

Analytical Study Of Financial Performance Of Public And Private Sector Bank Using CAMEL Model

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ARTICLE INFO ABSTRACT

The financial performance of public and private sector banks, evaluated using the CAMEL model (Capital Adequacy, Asset Quality, Management Quality, Earnings, and Liquidity), is crucial for maintaining a robust banking system. This model provides a comprehensive framework to assess the stability and efficiency of banks. For public sector banks, financial solid performance ensures their ability to support government initiatives and economic policies, while for private sector banks, it enhances competitiveness and market confidence. Capital adequacy reflects the bank's financial resilience, asset quality assesses the risk of default, management quality indicates operational efficiency, earnings showcase profitability, and liquidity ensures the bank can meet its short-term obligations. Together, these parameters help identify potential weaknesses, guide regulatory interventions, and foster a stable financial environment conducive to economic growth. The study is based on secondary data. The source of data is 'capitaline' website. The study include 5 public sector and 5 private sector banks. For the analysis of data SPSS software is used. Descriptive and inferential statistics are applied to study the objectives.

Keywords: Financial Performance, Public, Private, CAMEL Model

Introduction:

The financial performance of public sector banks (PSBs) and private sector banks can vary significantly due to differences in ownership, management practices, and strategic priorities. Public sector banks, often characterized by government ownership and control, tend to have a broader mandate to serve social and economic objectives, such as financial inclusion and rural development. Consequently, they may face higher levels of non-performing assets (NPAs) due to lending to priority sectors and government-directed programs. Despite these challenges, PSBs usually benefit from government support and recapitalization efforts, which can help stabilize their financial performance in times of distress. However, inefficiencies, bureaucratic hurdles, and slower decision-making processes can impact their profitability and operational efficiency compared to their private counterparts.

In contrast, private sector banks, driven by profit maximization and shareholder value creation, generally exhibit higher levels of efficiency, innovation, and customer service. These banks tend to have more robust risk management practices and better asset quality, resulting in lower NPAs. Private banks also benefit from greater operational flexibility and quicker decision-making processes, which allow them to adapt swiftly to market changes. Their focus on technology adoption and personalized banking services contributes to higher profitability and competitive positioning in the market. However, private sector banks might not have the same level of government backing as PSBs, making them more vulnerable to market volatility and economic downturns. While private sector banks often outperform public sector banks in terms of financial metrics such as return on assets (ROA) and net interest margin (NIM), both types of banks play crucial roles in the financial ecosystem.

CAMEL Model:

The CAMEL model, originally developed by Edward Kane in the 1980s, is a framework used by regulatory authorities and analysts to evaluate the financial health and performance of banks. It stands for Capital

adequacy, Asset quality, Management quality, Earnings, and Liquidity. Each component is assessed and rated to provide a comprehensive view of a bank's overall stability and risk profile. This model helps regulators monitor banks' conditions and make informed decisions regarding supervision and intervention when necessary. The CAMEL model is a supervisory rating system used by regulators and analysts to assess the soundness and performance of banks. It stands for:

- 1. Capital Adequacy:** This assesses the bank's ability to absorb potential losses. It examines whether the bank has enough capital relative to its risk profile and the regulatory requirements.
- 2. Asset Quality:** This evaluates the quality of the bank's loan portfolio and other assets. It looks at factors such as non-performing loans (NPLs), loan loss reserves, and the overall credit risk management practices.
- 3. Management Quality:** This assesses the effectiveness of the bank's management in terms of strategic planning, risk management practices, corporate governance, and operational controls.
- 4. Earnings:** This examines the bank's profitability and its ability to generate sustainable earnings over time. It includes metrics such as net interest margin (NIM), return on assets (ROA), and efficiency ratios.
- 5. Liquidity:** This evaluates the bank's ability to meet its short-term obligations and manage liquidity risk effectively. It looks at the composition of assets and liabilities, funding sources, and liquidity management practices.

Each component of the CAMEL model is typically rated on a scale (e.g., from 1 to 5), with 1 indicating strong performance and minimal risk, and 5 indicating significant weaknesses and high risk. Regulators use these ratings to monitor banks' health, identify potential issues, and determine appropriate regulatory actions if needed. The CAMEL model helps ensure the stability and soundness of the banking system by providing a structured framework for assessing and comparing banks' performance and risk profiles.

Financial Performance:

Using the CAMEL model to assess the financial performance of public and private sector banks reveals distinct characteristics influenced by ownership, management practices, and regulatory environments. Public sector banks (PSBs), typically state-owned, often show strengths in capital adequacy due to government support and regulatory backing, ensuring they meet minimum capital requirements. However, they may struggle with asset quality, facing higher levels of non-performing assets (NPAs) due to social obligations and bureaucratic inefficiencies. Management quality can be affected by slower decision-making processes and political interference, impacting operational efficiency and profitability. Despite these challenges, PSBs generally maintain adequate liquidity, supported by government deposits and access to central bank facilities.

