth rate of operating profit (%)

Periods	SBI	NB	OSB	FB
1969-79 (pre-reform I)	6.44	7.81	10.17	12.24
1980-91(pre-reform II)	39.65	30.53	56.56	33.10
1969-91(Pre-reform period entire)	23.83	19.71	34.47	23.16
1992-1999(post-reform I)	137.77	119.03	123.39	101.40
2000-09(Post reform II)	18.90	23.62	35.33	27.88
1992-2009(post reform period entire)	71.73	66.02	74.47	60.55
1969-2009(entire period)	45.94	41.09	52.93	40.42

Financial liberalization and other reforms in banking sector made a significant impact on maintaining a very high rate of operating profit which was revealed from a very high annual average growth rate of operating profit during the post reform period. Compared to the pre reform period, the percentage growth rates have trebled for all bank groups in the post reform period. Within the post reform period, the first phase ie, 1992-99 made a significant contribution in increasing average growth rate of operating profit for all bank groups. In general, though the

financial liberalization and other reforms significantly improved the operating profit of all bank groups in India, its impact on public sector banks particularly SBI groups was really astounding.

3.2 Trends in net profit

The real picture of profitability and the performance of banking activities can be revealed only with the help of net profit earned by the banks. The Table:-3 reveals the actual amount of net profit of various bank groups since 1992. The annual average growth rate of net profit for the period since 1992 shows that the OSB could attain the maximum rate (51.97 percent) followed by SBI (32.43 percent). In the case of NB and FB actually there was a negative average growth rate indicating a position of loss for the entire period. In the case of SBI and OSB groups, the average growth rates of net profit were higher during the first phase of post reform compared to the second period. At the same time, the negative annual average growth rate of NB and FB during the first period was significantly declined and transformed into positive growth in the second period of banking sector reforms.

Table:-3

Net Profit and Its Average Annual Growth of Various Bank Groups

(amount in Rs. Crores)

Year	SBI	NB	OSB	FB
1991-1992	245	601	82	269
1992-1993	280	-3573	71	-788
1993-1994	357	-4706	129	574
1995	846	269	402	547
1996	803	-1138	1587	738
1997	1670	1445	649	770
1998	2412	2567	842	630
1999	1466	1792	709	696
2000	2759	2437	1310	1035
2001	2222	2094	1161	1020
2002	3450	4854	2288	1492
2003	4513	7783	2911	1811
2004	5618	10929	3484	2242
2005	5675	9747	3333	1982
2006	5991	10295	4977	3250
2007	6572	13580	6469	4583
2008	9005	17587	9521	6613
2009	11896	22496	10865	7508
Annual average growth rate of net profit(%)				
1992-99	40.96	-210.09	75.67	-77.02
2000-09	26.47	33.86	35.38	29.00
1992-2009	32.43	-66.59	51.97	-14.66

Source:- *same as for Table:.1*

3.3 Trends in Profitability indices

The trends in operational profitability with respect to income earned, deposit mobilized and total asset of various bank groups during various time points are given in the Table:-4. Their respective annual average growth rate is shown in Table:-5.

Table:-4

Profitability of various bank groups in India

Year	Operating profit per income	Operating profit per deposit	Operating profit per asset
		SBI	
1969	0.083	0.008	0.006
1979	0.011	0.001	0.001
1980	0.010	0.001	0.001
1992	0.236	0.042	0.027
2000	0.174	0.023	0.018
2008	0.212	0.224	0.017
		NB	
1969	0.094	0.008	0.006
1979	0.011	0.001	0.001
1980	0.011	0.001	0.001
1992	0.114	0.015	0.013
2000	0.127	0.015	0.013
2008	0.201	0.196	0.016
		OSB	
1969	0.059	0.006	0.005
1979	0.012	0.001	0.001
1980	0.009	0.001	0.001
1992	0.192	0.024	0.021
2000	0.195	0.024	0.020
2008	0.219	0.028	0.020
		FB	
1969	0.160	0.016	0.012
1979	0.043	0.006	0.003
1980	0.049	0.007	0.004
1992	0.320	0.070	0.047
2000	0.267	0.056	0.033
2008	0.401	0.073	0.039

Source:- *same as for Table:-1*

The annual average growth rate of profitability for various periods shows that all profitability indices have increased very drastically during the post reform period for all bank groups. The reform made decisive impacts on the profitability of banks in India. Among the bank groups, the performance of foreign banks are greater compared to other bank groups in all periods. However, the percentage change in growth rate of profitability indices during post reform periods as compared to pre reform period is more among the public sector banks such as SBI and NB groups.

