

# Decadal Profitability Analysis of Indian Banks

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## Abstract

The researcher analysed profitability of Indian banks from public and private sector in this study for a decade from 2010 to 2019. The study compares profitability of banks through analysing various financial ratios related to profitability. The results indicate that although private sector came after a long time from public sector banks but in performance they are giving a good competition and performing well.

Performance administration based on profitability modeling is becoming more significant in the banking sector as a result of growing concerns about the future of regulatory requirements, funding costs, rapidly changing consumer preferences, escalating competition, and profitability constraints. Insights into the financial stability and performance potential of banks are provided by profitability analysis, which is beneficial and essential for their responsibility in the cutthroat financial market.

**Keywords:** Profitability, Banking, Public Sector, Private Sector, Financial Ratios, Funding Costs.

## Introduction

Profitability is a gauge of effectiveness and efficiency; it shows how effectively or efficiently a company's operations are carried out. Different insightful information about a company's financial performance and health can be found in profitability ratios. A company that is not profitable will not last. On the other hand, a company that is extremely profitable might give its owners a significant return on their investment. One of the most crucial jobs for business managers is boosting profitability. When assessing the profitability of banks in India, a variety of factors are considered, including deposit, advance, funds, branches, load, dealing, operational income, Deposit costs, borrowing costs, expense of finances, return on investments, a profit from investing, net income, load, running costs, and sartorial the use of credit.

In order to complete this study, Bank profitability has been assessed using a set of financial parameters that are broken down into seven categories:

Ratios measuring capital adequacy, debt coverage, balance sheet, managerial effectiveness, profitability, worker productivity, and non-performing assets. Measurement and management of performance focused on profitability are important to high-performing banks and institutions committed to enhancing their performance. To understand how a bank's ability to benchmark and impact earnings the results whatever such adjustments, profitability-oriented performance management is essential.

### **Review of Literature**

Cheema and Aggarwal (2012) evaluated the performance of Public sector banks in India, private sector banks, and foreign banks while analysing the productivity of commercial banks in India. Nationalized banks and State Bank cluster were the two categories into which public sector banks were split. As input parameters, owned money, deposit, borrowings, and wage costs were utilized. The result metrics swell and Non-interest earnings were utilize. It was discovered that all public sector banks had similar mean productivity scores. State Bank of Patiala, Allahabad Bank, and Jammu & Kashmir Bank were determined to be the most effective public sector banks in their bank groups, respectively. Among the group of foreign banks, ING Bank stood at the top. According to the study, excessive ownership of funds and excessive borrowing were the causes of inefficiency among public industry banks and banks from abroad, respectively. in chronological order to increase the effectiveness of banks, The researchers advised paying attention to the diversification of their enterprises as well as the right use of deposits and borrowings. Chandan and Rajput (2012) banks' performance was calculated using a profitability analysis. The multiple retro gradation technique was used by the researcher to analyse the elements determining the profitability of Indian banks. They discovered that the primary a means of support for banks is interest income, net. According to the survey, public sector banks are in a poorer position when compared to international and private banks. In order to improve data management and speed up information flow, the author urged public sector banks to focus on carrying out asset management and invest in high-end technology. Manish Mittal and Aruna Dhademade (2015) concluded that the sole significant factor for determining the performance of the from the standpoint of the banking industry of the shareholders is better profitability. The banks are responsible for striking a harmony between business and goals in society. They found that governmental banks are less lucrative than commercial banks. In terms of net profit, foreign banks came out on top. Because they provide an increasing number of services provided for a fee to businesses or the corporate sector, private sector banks generate high fee returns than public sector banks. The result is, it is necessary

