

# Comparative Analysis of Liability Structures and Profitability Trends in Public and Private Sector Banks in India

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**Abstract--** This paper presents a comprehensive study of liability management and profitability trends in Indian public and private sector banks over the period 2014–2024. Using statistical techniques including t-tests, correlation analysis, and regression modeling, the research examines differences in financial structures, the relationship between liabilities and profits, and operational strategies of these two banking sectors. The study finds significant differences in liability structures, while profitability differences are not statistically significant, indicating that factors beyond liabilities, such as asset quality and operational efficiency, are critical in determining bank performance. The paper also discusses implications for policymakers, banking institutions, and future research.

**Keywords--** Public Sector Banks, Private Sector Banks, Liabilities, Net Profit, Banking Performance, India, Liability Management

## I. INTRODUCTION

The Indian banking sector forms the backbone of the nation's financial system, comprising government-backed public sector banks (PSBs) and private sector banks (PVBs). While PSBs focus on social banking, financial inclusion, and economic stability, private banks emphasize market expansion, innovation, and profitability. Over the last decade, private banks have demonstrated superior operational efficiency and financial stability, prompting the need for a comparative analysis of liability structures and profitability trends.

## II. LITERATURE REVIEW

**Sidhu et al. (2022)** Impact of Net Stable Funding Ratio (NSFR) on bank performance and liability structures. Highlights the stark contrast between private banks (agile, flexible, adaptive) and public banks (stable, risk-averse, regulation-driven). This is the most contemporary study directly linking NSFR to liability structures in India, making it highly relevant for your dissertation.

**Kishore (2019)** Contingent liabilities in Indian banks, comparing exposure levels of public vs private banks. Shows private banks' aggressive exposure (up to 110%) vs public banks' prudence (~41%), linking ownership structure with risk-taking.

Provides empirical evidence on how liability exposure reflects risk appetite, which is critical for your research on resilience and performance.

**Ghosh, Saibal (2009)** Empirical study on liability structures and their impact on risk behavior and spreads. Demonstrates how liability management decisions shape both financial performance and risk profile, with private banks being more dynamic and public banks more conservative. Offers a strong theoretical and empirical base for understanding strategic liability management in Indian banking, forming a foundation for later studies.

## III. OBJECTIVES OF THE STUDY

1. To analyse the trends in liabilities and profitability of public banks and private banks from 2014 to 2024.
2. To examine the relationship between total liabilities and net profits in both public and private sector banks.

## IV. RESEARCH HYPOTHESIS

*H1:* There is significant difference in average total liabilities and net profits between public and private sector banks.

*H2:* Total liabilities have significant impact on the net profits of banks.

## V. RESEARCH GAP

Research on the relatively liability structures of Indian public and private sector banks is scarce, even though many studies have been done on how banks perform overall. The majority of current research ignores the makeup and consequences of liabilities in favor of focusing on asset quality and profitability. By examining and contrasting the liability patterns, structures, and related risks in each industry, this analysis closes that gap.

## VI. RESEARCH METHODOLOGY

*Data Collection*

*Data were collected from:*

Annual reports of 11 public sector banks and 11 private sector banks (2014–2024)



Reserve Bank of India publications  
 Financial statements including total liabilities and net profits

*Statistical Tools*

*Independent Two-Sample t-Test (Unequal Variances):* To examine differences between sectors.

*Pearson Correlation Analysis:* To measure the linear relationship between liabilities and profits.

*Simple Linear Regression:* To test whether liabilities predict profitability.

