

A STUDY ON ASSESSING DETERMINANTS OF DEPOSIT VOLUME BY ADOPTING THE CAMELS RATING SYSTEM OF SELECTED PRIVATE INDIAN BANKS

Dr. SRI HARI. V

Associate Professor & Placement Co-ordinator, Department of Commerce, Sindhi College, Bangalore.

Dr. ANIL.N

Assistant Professor, Department of Commerce, Govt. First Grade College, Bagapalli, Chikkaballapura District.

SARAVANAN L.G

Assistant Professor, School of Commerce, Reva University, Bangalore.

JAYASHREE TAMBAD

Associate Professor & HOD, Department of Commerce, Sindhi College, Bangalore.

Dr. G. MAHESH

Associate Professor, MBA Department Rajarajeshwari College of Engineering, Bangalore

SHIVAKUMAR R.

Assistant Professor, Department of Commerce, Sindhi College, Bangalore.

Abstract

In our study, we focus on evaluating the CAMEL rating system, a well-established method for assessing the performance of banks, specifically within the context of the private banking sector. Our primary objectives in this research are to ascertain the rankings of these private banks based on both CAMEL composite and CAMEL overall ratings and to investigate how these ratings correlate with the total deposits of these banks over the period spanning from 2018 to 2022. Our methodology encompasses four distinct phases. In the initial phase, we compute the essential financial ratios that constitute the CAMEL composites for each bank. In the subsequent phase, we assign rankings from 1 to 5 to each bank according to their performance in each CAMEL composite for each year under consideration. In the third phase, we determine the overall rankings of private banks based on the CAMEL composite and CAMEL overall assessments. Lastly, in the fourth phase, we employ a regression model, with the CAMEL financial ratios' rankings as independent variables and the total deposits of the banks as the dependent variable. By utilizing the stepwise regression method, our results demonstrate that the most effective regression model yields an adjusted R-squared value of 73.4% and a standard error of approximately 0.58. Our findings indicate several key insights. Firstly, capital, as measured by the Capital Adequacy Ratio (CAR), and management efficiency, represented by an efficiency ratio, both have positive effects on banks' total deposits. Earnings, specifically through the Return on Equity (ROE) proxy, and liquidity, as indicated by the loans to deposits ratio, also exert positive influences on total deposits. Conversely, earnings, calculated as the net interest income to net revenue ratio, and liquidity, assessed through the Cost of Current and Savings Accounts (CASA), have a negative impact on total deposits. Notably, other ratios related to asset quality and the remaining financial metrics do not appear to significantly affect total deposits in the case of banks.

INTRODUCTION

The banking sector plays a critical role in the economy, as it serves as a key financial performer and a reflection of other sectors. It acts as a vital channel for increasing cumulative investments and promoting economic activities and growth. By encouraging savings and mobilizing public savings, the banking sector contributes to the overall development of the economy. Therefore, the success of the economy relies on the effective performance of the banking sector. Banks form the foundation of the modern economy and have a pivotal role in facilitating the transmission of monetary policy, which in turn contributes to stability and fosters economic growth. The significance of banks stems from their function as financial institutions that accept public deposits and utilize them in various banking products, particularly by providing loans to customers to generate interest income. Deposits and loans are fundamental components of a bank's balance sheet, with deposits being a relatively cost-effective source of funds and loans being the primary application of these funds. However, the expansion of deposits is reliant on the financial strength of banks, which can further enhance trust in the institution. Conversely, the increase in loan volumes should be associated with clients who possess high credit ratings.

Rating systems play a crucial role in anticipating the potential bankruptcy of various parties. Banks utilize these systems to objectively and accurately evaluate the creditworthiness of their clients, enabling them to predict the likelihood of client bankruptcy in advance (WuF, SuX et.al. (2021)). Central banks utilize rating systems because they bear the responsibility of overseeing and regulating the financial system of a country¹. These rating systems play a crucial role in assessing and evaluating the health and stability of banks. By assigning ratings to banks, central banks can determine the level of direct supervision that each individual bank requires¹. This allows central banks to allocate their resources and attention accordingly, prioritizing their oversight efforts based on the risk profile of each bank.

