

# Analysis of Financial Performance of Banks in India

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## ABSTRACT

*Business cycles are not new to the Indian economy. In last ten years India witnessed two major phases of business cycle. High growth tide lifted all boats and high revenue high profits were taken for granted. The last four years have been the phase of recession. Banking industry which was growing at a high growth of +30% now is struggling to achieve 19% growth. This paper is an attempt to analyze performance of five major public, private and foreign sector banks with principle component analysis on the financial parameters. The weights are assigned on the basis of importance of the parameters on financials.*

**Keyword:** Banks, Financial Ratios, High Growth Years, Recession

## Introduction

Indian economy has been going through recession for last couple of years. The growth momentum achieved during 2004-08 has been lost. Indian economy is struggling to maintain the GDP growth of 5%. In this scenario, banking sector has been facing reduced demand for credit. The high inflation years of 2010-2012 compelled RBI to keep policy rates at

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higher levels. The high growth years saw goldilocks period where inflation was low and growth rate was high. The scenario changed in 2009 when GDP growth rate dipped. The expansionary fiscal policy was used by the government to boost the growth rate. If anything it increased inflation in the economy. Fiscal prudence was needed and with the fear of credit agencies reducing India's ranking to junk status, government reduced its expenditure. This resulted in further reduction in growth.

Banking sector has been suffering since the current crisis started from collapse of major banks and financial institutions in the western economies. The lack of trust in banking sector is death bell. Couple of new private sector banks suffered more due to this lack of trust of people. This paper is an attempt to find out how banks have performed on financial parameters during last 5 years compared to high growth years. Financial performance of banks is compared in two time periods: (1) High growth years of 2004-08, (2) Low growth years of 2009-2013.

## **Review of Literature**

Many studies have undertaken by researchers on the performance of Indian commercial banking. The studies have focused on ratio analysis, CAMEL rankings, liquidity, and profitability and so on. There have been studies which prove that there has been significant difference in performance of public and private sector banks (Tatuskar, Svetlana, 2010, Makkar, Anita; Singh, Shveta, Sharma, Vijay Kumar; Kumar, Anuj 2013). The other studies have shown that non-performing assets have been rising in recent years (Bansal Disha 2010, Mishra, Akshay Kumar 2013). The banking services in retail segment have also improved over the last couple of years (Haque, Imamul 2011). The analysis of banks has not been done on the basis of economic cycles. The impact of recession on Indian banks has been analyzed in current paper. The principle component analysis is applied on financial parameters of banks. The resultant 11 parameters are compared between two periods of time.

## **Hypothesis**

Ho: There has been no difference in performance of Indian banks in two time periods (2002-08) and (2009-13).

H1: There has been a difference in performance of Indian banks in two time periods (2002-08) and (2009-13).

### **Methodology - Data Analysis**

The current study has 15 banks which are chosen from all reporting banks to RBI. The banks are selected on the basis of two parameters.

1. Types of banks (Public, Private and Foreign Banks)
2. First 5 banks from each category on the basis of total funds

The banks considered for the study are SBI, PNB, BOB, BOI, Canara bank from Public sector banks. ICICI, HDFC, AXIS, DCB and IndusInd Bank from private sector banks. CITI, SCB, HSBC, DBS and Deutsche bank from foreign sector banks.

The data is collected from each years' RBI publications.

The summary of Principle Component Analysis is given in Table 1.

The 55 financial parameters are compared and 11 major components are studied for the analysis. The parameters are Deposits, Advances, Profit, Interest Income, Other Income, total funds, Gross NPAs, Net NPAs, Net Worth, and Total assets.

The data is collected for the said 11 parameters from 2003 to 2013. The data is divided in period 1 as 2003-2008 and period 2 as 2009-2013.

The summary of mean values of all parameters is given in the Tables 2, 3 and 4.

### **Results and Findings**

Standard two sample T test

The parameters mentioned for principle component are divided in two time periods

- (A) The high growth years of 2003 to 2008
- (B) The recessionary phase from 2009 to 2013.