Table:-5
Annual average growth rate of Profitability (operating profit) Ratios

Year	SBI			NB			OSB			FB		
	P1	*P2*	*P3*	*P1*	*P2*	*P3*	*P1*	*P2*	*P3*	*P1*	*P2*	*P3*
1969-79	2.40	0.22	0.17	2.56	0.21	0.16	3.29	0.29	0.22	6.13	0.67	0.46
1980-91	1.33	0.16	0.10	1.22	0.13	0.10	2.06	0.23	0.18	8.33	1.46	0.77
1969-91	1.87	0.19	0.13	1.89	0.17	0.13	2.67	0.26	0.20	7.23	1.07	0.62
1992-99	17.91	2.71	1.93	10.44	1.27	1.08	19.27	2.62	2.20	26.48	5.14	3.45
2000-09	22.21	2.47	1.95	20.71	2.00	1.78	22.25	2.62	2.15	34.59	6.11	3.28
1992-2009	20.32	2.60	1.95	16.02	1.66	1.46	20.91	2.63	2.18	30.98	5.65	3.36
1969-2009	10.17	1.27	0.95	8.25	0.84	0.73	10.88	1.33	1.09	17.92	3.13	1.85

Note:-, *P1= Profit as percentage of total income,P2= Profit as percentage of total deposit and P3= Profit as percentage of total assets*
Source:- *same as for Table:-1*

3.4 Empirical Determinants of profitability in banking sector

The empirical determination of profitability are evaluated based on following indicators which are though bank specific, are consequent effect of many exogenous, endogenous and structural factors. The banking sector reforms affect the profitability of banks by changing the maginitude and direction of certain bank specific parameters. The important among them are:

(1) Share of credit to agriculture and small scale industry

(2) Investment to asset ratio

(3) Capital-labour ratio

(4) Liquid asset ratio

(5) Market share of total deposits

(6) Ratio of officers to total staff

(7) Ratio of rural and semi urban branches to total branches and

(8) Ratio of time deposit to total deposit.

The following Table:-6 reveals the trends in these identified determinants of various bank groups during various time points.

Table:-6

Trends in determinants of profitability

Year	Credit to agriculture and small scale industries to total credit	Investment to total asset	Fixed asset to labour (lakhs)	Liquid asset to total asset	Market size	Ratio of officers to total staff	Ratio of rural and semi urban branches to total branches
	SBI						
1969	NA	0.243	NA	0.067	0.272	NA	0.807
1979	0.200	0.205	0.033	0.123	0.294	0.229	0.753
1980	0.216	0.217	0.035	0.083	0.274	0.231	0.772
1992	1.930	0.257	0.174	0.119	0.290	0.242	0.747
2000	0.201	0.360	0.928	0.170	0.285	0.242	0.702
2008	0.154	0.261	2.063	0.093	0.233	0.333	0.635
	NB						
1969	NA	0.229	NA	0.078	0.573	NA	0.520
1979	0.186	0.240	0.047	0.113	0.623	0.239	0.662
1980	0.214	0.243	0.055	0.121	0.644	0.246	0.673
1992	0.246	0.304	0.205	0.145	0.603	0.266	0.661
2000	0.192	0.383	1.263	0.141	0.534	0.279	0.618
2008	0.145	0.267	6.473	0.099	0.506	0.369	0.550
	OSB						
1969	0.000	0.207	NA	0.104	0.063	NA	0.618
1979	0.564	0.232	0.041	0.152	0.051	0.221	0.646
1980	0.276	0.240	0.045	0.162	0.053	0.225	0.702
1992	0.211	0.286	0.139	0.209	0.047	0.261	0.636
2000	0.123	0.372	4.988	0.156	0.126	0.354	0.551
2008	0.087	0.296	10.745	0.103	0.203	0.649	0.425
			FB				
1969	NA	0.186	NA	0.031	0.092	NA	NA
1979	NA	0.205	0.231	0.060	0.032	0.144	0.023
1980	NA	0.196	0.249	0.066	0.029	0.147	0.023
1992	0.060	0.336	1.852	0.202	0.061	0.319	0.020
2000	0.021	0.358	14.886	0.119	0.055	0.573	0.011
2008	0.013	0.272	24.642	0.115	0.058	0.907	0.007