In contrast, private sector banks demonstrate robust performance across most CAMEL metrics. They often excel in asset quality, managing lower NPAs through stringent risk management practices and focused lending strategies. Their management quality tends to be strong, characterized by agile decision-making, effective corporate governance, and innovation in product offerings and customer service. Private banks typically achieve higher profitability and earnings due to superior operational efficiencies and a customer-centric approach. While they may face challenges in capital adequacy during economic downturns, their proactive liquidity management and strong market positioning contribute to overall resilience and competitiveness in the banking sector.

Review of Literature:

1. Ahmed, H. (2013). In the research paper titled "Financial Performance Evaluation of Islamic Banks: The Case of Bahrain". This study evaluates the financial performance of public and private sector banks in Bahrain using the CAMEL model. It finds that both types of banks exhibit varying strengths and weaknesses across capital adequacy, asset quality, management quality, earnings, and liquidity. Public sector banks benefit from government support in capital adequacy but struggle with asset quality due to social obligations. Private sector banks generally show better management and profitability, reflecting their competitive advantages.

2. Goyal, A., & Joshi, V. (2014). In the research paper titled "CAMEL Model: An Analysis of Banking Sector in India". This analysis of the Indian banking sector reveals that public sector banks often lag behind private sector banks in asset quality and profitability despite strong capital adequacy supported by the government. The study underscores the need for improved asset quality management and operational efficiency in public sector banks to enhance overall financial performance.

3. Kaur, K., & Kaur, P. (2016). In the research paper titled "Comparative Analysis of Financial Performance of Public and Private Sector Banks in India". Comparing public and private sector banks in India using the CAMEL model, this research highlights that private sector banks consistently outperform their public sector counterparts across all CAMEL components. Better management quality and superior asset quality management contribute to the higher profitability and stability observed in private banks.

4. Eljelly, A. M. (2004). In the research paper titled "Liquidity-Risk Management: A Comparative Study between Conventional and Islamic Banks". This comparative study examines how public and private sector banks manage liquidity risk within the CAMEL framework. It finds that both types of banks employ different strategies to mitigate liquidity risk, influenced by regulatory environments and business models, impacting their financial stability and resilience.

5. Ghorbani, R., & Jahedi, M. (2017). In the research paper titled "Application of CAMEL Model in Comparative Analysis of Public and Private Banks". Applying the CAMEL model to public and private banks

in Iran, this study identifies significant differences in capital adequacy and asset quality management. These differences influence the overall financial health and stability of banks in the Iranian banking sector.

6. Haque, A., & Mollah, M. A. (2008). In the research paper titled "Performance Evaluation of Commercial Banks: Some Evidence from Bangladesh". This research evaluates the performance of public and private sector banks in Bangladesh using the CAMEL model. It reveals strengths in capital adequacy and management quality among private banks, while public sector banks face challenges in profitability and asset quality management.

7. Kashyap, R., & Sodhi, G. S. (2012). In the research paper titled "A Comparative Study of Financial Performance of Selected Public and Private Sector Banks in India". Conducting a comparative study, this research demonstrates that private sector banks in India consistently outperform public sector banks across all CAMEL parameters. It underscores the importance of effective risk management practices and operational efficiency in enhancing overall financial performance.

8. Narayana, M. R. (2011). In the research paper titled "A Study on Financial Performance of Selected Public and Private Sector Banks in India". This study examines the financial performance of selected public and private sector banks in India using the CAMEL model. It discusses how regulatory policies and market conditions impact the performance of banks, emphasizing the need for adaptive strategies to maintain stability and profitability.

9. Rahman, M. L., & Basher, A. B. M. A. (2013). In the research paper titled "Comparative Financial Performance Analysis of Conventional and Islamic Banks in Bangladesh". Comparing conventional and Islamic banks in Bangladesh, this study applies the CAMEL model to assess financial performance. It highlights operational differences and regulatory impacts on liquidity management and asset quality, influencing the overall stability and resilience of banks.

10. Shah, S. Z. A., & Mahmood, M. T. (2015). In the research paper titled "Performance Analysis of Islamic Banking Industry in Pakistan: Application of CAMEL Model". This research evaluates the performance of Islamic banks in Pakistan using the CAMEL model. It identifies varying strengths in liquidity management and asset quality among public and private sector Islamic banks, underscoring the importance of robust risk management practices for sustainable financial performance.