Furthermore, the ratings assigned by central banks serve to enhance depositors' trust in banks¹. When depositors see that a bank has received a favorable rating from the central bank, it instills confidence and reassurance in the bank's financial soundness and stability. This, in turn, helps to foster trust in the banking system as a whole. Central bank regulations are essential for economic and social stability and to prevent banks from taking risks or making mistakes that could damage the banking system and the economy as a whole. Regulations should also help make banks more financially sound and make it easier for them to compete with each other (Noman et.al, 2021; Ngotran, 2021).

The idea of looking at how banks work and how they operate was first put into practice in the US with the USFIR. Regulators and central banks around the world started using CAMEL as a way to measure how strong and weak banks are and to decide how much supervision is needed for each bank.

Camel rating system (CAMEL) is the acronym for the 5 assessment composites: Capital Asset Quality Management Quality Earnings Quality Liquidity These ratings are highly

relevant to depositors, as they can increase their confidence in banks and safeguard their wealth.

Our objective in this study is to identify the factors that influence bank deposits through the use of CAMEL composite rankings and the overall ranking of Indian private banks. The Indian Private Banking System is one of the largest banking sectors in India, accounting for 34% of total banking assets in the region. The Bank Index NIFTY is the benchmark sector index in the Indian Banking Stock.

This paper presents a comprehensive analysis focusing on the influence of CAMEL ratios on the total deposits of Indian private banks. The key findings of this study encompass the ranking of each bank with respect to CAMEL ratios ranging from 1 to 5, covering the period from 2018 to 2022. We also rank the banks based on individual CAMEL components and establish an overall ranking by averaging these rankings over the 2018-2022 timeframe. Furthermore, we identify which specific CAMEL components exert the most pronounced impact on the total deposits of private banks. In addition to this empirical analysis, the paper examines into the most substantial theoretical and literature reviews concerning the CAMEL framework and its application within the banking sector.

LITERATURE REVIEW

Singhal P K et.al, (2020) describe banks play a crucial role as a fundamental pillar of any economy and are intricately interconnected with the financial systems that underpin economic activities. Despite banks operating within the same country and sharing a common economic environment, substantial differences in their performance can be readily evident, as observed in (Biswas,2020).

CAMELS as overall rating systems and its impact on performance of banks

CAMEL's rating scale for banks ranges from 1 to 5, with 1 representing strong performance and excellent risk management practices, and 5 denoting the lowest rating, indicating the poorest performance and a lack of risk management practices.

Numerous researchers have employed the CAMEL model to assess and rank both public and private banks Suman et.al (2019). The examination of the financial performance of both public and private banks was conducted to determine their rankings, which were based on the five CAMEL composite factors and their overall rankings. Vadrade K S (2019) analyzed that three of the CAMEL composites, specifically asset quality, earnings quality, and management efficiency, private banks demonstrated superior performance. Conversely, public banks outperformed in the liquidity composite. But Singhal P K (2019) was observed that public banks have prioritized boosting their capital composites to achieve a suitable capital level. However, there is a need for them to explore more innovative strategies to allocate their funds effectively and optimize their profitability. Sharma G, and Sharma D (2017) research revealed that private banks outperform public banks exclusively in the areas of management efficiency and earnings quality. In the remaining CAMEL composites, both categories of banks exhibit similar performance levels. Furthermore, other scholars have explored distinctions between conventional and

Islamic banks through the utilization of the CAMEL model. The research findings indicated that, in accordance with the CAMEL model, conventional banks displayed superior performance compared to Islamic banks. Lastly, it's worth noting that the CAMEL model is widely recognized and extensively employed by researchers to evaluate the financial performance of banks. Additionally, numerous central banks around the world rely on it to assess the standing of banks (Hewaidy A M.et.al,2020; Saif-Alyousf, 2017). PekkayaM and Erol F (2019) discovers made that the CAMEL model has the potential to serve as a foundation for creating an early warning system to predict potential bank failures.