Source:- Same as Table:-1

Among the determinants, the ratio of credit to agriculture and small scale industries to total credit have been declining for all bank groups since the inception of banking sector reforms particularlywith greater renewed speed in the second phase. The investment to total assets possessed by banks received an upward spurt in the post reform period which indicates the use of banking assets in non traditional form of business. Though the fixed assets to labour force received a continuous spurt through out for all bank groups, it has a greater momentum in the post reform period with a bias towards private and foreign banks. In general the current assets to total assets have a continuous declining trend with an exception to SBI during the first phase of reform. This will have greater impacts on the extent of the utilization of assets and earning of profits by banks. The market share of public sector banks have been declining along with the increasing share of private and foreign banks. There has been an increasing ratio of officers to total staff during the post reform period indicates the structural shift in labour composition and which is more pronounced in the case of private and foreign banks. The increase in bank branches in rural and semi urban areas enhances the geographical spread and accessibility to general public. This geographical expansion can be afforded only at a reduced volume of transaction which may lead to higher operational cost per unit of branch and may negatively affect the profitability of banks. The trend indicates that this ratio of rural and semi urban branches to total number of branches have been declining drastically during post reform period for all bank groups with a higher tilt for private and foreign banks.

3.5 Empirical result of determinants of profitability

The determinants of banking sector profitability are derived by applying the tool of multiple regression. Three dependent variables are considered relating to profitability. They are

(1) Profit per income (Y1)

(2) Profit per deposit (Y2)

(3) Profit per total assets (Y3)

Independent variables are (1) share of credit to agriculture and small scale industry (2) investment to asset ratio (3) capital-labour ratio (4) liquid asset ratio (5) market share of total deposits (6) ratio of officers to total staff (7) ratio of rural and semi urban branches to total branches and (8) ratio of time deposit to total deposit. All these independent variables are correlated separately to each of the three dependent variables.

Data are collected for the years from 1976 to 2008 for three bank groups of State Bank of India and Associates (SBI groups), Nationalised Banks (NB), Private Banks (which include both domestic private and foreign banks operated in India). Both the linear and log-linear models were tried but only the log linear results are presented since they are superior. Equations are presented in Tables for all the three definitions of the dependent variables. The multiple log linear model used in the present analysis is as follows.

$$LnY = \beta_0+\beta_1 LnX_1+\beta_2 LnX_2 + \beta_3 Ln X_3+\beta_4 Ln X_4+\beta_5 Ln X_5+\beta_6 Ln X_6+\beta_7 LnX_7+\beta_8 LnX_8 +U_i$$

Where,

LnY = log value of dependent variable of profit per income, profit per deposit and profit per asset.

$Ln X_1$ = log value of share of credit to agriculture and small scale industry to total credit

$Ln X_2$ = log value of investment to asset ratio

LnX_3 = log value of capital- labour ratio

LnX_4 = log value of liquid asset ratio

LnX_5 = log value of market share of total deposits

LnX_6 = log value of ratio of officers to total staff

LnX_7 = log value of ratio of rural and semi urban branches to total branches

LnX_8 = log value of ratio of time deposit to total deposit

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ and β_8 are the coefficient of independent variables

β_0 is the intercept and Ui is the random error term.

Regression analysis is conducted separately for SBI, NB and private banks. After performing log linear multiple regression, for the years 1979-2008, the following multiple linear regression equation is employed to examine the impact of banking reforms on selected indicators of the banking sector in India.

$LnY = a_0 + a_1T + a_2D + U_i$

Where,

LnY = log values of selected indicators of banking sector. These selected indicators are the independent variables considered in the first equation in the preceding regression.

T = time trend

D = dummy variables ie, ‘0’ for pre liberalisation period and ‘1’ for the post liberalisation period (1991-92 to 2008).

a_0, a_1 and a_2 are the parameters to be estimated and

Ui = random error term.