The mean values are compared on standard two sample T test with 95 % confidence interval with the null hypothesis of there has been no significant difference between two time periods.

**Table 1:** Financial Parameters Compared for Principle Component Analysis

	FA1		Method		Principal Rotation		Varimax		No. of Factors		SS
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8			
Deposits	0.972										0.123
Advances	0.980										0.110
Profit	0.950										
Interest Income	0.990										
Other Income	0.948										
Cash-deposit ratio		0.175		0.469					-0.102		-0.119
Credit-deposit ratio	0.124	0.183			-0.154						
Investment-deposit ratio	-0.208		-0.173						-0.204		-0.857
(Credit + Investment)-deposit ratio		0.144	-0.131						-0.125		-0.567
Ratio of deposits to total liabilities	0.140	-0.205	0.274	-0.250					0.183		0.474
Ratio of term deposits to total deposits	-0.203			-0.178	-0.198					0.214	
Ratio of priority sector advances to total advances		-0.139			0.466	0.197				-0.140	
Ratio of term loan to total advances	0.101	-0.171	0.169		-0.589	0.273				-0.131	0.126
Ratio of secured advances to total advances	0.142	-0.189	0.308	-0.545	-0.231					0.168	
Ratio of investments in non-approved securities to total investments					-0.175					-0.127	-0.521
Ratio of interest income to total assets			0.924						0.144		0.127
Ratio of net interest margin to total assets		0.470		0.535	0.133	0.389					

	FA1	Method		Principal		Rotation		Varimax		No. of Factors		15.000		SS
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8					
Ratio of non-interest income to total assets	-0.208	0.268		0.634	-0.129									
Ratio of intermediation cost to total assets	-0.229			0.927										
Ratio of wage bills to intermediation cost	0.316			-0.272	0.806							0.114	0.169	
Ratio of wage bills to total expense		0.110	-0.299	0.389	0.795	0.159								
Ratio of wage bills to total income		-0.140	-0.194	0.283	0.852	0.233								0.119
Ratio of burden to total assets		-0.370	0.127		0.221	0.873								
Ratio of burden to interest income		-0.326			0.160	0.888								
Ratio of operating profits to total assets	-0.126	0.687		0.436		-0.311								
Return on assets		0.861		0.219	-0.102							-0.154		
Return on equity		0.879	0.133	-0.133								-0.119		
Cost of deposits	0.176	-0.226	0.716	-0.405	-0.164									
Cost of borrowings	-0.119		0.109		0.121									
Cost of funds		-0.234	0.800	-0.295							-0.152			
Return on advances		0.150	0.803	0.278	-0.172									
Return on investments	-0.120	0.274	0.248	-0.113								0.173		
Return on advances adjusted to cost of funds	-0.113	0.325	0.258	0.505	-0.182	0.173								
Return on investments adjusted to cost of funds	-0.161	0.425	-0.378	0.121		0.132						0.115		

	FAI		Method		Principal		Rotation		Varimax		No. of Factors		15.000		SS		
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	
Business per employee (in Rs.lakh)		0.170	-0.159		-0.134												
Profit per employee (in Rs.lakh)		0.493	-0.140														
Capital adequacy ratio			-0.138														
Capital adequacy ratio - Tier I			-0.136														
Ratio of net NPA to net advances		-0.100															
GNPA to Advances ratio		-0.383	0.111		0.139												
NET NPAs to Advances ratio		-0.180	0.118														
Net Interest to Total Assets			0.854														
Net Profit Margin		0.917	-0.149														
Return on Net Worth		0.874	0.110														
Profit to Total Funds ratio		0.876															
Profit to Total Assets		0.925															
Advances to Total Assets ratio	0.353		0.259														
NET NPAs to Total Assets		-0.177	0.120														
CASA percentage	0.159	0.248	-0.161														
Total funds	0.984																
Total income	0.991																
Gross NPAs	0.934																
Net NPAs	0.927																
Net Worth	0.944																
Total assets	0.990																

Source: Calculated by researcher.