for public sector banks to offer these solutions in order to compete with private sector banks. Medhat Tarawneh (2016) Financial success is a predicted variable that is measured by ROA and the intended gain magnitude, according to research. Total bank assets and the asset utilisation ratio are used as the independent variables to determine the size of banks and property management, respectively (operating income divided by total assets) the operating efficiency ratio, which measures operational efficiency (total operating expenses divided by net income). Kumar (2018), for the years between 2010 and 2015, examined the effects of computer technology on the development and Indian bank performance in terms of output and income. The researcher assessed how bank clients perceived using the cutting-edge technology services that the banks offer. Four groups of banks were created for the study's purposes. They are categorised as follows: Three newly established fully computerised private sector banks (The Centurion Bank of Punjab, ICICI Bank, and HDFC Bank), three fully computerised commercial banks (Bank of Punjab, IndusInd Bank, and IDBI Bank), and three partially computerized nationalised banks made up Groups I through III ((Punjab National Bank, Punjab & Sind Bank, and Oriental Bank of Commerce), Group-IV includes the State Bank of India and its affiliates., which are only partially computerized (State Bank of Patiala, State Bank of Bikaner & Jaipur, and State Bank of India). branch, and financial productivity have all been determined using ratio analysis. According to the study, fully automated banks with online service delivery capabilities fared substantially better on practically all counts. The participants, who, rather than in the cases of Group-III and Group-IV categories, were found to be satisfied under Group-I and Group-II, have also backed up this claim. According to the study, public sector banks should place a strong emphasis on offering computerization and IT-related consumer services. According to Kumari (2019), both private and public sector banks have showed an upward tendency about deposits mobilisation arm expansion, categorization of credit, and the creation of jobs. Private sector banks have improved more than public sector banks, according to a bank analysis. The study recommended that indian public sector banks get better their efficiency and profitability by embracing new technology change and by establishing responsibility for officers in terms of rewards and other things. mer services as well as spreading information technology to rural and semi-urban areas. Qamar (2019) Study subjects included 100 schedule industrial banks, including 42 banks from abroad, 8 new and 23 old private sector banks, 27 public sector banks, and criteria for efficiency, profitability, revenue diversification, and endowment. Data for the fiscal years 2017–2018 was collected from the annual accounts of the banks. Public sector banks, new private sector banks, and foreign sector banks were

the four groups of banks used for the study. The overall assets, shares of equity, ratio of capitalization, and efficiency indicators of the chosen scheduled commercial banks differed, according to the study. Bank profitability performance varied significantly due to variations in human resource efficiency as indicated by business per hour.

### **Objectives**

1. To examine the profitability of Indian public and private sector banks.
2. To examine the comparative financial performance of public and private sector banks.

### **Research Methodology**

Research techniques refers to the precise procedures or methods used to collect, choose, practice, and analyses data related to a topic. A study paper's technique part gives the booklover the option to evaluate the study's total credibility and dependability.

**Sample:** All 25 public sector banks and 11 private sector banks are taken into account in this study.

**Period of Study:** This study covers the data of last 10 years from 2010 to 2019.

**Data Collection:** For the research project, gathering data is a crucial responsibility for the researcher. In general, secondary data can be gathered through records, papers, materials relating to the topic, and associated websites. The study's primary data source is secondary data. Secondary information gathered from the public and private sector banks under study's annual reports and financial statements.

**Parameters of the Study:** The profitability assessment of public and private banks is the foundation of this study. Numerous measures were taken into account for the analysis, including the net profit margin, return on long-term investments, earnings each share, revenue from equity, income from assets, and net profit fraction, and net interest margin, among others.

## 4.1 Data Analysis

Table 1: Normality Test: One Sample Kolmogorov-Smirnov Test

Type of Bank	Cash - Deposit Ratio	Credit - Deposit Ratio	Investment - Deposit Ratio	Credit + Investment - Deposit Ratio	Ratio of deposits to total liabilities	Ratio of interest income to total assets
N	210	210	210	210	210	210
Normal Parameters <sup>ab</sup>	Mean	71.4918	31.5741	103.0659	85.0412	7.8870
	Std. Deviation	7.11900	4.67121	7.09577	4.21707	.84509
Public Sector Banks	Absolute	.097	.059	.081	.141	.058
	Positive	.040	.059	.081	.102	.037
	Negative	-.097	-.033	-.067	-.141	-.058
Kolmogorov-Smirnov Z	2.424	1.406	.859	1.173	2.046	.837
Asymp. Sig. (2-tailed)	.000	.038	.452	.127	.000	.486
N	150	150	150	150	150	150
Normal Parameters <sup>ab</sup>	Mean	80.2379	36.1557	116.3941	77.4031	8.8464
	Std. Deviation	10.06345	9.38657	15.51757	10.05602	.95804
Private Sector Banks	Absolute	.106	.125	.120	.153	.035
	Positive	.106	.125	.120	.095	.035
	Negative	-.045	-.090	-.111	-.153	-.029
Kolmogorov-Smirnov Z	1.584	1.299	1.526	1.464	1.869	.426
Asymp. Sig. (2-tailed)	.013	.068	.019	.027	.002	.993

Source: Primary Data

Table 2: Normality Test: One Sample Kolmogorov-Smirnov Test (Contd.)