VII. ANALYSIS AND RESULTS

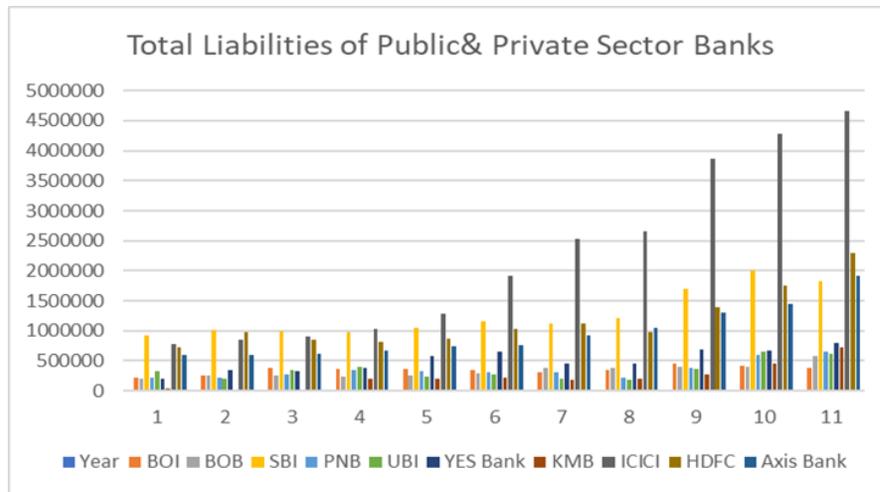
*Total Liabilities of Selected Banks*

**Table 4.1**  
**Total Liabilities of Public Sector Banks (in |Crores)**

<b>Years</b>	<b>Bank of India</b>	<b>Bank of Baroda</b>	<b>State Bank of India</b>	<b>Punjab National Bank</b>	<b>Union Bank of India</b>
2014	2,21,686.80	2,04,628.92	9,26,374.07	2,14,279.12	3,24,595.24
2015	2,52,469.30	2,59,912.78	10,17,329.95	2,16,274.78	1,95,524.16
2016	3,73,702.59	2,46,384.72	10,00,627.26	2,73,945.38	3,49,105.33
2017	3,53,809.32	2,28,977.16	9,71,956.01	3,35,795.92	3,93,716.40
2018	3,59,779.43	2,52,518.96	10,46,440.93	3,32,831.33	2,31,600.86
2019	3,42,653.99	2,98,226.66	11,62,020.69	3,04,127.70	2,66,573.93
2020	3,11,309.21	3,80,312.98	11,16,081.46	3,05,400.13	1,98,405.70
2021	3,52,309.91	3,79,610.40	12,14,994.61	2,10,800.74	1,88,202.36
2022	4,53,634.85	3,95,655.76	17,06,949.91	3,83,279.78	3,70,527.97
2023	4,23,198.91	3,99,234.43	20,07,083.44	6,05,180.05	6,50,247.75
2024	3,78,970.34	5,77,753.35	18,26,574.12	6,44,471.88	6,07,809.42

**Table 4.2:**  
**Total Liabilities of Private Sector Banks (in |Crores)**

Years	Yes Bank LTD	Kotak Mahindra Bank LTI	ICICI Bank Limited	HDFC Bank LTD	Axis Bank Limited
2014	2,01,016.82	43,887.94	7,81,430.45	7,23,154.91	5,95,064.49
2015	3,37,299.25	2,903.12	8,51,977.61	9,75,233.95	5,91,174.91
2016	3,31,239.20	3,687.01	9,00,798.78	8,53,318.11	6,17,446.36
2017	3,79,564.16	1,93,067.54	10,30,993.71	8,17,869.59	6,69,625.84
2018	5,81,829.64	2,05,104.84	12,89,244.00	8,75,488.23	7,35,297.70
2019	6,54,158.02	2,12,082.27	19,22,038.29	10,24,715.12	7,55,765.27
2020	4,58,526.09	1,87,277.36	25,23,825.80	11,28,953.40	9,22,968.76
2021	4,59,642.22	1,93,106.99	26,48,640.67	9,71,097.00	10,52,658.81
2022	6,80,146.24	2,66,610.63	38,67,675.87	13,95,442.30	12,92,104.57
2023	6,61,385.00	4,55,693.74	42,83,165.45	17,48,130.32	14,41,248.94
2024	7,96,957.22	7,17,281.18	46,55,761.78	22,96,758.34	19,08,892.46



**Figure 4.1: Graphical Comparison of Total Liabilities**

*Interpretation:* The graph of total liabilities of public and private sector banks for the period between 2014 to 2024 evidently reflects the public sector banks, particularly State Bank of India, consistently maintains largest total liabilities for the period. The liabilities of SBI increased from |9,26,374.07 crores in 2014 to |20,07,083.44 crores in 2023, then dipped marginally to |18,26,574.12 crores in 2024.

A few of the other government-owned sector banks like Punjab National Bank, Bank of Baroda, and Union Bank of India also depict a consistent trend of rise in liabilities, which is visible after 2019, reflecting structural changes and expansion in their operations and lending. In private sector banking, ICICI Bank displays the highest growth-caused growth with total liabilities from |7,81,430.45 crores in 2014 to a stunning |46,55,761.78 crores in 2024.