3.6 Estimation of the determinants of profitability of banks

The following Table:-7 shows the values of coefficient of independent variables with respect to three dependent variables. In the Table the dependent variables LnY, LnY2 and LnY3 represent the natural logarithmic values of profit per income, profit per deposits and profit per assets. The indepenent variables X1 to X8 are same as referred before.

Table:-7
Regression Analysis of Determinants of Profitability of Various Banks

	SBI and associate banks			**Nationalised banks**			**Private banks**		
	Dependent variables			**Dependent variables**			**Dependent variables**		
Independent variables	**LnY1**	**LnY2**	**LnY3**	**LnY1**	**LnY2**	**LnY3**	**LnY1**	**LnY2**	**LnY3**
Ln X1	-2.037** (-1.695)	-2.585** (-1.949)	-2.596** (-1.884)	-2.037** (-1.695)	-2.585** (-1.949)	-2.596** (-1.884)	2.037 (1.695)**	2.585 (1.949)**	2.596 (1.884)**
Ln X2	2.162 (1.369)	1.760 (0.966)	2.211 (1.168)	2.162 (1.369)	1.760 (0.966)	2.211 (1.168)	2.262 (1.369)	1.760 (0.966)	2.211 (1.168)
Ln X3	-0.431 (-1.431)	0.513 (1.545)	0.504 (1.461)	-0.431 (-1.431)	0.513 (1.545)	0.504 (1.461)	0.431 (1.431)	0.513 (1.545)	0.504 (1.461)
Ln X4	-2.382** (-1.647)	-2.477** (-1.5530)	-2.459** (-1.483)	-2.382** (-1.647)	-2.477** (-1.5530)	-2.459** (-1.483)	2.382 (1.647)	2.477 (1.553)	2.459 (1.483)
Ln X5	-0.907 (-0.278)	-1.347 (-0.374)	-1.387 (-0.371)	-0.907 (-0.278)	-1.347 (-0.374)	-1.387 (-0.371)	9.07 (0.278)	1.347 (0.374)	1.387 (0.371)
Ln X6	-9.155* (-2.049)	-8.956* (-1.817)	-8.973* (-1.752)	-9.155* (-2.049)	-8.956* (-1.817)	-8.973* (-1.752)	-9.155 (-2.047)*	-8.956 (-1.817)*	-8.973 (-1.752)*
Ln X7	-9.952** (-1.864)	-12.21** (-2.074)	-11.48** (-1.877)	-9.952** (-1.864)	-12.21** (-2.074)	-11.48** (-1.877)	-9.952 (-1.864)*	-12.211 (-2.074)*	-11.484 (-1.877)*
Ln X8	-0.168 (-0.132)	-0.035 (-0.025)	-0.223 (-0.153)	-0.168 (-0.132)	-0.035 (-0.025)	-0.223 (-0.153)	-0.168 (-0.132)	-0.035 (-0.025)	-0.223 (-1.53)
α	-9.580* (-2.681)	-12.183* (-3.091)	-11.719* (-2.862)	-9.580* (-2.681)	-12.183* (-3.091)	-11.719* (-2.862)	-9.582 (-2.681)*	-12.183 (-3.091)*	-11.719 (-2.862)*
R^2	0.924	0.924	0.922	0.924	0.924	0.922	0.924	0.924	0.922

Note:- *Figure in the bracket shows the value of ‘t’ statistics*
‘’ shows the value of ‘t’ statistics at 5 percent level of significance*
*‘**’ shows the value of ‘t’ statistics at 10 percent level of significance*