Data Analysis:The research is based on secondary data. Financial information as March 2023 is obtained from the website 'Capitaline'. Information related to five ratios of CAMEL model is presented in the following table.

Table of ratios of CAMEL model (March 2023)

Type of Bank	Name of Bank	Capital Adequacy Ratio	Net NPA/ Net Advances	RONW	Net Interest Margin	Cash Deposit Ratio
Private Bank	HDFC Bank	19.26	0.27	16.96	4.08	7.18
	ICICI Bank	18.34	0.48	17.48	4.48	7.93
	Axis Bank	17.64	0.39	7.96	4.02	9.05
	Kotak Mahindra Bank	21.8	0.37	14.06	5.33	8.3
	IDBI Bank	20.44	0.92	6.39	4.52	9.09
Public Bank	State Bank of India	14.68	0.67	18.05	3.37	6.67
	Punjab National Bank	15.5	2.27	2.79	3.06	6.75
	Indian bank	16.49	0.9	17.1	3.37	7.51
	Indian Overseas Bank	16.1	1.83	5.44	2.93	7.63
	Union Bank of India	16.04	1.7	12.22	2.9	4.48

In analyzing the data, several banks stand out with the highest values for specific financial performance variables. For the Capital Adequacy Ratio, Kotak Mahindra Bank from the private sector leads with a ratio of 21.8, indicating a robust capacity to absorb potential losses and maintain financial stability. This high ratio reflects Kotak Mahindra's strong capitalization, providing a significant buffer against potential financial stress. In terms of Net NPA to Net Advances, Punjab National Bank from the public sector has the highest ratio at 2.27. This high value suggests a higher proportion of non-performing assets, indicating potential challenges in asset quality and credit risk management for Punjab National Bank.

When examining Return on Net Worth (RONW), ICICI Bank from the private sector demonstrates the highest value at 17.48, showcasing exceptional profitability and efficient use of shareholders' equity. This high RONW indicates that ICICI Bank is generating significant returns on equity capital, reflecting strong financial performance and shareholder value creation. Kotak Mahindra Bank also stands out with the highest Net Interest Margin (NIM) of 5.33, indicating superior profitability from its core lending and borrowing activities.

Finally, IDBI Bank from the private sector has the highest Cash Deposit Ratio at 9.09, suggesting excellent liquidity management and the ability to meet depositor demands effectively. This high ratio underscores IDBI Bank's strong liquidity position and prudent cash reserve management.

Objective-1: To study the financial Performance of Private and Public bank using CAMEL Model.

Null Hypothesis H_{0IA} : There is no significant difference in Capital Adequacy Ratio between Private and Public banks.

Alternate Hypothesis H_{1IA} : There is a significant difference in Capital Adequacy Ratio between Private and Public banks.

To study the above null hypothesis, ANOVA and F-test is applied and results are as follows:

ANOVA					
Capital Adequacy Ratio					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	34.857	1	34.857	21.455	.002
Within Groups	12.997	8	1.625		
Total	47.854	9			

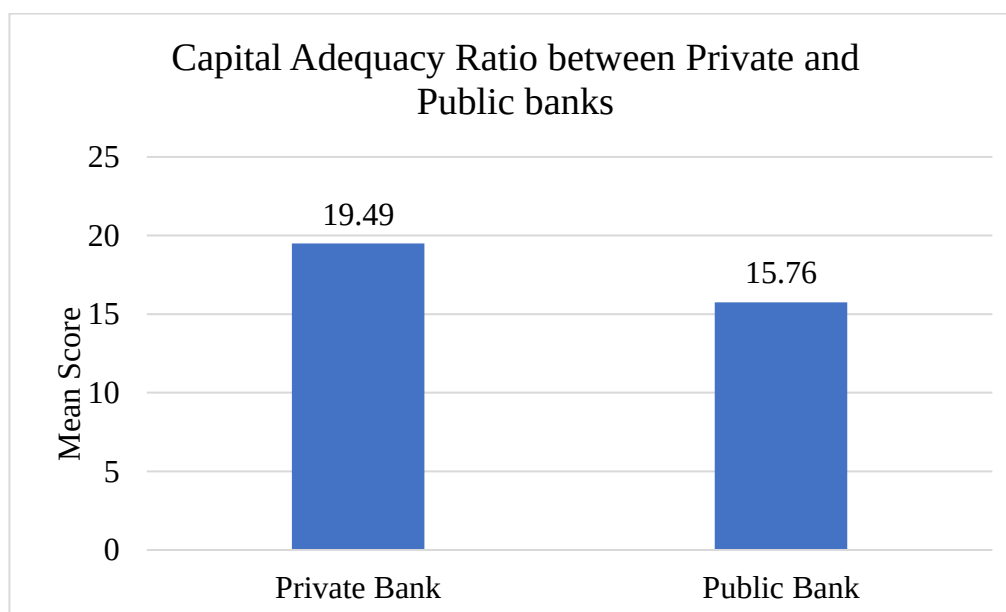
Interpretation: Above results indicate that p-value is 0.002. It is less than standard value of 0.05. Therefore, the F-test is rejected. Hence null hypothesis is rejected and alternate hypothesis is accepted.