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HDFC Bank also displays a sudden hike from |7,23,154.91 crores in 2014 to |22,96,758.34 crores in 2024. Axis Bank is behind with an ever-rising growth up to |19,08,892.46 crores in 2024.

This ten-year comparison shows a fast-developing competitive footprint of private sector banks, with ICICI Bank overtaking even prominent public banks (with the exception of SBI) in terms of total liabilities by 2024. The trends reflect not only the dominance of SBI but also the fast-growing private banks, indicative of transformation in India's banking scene.

*Net Profits of Selected Banks*

**Table 4.3:**  
**Net Profit/Loss (in |Crores) of Public Sector Banks (2014–2024)**

<b>Years</b>	<b>Bank of India</b>	<b>Bank of Barod</b>	<b>State Bank of Indi</b>	<b>Punjab National Banl</b>	<b>Union Bank of India</b>
2014	2,729.27	4,541.08	1,08,91.05	3,342.57	1,696.20
2015	1,708.92	3,398.44	13,101.57	3,061.58	1,781.64
2016	6,089.21	-5,395.54	9,950.65	-3,974.40	1,351.60
2017	-1,558.31	1,383.14	10,484.10	1,324.80	555.21
2018	-6,043.71	-2,431.81	-6,547.45	-12,282.82	-5,247.37
2019	-5,546.90	433.52	862.23	-9,975.45	-2,947.45
2020	-2,956.89	546.19	14,488.11	336.19	-2,897.78
2021	2,160.30	828.96	20,410.47	2,021.62	2,905.97
2022	3,404.70	7,272.28	31,675.98	3,456.96	5,232.10
2023	4,022.94	14,109.62	50,232.45	2,507.20	8,433.28
2024	6,317.92	17,788.78	61,076.62	8,244.62	13,648.31

**Table 4.4:**  
 Net Profit/Loss (in |Crores) of Private Sector Banks (2014–2024)

Years	Yes Bank	Kotak Mahindra	ICICI Bank	HDFC	Axis Bank
2014	1,617.78	1,502.52	9,801.48	8,478.38	6,217.67
2015	2,005.36	1,865.98	11,175.35	10,215.92	7,357.82
2016	2,539.45	2,089.78	9,726.29	12,296.21	8,223.66
2017	3,330.10	3,411.50	9,801.09	14,549.64	3,679.28
2018	4,224.56	4,084.30	6,777.42	17,486.73	275.68
2019	1,720.28	4,865.33	3,363.30	21,078.00	4,676.61
2020	-16,418.03	5,947.18	7,930.81	26,257.32	1,627.22
2021	-3,462.23	6,964.84	16,192.68	31,116.53	6,588.50
2022	1,066.21	8,572.69	23,339.49	36,961.36	13,025.48
2023	717.41	10,939.30	31,896.56	44,108.70	9,579.68
2024	1,251.08	13,781.58	40,888.27	60,812.28	24,861.43

Table 4.2 Data - Requires actual table environment]