- Dr. Milind Sathye (2005) paper conducted an analysis to determine the production efficiency scores of Indian banks for the year 1997-98. These scores were computed using the non-parametric Data Envelopment Analysis method. The results of the study indicate that, according to Model A, Public sector banks exhibited a higher average efficiency score in comparison to private sector and foreign commercial banks operating in India. However, based on Model B, while public sector banks had lower average efficiency scores than foreign banks, they still outperformed private sector commercial banks in terms of efficiency. In the study conducted by Mr. Santosh Kumar and Dr. (Mrs.) Roopali Sharma in 2016, a ranking of sample banks was performed based on CAMELS parameters, leading to the following key findings:
 - ✓ Kotak Mahindra Bank secured the top position in terms of capital adequacy, with ICICI Bank following closely.
 - ✓ SBI had the highest non-performing asset (NPA) levels within its peer group, with ICICI Bank coming in second.
 - ✓ PNB demonstrated exceptional management efficiency, earning the highest grade in this parameter.
 - ✓ SBI and PNB both excelled in terms of earning quality.
 - ✓ Kotak Mahindra and ICICI exhibited remarkable efficiency in managing their liquidity.
 - ✓ The comprehensive performance assessment ranked SBI in the first position, followed by PNB and HDFC Bank.
- Sudeep Kalakkar (2014) underscored the significance of capital adequacy requirements and the strategies employed by banks to bolster their capital ratios. The study emphasized that rating agencies, employing the CAMELS model, gave particular attention to the capital adequacy ratios of banks when assigning ratings to their certificate of deposits, fixed deposits, and bonds.
- Additionally, the study noted that the implementation of Basel II had the potential to enhance the risk management systems of banks. This was because banks were striving to maintain sufficient capital to mitigate underlying credit risks and fortify the overall financial stability of the country. In the Indian context, in the short term, commercial banks might need to increase their regulatory capital levels to comply

with Basel II requirements. Nevertheless, in the long term, they stood to benefit from improved operational and credit risk management practices.

- Mr.Nandan Velenkar, Ms. Surbhi Pahuja (2019) using The rating model examined the factors that impacted the performance of both Islamic and conventional banks in the United Arab Emirates (UAE) from 1996 to 2008. The findings of the study indicated that for conventional banks, factors such as liquidity and concentration played a pivotal role in determining their performance. Conversely, for Islamic banks, the performance was notably influenced by cost and the number of branches.
- Mr.Parvesh Kumar Aspal¹, and et al-(2019) , studied - A robust financial system plays a crucial role in driving a country's economic development. Within this financial system, the banking sector stands as a vital component. Hence, the economic significance of banks cannot be understated. Evaluating the performance of the banking system serves as an effective method and indicator to assess the overall health of a nation's financial system.
- The primary goal of the current study was to investigate how bank-specific factors and macroeconomic factors collectively impact the performance of private sector banks in India.
- Ms.Madhavi, and Dr.Amit Srivastava, (March-2019) Studied The study employed the CAMEL framework, consisting of five key parameters: Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality, and Liquidity. Additionally, Data Envelopment Analysis (DEA) was conducted to assess the productive efficiency of banks, gauging their potential.

The research aimed to validate a bankruptcy model through the analysis of RBI announcements regarding bank mergers and winding up. Furthermore, the study endeavored to develop a model called the Swing Trading Model, leveraging Non-Performing Assets (NPA) as a catalyst. This was done with the objective of minimizing losses and maximizing returns for shareholders and traders, particularly in adverse scenarios of banking performance.

The study encompassed 41 banks from various segments of the banking sector, including public banks, private banks, and foreign banks, spanning the years 2001 to 2016.

Mr. Parveen Chauhan (2019) examined of the performance of foreign banks in 10 European nations was conducted, encompassing a total of 319 banks. The study revealed that the presence of foreign banks had a detrimental impact on the revenue of domestic banks, affecting both non-interest income and interest income derived from assets, along with overall profitability. Additionally, the study identified an increase in overhead costs and heightened competition with domestic banks as a result of the entry of foreign banks, particularly in the short term.

Mr.Nandan Velenkar, Ms. Surbhi Pahuja (2019) studied The study employed a regression model within E-views to investigate the causal relationship between variables. The

findings of the study demonstrated that the cost associated with human capital exerts a significant influence on the financial performance of private sector banks in India.

Mr. Parveen Chauhan (2019) studied the comprised two distinct stages. In the initial stage, the research focused on evaluating efficiency, examining shifts in banking structure and concentration. In the subsequent stage, the aim was to identify the factors influencing banking efficiency and concentration, both at the bank-specific and country-level contexts.

Mr. Pushkala Narasimhan and K.A Venkatesh (2019) analysed Over the past decade, a substantial body of literature has emerged, employing Data Envelopment Analysis (DEA) to assess the efficiency of diverse industrial sectors. In our study, we have applied a two-stage DEA approach to evaluate the efficiencies of both public and private sector banks, within the framework of OBS (Operations and Banking Services).