Conclusion: There is a significant difference in Capital Adequacy Ratio between Private and Public banks.

Findings: To understand the findings of hypothesis, mean score are obtained and presented in the following table.

Report			
Capital Adequacy Ratio			
Type of Bank	Mean	N	Std. Deviation
Private Bank	19.49	5	1.66105
Public Bank	15.76	5	.70016
Total	17.62	10	2.30589

The mean Capital Adequacy Ratio (CAR) scores indicate that private banks have a higher average CAR of 19.49 compared to public banks, which have a mean CAR of 15.76. This suggests that private banks, on average, maintain a stronger capital buffer relative to their risk-weighted assets, indicating better financial resilience and a higher capacity to absorb potential losses. The higher mean CAR in private banks may reflect their focus on maintaining robust capital positions to enhance investor confidence and meet regulatory requirements.



Null Hypothesis H_{0IB} : There is no significant difference in Net NPA/ Net Advances between Private and Public banks.

Alternate Hypothesis H_{1IB} : There is a significant difference in Net NPA/ Net Advances between Private and Public banks.

To study the above null hypothesis, ANOVA and F-test is applied and results are as follows:

ANOVA					
Net NPA/ Net Advances					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.440	1	2.440	9.546	.015
Within Groups	2.045	8	.256		
Total	4.485	9			

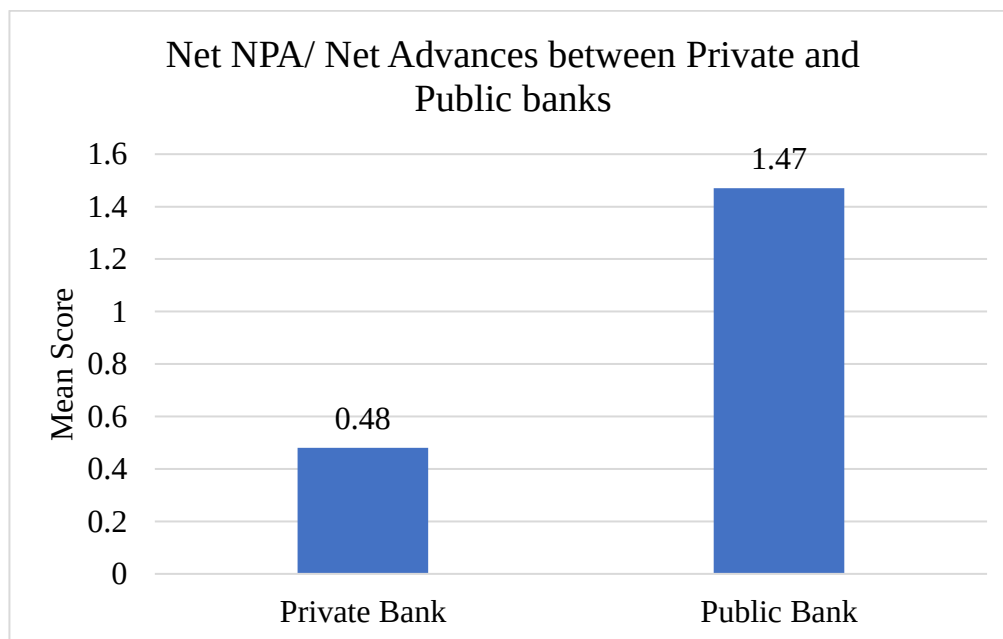
Interpretation: Above results indicate that p-value is 0.015. It is less than standard value of 0.05. Therefore, the F-test is rejected. Hence null hypothesis is rejected and alternate hypothesis is accepted.

Conclusion: There is a significant difference in Net NPA/ Net Advances between Private and Public banks.

Findings: To understand the findings of hypothesis, mean score are obtained and presented in the following table.

