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EVALUATING IMPACT OF COVID-19 ON THE LIQUIDITY AND PROFITABILITY OF SELECTED PRIVATE BANKS: EMPIRICAL EVIDENCE FROM INDIA

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ABSTRACT
This study analyses the impact of the Covid-19 Pandemic on the liquidity and profitability of the top five listed private banks of India through 7 key variables. It also evaluates and compares the performance of the banks during the period from 2017 to 2023 for the same. For analysing the data, the periods have been divided into the three phases – Pre-Covid, During Covid, and Post-Covid following which ratio and trend analysis have been used. For further comparative analysis, the Multi-Criteria Decision Analysis (MCDA) method has been employed. From the analysis, it has been broadly found during the pandemic, the selected banks' average liquidity metrics were adversely affected. However, the profitability performances were not impacted the same and rather saw a linear growth. From the comparative analysis of the banks, it has been found that based on Liquidity and Profitability, HDFC Bank and Kotak Mahindra Bank has been the top performing private banks in the last seven years among all the banks under this study.

KEYWORDS: *Covid-19, Banks, Liquidity, Profitability, India*

1. INTRODUCTION

Finance and banking are also known as the lifeline of commerce, business, and industries. It is imperative for an economy's growth, development, and survival. The banking sector is the backbone of modern trade and business. The health of a country's economy is heavily dependent on a sound and effective banking system of that country (Sharma et al., 2012). If the banking system in a country is efficient, effective, and disciplined, it brings about rapid growth in the various sectors of the economy and is a crucial driver for socio-economic development (Haralayya, Aithal, 2021). The Banking industry acts as the mediating bridge for every other industry to carry out their functions properly.

As Barna & Ruschyshyn (2020) rightly pointed, economic growth of any nation has a huge contribution of its banking system which plays a crucial role by ensuring stable growth, providing financial services, security, and adaptability to the macroeconomic environments across the globe. Facilitating trade, credit creation, accepting deposits, lending loans, etc. are a few of the many functions which the banking industry undertakes. All these functions play a crucial part in the operations of other industries, trade and commerce, and in daily activities of general consumers as well.

Recently, the world was shaken with the Covid-19 Pandemic which disrupted the normal lives of people across the globe (Gazi et al., 2022). With staggered and reduced mobility, lockdowns on markets and through several other factors, especially with the significantly high infection rate of the virus. The biggest dent made by this virus was on the economies of several countries in the world, especially to developing nations as their steadily growing economies went into recession at once. India, being one of the largest developing nations was no exception to the adverse effects of the Covid-19 pandemic that started in 2020. "The Indian government implemented a 55-days lockdown throughout the country that started on March 25th, 2020, to reduce the transmission of the virus", Kumar et al. (2020) noted. It took almost more than two years to bring the pandemic under control with mass vaccinations and social distancing.

In light of the immensely significant role that Banks play in today's economy, it thus becomes a necessity to properly assess and understand the impact of the covid-19 pandemic on the performance of the banks as well as on their true financial situation. Thus, this study aims to analyse the top five private banks of the country based on their market capitalisation, for their profitability performance and liquidity scenario in the last 7 years through relevant ratios.

There are two major research objectives in this study which are listed as follows:

i. To analyse the impact of covid-19 on the liquidity position and profitability performance of top five Indian private banks based on market capitalization.

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ii. To evaluate and compare the overall financial performance of the top five private banks during the period of study in terms of liquidity and profitability.

2. METHODOLOGY

2.1. Data and Variables

The study is based on a set of panel data of listed private sector banks in India collected from secondary sources. The relevant data has been collected and arranged from the published annual reports of the banks. Certain data has also been collected from ACE Equity database and Moneycontrol database. By the end of March 2024, there were 22 listed banks in the private sector in India. For the study, the top five banks based on their market capitalisation value as on 31st March, 2024 has been considered viz. HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra, and IndusInd Bank.

Since the primary research objective of this study is to examine the impact of Covid-19 Pandemic on the performance of the banks, hence, the period of study has been taken from the year 2017 to 2023 comprising all three periods i.e. pre-pandemic, during-pandemic, and post-pandemic.