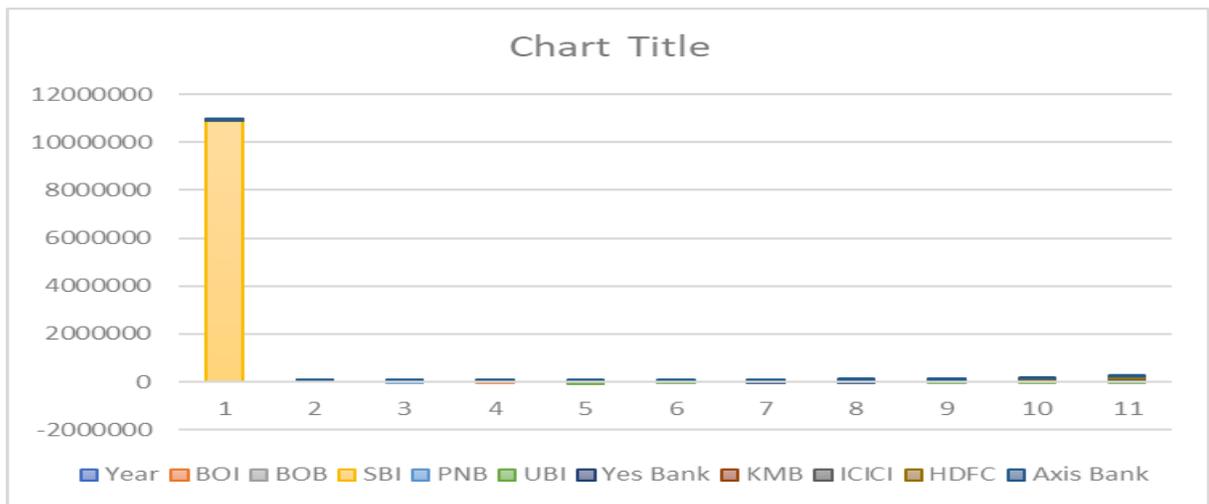


Figure 4.2: Graphical Comparison of Net Profits

*Interpretation:* The graph comparing the net earnings of some of the public and private sector banks between 2014-2024 brings out distinct differences in profitability patterns between the two sectors. SBI is leader among the public sector banks, with an impressive rise in profits from |10,891.05 crores in 2014 to |61,076.62 crores in 2024.

This spectacular growth is a testimonial to the good financial health and efficient working practices of SBI. Other government-owned banks such as Bank of India, Bank of Baroda, Punjab National Bank, and Union Bank of India exhibit erratic performance.

PNB, BOI, and BOB posted losses in most years, especially between 2016 and 2019, owing to increasing NPAs and provisioning concerns. Union Bank of India repeatedly showed a negative net profit of |5,247.37 crores from the year 2018 to 2024, suggesting underlying structural problems. Although there were previous setbacks, BOI and BOB registered the following impressive recoveries by 2024 with profits of |6,317.92 crores and |17,788.78 crores respectively.

Conversely, private sector banks exhibit steady and dramatic profitability. HDFC Bank demonstrated a consistent rise with its net profit growing from |8,478.38 crores in the year 2014 to |60,812.28 crores in 2024 and tying in this aspect with SBI as a runner with similar earnings.

ICICI Bank had a good run, increasing from |9,801.48 crores to |40,888.27 crores during the same timeframe.

Kotak Mahindra Bank (KMB) and Axis Bank also exhibited good profit growth, reaching |13,781.58 crores and |24,861.43 crores respectively by 2024. YesBank experienced a volatile journey, incurring huge losses in 2020 and 2021 (e.g., |-16,418.03 crores in 2020), after which it saw a gradual pickup in later years.

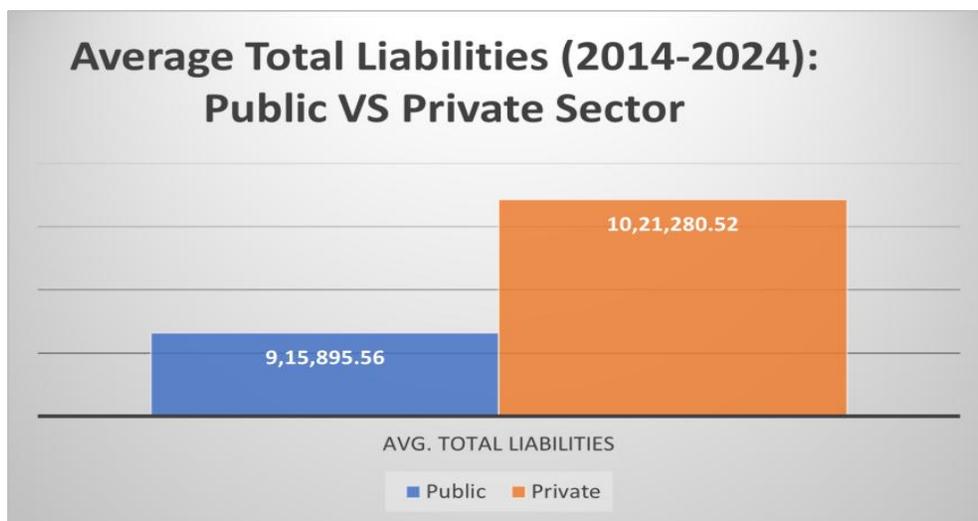
Taken as a whole, the graph points to rising disparity in profitability between private and public banks. While SBI stands as an exception among public sector banks, private banks collectively outperform their respective public bank counterparts, reflecting their better operating efficiencies, asset quality, and customer-oriented business models within a competitive financial environment.

