Financial Performance Analysis of Top Ten Commercial Banks in India According to the Basel III Norms

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ABSTRACT:
The research aims to analyses and evaluate the financial performance of commercial banks in India using the standard quantitative approach. The data were obtained from the annual financial reports of commercial banks; the research sample during (2015-2019). The data was analysed using the panel data methodology. And it was processed using the Eviews9. with a models estimate of fixed and random effect to know the effect of financial variables on the financial performance of banks. The results of the random model showed that there is a positive and significant effect of the financial leverage ratio on the financial performance of banks as measured by the rate of return on assets (ROA), while the ratio of liquidity coverage negatively effects on the return on assets in Indian commercial banks. Whereas the research found no effect of the capital adequacy ratio on the return on assets.
KEYWORDS: *leverage ratio, liquidity coverage, capital adequacy, panel data.*

I.   INTRODUCTION :

The banking system plays an important and essential role in the economic development of a country. This importance comes from the primary role of banks in meeting the credit needs of all segments of society and other economic sectors. Without an efficient banking system, no country can have a healthy economy. The banking sector is the backbone of the country's economy. In this modern era, a large part of the money in a country is circulated in the banking system of that country through the process of savings and lending. A sound financial system ensures development. To achieve development, there must be a well-developed financial system to support not only the economy but also the society. Therefore, the Bank plays a vital role in the social and economic affairs of the country. The Indian banking industry plays a crucial and vital role in the economic development of the country as it dominates a large part of the financial sector. This vital role lies in the ability of banks to direct savings to investments that have the potential to generate higher returns.The volatility of financial markets and the increase in financial risks and competition have led banks to assess those risks and the challenges they face. This creates the need of effective supervisory system and a tool to ensure safety and soundness of the banks. As a result of frequent banking failures and subsequent financial crises over the past two decades, authorities around the world have tried to limit the impact of bank failures by obligating banks to abide by the guidelines issued by central banks as well as adherence to international standards, the most important of which is Basel III norms. Basel III is the regulation norms to set common standards for banks across different countries. The motive of Basel III norms is to enhance the regulation, supervision, and risk management in the banking industry. The main purpose of this study is to analyze the financial performance of top ten Indian commercial banks according to Basel III norms by determining the impact of Capital adequacy ratio, Liquidity coverage ratio and Leverage ratio on the profitability of top ten Indian commercial banks.

II.   LITERATURE REVIEW:

Palamalai and Britto (2017) aims to analyses and measure the financial performance of a group of Indian commercial banks. 16 commercial banks were selected as a sample for the study during the period 2013-2017. The study used a set of financial ratios (liquidity ratios, solvency ratios, turnover ratios, efficiency) for the purpose of analysing, testing and measuring the impact of these ratios on the profitability of the selected banks. The study used panel data for the purpose of analysis. The study found that private sector banks showed an outstanding financial performance in terms of profitability compared to public sector banks. The study showed that liquidity ratios, solvency ratio and turnover ratios have a positive and significant effect on the profitability of the selected banks under study. Where the study confirmed that profitability is a function of the mentioned financial ratios. **Shradha (2018)** attempts to analyses the financial performance of Indian commercial banks by testing, measuring and comparing the financial performance of three main groups of banks (public sector banks,

private sector banks, foreign banks). The study used a set of financial ratios, namely,teratio of liquidity, profitability and productivity for the purpose of analysis during the period 2010-2017. The study reached a set of results that stated that foreign banks had a prominent performance in terms of productivity. The study also showed that both foreign banks and private sector banks had an outstanding performance in terms of profitability. With regard to liquidity, the study showed that foreign banks enjoy great liquidity relative to total assets and deposits. The study indicated that the banks, however, do not comply with the required precautionary measures regarding liquidity. **Shah (2013)** aims to determine the impact of Basel III norms on the financial performance of Indian banks. The study also addressed the impact of Basel on Indian banking services. The study concluded that the introduction of Basel III norms to the Indian banking sector helped to improve the financial capacity of banks and enhance their financial performance. **Pham and Daly (2020)** attempts to examine the effect of Basel norms on risk-based capital adequacy regulation and banking risk management o Vietnamese commercial banks. This study relied on simultaneous equation modeling (SiEM) with three-stage least squares regression (3SLS). This study found a significant impact of Basel on the risk-based capital adequacy of Vietnamese commercial banks. The study also confirmed that adhering to the Basel standards led to a reduction the financial risks facing banks. **Jangra (2020)** aims to measure the impact of Basel III norms on the operational efficiency of the Indian public banking sector and to analyze the risk-weighted assets of Indian banks according to Basel III norms. The study targeted 21 Indian public sector banks during the period 2008-2017. The study used operational efficiency indicators (NIM, Cost income ratio). The study recommended that banks with low operational efficiency should comply with Basel III standards in order to improve their financial performance.