Type of Bank	Cash - Deposit Ratio	Credit - Deposit Ratio	Investment - Deposit Ratio	Credit + Investment - Deposit Ratio	Ratio of deposits to total liabilities	Ratio of interest income to total assets
N	210	210	210	210	210	210
Normal Parameters <sup>a,b</sup>	Mean	71.4918	31.5741	103.0659	85.0412	7.8870
	Std. Deviation	7.11900	4.67121	7.09577	4.21707	.84509
Public Sector Banks	Absolute	.097	.059	.081	.141	.058
	Positive	.167	.059	.081	.102	.037
	Negative	-.136	-.033	-.067	-.141	-.058
Kolmogorov-Smirnov Z	2.424	1.406	.859	1.173	2.046	.837
Asymp. Sig. (2-tailed)	.000	.038	.452	.127	.000	.486
N	150	150	150	150	150	150
Normal Parameters <sup>a,b</sup>	Mean	80.2379	36.1557	116.3941	77.4031	8.8464
	Std. Deviation	10.06345	9.38657	15.51757	10.05602	.95804
Private Sector Banks	Absolute	.129	.125	.120	.153	.035
	Positive	.129	.125	.120	.095	.035
	Negative	-.122	-.090	-.111	-.153	-.029
Kolmogorov-Smirnov Z	1.584	1.299	1.526	1.464	1.869	.426
Asymp. Sig. (2-tailed)	.013	.068	.019	.027	.002	.993

Source: Primary Data

a. Test distribution is Normal.

b. Calculated from data of banks under study.

Tables 1 and 2 showing normality test namely One-Sample Kolmogorov-Smirnov test has been applied dividing the banks data in two groups of public and private sector banks. The results given in these Tables 1 and 2 confirm that most of the variables of this data group are normally distributed and parametric test like t-test can be applied to this data group. So, t-test has been applied to the public and private banks data set and results have been given in Table-3.

#### *4.2 T-Test for Profitability and Financial Performance Ratios of Banks*

Table 3 shows t-test results for following hypotheses:

$H_{01}$  : There is no significant mean difference in the profitability of public and private sector banks under study.

$H_{11}$  : There is significant mean difference in the profitability of public and private sector banks under study.

$H_{02}$  : There is no significant mean difference in the financial performance of public and private sector banks under study.

$H_{12}$  : There is significant mean difference in the financial performance of public and private sector banks under study.

Table 3: Levene's Test and t-test

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means							
F		Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Result	Comparison of Banks	Mean	
		Profitability_Ratio of deposits to total liabilities_x000D_	Equal variances assumed	182.289	.000	9.864	358	.000	7.63810	.77437	
not assumed				8.768	186.684	.000	7.63810	.87111	<b>H0 Rejected</b>	Private Sector Banks	77.4031
Profitability_Ratio of interest income to total assets_x000D_	Equal variances assumed	1.388	.240	-10.041	358	.000	-.95945	.09556	<b>H0 Rejected</b>	Public Sector Banks	7.8870
	not assumed			-9.833	295.561	.000	-.95945	.09757		Private Sector Banks	8.8464
Profitability_Ratio of net interest income to total assets (Net Interest Margin)_x000D_	Equal variances assumed	20.551	.000	-14.270	358	.000	-.83316	.05839	<b>H0 Rejected</b>	Public Sector Banks	2.2902
	not assumed			-13.415	244.334	.000	-.83316	.06211		Private Sector Banks	3.1234
Profitability_Ratio of non-interest income to total assets_x000D_	Equal variances assumed	104.229	.000	-12.817	358	.000	-.50771	.03961	<b>H0 Rejected</b>	Public Sector Banks	.9086
	not assumed			-11.615	204.476	.000	-.50771	.04371		Private Sector Banks	1.4163



Profitability_Ratio of burden to total assets_x000D_	Equal variances assumed	24.242	.000	-3.447	358	.001	-14424	.04184	<b>H0 Rejected</b>	Public Sector Banks	.6684
	not assumed			-3.203	230.977	.002	-14424	.04503		Private Sector Banks	.8127
Profitability_Ratio of burden to interest income_x000D_	Equal variances assumed	13.663	.000	-1.319	358	.188	-66758	.50598	<b>H0 Rejected</b>	Public Sector Banks	8.4910
	not assumed			-1.240	244.199	.216	-66758	.53830		Private Sector Banks	9.1585
Profitability_Ratio of operating profits to total assets_x000D_	Equal variances assumed	43.960	.000	-11.728	358	.000	-70816	.06038	<b>H0 Rejected</b>	Public Sector Banks	1.6322
	not assumed			-10.938	235.090	.000	-70816	.06474		Private Sector Banks	2.3404