Table 2: The Mean Values of Principle Component Analysis Factors Public Sector Banks

Bank	SBI	SBI	PNB	PNB	BOB	BOB	BOB	BOI	BOI	BOI	Canara
Period	1	2	1	2	1	2	1	2	1	2	
Deposit	389126	945301	115483	308627	98558	319570	96371	283681	111415	279577	
Advance	254387	768866	73098	237181	60763	232505	67934	212539	72417	198697	
Profit	4460	10472	1397	4212	950	3802	1005	2532	1298	3054	
Interest Income	36368	88470	9851	29177	7800	23708	7720	23272	9267	24747	
Other Income	7054	14773	1510	3740	1451	3085	1575	3079	1679	2811	
Total Funds	416457	1059797	118604	335048	100727	337859	102069	307959	112261	292690	
Total Income	43422	103244	11362	32918	9251	26793	9341	26351	10744	27559	
GNPA	11973	30262	3873	6508	2988	3968	2866	5588	2111	3627	
NNPA	5759	14108	630	2994	932	1515	1394	2930	1110	2863	
Net Worth	28247	74343	8222	22874	7114	21694	5580	17978	7249	18896	
Total Assets	504282	1228672	136917	371788	115387	371715	114867	337755	128534	321393	

Mean values of each parameter for 2003-2008 (Period 1) and 2009-2013 (Period 2).

Table 3: The Mean Values of Principle Component Analysis Factors Private Sector Banks

Bank	ICICI	ICICI	AXIS	AXIS	AXIS	HDFC	HDFC	DCB	DCB	IndusInd	IndusInd
Period	1	2	1	2	1	2	1	2	1	2	
Deposit	142686	238815	42692	184125	52333	212350	4273	5948	14100	35932	
Advance	129070	231971	25165	139005	33416	163967	2613	4576	9139	28373	
Profit	2442	5544	503	3427	860	4202	-25	2.412	123	587	
Interest Income	15891	31277	3238	17360	4855	23074	366	654	1238	4189	
Other Income	4893	7514	816	4688	1086	4848	95	111	270	819	
Total Funds	185021	350144	45447	210454	55608	229648	4507	6819	14996	42023	
Total Income	20084	38792	5011	22049	6748	27922	1699	765	2597	5008	
GNPA	4128	9649	349	1602	518	1966	217	268	307	315	
NNPA	1576	2978	203	466	130	427	49	70	240	116	
Net Worth	20430	56670	3256	20234	5449	25538	316	736	917	4096	
Total Assets	232589	434958	52345	239453	70346	284264	5174	7881	17069	47904	

Mean values of each parameter for 2003-2008 (Period 1) and 2009-2013 (Period 2).



Table 4: The Mean Values of Principle Component Analysis Factors Foreign Sector Banks

Bank	CITI	CITI	SCB	SCB	SCB	HSBC	HSBC	HSBC	Deutsche	Deutsche	Deutsche	DBS	DBS	DBS
Period	1	2	1	2	1	1	2	1	1	2	1	1	2	2
Deposit	28600	58810	26685	54875	24747	55622	5524	16224	1915	9687				
Advance	23615	43261	22782	49153	16724	29936	3789	14186	891	8192				
Profit	828	1819	1004	2157	575	1509	208	672	27	255				
Interest Income	3312	7172	3213	6940	2558	5996	673	2088	211	1421				
Other Income	1236	2102	1085	2840	993	2109	599	900	8	198				
Total Funds	36064	81245	33099	66264	28946	65102	10436	20774	2514	20080				
Total Income	5332	9274	5072	9780	4510	8105	2433	2988	1526	1619				
GNPA	453	1224	611	2078	445	1115	24	193	5	197				
NNPA	263	703	250	524	97	304	3	50	3	96				
Net Worth	4738	14670	4583	13647	4518	13436	1755	5897	606	2087				
Total Assets	47381	113829	46532	106868	40424	98319	13277	30216	3447	26429				

Mean values of each parameter for 2003-2008 (Period 1) and 2009-2013 (Period 2).

The Table 5 lists the p values at 95% confidence interval for the given parameters.