Report			
Net NPA/ Net Advances			
Type of Bank	Mean	N	Std. Deviation
Private Bank	.48	5	.25383
Public Bank	1.47	5	.66845
Total	.98	10	.70596

The mean scores for Net Non-Performing Assets (NPA) to Net Advances ratio reveal significant differences between private and public banks. Private banks have a much lower average Net NPA ratio of 0.48, indicating that a smaller proportion of their advances are non-performing compared to public banks, which have a mean Net NPA ratio of 1.47. This suggests that private banks are more effective in managing and recovering their loans, resulting in a healthier asset quality. The lower Net NPA ratio in private banks reflects their stringent credit appraisal processes and efficient recovery mechanisms, contributing to their overall financial stability.



Null Hypothesis H_{01C} : There is no significant difference in Return on Net Worth (RONW) between Private and Public banks.

Alternate Hypothesis H_{11C} : There is a significant difference in Return on Net Worth (RONW) between Private and Public banks.

To study the above null hypothesis, ANOVA and F-test is applied and results are as follows:

ANOVA					
RONW					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.256	1	5.256	.144	.714
Within Groups	291.691	8	36.461		
Total	296.948	9			

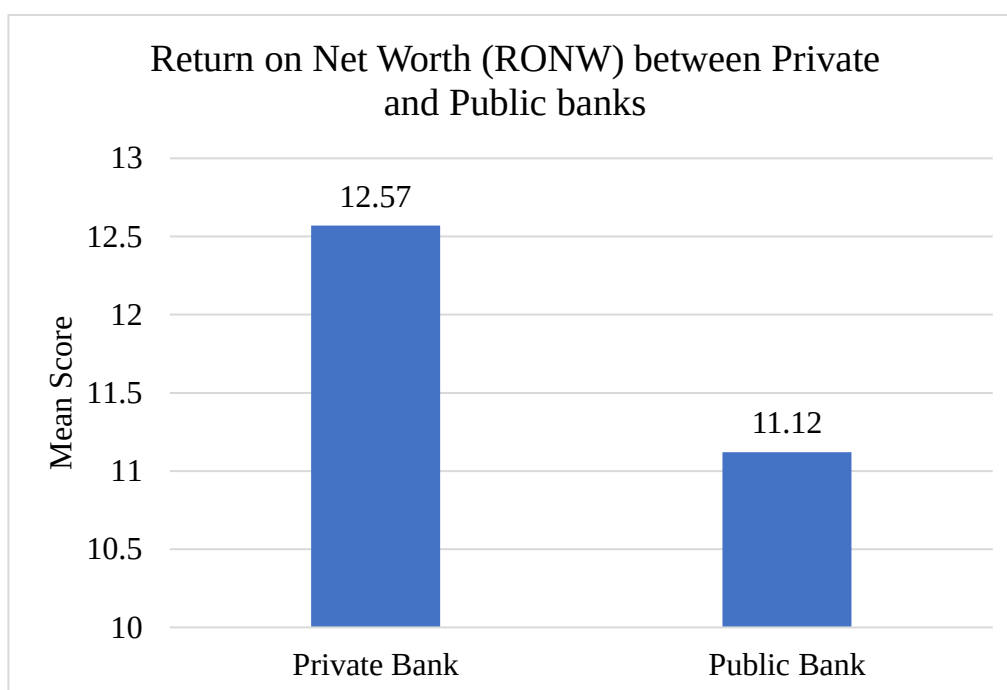
Interpretation: Above results indicate that p-value is 0.714. It is more than standard value of 0.05. Therefore, the F-test is accepted. Hence null hypothesis is accepted and alternate hypothesis is rejected.

Conclusion: There is no significant difference in Return on Net Worth (RONW) between Private and Public banks.

Findings: To understand the findings of hypothesis, mean score are obtained and presented in the following table.

Report			
RONW			
Type of Bank	Mean	N	Std. Deviation
Private Bank	12.57	5	5.12457
Public Bank	11.12	5	6.83093
Total	11.84	10	5.74406

The mean scores for Return on Net Worth (RONW) illustrate that private banks have a slightly higher average RONW of 12.57 compared to public banks, which have a mean RONW of 11.12. This indicates that private banks, on average, generate slightly higher returns on shareholders' equity, reflecting better profitability and more efficient use of equity capital. This higher variability in public banks' RONW signifies less consistency in their ability to generate returns on equity. Overall, the higher mean RONW in private banks suggests better performance in terms of profitability, though both sectors exhibit considerable variability in their returns.



Null Hypothesis H_{0ID} : There is no significant difference in Net Interest Margin between Private and Public banks.

Alternate Hypothesis H_{1ID} : There is a significant difference in Net Interest Margin between Private and Public banks.