Source:- *estimated results*

The result reveals that in the case of public sector banks, any increase in credit to agriculture and small scale industry, liquid assets, number of officers and rural and semi urban branches lead to decline in profitability. Since the credit to agriculture and small-scale industry is on a priority targeted basis at a low rate of interest, the increase in credit volume to this direction unfavourably affect the profitability performance of banks. Under the aegis of socialisation and nationalisation of commercial banks, it was the responsibility of banks to open more branches to rural and semi urban areas though they are unviable. This drive towards spatial spread of banking business on social welfare consideration might have unfavourably affected the profitability of banks. Increasing the liquid asset reduces the fund available to deploy to more profitable long-term credit and other investment ventures by the bank. This may affect unfavourably the profitability of banks. In the case of officer employees, their growth would eat away a sizeable chunk of bank's income as establishment expenses, which will naturally erode the profitability of banks. Increasing volume of non banking activities greatly influence the profitability of banks recently. One such index is the investment ratio to total assets. Banks generally prefer to invest their funds in outside sources from which they could expect a higher return compared to interest on loans and advances. This logic explains the positive association between increase in investment and profitability of banks. Market share of total deposits is another factor, which affect the profitability. Increasing the share of mobilisation of deposit in the market involves both cost of mobilisation and yield of mobilised funds. When there is positive difference between the yield and cost of mobilisation, any increase in the market share of deposit leads of higher profit. Since larger the volume of time deposit to total deposit, the greater the yield of banks by advancing more funds for a longer period, any increase in time deposit will have a positive impact on profitability of banks. Though all these independent factors show similar association with all profitability indicators, the relative influence varies.

Of the factors affecting profitability of private sector banks, credit to agriculture and small-scale industry, investment to asset ratio, capital labour ratio, liquid asset ratio, and market share are positively associated. Among these, credit to agriculture and small-scale industry is the only significant variable, that too at 10 percent. The factors, which are negatively associated, are ratio of officers to total employees, number of rural and semi urban branches and ratio of time deposit to total deposit. However, these are not significant. Contrary to nationalised banks, the private

sector banks could make profit out of efficient lending to agriculture and small-scale industry. Also by better management of liquid asset the private sector banks could make profit.

3.7 Changing direction of determinants of profitability of banks

Results of multiple regression run with time and dummy variable as independent factors and selected indicators of banking sector as dependent variable are given in the following Table:-8.

Table:-8

Changing trend in determinants of banking profitability

	SBI			*NB*			*Private Banks*		
Dependent variables	*T*	*DumT*	R^2	*T*	*DumT*	R^2	*T*	*DumT*	R^2
Ratio of credit to agriculture and small scale industries to total credit	0.0123 (1.73)*	-0.387 (-3.89)*	0.524	0.01274* (2.025)	-0.207* (-2.361)	0.510	-0.046 (-6.80)*	0.144 (1.518)	0.815
Ratio of investment to total assets	0.0023 (0.391)	0.280 (3.440)*	0.662	0.01187* (4.082)	0.197* (4.870)	0.912	0.0015 (0.214)	0.362 (5.297)*	0.807
Capital-Labour ratio	0.132 (13.262)*	0.304 (2.184)	0.970	0.119* (9.121)	0.825* (4.547)	0.961	0.145 (6.317)*	1.305 (4.078)*	0.934
Ratio of liquid asset to total asset	0.0123 (5.78)*	-0.088 (-2.957)*	0.656	0.0312* (5.824)	-0.095* (-1.277)	0.764	0.0198 (3.554)**	0.0749 (0.963)	0.726
Market share (ratio of deposit to total bank deposit)				0.005125* (2.019)	-0.137* (-3.879)	0.442	-0.028 (-2.168)*	0.775 (4.344)*	0.513
Ratio of officers to total staff	0.010 (1.09)	-0.046 (-3.522)*	0.734	0.01368* (8.744)	-0.075* (-3.461)	0.844	0.0117 (1.6999)*	0.175 (1.822)*	0.604
Ratio of rural and semi urban branches to total branches	0.03639* (3.606)	-0.145 (-1.034)	0.570	0.00166 (1.247)	-0.074 (-3.971)*	0.549	-0.72 (-3.777)*	-0.035 (-1.316)	0.771
Ratio of term deposit to total Deposit	-0.004 (-0.692)	0.154 (1.577)*	0.523	0.0051* (2.114)	0.114* (2.033)	0.683	0.00474 (0.455)	0.174 (2.187)*	0.411

Note:- *Figure in the bracket shows the value of 't' statistics*
'' shows the value of 't' statistics at 5 percent level of significance*
*'**' shows the value of 't' statistics at 10 percent level of significance*
Source :-*estimated results*

The coefficients of 'T' and 'DumT'show the general trends of independent variables for the entrire time period and change in direction of these variables during the post reform period respectively. The result indicates that the determinants, credit to agriculture and small scale industries, number of rural and semi urban branches and ratio of liquid asset to total assets have positive trend coefficient with adverse impact on profitability. However, the values of these indicators have been decreasing during the post reform period for public sector banks. At the same time, the determinants such as ratio of investment to total assets, fixed assets to labour have

increasing trends for the entire time period as wells as during post reform period. The ratio of time deposit to total deposit has an increasing trend in the post reform period which is revealed from the coefficient of dummy time variable. The increase in market share has overall positive impacts on profitability of nationalised banks. However, the value of market share of these banks has a declinining trend during the post reform period. Overall, all determinants of profitability are moving on the right direction to increase the profitability of public sector banks during the post reform period, indicating the positive impact of financial liberalisation measures in improving the financial viability of banks.