Profitability_Return on assets_x000D_	Equal variances assumed	.003	.957	-6.220	358	.000	-41297	.06639	H0 Rejected	Public Sector Banks	.8218
	not assumed			-6.525	357.336	.000	-41297	.06329		Private Sector Banks	1.2347
Profitability_Return on equity_x000D_	Equal variances assumed	14.021	.000	.746	358	.456	.81270	1.08991	H0 Rejected	Public Sector Banks	14.5281
	not assumed			.827	321.749	.409	.81270	.98326		Private Sector Banks	13.7154
Profitability_Return on advances_x000D_	Equal variances assumed	3.647	.057	-12.387	358	.000	-1.58853	.12825	H0 Rejected	Public Sector Banks	9.4217
	not assumed			-12.037	285.608	.000	-1.58853	.13198		Private Sector Banks	11.0102
Profitability_Return on investments_x000D_	Equal variances assumed	6.545	.011	1.398	358	.163	.09557	.06835		Public Sector Banks	7.2806
	not assumed			1.363	289.310	.174	.09557	.07013	H0 Rejected	Private Sector Banks	7.1850
Profitability_Return on advances adjusted to cost of funds_x000D_	Equal variances assumed	8.116	.005	-14.949	358	.000	-1.14670	.07671		Public Sector Banks	3.3014
	not assumed			-14.212	257.959	.000	-1.14670	.08068	H0 Rejected	Private Sector Banks	4.4481

Profitability_Return on investments adjusted to cost of funds_x000D_	Equal variances assumed	7.370	.007	4.331	358	.000	.34138	.07882	Public Sector Banks	1.2687
	not assumed			4.459	348.866	.000	.34138	.07655	Private Sector Banks	.9273
Profitability_Business per employee (in Rupees Lakh)	Equal variances assumed	.146	.702	8.760	358	.000	359.23570	41.00647	Public Sector Banks	1427.6711
	not assumed			8.841	331.185	.000	359.23570	40.63279	Private Sector Banks	1068.4354
Profitability_Profit per employee (in Rupees Lakh)	Equal variances assumed	2.282	.132	-1.034	358	.302	-83786	.81000	Public Sector Banks	8.0025
	not assumed			-1.128	341.547	.260	-83786	.74273	Private Sector Banks	8.8403
Profitability_Ratio of net NPA To net advances_x000D_	Equal variances assumed	102.817	.000	9.587	358	.000	2.91850	.30443	Public Sector Banks	4.2188
	not assumed			10.846	289.403	.000	2.91850	.26908	Private Sector Banks	1.3003

**Source:** Author's compilation of public and private bank data from 2010 to 2019 through E-Views 12.

Table 3 shows Levene's test for equality of variances and t-test for equality of mean values of profitability and financial performance ratios of public and private banks. Results show that *null hypothesis for each of these ratios has been rejected* which means there is a significant mean difference in the profitability and financial performance ratios of the banks under study. This is clear from the mean values given in last column of this Table.

For deposit to total liability ratio, mean value for public sector banks is 85.0412 whereas for private sector banks it was 77.4031. It is clear that there is a *big difference* between both ratios and hence, the null hypothesis is rejected. These mean values also indicating that public sector banks have more deposits in comparison to their liabilities and private sector banks are well behind them.

For interest income to total assets ratio, mean value for public sector banks is 7.8870 whereas for private sector banks, it came 8.8464. From these values, it is evident that there is a *significant difference* of more than 12 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that private sector banks earning more interest income than public sector banks.

For Net interest margin to total assets as a percentage, mean value for public sector banks is 2.2902 whereas for private sector banks, it came 3.1234. From these values, it is evident that there is a *significant difference* of more than 36 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that private sector banks' interest margin (i.e., interest earned - interest paid) is more than public sector banks.

For non-interest income to total assets ratio, mean value for public sector banks is 0.9086 whereas for private sector banks, it was 1.4163. From these values, it is evident that there is a *big difference* of more than 40 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that private sector banks' non-interest income is more than public sector banks.

For ratio of burden to total assets, mean value for public sector banks is 0.6684 whereas for private sector banks, it came 0.8127. From these values, it is evident that there is a *significant difference* of more than 20 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that private sector banks' burden is more than public sector banks.

For burden to interest income ratio, mean value for public sector banks is 8.4910 whereas for private sector banks, it came 9.1585. From these values, it is evident that there is a *significant difference* between mean values and

hence, the null hypothesis is rejected. These mean values showing that private sector banks' burden is more than public sector banks.