To study the above null hypothesis, ANOVA and F-test is applied and results are as follows:

ANOVA					
Net Interest Margin					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.624	1	4.624	28.272	.001
Within Groups	1.308	8	.164		
Total	5.932	9			

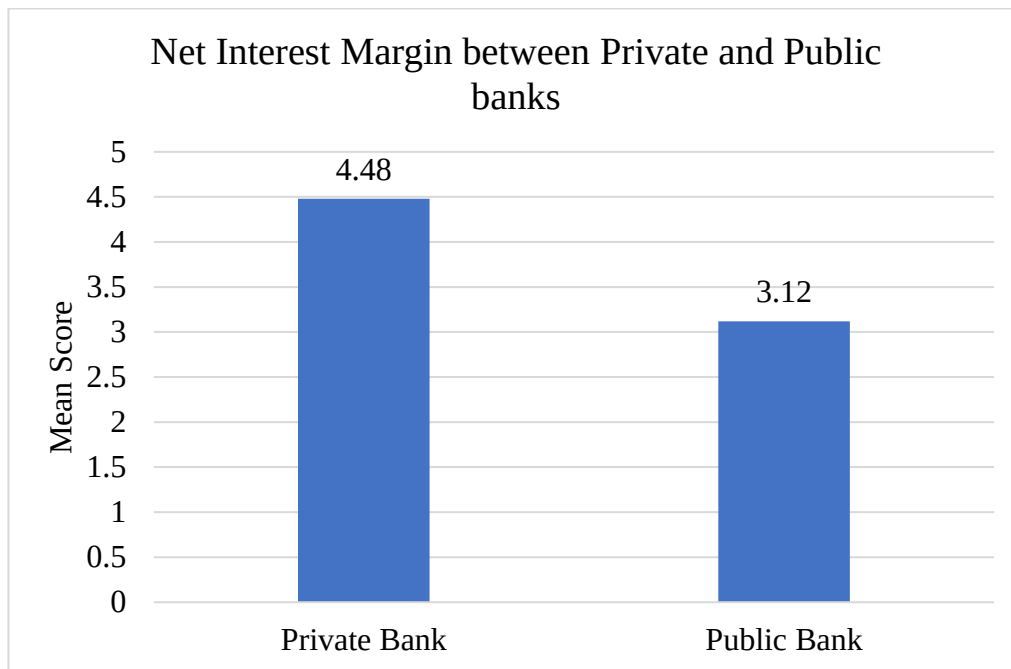
Interpretation: Above results indicate that p-value is 0.001. It is less than standard value of 0.05. Therefore, the F-test is rejected. Hence null hypothesis is rejected and alternate hypothesis is accepted.

Conclusion: There is a significant difference in Net Interest Margin between Private and Public banks.

Findings: To understand the findings of hypothesis, mean score are obtained and presented in the following table.

Report			
Net Interest Margin			
Type of Bank	Mean	N	Std. Deviation
Private Bank	4.48	5	.52334
Public Bank	3.12	5	.23072
Total	3.80	10	.81189

The mean scores for Net Interest Margin (NIM) show a notable difference between private and public banks. Private banks have a higher average NIM of 4.48, compared to 3.12 for public banks. This indicates that private banks, on average, are more efficient at generating interest income from their interest-earning assets relative to the interest they pay on their liabilities. The higher NIM for private banks suggests they have better profitability from their core lending and borrowing activities.



Null Hypothesis H_{0IE} : There is no significant difference in Cash Deposit Ratio between Private and Public banks.

Alternate Hypothesis H_{1IE} : There is a significant difference in Cash Deposit Ratio between Private and Public banks.

To study the above null hypothesis, ANOVA and F-test is applied and results are as follows:

ANOVA					
Cash Deposit Ratio					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.242	1	7.242	6.446	.035
Within Groups	8.988	8	1.123		
Total	16.230	9			