III.   RESEARCH METHODOLOGY:

3.1 Methodology of the study:
The study seeks to determine the effect of some financial ratios on the financial performance of commercial banks in India according to **Basel III**. to achieve this goal, descriptive analytical approach will be used. In this study, the Panel Data Method will be used to estimate both the Fixed Effect Model (FEM) and the Random Effect Model (REM). The Hausman test will be used to choice between them, as well as the causality test between the variables. This is done after ensuring that the model is free of Measurement problems such as: Auto- Correlation, Multi-Collinearity and Heteroscedasticity . EViews program will be used in this study.

3.2 Sampling of the Study:
To determine the effect of financial ratios on the financial performance of Indian commercial banks, a sample of ten commercial banks was selected during the period (2015-2019).

3.3   Data of the study
The study relied on the secondary data, as it included publications forthe relevant authorities, books, published scientific researches, bank websites and annual financial reports of the commercial banks under study.

3.4   MODEL OF THE STUDY:
The study model consists of a set of financial ratios chosen as independent variables which are capital adequacy ratio , liquidity coverage ratio and leverage ratio.The dependent variable also represents the financial performance of banks as measured by Return on Assets (ROA) .The model of the study as follow:
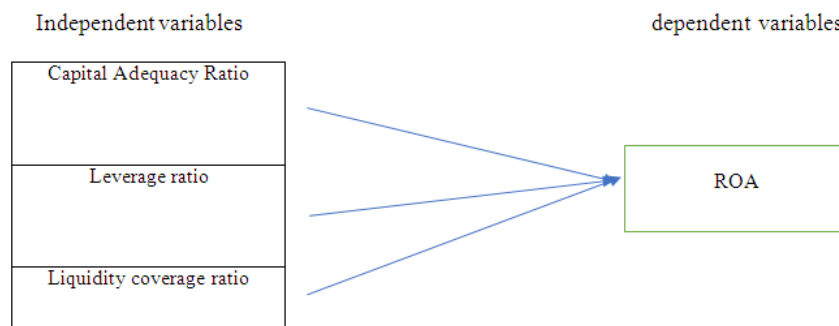
IV.   RESULTS AND DISCUSSION

4.1   Correlation Analysis:

Table (1) showing correlation matrix for search variables

	ROA	CAR	LCR	LVR
ROA	1	0.648	-0.412	0.749
CAR	0.648	1	-0.232	0.830

LCR	-0.412	-0.232	1	-0.227
LVR	0.749	0.830	-0.227	1

From the above table, we note that there is a strong positive correlation to the rate of return on assets (ROA) with both the capital adequacy (CAR) and the leverage ratio (LVR), as they are considered one of the most important factors that determine the financial performance of banks. It is also correlated with a negative relationship with the liquidity coverage ratio (LCR).