As we are studying the liquidity positioning and profitability performance of the banks, we have identified 7 key ratios which are our variables for this study. The variables pertaining to the liquidity position are [1] Cash-Deposit Ratio (CHDR) [2] Credit-Deposit Ratio (CRDR) [3] Net Non-Performing Assets (NNPA) Ratio. For measuring the profitability position, the following variables have been selected [4] Net Interest Margin (NIM) [5] Return on Assets (ROA) [6] Return on Equity (ROE) [7] Net-Profit Growth Percentage (NPG). The detailed description of these variables are provided in Table 1 below. The next section delves into the research methods used in order to measure the impact of covid-19 on the banks' performance as well as to rank the performance of the banks in each year and in an overall ranking.

Table 1: Description of Ratios

Type	Variable	Ratio	Description
Liquidity	[1] CHDR	Cash-Deposit Ratio	CDR of scheduled commercial banks is the ratio of cash in hands and balances with the RBI as a percentage of aggregate deposits. The amount of money a bank should have available as a percentage of the total amount of money its customers have paid into the bank. This ratio helps customers know if they can take their money out of the bank if they want to.
	[2] CRDR	Credit-Deposit Ratio	It tells how much of money banks have raised as deposits has been deployed as loans. A high CD ratio would mean there is a strong demand for credit with relatively lower deposit growth.
	[3] NNPA	Net Non-Performing Assets Ratio	NNPA simply means the present NPAs of the bank over the number of loans provided. NNPA Ratio = Net NPA/Total Loans Given Net NPA= Gross NPA-provisions A high NNPA would mean the bank has too many loans that are not rendering any interest income for the banks.
Profitability	[4] NIM	Net-Interest Margin	Net interest margin (NIM) is a measurement of profitability obtained by comparing the net interest income with outgoing interest expenses expressed in a percentage.
	[5] ROA	Return on assets	Measures how much profit a company makes from the sale of goods and services after deducting the direct costs.
	[6] ROE	Return on Equity	Measures the amount of profit a company can generate from the utilisation of its assets.
	[7] NPG	Net Profit Growth	Measures the year-on-year growth of the net profit.

[Source: Author's Compilation]

2.2. Research Methods

For analysing the collected data of the variables, a few research techniques have been applied based on the concerned research objectives. To achieve the first objective, we have used trend analysis to investigate any signs of recurring patterns or variation in the variables within the three segments in the period of study viz. 2017-19, 2020-21, and 2022-23. Hence, we have obtained the arithmetic mean of all the five banks' values for each variable (except NPG where median has been used due to presence of extreme values) for each year. We then grouped the averages based on the relevant periods to map for the impact during the covid-19 affected years and compare it with the other two periods. Ratio analysis was further used to understand the different variables in order to interpret their impact. Further, to compute the overall comparative performance of each of the banks in the respective years we have used the Multi-Criteria

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Decision Analysis (MCDA) method. We have assigned scores from 1 to 5 for each of the variables for each of the 7 years, which are assigned based on the performance of the banks, wherein 5 is awarded to the best performing or positioned bank and 1 for the lowest performer and all intermediate scores are assigned accordingly. We have then calculated the total scores for each of the bank for each year by adding all of their seven variable scores to obtain the ranking of banks for the respective years. Finally, we have measured the arithmetic mean of the ranks of the banks across the seven years to assign overall seven-year liquidity and profitability performance ranks.

3. RESULTS AND DISCUSSION

3.2. Liquidity Performance

Through liquidity ratios, we get a brief understanding about the liquidity condition of the banks. As (Vasiu et al., 2015) pointed, "Liquidity ratios are used to measure a company's ability to pay short-term debt, assessing the amount of cash and cash equivalents that it has on the short term." Table 2 summarizes the average data of the variables grouped as per the three sub-periods. The observed values of CHDR indicate a rise from the covid-19 period which increased from the previous 0.08 to 0.09 during covid and further increased to 0.13 post covid. A higher CHDR is a bad signal for banks, hence the impact has been adverse in terms of liquidity. The CRDR decreased by 4.37% from pre covid to the covid period signalling that the banks became more conservative in lending which can be seen as a direct impact of the economic slowdown of businesses due to the pandemic. Even for the post covid period, the average CRDR is at 85.22%, which is 5.26% lesser than what it was at the pre-covid period.