For operating profit to total assets ratio, mean value for public sector banks is 1.6322 whereas for private sector banks, it came 2.3404. From these values, it is evident that there is a *significant difference* of more than 40 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that private sector banks' operating profit is more than public sector banks.

For income from assets, mean value for public sector banks is 0.8218 whereas for private sector banks, it came 1.2347. From these values, it is evident that there is a *significant difference* of more than 50 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that private sector banks having better return on assets than public sector banks.

For return on equity, mean value for public sector banks is 14.5281 whereas for private sector banks, it came 13.7154. From these values, it is evident that there is a *significant difference* between mean values and hence, the null hypothesis is rejected. These mean values showing that public sector banks' earning more return on equity than private sector banks.

For return on advances, mean value for public sector banks is 9.4217 whereas for private sector banks, it came 11.0102. From these values, it is evident that there is a *significant difference* of more than 15 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that private sector banks' earned more on advances than public sector banks.

For a profit from investing, mean value for public sector banks is 7.2806 whereas for private sector banks, it came 7.1850. From these values, it is evident that there is a *significant difference* between mean values and hence, the null hypothesis is rejected. These mean values showing that public sector banks' return on investment is more than private sector banks.

For return on advances that is cost-adjusted, mean value for public sector banks is 3.3014 whereas for private sector banks, it came 4.4481. From these values, it is evident that there is a *significant difference* of more than 30 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that private sector banks' return on advances is more than public sector banks.

For return on investments that is cost-adjusted, mean value for public sector banks is 1.2687 whereas for private sector banks, it came 0.9273. From

these values, it is evident that there is a *significant difference* of more than 30 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that public sector banks' return on investment is more than private sector banks.

For company per employee, mean value for public sector banks is Rs. 1427.6711 lakh whereas for private sector banks, it came Rs. 1068.4354 lakh. From these values, it is evident that there is a *significant difference* of more than 30 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that public sector banks' doing more business per employee than private sector banks.

For profit per worker, mean value for public sector banks is Rs. 8.0025 lakh whereas for private sector banks, it was Rs. 8.8403 lakh. From these values, it is evident that there is a *significant difference* of more than 10 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that private sector banks' earning more profit per employee than public sector banks.

For ratio of net NPA to net advances, mean value for public sector banks is 4.2188 whereas for private sector banks, it came 1.3003. From these values, it is evident that there is a *significant difference* of more than 30 percent between mean values and hence, the null hypothesis is rejected. These mean values showing that public sector banks having more NPA to net advances than private sector banks.

From this analysis, it can be concluded that public sector banks have more deposits in comparison to their liabilities and private sector banks are well behind them, private sector banks earning more interest income than public sector banks, private sector banks' interest margin (i.e., interest earned - interest paid) is more than public sector banks, private sector banks' non interest income is more than public sector banks, private sector banks' burden is more than public sector banks, private sector banks' burden is more than public sector banks, private sector banks' operating profit is more than public sector banks, private sector banks having better return on assets than public sector banks, public sector banks' earning more return on equity than private sector banks, private sector banks' earned more on advances than public sector banks, public sector banks' return on investment is more than private sector banks, private sector banks' return on advances is more than public sector banks, public sector banks' return on investment is more than private sector banks, public sector banks' doing more business per employee than private sector banks, private sector banks' earning more profit per employee than public sector banks, public sector banks having more NPA to net advances than private sector banks.

## Conclusion

In the current study, data from 25 public sector banks and 11 private sector banks were analysed over a 10-year period, from 2010 to 2019, to determine whether or not the profitability ratios varied. The findings of the t-test and Levene's test indicate that there was a sizable profit gap between banks in the public and private sectors during the research phase. Profitability of public sector banks was proven to be much higher than that of private sector banks.

In the following ratios, public sector banks outperformed private sector banks: Deposits as a percentage of total liabilities, Burden as a percentage of interest income, return on investment, investment return, Investment return adjusted for cost of capital and company per employee.

In the following ratios, private sector banks outperformed public sector banks: Ratio of interest income to total assets, interest margin at net in relation to overall assets, non-interest ratio of income to assets, operating revenue relative to assets, return on investment, return on investments, return on advances that are adjusted for funding costs, revenue per employee and net advances to net NPA.

Although private sector banks are not far behind and are providing public sector banks with robust competition, public sector banks' profitability was determined to be higher as a result of their superior performance in key profitability ratios and at the same time, financial performance of private sector banks found better than public sector banks due to their better investment policies, as they are earning more interest on loans and advances.

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