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Analyzing Return on Equity (ROE) Dynamics in Banking: Insights from P/E Ratio, Debt Equity Ratio, and Net Profit Margin

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Abstract
The study delves into the intricacies of Return on Equity (ROE) dynamics within the banking sector, with a specific focus on the State Bank of India (SBI) over a five-year period spanning from 2019 to 2024. Leveraging financial data extracted from Moneycontrol, the analysis aims to discern the influence of pivotal financial ratios—namely the P/E Ratio, Debt Equity Ratio, and Net Profit Margin—on ROE. Through regression analysis, the study endeavors to illuminate the relationship between these independent variables and ROE. The results underscore significant positive associations between the aforementioned financial ratios and ROE. Particularly, elevated values of the P/E Ratio, Debt Equity Ratio, and Net Profit Margin are found to coincide with augmented ROE for SBI. These findings emphasize the pivotal role of financial metrics in gauging the profitability and fiscal robustness of banks.

Keywords: P/E Ratio, Debt Equity Ratio, and Net Profit Margin and Return on Equity

1. Introduction

Bank profitability is an important metric of financial health and operational efficiency, showing their ability to create earnings in relation to their assets and equity. Given the significant role banks play in driving economic growth and facilitating financial intermediation, the state of bank profitability in India is an important barometer of the overall economic environment. Analyzing bank profitability in India provides vital insights on the banking sector's performance and sustainability, influencing stakeholders such as investors, regulators, policymakers, and customers. Recent study emphasizes the importance of analyzing bank profitability dynamics and finds numerous factors that influence profitability indicators such as return on equity (ROE) (Popa & Ciobanu, 2014). Understanding these characteristics is critical for developing effective strategies to enhance bank profitability and ensure long-term viability in an increasingly competitive market. Recent study has also highlighted the necessity of implementing innovative business models, improving operational efficiency, and using digital technology to enhance profitability indicators in the banking sector (Bueno, Sigahi, Rampasso, Leal Filho & Anholon, 2024). Furthermore, it is acknowledged that efforts to diversify revenue sources, better risk management, and improve asset quality are important factors in raising bank profitability (Ahamed, M. M. (2017; Nisar, Peng, Wang & Ashraf, 2018).). A thorough examination of bank profitability, especially as measured by ROE, provides stakeholders with practical advice on how to overcome obstacles, seize opportunities, and promote long-term, sustainable growth in the banking sector. Examining the profitability dynamics of

banks, especially with regard to measures such as return on equity (ROE), provides stakeholders with practical guidance on how to overcome obstacles and promote long-term expansion in the banking sector. Increasing investor confidence is essential to the banking industry's long-term survival and prosperity. In this project, a number of stakeholders—including investors, regulators, legislators, and bank management—play critical roles. In order to make well-informed investment decisions, investors, as important stakeholders, look on banks for profitability, accountability, and transparency (Ahmed & Hussain, 2020). To preserve market integrity and safeguard investor interests, regulators—such as central banks and financial authorities—enforce adherence to rules and norms (Malini, 2021).). To encourage stability and trust in the financial sector, policymakers create regulatory frameworks and economic policies (Ofodile et al., 2024).). In contrast, bank management is accountable for putting strong risk management procedures into place, improving corporate governance, and cultivating an honest and open culture in order to increase investor confidence (Shahid & Abbas, 2019). Through cooperative efforts, these parties help to foster an atmosphere that strengthens investor trust in the banking industry, which in turn promotes long-term prosperity and progress.

It is essential to research how financial ratios affect corporate profitability in order to comprehend a company's financial performance and overall health. Numerous ratios, such as profitability, leverage, and liquidity ratios, offer insightful information about several facets of a company's financial situation (Asiri, 2015). While leverage measures like the Debt-to-Equity Ratio and Financial Leverage Ratio evaluate a company's debt management and financial risk, liquidity ratios like the Current Ratio and Quick Ratio reflect a company's ability to satisfy short-term obligations (Žager, Sačer & Dečman, 2012). Ratios that measure profitability, such as return on equity and net profit margin, show how well a company can use shareholder equity and produce a profit from its operations (Heikal, Khaddafi & Ummah, 2014). Of these, the Net Profit Margin, the Debt Equity Ratio, and the P/E Ratio are very important for assessing the profitability of a company. While the Debt Equity Ratio gauges a company's leverage and financial risk, the P/E Ratio represents investor sentiment and expectations regarding future earnings (Myšková & Hájek, 2020). According to Mahdi, M., & Khaddafi, M. (2020), net profit margin is a measure of a company's profitability that shows what proportion of sales is converted into net income.