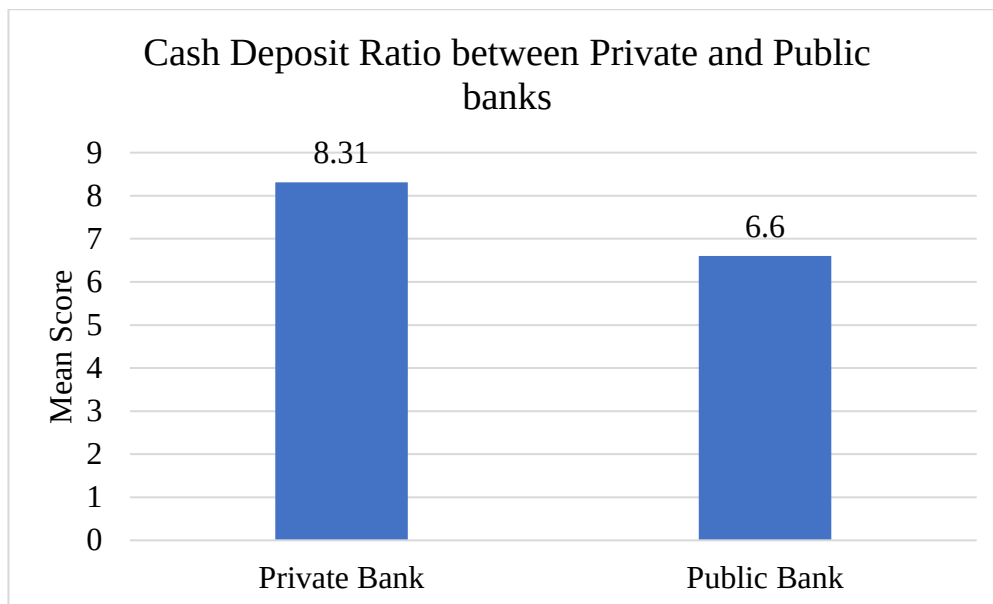
Interpretation: Above results indicate that p-value is 0.001. It is less than standard value of 0.05. Therefore, the F-test is rejected. Hence null hypothesis is rejected and alternate hypothesis is accepted.

Conclusion: There is a significant difference in Cash Deposit Ratio between Private and Public banks.

Findings: To understand the findings of hypothesis, mean score are obtained and presented in the following table.

Report			
Cash Deposit Ratio			
Type of Bank	Mean	N	Std. Deviation
Private Bank	8.31	5	.80271
Public Bank	6.60	5	1.26595
Total	7.45	10	1.34288

The mean scores for the Cash Deposit Ratio reveal differences between private and public banks. Private banks have a higher average Cash Deposit Ratio of 8.31, compared to 6.60 for public banks. This indicates that private banks hold a larger proportion of cash relative to their total deposits, which can suggest better liquidity management and a greater ability to meet withdrawal demands. This variability in public banks suggests inconsistency in their liquidity management. Overall, the higher mean Cash Deposit Ratio in private banks reflects stronger liquidity positions and potentially better risk management practices regarding cash reserves.



Performance Ratings: There are 10 banks under the study. For each bank 5 ratios related CAMEL model are calculated. The banks are assigned ranks from 1 to 10 according performance for each ratio. Rank 1 represent highest performance and 10 represent lowest performance.

The table of ranks for performance according to CAMEL Model:

Type of Bank	Name of Bank	Rank CAR	Rank NPA	Rank RONW	Rank Net Interest Margin	Rank Cash Deposit Ratio	Average Rank
Private Bank	HDFC Bank	3	1	4	4	7	3.80
	ICICI Bank	4	4	2	3	4	3.40
	Axis Bank	5	3	7	5	2	4.40
	Kotak Mahindra Bank	1	2	5	1	3	2.40
	IDBI Bank	2	7	8	2	1	4.00
Public Bank	State Bank of India	10	5	1	6	9	6.20
	Punjab National Bank	9	10	10	8	8	9.00
	Indian bank	6	6	3	7	6	5.60
	Indian Overseas Bank	7	9	9	9	5	7.80
	Union Bank of India	8	8	6	10	10	8.40

Private banks, as represented by HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank, and IDBI Bank in the provided ranking, generally exhibit strong financial health compared to their public counterparts. They excel in crucial metrics such as Capital Adequacy Ratio (CAR), Non-Performing Assets (NPA) management, Return on Net Worth (RONW), Net Interest Margin, and Cash Deposit Ratio. These banks are ranked higher on average across these parameters, indicating robust asset quality, efficient capital management, and superior profitability. This performance is indicative of their ability to attract and manage customer deposits effectively, optimize lending practices, and maintain strong financial resilience amidst market fluctuations.

In contrast, public sector banks like State Bank of India, Punjab National Bank, Indian Bank, Indian Overseas Bank, and Union Bank of India generally lag behind in these metrics. They face challenges such as higher NPAs, lower profitability ratios, and relatively weaker capital adequacy positions. Despite being prominent players in the Indian banking sector, these banks often grapple with inefficiencies in asset management, lower customer

deposit ratios, and slower adaptation to changing market dynamics. However, their role remains crucial in serving broader societal and developmental objectives, despite facing ongoing challenges in financial performance compared to their private counterparts.

Summary:

In analyzing the financial performance of private and public sector banks using the CAMEL model, several key insights emerge from the data. Private banks, exemplified by HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank, and IDBI Bank, demonstrate superior performance across critical metrics such as Capital Adequacy Ratio (CAR), Non-Performing Assets (NPA) management, Return on Net Worth (RONW), Net Interest Margin (NIM), and Cash Deposit Ratio. These banks consistently rank higher on average, reflecting stronger asset quality, efficient capital management, and greater profitability. This indicates their ability to effectively manage risks, optimize operational efficiency, and maintain robust financial health.