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For private banks, the flow of credit to agriculture and small scale industries have been increasing for the post reform period commensurate with the postive relationship of this determinants with profitability of banks. Also, the ratio of investment to total assets and fixed assets to labour ratio have positive trends throughout including the post reform period. The increase in these values enhances the profitability of private banks. The increasing trend of liquid assets ratio is not significant in the post reform period. The increasing trend of the ratio of term deposit to total deposit of private sector banks during the post reform period have favourable impacts on the profitability. Thus same as public sector banks, the financial liberalisation measures changes the direction of determinants of profitability of private sector banks in a desirable way.

Part IV
Conclusion

The literature review and trends in profit and profitability highlights the fact that the financial repression followed by the monetary system in India negatively affected the profit and profitability of commercial banks. The regulated credit flow region wise and sector wise, restriction on the use pattern of deposit mobilised, prudential accountancy norms for asset classification and capital adequacy were some of important factors which acted as a drag on the profability of banks. The financial liberalisation measures were targeted to reverse these identified factors for maintaining the financial viability of banks. The trends on profit and profitability unequivocally proved the significant positive impacts of reform measures on both

public and private sector banks. However, the performance improvement with respect to profitability among public sector banks particularly SBI group was astounding. The identified determinants of profitability of all bank groups have changed to the direction favourable for its improvements as explicitly desired in financial liberalisation measures. However, in this process of singled focussed leap towards profit, the social objectives of banking including priority sector lending and branch expansion were turned to be casuality. The withdrawal of pubic sector banks from their social obligation was not compensated by any other mechanism and this unfilled gap may have the possibility of opening up of another pandaras box of financial exclusion.

Notes and references

[1] Angadi, V. B (1987), 'Integrated Approach to Study Bank's Profitability', **Prajnan**, No.4, Vol XIV, Oct-Dec. National Institute of Bank Management, Pune, p.524.

[2] Solvency risks include losses arising out of credit risks and interest rate risks. The credit risks refer to losses arising from deterioration in the quality of banks earning assets. On the other hand opportunity costs on equity refer to alternative earning on capital and service if they would have been invested in other form of economic activities.

[3] Howard and Uptron (1953), **Introduction to Business Finance,** 147, Mc Graw Hill Book Company, New York, p.47.

[4] The Committee was set up by the RBI to undertake a review of the working of the monetary system and suggest measures for improving the effectiveness of monetary policy.

[5] The Vaghul Committee was set up to study the money market

[6] Rangarajan C(1998): Indian Economy Essays on Money and Finance UBSPD, New Delhi

[7] It recommended that the minimum capital to risk assets ratio be increased to 10 per cent from its present level of 8 per cent in a phased manner.

[8] The committee recommended that an asset be classified as doubtful if it is in the substandard category for 18 months in the first instance and eventually 12 months and loss of it has been identified but not written off. Advances guaranteed by the government should also be treated as NPAs. Banks should avoid the practice of 'ever greening' by making fresh advance to the troubled parties with a view to settle interest dues and avoiding such loans treating as NPAs. The committee believes that the objective should be to reduce the average level of net NPAs for all banks to below 5 per cent by the year 2000 and to 3 per cent by 2002.

[9] It recommended moving to international practice for income recognition and recommended 90 days norm in a phased manner by the year 2002. In future income recognition, asset classification and provisioning must apply even to government guaranteed advances.

[10] CAMEL stands for capital adequancy, asset managemnet, earnings and liquidity

[11] The difference between interest earned and interest paid is defined as spread. Burden is defined as the difference between non-interest expenses (comprising establishment expenses and other expenses of current and non-current nature) and non-interest income (consisting of commission, exchange brokerage and other miscellaneous receipts) of commercial banks.