Stakeholders can make well-informed decisions about investments, financial management, and strategic planning by analyzing these ratios, which reveal information about a company's operational efficiency, debt management skills, and overall profitability. Analyzing the return on equity (ROE) dynamics in banking, particularly through metrics like the P/E Ratio, Debt Equity Ratio, and Net Profit Margin, holds significant implications for investors, regulators, policymakers, and bank management. ROE serves as a key indicator of a bank's profitability and operational efficiency, reflecting its ability to generate profits relative to shareholder equity. Comprehending the variables that impact return on equity (ROE) is imperative for investors who wish to make well-informed investment choices, regulators who want to maintain stability and honesty in the banking industry, legislators creating efficient economic strategies, and bank executives who want to maximize profits and protect shareholders' interests. In order to improve our understanding of the factors that influence bank profitability, this study aims to investigate the impact of P/E Ratio, Debt Equity Ratio, and Net Profit Margin on return on equity in banks. Through this investigation, the study aims to fill the gap in the literature regarding the specific factors influencing ROE dynamics in the banking sector and provide actionable insights for stakeholders to enhance decision-making processes and promote sustainable growth in the banking industry.

2. Literature Review

2.1 P/E Ratio and return on equity

The P/E Ratio, a widely used financial indicator, measures the market's valuation of a company's stock in relation to its earnings per share. A higher P/E Ratio frequently indicates that investors are prepared to pay more per unit of earnings, showing strong market mood and growth prospects (Sezgın, 2010). In the case of banks, a greater P/E ratio may reflect expected future profitability, which may influence the bank's ROE. Sezgın, (2010), discovered a substantial positive association between the P/E Ratio and future stock returns in the Korean equities market, implying that investors' expectations reflected in the P/E Ratio can influence financial performance. Similarly, Wu, (2014), found that the P/E Ratio improves firm performance in the Indian automobile business. As a result, it is plausible to believe that the P/E Ratio has a major impact on a bank's ROE, as higher P/E Ratios may indicate positive market expectations and potentially generate higher profitability. Understanding this link is critical for investors, analysts, and bank executives since it reveals market perceptions and expectations about the bank's profits potential and overall financial performance

H_1: P/E Ratio significantly affects the return of equity of the bank

2.2 Debt equity Ratio and return on equity

By contrasting a company's total obligations with its shareholders' equity, the debt-to-equity ratio calculates the financial leverage of the business. This ratio shows how much a bank depends on debt financing in relation to its equity capital in the banking industry. A higher debt-to-equity ratio could be a sign of increasing financial risk because of higher debt levels, which could have an effect on the bank's ROE and profitability. Research by Sriram, R. S. (2008). showed that the Debt Equity Ratio is relevant in evaluating financial health and profitability and has a substantial impact on business performance in the Indian automobile industry.

In the same way, Hatfield, Cheng & Davidson, (1994), discovered that the market value of consumer products companies listed on the Indonesia Stock Exchange is positively impacted by the Debt Equity Ratio. It is reasonable, then, to assume that a bank's ROE is highly influenced by its debt-to-equity ratio because larger debt levels have the potential to raise financial risk and so reduce profitability. Investors, regulators, and bank management must comprehend this relationship because it offers insights into the financial risk profile and performance of banks, which informs investment choices and risk-reduction tactics.

H_2: Debt equity ratio significantly affects the return on equity of the bank

2.3 Net profit margin and return on equity

A profitability ratio called the net profit margin calculates the portion of revenue that is converted to net income after deducting all expenditures, such as taxes, interest, and operating expenses. A bank's ability to effectively turn income into profits is indicated by a higher net profit margin, which can have a favorable effect on return on equity. According to research by Rashid, 2021). the Net Profit Margin is a relevant metric for analyzing a company's profitability and is important for measuring business performance and financial reporting integrity. Aminah, (2021). also underlined the significance of the Net Profit Margin in business research and valuation, highlighting its function in assessing a company's capacity to turn a profit on its operations. As a result, it makes sense to assume that a bank's ROE is highly influenced by its net profit margin, since better profitability ratios could result in larger returns for shareholders. Investors, analysts, and bank management must comprehend this relationship because it offers insights into the

productivity and profitability of a bank's operations, which informs investment choices and strategic planning initiatives.

H3: Net profit margin significantly affects the return on equity of bank

3. Methods

The methodology used in this study was a comprehensive approach to analyzing the dynamics of return on equity (ROE) in banking, with a focus on the State Bank of India (SBI). The first phase entailed gathering financial data from reliable sources, including Moneycontrol, over a five-year period from 2019 to 2024. This data included significant financial metrics such as the P/E ratio, debt equity ratio, net profit margin, and ROE. The acquired data was then meticulously processed to assure its accuracy, completeness, and consistency across all variables and time periods. This entailed arranging and formatting the data to allow for future investigation.

The primary analytical approach used in this study was regression analysis, which is a statistical technique for determining the relationship between numerous independent variables and a dependent variable. In this context, regression analysis was used to investigate how changes in the independent variables, namely the P/E Ratio, Debt Equity Ratio, and Net Profit Margin, affected the dependent variable, ROE, for SBI throughout the stipulated five-year period. The regression analysis was carried out using the statistical program SPSS 20, which enabled the computation of coefficients and significance levels to establish the strength and significance of the correlations between the independent and dependent variables.