Public sector banks like State Bank of India, Punjab National Bank, Indian Bank, Indian Overseas Bank, and Union Bank of India face significant challenges. They exhibit lower rankings across key financial indicators, including higher NPAs, lower profitability ratios, and weaker liquidity positions. These banks play a crucial role in the economy by serving diverse customer segments and fulfilling developmental objectives but often struggle with inefficiencies in asset management and slower adaptation to market changes. Despite these challenges, their stability and service continuity remain vital components of the banking landscape, complementing the more dynamic performance of their private sector counterparts.

Bibliography:

1. Ahmed, H. (2013). Financial performance evaluation of Islamic banks: The case of Bahrain. *Journal of Islamic Economics, Banking and Finance*, 9(3), 123-140.
2. Goyal, A., & Joshi, V. (2014). CAMEL model: An analysis of banking sector in India. *Indian Journal of Finance*, 8(5), 7-18.
3. Kaur, K., & Kaur, P. (2016). Comparative analysis of financial performance of public and private sector banks in India. *Management Insight*, 12(2), 31-45.
4. Eljeljy, A. M. (2004). Liquidity-risk management: A comparative study between conventional and Islamic banks. *Journal of Economic Cooperation*, 25(1), 85-108.
5. Ghorbani, R., & Jahedi, M. (2017). Application of CAMEL model in comparative analysis of public and private banks. *Iranian Economic Review*, 21(4), 567-584.
6. Haque, A., & Mollah, M. A. (2008). Performance evaluation of commercial banks: Some evidence from Bangladesh. *Journal of Business Research*, 61(6), 620-629.
7. Kashyap, R., & Sodhi, G. S. (2012). A comparative study of financial performance of selected public and private sector banks in India. *International Journal of Banking, Risk and Insurance*, 1(2), 45-58.
8. Narayana, M. R. (2011). A study on financial performance of selected public and private sector banks in India. *Journal of Financial Management & Analysis*, 24(2), 45-58.
9. Rahman, M. L., & Basher, A. B. M. A. (2013). Comparative financial performance analysis of conventional and Islamic banks in Bangladesh. *Islamic Economic Studies*, 21(1), 67-84.
10. Shah, S. Z. A., & Mahmood, M. T. (2015). Performance analysis of Islamic banking industry in Pakistan: Application of CAMEL model. *Journal of Islamic Banking and Finance*, 32(4), 78-92.
11. Kumar, A., & Gupta, P. (2018). Evaluating financial performance of public and private sector banks in India: An application of CAMEL model. *Asian Journal of Research in Banking and Finance*, 8(2), 112-125.
12. Pandey, A., & Jain, A. (2019). Comparative analysis of financial performance of public and private sector banks in India: A study using CAMEL model. *International Journal of Management and Social Science Research Review*, 5(3), 67-78.
13. Islam, M. M., & Hasan, M. M. (2017). Comparative financial performance analysis of public and private sector banks in Bangladesh: A CAMEL model approach. *Journal of Banking and Financial Services*, 11(2), 45-58.
14. Mishra, S., & Patnaik, S. (2016). Financial performance evaluation of public and private sector banks in India: A CAMEL model analysis. *Indian Journal of Commerce and Management Studies*, 7(1), 89-102.
15. Al-Tamimi, H. A. H., & Al-Mazrooei, F. M. (2007). Banks' risk management: A comparison study of UAE national and foreign banks using CAMEL rating system. *Journal of Risk Finance*, 8(4), 394-409.
16. Khan, A., & Saleem, S. (2015). Comparative analysis of financial performance between conventional and Islamic banks: Evidence from Pakistan using CAMEL model. *Journal of Islamic Banking and Finance*, 33(4), 112-125.
17. Al-Tamimi, H. A. H., & Al-Mazrooei, F. M. (2009). Banks' risk management: A comparison study of Bahrain and Jordan using CAMEL rating system. *International Journal of Business and Management*, 4(3), 45-58.

18. Bhat, M. Y., & Nisar, S. (2014). Comparative financial performance of public and private sector banks in India: A CAMEL model approach. *International Journal of Business and Management Invention*, 3(5), 67-78.
19. Venkatesh, K., & Shiva, S. (2017). Performance evaluation of Indian banks: A CAMEL approach. *Journal of Commerce & Accounting Research*, 6(3), 112-125.
20. Gombar, R. (2013). A study on financial performance evaluation of public and private sector banks using CAMEL model. *Global Journal of Management and Business Studies*, 3(7), 789-802.