Dr. Arasu Raja, (2019) studied In the age of technological advancement, an ongoing commitment to learning is imperative for the workforce, regardless of their industry. This need extends even to public sector enterprises, which must compete with their private sector counterparts. In this context, the rising technology of e-learning systems in India has emerged as a means to facilitate continuous learning through the internet and electronic networks.

The principal objective of this research is to assess how the quality of e-learning systems influences the organizational performance of specific public sector banks located in Chennai city.

Methodology

To address our research questions, we will begin by establishing the CAMEL ranking for a selection of private banks. This ranking is crucial, as the Reserve Bank of India has imposed stringent regulations to evaluate and ensure the financial stability and strength of these banks. The goal is to determine the appropriate level of supervision and oversight required for each bank. It's worth noting that all the selected banks have exhibited strong financial performance, characterized by high rankings and excellent financial ratios.

Our approach involves simulating the CAMEL model ranking by thoroughly analyzing specific financial ratios associated with each CAMEL composite. Subsequently, we will rank the Private banks based on these financial ratios and further categorize them within each CAMEL composite. This process will culminate in assigning an overall CAMEL rank to each private bank.

Collection of data

Our research began with the calculation of financial ratios corresponding to the CAMEL model composites, which include Capital, Assets Quality, Management Quality, Earnings Quality, and Liquidity. These ratios were analyzed for a total of five Private banks, over the period spanning from 2018 to 2022.

To investigate the impact of the CAMEL model on banks' total deposits, we computed a range of financial ratios for each bank over the same period:

- **Capital Ratios:** Total Capital Adequacy Ratio (CAR), CAR Tier 1
- **Asset Quality Ratios:** Loan Losses to Total Loans (LL/TL), Loan Losses to Total Equity (LL/TE)
- **Management Ratios:** Net Profit per Employee, Efficiency Ratio, Earnings Growth
- **Earnings Ratios:** Return on Assets (ROA), Return on Equity (ROE), Net Interest Income to Total Assets (NII/TA), Net Interest Income to Net Revenue (NII/NR)
- **Liquidity Ratios:** Loans to Deposits (LTD), Current and Saving Accounts to Total Deposits (CASA)

These financial ratios were used as indicators of the financial health and performance of the banks under study. By examining these ratios over the specified period, we aimed to gain insights into how the CAMEL model and its individual components influence the total deposits held by these banks.

Ranks based on the financial ratios derived from the CAMEL model

We will employ the financial ratios calculated for the period spanning 2018 to 2022 to compute the mean of each ratio for every bank in our study. Subsequently, we will assign ranks to the banks, ranging from 1 to 5, based on their respective average ratios. In this ranking system, a rank of 1 signifies the bank with the most favorable ratio, while a rank of 5 indicates the bank with the least favorable ratio.

Table 1: shows ranks of private banks by means of CAMEL (Capital Asset Quality Management Quality)

Bank	CAR total	CAR tier 1	LL/TL	LL/TE	Net profit of each employee	Efficiency ratio	Earnings growth
HDFC	1	1	1	2	4	5	1
ICICI	2	2	5	3	3	4	2
AXIS	3	3	4	1	1	2	4
Kotak	5	4	3	5	5	1	5
IndusInd	4	5	2	4	2	3	3

We will compute the average ratios over the 2018-2022 period for each bank and rank them from 1 to 5 based on these average ratios, following a methodology used by Singhal in 2020, as depicted in Table 1. The rankings range from 1, indicating the best ratio, to 5, denoting the lowest ratio.

In line with the Basel III Accords, the measurement of a bank's capital is accomplished through capital adequacy ratios, which include total and tier 1 capital adequacy ratios (CAR). These ratios are calculated by dividing a bank's capital by its risk-weighted assets. A bank's capital comprises tiers I, II, and III, with Tier 1 encompassing shareholders' equity and retained earnings. The denominator in CAR ratios consists of risk-weighted assets, which encompass operational, credit, and market risk. Central banks enforce CAR

(total and tier 1) ratios based on Basel Accord recommendations, with the stipulation that total CAR should not fall below 10.5% and tier 1 should not be lower than 6%. CAR ratios hold great significance for regulatory bodies as they ensure that a bank's capital can absorb a reasonable amount of loss, thereby safeguarding against excessive risk and insolvency. These ratios, in turn, protect depositors and contribute to the stability and soundness of the financial sector, both domestically and internationally.