Table 2: **Summary of Variables**

PERIOD	CHDR	CRDR	NNPA	NIM	ROA	ROE	NPG
Pre Covid [2017-19]	0.08	90.48	1.83	3.39	1.25	11.21	19.06
Covid-19 [2020-21]	0.09	86.53	0.97	3.57	1.26	10.62	21.54
Post Covid [2022-23]	0.13	85.22	0.53	3.62	1.60	12.85	35.88

[Source: Author's Compilation]

However, the NNPA % can be seen reducing significantly from the pre-covid to covid phase and further to the post covid phase as well. This indicates that the banks have become more liquid throughout these phases which might be the outcome of various other forces as well.

3.2. Profitability Performance

A group of financial measurements known as profitability ratios are employed to evaluate a company's potential to create profits over time in relation to its revenue, operational expenses, balance sheet assets, and shareholders' equity. We can observe an almost steady average NIM (i.e. between 3-4 %) throughout the three phases with an incremental increase. This indicates that the profitability of the banks did not get any major in regards to the difference in lending and borrowing interest rates. The average ROA has depicted almost no change from 2017-2021, and a 0.34 increase from 2021 to 2023. However, the average ROE has dipped from 11.21 in pre-covid phase to 10.62 during the covid phase indicating an adverse impact of covid on the profitability to shareholders. The average ROE has later jumped up to 12.85 post covid showcasing recovery in profitability. In terms of average growth in the net profit (NPG), a linear growth trend can be observed throughout the three phases with a 66.57% increase from the covid phase to the post-covid phase. Such an increase indicates that the banks have been recovering well after the pandemic in terms of growing their net profitability.

3.2. Ranking of Combined Performance

The results upon exploring the second objective of the study, i.e. to evaluate and compare the overall financial performance of all the banks, we assigned the respective scores (ranging from 1 to 5) for each of the ratios based on the banks' performance. The final summarized results of the scoring are presented below in Table 3.

Table 2: **Summary of Variables**

RANK	BANK	CHDR	CRDR	NNPA	NIM	ROA	ROE	NPG	FINAL SCORE
1	HDFC	23.5	27	35	27	32	34	20	198.5
4	ICICI	24	27	9	16	17	20	21	134
5	AXIS	13.5	14	16	7	8	9	19	86.5
2	KOTAK M.	33	22	22.5	31	30	21	20	179.5
3	INDUSIND	11	15	22.5	24	18	21	25	136.5

[Source: Author's Compilation]

After assigning the scores to the banks based on their performance as per the ratios' nature for each of the variables for the 7 years, we have then summed up their total overall scores. Based on the final scores, HDFC Bank has been ranked the top performer in the last 7 years in terms of liquidity positioning and profitability performance, which is followed by Kotak Mahindra Bank at the second rank. IndusInd Bank has been ranked third with a very narrow margin of 2.5 points pushing ICICI Bank to the fourth rank. Axis bank has been ranked fifth as it has scored the lowest and has a deficit of 47.5 points from the next ranked bank.

As per the yearly scores for the banks, HDFC bank has been at the first position for 5 out of the 7 years. Kotak Mahindra Bank has been the second-best performer for 6 of the 7 years and the best performer in the year 2020. In the most recent year, ICICI bank has performed significantly better than earlier and secured the first rank.

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4. CONCLUSION

Through this study, we have attempted to examine the impact of the covid-19 pandemic upon the liquidity and profitability performance of the top Indian private banks. Alongside, we also tried to compare these performances of the referred banks to get an idea of the overall robustness of their liquidity and profitability positions in these past several years. We have gained several useful insights from the segmented trend analysis of the bank's performances across the several relevant variables that have been studied. One of the key insights achieved is that the banks' liquidity positions were adversely affected due to the covid-19 pandemic but at the same time their profitability performances were not affected as much and were rather at a brighter end.

This study has certain shortcomings as we have not considered other key areas for a bank's performance and level of functioning such as capital adequacy, size of the firm, etc. and have only looked at their positions from a liquidity and profitability dimension. Due to this reason, the overall performance scores of liquidity and profitability may not depict the actual overall comparative performance of the banks due to the influence of the other unknown factors.

There is ample scope of further study following this research wherein the other factors through models such as CAMELS can also be taken into consideration to get a more accurate overall scenario of the banks' performance. The number of banks under study may also be considered to be increased for a broader dataset.

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