*Comparison of Liabilities*

This section consists the comparison of liability levels in public and private sector banks are collectively.

**Table 4.5:**  
**Average Total Liabilities (2014-2024): Public sector banks vs private sector bank**

Sector	Average Total Liabilities ( Crores)
Public Sector Banks	9,15,895.56
Private Sector Banks	10,21,280.52



**Figure 4.3: Comparison of Average Total Liabilities of Public vs Private Sectors**

*Interpretation:* The mean total liabilities of public sector banks and private sector banks between 2014 to 2024 indicate a clear trend in the structural dynamics in the banking industry in India.

The public sector banks posted an average total liability of |9,15,895.56 crores, indicating their robust institutional presence, extensive branch network, and large-scale government-driven operations.

But on aggregate, private sector banks as a group outdid them with a higher average of |10,21,280.52 crores reflecting higher growth, higher customers, and more aggressive market penetration practices in the decade.

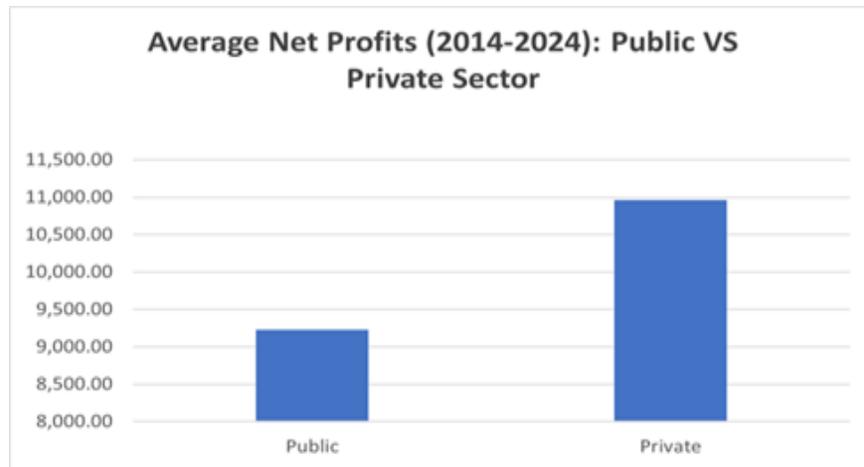
This contrast points to a shifting balance in India's banking sector.

Sector	Average Net Profit ( Crores)
Public Sector Banks	9,227.79
Private Sector Banks	10,963.35

Whereas public sector banks are enjoyed a historical advantage in terms of size and government favor, private banks are emerging as formidable competitors, leveraging technology, innovation, and efficiency to build bigger balance sheets.

The data points towards a consistent rise in the cost burden of private banks, which now exceed public banks on average liabilities on average, marking a milestone achievement in the evolution of India's banking industry.

*Comparison of Net Profits*



**Figure 4.4: Analysis of Average Net Profits of Public Sectors vs Private Sectors**

*Interpretation:* The average net profit comparison between private and public sector banks for the period from 2014-2024 shows the obvious performance difference in favor of private banks. The public banks are depicted an average net profit of |9,227.79 crores displaying moderate profitability that is in accordance with the level of provisioning against bad loans, changes in the regulatory frameworks, and moderately sensible lending patterns.

On Contrary to this, private sector banks have recorded a superior average net profit of |10,963.35 crores, signified their superior financial performance, effective management of assets, and better revenue generation when compared to public sector banks. This shows that private banks had more stable, constant & stronger path of profits throughout the decade because of their focus on online innovation, services which are customer-centric and risk-based lending of finances.



These all factors have assisted them in achieving their higher-than-average profitability rates of the banks. The above data reflects the upper hand of the private sector banks in profitability even though the size and dominance of government-backed public sector banks. Through this, we can observe the growing efficiency and financial stability of private banks are evolving in Indian banking sector.

*Hypothesis I: Difference between Public and Private Banks*

*Hypothesis*

$H_0$  (Null Hypothesis): There is no significance difference in average total liabilities and net profits between public and private sector banks.

$H_1$  (Alternative Hypothesis): There is significance difference in average total liabilities and net profits between public and private sector banks.