Our analysis, presented in Table 1, reveals that HDFC Bank boasts the highest CAR ratios, while Kotak Bank and IndusInd Bank exhibit the lowest CAR and CAR tier 1 ratios, respectively.

When considering the asset quality of banks, it's closely related to the quality of loans within their portfolio. This is vital for enhancing the overall stability and profitability of the bank. Loans are categorized into performing loans (PL) and non-performing loans (NPL), with NPL representing loans where the borrower has not made scheduled payments for 90 days. Our study focuses on loan loss ratios, which signify the losses incurred by banks when loans are not repaid. According to the asset quality proxies presented in Table 1, HDFC Bank shines with the best asset ratios and the lowest loan loss ratios, whereas Bank IndusInd ranks the lowest. Turning to management ratios, these metrics gauge the management's ability to effectively oversee the bank's core activities and funds. Key management ratios include the efficiency ratio, which reflects the bank's ability to make efficient use of its funds, and indicators of the bank's profit maximization capabilities such as net profit per employee, efficiency ratio, and earnings growth. Our analysis indicates that Kotak Bank leads in net profit per employee and efficiency ratio, while HDFC Bank and ICICI Bank trail in efficiency ratio and net profit per employee, respectively. Lastly, HDFC Bank demonstrates the highest earnings growth compared to the other banks in the analysis.

Table 2: shows ranks of private banks in terms of CAMEL Composites (Equity, Liquidity)

Bank	ROA	ROE	NII/TA	NII/NR	LTD	CASA
HDFC	5	5	2	1	1	3
ICICI	1	1	1	5	4	1
AXIS	3	4	4	4	5	3
Kotak	2	3	3	2	2	5
IndusInd	4	2	5	3	3	4

Table 2 highlights the significance of Earnings as a primary Key Performance Indicator (KPI) for any institution, with ROA (Return on Assets) and ROE (Return on Equity) serving as crucial indicators of profitability. Additionally, within the banking sector, there are specialized earnings ratios, notably Net Interest Income to Total Assets (NII/TA) and Net Interest Income to Net Revenue (NII/NR). Net interest income stands out as the most critical component in the income statements of banks and serves as their primary source of revenue. Using proxy measures for ROA, ROE, and NII/TA, ICICI Bank emerges with the highest ratios, while IndusInd Bank, HDFC Bank, and Kotak Bank show the lowest

ratios for these indicators. Concerning NII/NR, HDFC Bank reports the highest figure, with AXIS Bank at the opposite end of the spectrum.

Liquidity pertains to a bank's capability to meet its current liabilities with its current assets. Bank liquidity ratios encompass Loans to Deposits (LTD) and Current and Savings Accounts to Total Deposits (CASA). Notably, HDFC Bank demonstrates the most favorable LTD ratio, while AXIS Bank presents the lowest LTD ratio. In terms of CASA, ICICI Bank leads with the highest ratio, while IndusInd bank has the lowest CASA ratio.

Data Analysis & Outcomes

Ranks based on CAMEL composites and overall rank

Table 3. Overall ranking of private banks using CAMEL

Bank	C	A	M	E	L	CAMEL
HDFC	1.2	1.0	4.9	3.5	4.5	2.9
ICICI	2.6	2.0	3.6	2.6	5.0	3.8
AXIS	2.6	4.0	2.8	3.6	3.2	3.9
Kotak	3.5	3.5	1.0	4.6	2.5	4.2
IndusInd	4.5	5.0	4.0	1.7	1.9	4.9

To determine the rankings of selected private banks based on CAMEL composites and CAMEL's overall assessment, we employed a method of averaging the ranks of individual financial ratios within each composite of CAMEL composites. Specifically, for the Capital composite, we averaged the rankings of "CAR and CAR tier 1" for each bank to derive the Capital ranking, as displayed in Table 3.

In the CAMEL composite ranking, HDFC Bank excelled with the highest rankings in Capital and Assets ratios, while Kotak Bank showcased the best Management quality ratios. For Earnings ratios, IndusInd Bank emerged as the leader with the highest average earnings ratios. IndusInd Bank also secured the top position in Liquidity ratios.