4.2   Estimate the search model

The research model was estimated according to the method previously presented in the introduction to the standard analysis, and below we show a summary of the results reached

4.2.1   Fixed Effects Model (FEM):

The following table shows the results of estimating the fixed effects model for the research model

Table (2) shows the results of estimating the FEM - dependent variable ROA

Variable	Cofficient	T-Ratio	prob
CAR	-0.023355	-0.306132	0.7612
LCR	-0.005179	-1.744100	0.0894
LVR	0.188666	1.925008	0.0619
C	0.093141	0.091605	0.9275

4.2.2   Random Effects Model (REM):

The following table shows the results of estimating the random-effects model:

Table (3) shows results of estimating REM - dependent variable ROA

Variable	Cofficient	T-Ratio	Prob
CAR	0.001407	0.021056	0.9833
LCR	-0.006713	-2.390621	0.0210
LVR	0.236366	3.577847	0.0008
C	-0.451288	-0.583164	0.5626

By performing the Hausman test to determine the optimal model for estimation, we find that the value of the Hausman statistic equals (3.386) and by comparing it with the $\chi^2_{(3,.05)} = 7.82$ it can be said that accepting the null hypothesis.

$$H_0: \text{Cov}(X_{it}, v_i) = 0 \qquad \text{(REM)}$$

Accordingly, the random effect model is the best model for estimation, as there are differences in behavior between banks that make transactions differ according to the bank, and according to this model, this effect falls within the intercept of the y-axis (see Appendix Table 2). So, from table (3), we find that the financial performance of banks, expressed in terms of return on assets (ROA), is greatly affected by the rate of financial leverage (LVR) , where the factor reached (0.236), and by a positive indication, where the factor indicates that an increase of financial leverage by 1% will lead to achieving a profitability of the bank by 0.236%, as it is possible to say here that high leverage is one of the appropriate ways to enhance the profitability of banks according to the method of return and risk (**Rossi, 2018, P: 23**) is a significant relationship with a confidence rate (0.95). The results also indicate that there is a significant negative correlation with the bank's performance with the liquidity ratio in the bank, as increasing this ratio means accumulating liquidity in the bank and thus missing investment opportunities on the bank (the opportunity cost) and that is why banks must align between the term of funds sources and their uses. We also notice from the results that the capital adequacy ratio did not contribute to the explanation of the change in return of banks.

4.3   Model Examination Tests

Table (4) showing the results of examining the model .

Test	Value
R-squared	0.408
Adjusted R-squared	0.369
$Durbin - Watson\ stat.$	1.81
$Normality\ J.B.(2)$	2.879 (0.23)
$F(6, 167)$	(0.000) 10.58

It is clear from the previous table that 40% of the effect on profitability is due to the variables included in the model, especially for the ratios of financial leverage and liquidity as it was shown previously. As the Durban Watson coefficient indicates that there is no problem of autocorrelation between the error elements of the estimated model as it equals (1.81). We also note the significance of the model estimated by the value of the statistic F. Estimated residuals of the model follow the normal distribution as shown by the J.B. statistic.

V. CONCLUSION:

The research aimed to analyze and evaluate the performance of commercial banks in India, using the standard quantitative approach. The data were obtained from the annual financial reports of commercial banks, the research sample during (2015-2019). The data was analyzed using the panel data methodology, where the data were processed using the Eviews9. is a significant negative correlation with the bank's performance with the liquidity ratio in the bank, as increasing this ratio means accumulating liquidity in the bank and thus missing investment opportunities on the bank (the opportunity cost) and that is why banks must align between the term of funds sources and their uses.. We also notice from the results that the capital adequacy ratio did not contribute to the explanation of the change in return of banks. with a models estimate of fixed and random effect to know the effect of financial variables on the financial performance of banks. The results of the random model showed that the financial performance of banks, expressed in terms of return on assets (ROA), is greatly affected by the rate of financial leverage (LVR) , where the factor reached (0.236), and by a positive indication, where the factor indicates that an increase of financial leverage by 1% will lead to achieving a profitability of the bank by 0.236%, as it is possible to say here that high leverage is one of the appropriate ways to enhance the profitability of banks according to the method of return and risk, while there

5.1 RECOMMENDATION:

• Commercial banks should improve of leverage ratio as they achieve high profit rates in banks.

• To reduce liquidity risk, banks must achieve alignment between the maturities for sources of funds and the maturities of using it in the bank.

• The research recommends conducting an empirical study of the same variables with the return on equity (ROE) to ensure the effect of the capital adequacy ratio on the profitability of banks.

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