*Total Liabilities Comparison:*

#### VIII. METHODOLOGY

In order to examine the above hypothesis, Independent Two Sample t-Test based on the unequal variance's assumption was employed in Microsoft Excel. The sample involved 11 public sector banks and 11 private sector banks during the recent period of time. Two variables were examined: Net Profit and Total Liabilities

The t-test assists in establishing if the average of these two groups significantly different from each other.

*Statistical Output*

*Net Profit Comparison:*

*Interpretation:* As the p-value (0.3568) exceeds 0.05, the result is not significance statistically, and the null hypothesis is *not* rejected (Note: text says rejected, but interpretation implies not rejected). This means that the difference between average net profits of public and private sector banks is not statistically significant, even though the numerical mean is higher for public banks.

**Table 5.1:**  
**t-Test: Two-Sample Assuming Unequal Variances**

	average net profit of public banks	average net profit of private banks
Mean	202114.6136	10963.34327
Variance	4.30663E+11	55510938.06
Observations	11	11
Hypothesized Mean Difference	0	
df	10	
t Stat	0.965998995	
P(T ≤ t) one-tail	0.178412512	
t Critical one-tail	1.812461123	
P(T ≤ t) two-tail	0.356825023	
t Critical two-tail	2.228138852	

**Table 5.2:**  
**t-Test: Two-Sample Assuming Unequal Variances**

	average liability of public banks	average liability of private banks
Mean	528106.7109	1021225.996
Variance	25020683298	2.83767E+11
Observations	11	11
Hypothesized Mean Difference	0	
df	12	
t Stat	-2.943191922	
P(T <= t) one-tail	0.006149409	
t Critical one-tail	1.782287556	
P(T <= t) two-tail	0.012298819	
t Critical two-tail	2.17881283	

*Interpretation:* As p-value (0.0123) < 0.05, the finding is significance statistically. Null Hypothesis is rejected. This shows a significant difference in average liability structures between public sector and private sector banks, with private banks have muc

*Total Liabilities and Average Liabilities*

Public banks like SBI carry large liabilities due to government mandates and financial inclusion schemes. Private banks such as HDFC and ICICI have aggressive liability growth due to market expansion and diversified financial products.

**Table :**  
**Average Liabilities (2014–2024)**

<b>Diagram 5.3: Total Comparison</b>	<b>Bank Type</b>	<b>Average Total Liabilities (₹ Crores)</b>	<b>Average Liabilities</b>
<b>Net Profit</b>	Public Banks	9,15,895.56	
	Private Banks	10,21,280.52	<b>Trends</b>

Private banks recorded higher average net profits (₹10,963.35 Cr) than public banks (₹9,227.79 Cr), reflecting better asset quality, risk management, and customer-focused strategies.

*Hypothesis Testing*

*Difference Between Public and Private Banks*

*Null Hypothesis (H0):* No significant difference in total liabilities and net profits.



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*Result:* Significant difference in liabilities ( $p=0.0123$ ) but not in net profits ( $p=0.3568$ ).

#### *Impact of Liabilities on Profits*

*Correlation Analysis:*  $r = 0.0267$  (extremely weak positive correlation)

*Regression Analysis:*  $R^2 = 0.0007$ ,  $p = 0.782$

*Interpretation:* Liabilities do not significantly predict net profits.

#### *Key Trends in Indian Banking (2014–2024)*

*Public Sector Banks:* SBI leads in liabilities and profits; others show volatility due to NPAs and operational inefficiency.

*Private Sector Banks:* ICICI and HDFC show rapid growth in liabilities and steady profits; Yes Bank experiences occasional volatility.

#### *Average Comparison:*

*Public Banks:* Liabilities ₹9,15,895.56 Cr, Net Profit ₹9,227.79 Cr

*Private Banks:* Liabilities ₹10,21,280.52 Cr, Net Profit ₹10,963.35 Cr

#### IX. CONCLUSION

The study identifies significant differences in liability structures between public and private banks in India, while profitability remains statistically comparable. Liability strategies are driven more by institutional objectives than profits. Private banks tend to hold higher liabilities due to expansion-focused and market-sensitive funding policies. Public banks face volatility due to regulatory obligations and social banking mandates. Operational efficiency, asset quality, and risk management are critical determinants of profitability.

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