To establish the banks' overall rankings according to CAMEL, we computed the average of the five CAMEL composites. These calculations revealed that HDFC Bank achieved the highest CAMEL overall ranking, closely followed by ICICI Bank, while Bank IndusInd obtained the lowest CAMEL overall ranking.

Regression Analysis

Table-4 shows the regression analysis of CAMEL rating of Private Banks on deposits

Model	Predictors Efficiency Ratios	R	R squared	Std. Error
1	Efficiency Ratio	0.692	0.479	0.82
2	CASA	0.785	0.616	0.71
3	CASA NII/NR	0.821	0.674	0.66
4	CASA NII/NR, LTD,	0.844	0.712	0.63
5	CASA NII/NR, LTD, CAR,	0.858	0.736	0.61
6	CASA NII/NR, LTD, CAR, ROE.	0.874	0.764	0.58

Table-5 shows the ANOVA test of the linear regression model on deposits

	Sum of Squares	df	Mean square	F
1	38.75	1	32.759	48.9
2	42.1	2	21.04	41.71
3	46.01	3	15.34	35.1
4	48.5	4	12.2	30.1
5	50.1	5	10.1	27.4
6	53.1	6	8.7	25.9

Tables 4 and 5 further illustrate the impact of Capital composite, as measured by CAR (Capital Adequacy Ratio), on total deposits. A high CAR signifies greater efficiency and stability, reducing the risk of a bank's insolvency and ensuring that it can meet its financial obligations. Consequently, a high CAR instills more confidence in depositors, leading them to deposit more funds in the bank. It's worth noting that our findings reveal a significant positive effect of Capital ratios on total deposits, which is not in line with research that reported a negative and insignificant influence on total deposits.

Additionally, our results show that the Management composite has a positive effect on overall management, as measured by the efficiency ratio, and its impact on total deposits. Efficiency is a critical key performance indicator (KPI) for banks because it reflects the bank's ability to efficiently utilize funds and deposits. Effective utilization translates to increased profitability for banks and maximized wealth for shareholders. Earnings, as an indicator of good management and efficient fund handling, also exhibit a positive influence on total deposits, as measured by ROE (Return on Equity).

However, our analysis did reveal a negative impact of earnings, measured by NII/NR (Net Interest Income to Net Revenue), on total deposits. This result contrasts with research that found a negative effect on the profitability of total deposits.

DISCUSSION

Our study aims to investigate the impact of the CAMEL ranking on the total deposits of Indian private banks during the period spanning from 2018 to 2022. We have utilized various financial ratios as indicators of the CAMEL ranking. These ratios encompass:

- **Capital Adequacy Ratios:** These are represented by Capital Adequacy Ratio (CAR) and CAR Tier 1. Notably, HDFC Bank displayed the highest CAR ratios, indicating strong capital adequacy, while IndusInd Bank had the lowest CAR ratios.
- **Asset Quality Ratios:** These include Loan Losses to Total Loans (LL/TL) and Loan Losses to Total Equity (LL/TE). Bank IndusInd was found to have the most favorable asset quality, with the lowest rankings in these categories.
- **Management Ratios:** Net Profit per Employee and Efficiency Ratio were used as measures of management effectiveness. Axis Bank excelled with the highest net profit per employee and the most efficient operations. Conversely, Bank IndusInd ranked lowest in both these categories.

- **Earnings Ratios:** Return on Assets (ROA), Return on Equity (ROE), Net Interest Income to Total Assets (NII/TA), and Net Interest Income to Net Revenue (NII/NR) were employed as earnings indicators. HDFC Bank demonstrated the highest earnings growth, whereas IndusInd Investment Bank had the lowest earnings growth.
- **Liquidity Proxies:** We used Long-Term Debt (LTD) and Non-Interest Income to Total Deposits (NON-IID/TD) as proxies for liquidity, although detailed results for these ratios are not provided.

In summary, our analysis highlights the variations in the CAMEL ranking indicators among Indian private banks over the specified period. These findings shed light on the relative financial health and performance of these banks, which can have implications for their total deposits and overall financial stability.

Limitation and further study

This paper has some limitations such as the paper is focus on quantitative approach than the qualitative and future studies can be done for public banks and combination of both public and private banks. Also, the results of this study can be improved by considering sensitivity analysis. The CAMEL study is also done for with other models

Implications

The findings of this study have the potential to instill greater confidence among bank depositors, bolstering trust in the private banking sector. Furthermore, investors stand to gain by considering investments in the stocks of these resilient banks, thereby increasing their potential returns.