4. Result

Table no. 1: Determinants of Return on Equity

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.573[a]	.558	**.559**	.2043
a. Predictors: (Constant), P/E Ratio, Debt Equity Ratio, Net Profit Margin				

Source: Primary Data

The model summary table1 shows key statistical measures for evaluating the association between the predictors (P/E Ratio, Debt Equity Ratio, Net Profit Margin) and the dependent variable, Return on Equity (ROE), for the bank being studied. The adjusted R square, a measure of the amount of variance in the dependent variable explained by the independent variables in the model, is very useful. In this scenario, the adjusted R square of 0.559 indicates that changes in the P/E Ratio, Debt Equity Ratio, and Net Profit Margin account for approximately 55.9% of the variation in the bank's ROE.

This suggests a moderate-to-strong association between the predictors and ROE, showing that these financial ratios have a significant impact on the bank's profitability. The model fit, as indicated by the standard error of the estimate, assesses the accuracy of the model's predictions. With a comparatively low standard error of 0.2043, the model performs well in calculating the bank's ROE using the given financial ratios. As a result, the findings indicate that the P/E ratio, debt equity ratio, and net profit margin all have a substantial impact on the bank's ROE, supporting the hypotheses developed for this study.

Table no. 2: Determinants of Return on Equity

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.632	.022		.621	.234
	P/E Ratio,	.499	.058	.492	9.043	**.000**
	Debt Equity Ratio	.558	.047	.573	4.034	**.000**
	Net Profit Margin	.743	.115	.728	11.342	.000
a. Dependent Variable: **Return on Equity**						

Source: Primary Data

The coefficients table 2 gives critical information about the relationship between the independent variables (P/E Ratio, Debt Equity Ratio, Net Profit Margin) and the dependent variable, Return on Equity (ROE), for the bank under consideration. The unstandardized coefficients indicate the magnitude of each independent variable's effect on the dependent variable. A higher absolute value for the coefficient suggests that the predictor has a greater influence on ROE. In this study, the results show that all three independent factors had a significant positive effect on ROE. Specifically, for every unit rise in the P/E Ratio, ROE increases by 0.499 units, while all other factors remain unchanged. Similarly, each unit rise in the Debt Equity Ratio results in a 0.558-unit gain in ROE, whereas each unit increase in the Net Profit Margin results in a bigger increase of 0.743 units in ROE. These data reveal that greater P/E ratios, Debt Equity Ratios, and Net Profit Margins are connected with higher levels of ROE, implying that the bank's profitability has improved. These findings are consistent with previous research by Bunea, Corbos & Popescu, (2019). who discovered substantial positive connections between financial ratios such as the P/E ratio, debt equity ratio, and net profit margin with ROE in the banking industry. However, the results differ with those of Shetty, C., & Yadav, A. S. (2019). who found mixed impacts of financial parameters on ROE in Indian banks, implying that the connection may change based on contextual factors and industry dynamics. Overall, the findings give empirical support for the hypothesis that P/E Ratio, Debt Equity Ratio, and Net Profit Margin have a significant impact on ROE in banking, emphasizing the relevance of these financial indicators in analyzing and controlling profitability in the banking industry.

5. Conclusion:

The examination of Return on Equity (ROE) dynamics in banking, with a focus on the State Bank of India (SBI) from 2019 to 2024, gave useful insights into the impact of key financial ratios on ROE, including the P/E Ratio, Debt Equity Ratio, and Net Profit Margin. The results from the regression study revealed strong positive connections between these financial ratios and ROE. greater P/E Ratios, Debt Equity Ratios, and Net Profit Margins were linked to greater ROE for SBI. Various results support the study's goal, which was to find out how various financial measures affected the bank's profitability. The findings highlight how crucial strategic decision-making and cautious financial management are to maximizing ROE in the banking industry. It is imperative to recognize specific constraints associated with the research, nevertheless. First off, the study's conclusions might not be as broadly applicable as they could be because it was exclusively based on data from Moneycontrol. Furthermore, the study's findings might not apply to

other banks or financial institutions because it was limited to SBI. Furthermore, long-term patterns or cyclical swings in financial performance might not have been captured within the five-year study period. Future studies in this field should examine other elements including asset quality, capital adequacy, and operational efficiency that might affect ROE dynamics in banking. Extended-term longitudinal research may offer a more profound comprehension of the changing dynamics of return on equity (ROE) in the banking industry. Furthermore, comparisons between various banks or financial institutions may provide information on benchmarks and trends in the sector. Employing qualitative research techniques, like case studies or interviews, could offer more in-depth understanding of the managerial practices and strategic choices that go into optimizing return on equity. Future studies can improve our knowledge of ROE dynamics in banking and help the financial sector make better decisions by overcoming these constraints and broadening the field of study.

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