**Table 5: P Values of Two Sample T Test of Selected Banks of Principle Component Factors**

<i>Bank</i>	<i>Deposits</i>	<i>Advances</i>	<i>Profit</i>	<i>Interest Income</i>	<i>Other Income</i>
SBI	0.0001	0.0004	0.0005	0.0006	0
PNB	0.0004	0.0004	0	0.0011	0
BOB	0.0013	0.0006	0.0002	0.0017	0.0001
BOI	0.0004	0.0004	0.001	0.0005	0.0002
CANARA	0.0005	0.0002	0.0002	0.0011	0.0003
ICICI	0.0412	0.0199	0.0074	0.01	0.0324
AXIS	0.0003	0.0004	0.0005	0.0011	0.0001
HDFC	0.0003	0.0004	0.0016	0.0007	0.0003
DCB	0.0557	0.0149	0.5915	0.0079	0.4072
IndusInd	0.0031	0.003	0.0133	0.0053	0.0053
CITI Bank	0.0005	0.0046	0.0243	0.0014	0.0859
SCB	0.0004	0.0009	0.0024	0.0009	0.0004
HSBC	0.0004	0.0148	0.0059	0.001	0.0066
DEUTSCHE	0.0011	0.0018	0.003	0.0006	0.0281
DBS	0.0032	0.0064	0.0001	0.0045	0.0021

*Source:* Calculated by the researcher

<i>Bank</i>	<i>Total Funds</i>	<i>Total Income</i>	<i>Gross NPA</i>	<i>NNPA</i>	<i>Net Worth</i>	<i>Total Assets</i>
SBI	0.0001	0.0003	0.0141	0.0028	0.0004	0.0001
PNB	0.0005	0.0007	0.1918	0.0749	0.0016	0.0005
BOB	0.0012	0.0012	0.3882	0.4177	0.0022	0.0012
BOI	0.0004	0.0004	0.0331	0.1219	0.0003	0.0004
CANARA	0.0004	0.0009	0.0651	0.0209	0.0011	0.0005
ICICI	0.0099	0.0125	0.0002	0.0759	0.0007	0.0099
AXIS	0.0004	0.0011	0.0004	0.0024	0.0013	0.0005
HDFC	0.0004	0.0007	0	0.0023	0.0004	0.0004
DCB	0.0363	0.5116	0.3102	0.4963	0.0036	0.032
IndusInd	0.0027	0.1439	0.8565	0.0005	0.0085	0.0029

<i>Bank</i>	<i>Total Funds</i>	<i>Total Income</i>	<i>Gross NPA</i>	<i>NNPA</i>	<i>Net Worth</i>	<i>Total Assets</i>
CITI Bank	0.0006	0.0105	0.0023	0.0041	0.0001	0.0004
SCB	0.0007	0.0026	0.0264	0.0985	0.0005	0.0001
HSBC	0.0005	0.0143	0.0085	0.0151	0.0001	0.0003
DEUTSCHE	0.0065	0.6674	0.0001	0.0154	0.0005	0.0019
DBS	0.0023	0.9495	0.0631	0.115	0.0015	0.0014

*Source:* Calculated by the researcher.

The p-values calculated on principle component reject the null hypothesis. The alternate hypothesis is accepted that there has been a significant difference in major parameters of banks. Except for couple of exceptions the eleven parameters which are considered are showing that the performance of selected commercial banks has been significantly different.

## Conclusion

Commercial banks depend on deposits received from all types of depositors. Achieving and maintaining faith of depositors is a key to bank's success. Commercial banks need to check credit appraisal process to reduce the non-performing assets. It has been seen that couple of banks depend on borrowing for giving advances. Banks are better if they depend on deposit money rather than borrowed money for disbursing advances. It was seen that though the overall deposits of commercial banks have gone down. The credit growth has slowed down. This is not reflected in the banks analyzed for the study. This is because large national level banks are able to withstand business cycles better than regional banks. The objective of government to create bigger national level banks by merging smaller banks is justified by this study.

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