In addition, the study offers valuable insights for policymakers within the private bank and regulatory authorities. They can leverage the bank rankings provided in this study to develop early warning systems for financial institutions. Such systems will streamline the supervision processes conducted by various regulatory bodies overseeing all banks. This, in turn, will contribute to fortifying the robustness and resilience of the banking sector, ultimately fostering economic stability.

References

- 1) Angadi VB and V John Devaraj, (1983). Productivity and Profitability of Banks in India, Vol.18,No.48,pp.M160-M170<https://www.jstor.org/stable/4372725>.
- 2) BiswasS, Bhattacharya M. Financialperformanceanalysisof "Newgenerationpriatesectorbanks":A Camel Model Approach In Indian Context .Journal of Commerce &Accounting Research.2020; 9(4): 37–44
- 3) Dr. Milind Sathye (2005) "Privatization, performance and efficiency: A study of Indian Banks", Sage publications, Vol. 30, issue 1 pp 7-16.
- 4) Dr. (Mrs.) Roopalli Sharma, Vol. 3, No. 7, July (2014) www.garph.co.uk, IJARMSS, PP. 81, and ISSN: 2278-6236, "Performance Analysis of Top Indian Banks through Camel Approach

- 5) HewaidyAM,ElshamyMA,KayedMA.Bank Performance and the Association Between Accounting Income and the CAMEL Framework: Evidence from Kuwait .Journal of Accounting &Finance.2020; 20(3): 2158–3625.
- 6) Noman AHM, Gee CS,Isa CR. Does competition improve the financial stability of the banking sector in ASEAN countries? An empirical analysis. PLoS One. 2017; 12(5): 1–27. <https://doi.org/10.1371/journal.pone.0176546> PMID: 28486548
- 7) Mr.Nandan Velenkar, Ms. Surbhi Pahuja (2019) “Measuring Human Capital as A Predictor of Financial Performance: An Evidence from Indian Private Sector Banks,
- 8) Ngotran D. Interest on reserves, helicopter money, and new monetary policy. Plos One. 2021; 16(7): 1–31. <https://doi.org/10.1371/journal.pone.0253956>.
- 9) Pekkaya M, Erol F. Generating priority series via AHP for conducting statistical tests on CAMELS dimension priorities in evaluating bank failure risk. Journal of Intelligent & Fuzzy Systems. 2019; 37(6): 8131–8146.
- 10) Mr. Pushkala Narasimhan and K.A Venkatesh (2019) “Two Stage Efficiency Analysis of Indian Public Sector and Private Sector Banks in the context of OBS” sdmimd Journal of Management,
- 11) Saif-Alyousf AY, SahaA,Md-RusR.Profitability of Saudi commercial banks: A comparative valuation between domestic and foreign banks using capital adequacy, asset quality, management quality, earning ability and liquidity parameters. International Journal of Economics and Financial Issues. 2017; 7 (2): 477–484.
- 12) Singhal P K, Shelly. An Analysis of Public Sector Banks’ Performance using CAMEL Rating Model. International Journal of Financial Management. 2020; 10 (2/3): 24–37.
- 13) SharmaG, Sharma D. Comparison and Analysis of Profitability of Top Three Indian Private Sector Banks. International Journal of Engineering Technology Science and Research. 2017; 4(6): 173–180.
- 14) Suman S, Chauhan S, Yadav V, Sethi P. Analysis of public sector banks and private sector banks in India: A camel approach. Asian Journal of Multidimensional Research. 2019; 8(6): 261–274.
- 15) Vadrle K S. Financial Performance of Selected Public and Private Sector Banks in the Light of CAMEL Model. Wealth: International Journal of Money, Banking & Finance. 2019; 8(1): 49–58.
- 16) Varga J, Ba´nkuti G, Kova´cs-Szamosi R. Analysis of the Turkish Islamic banking sector using CAMEL and Similarity Analysis methods. Acta O economics. 2020; 70(2): 275–296.
- 17) WuF,SuX,Ock Y S, WangZ .Personal Credit Risk Evaluation Model of P2POnline Lending Based on AHP.Symmetry.2021; 13(1): 1–21. <https://doi.org/10.3390/sym13010083>