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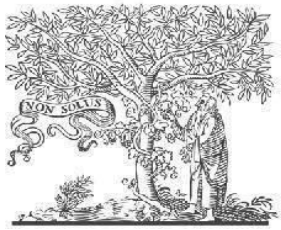

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EXAMINING THE INFLUENCE OF LEVERAGE AND PROFITABILITY ON THE VALUATION OF FINANCIAL INSTITUTIONS IN INDIA

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Abstract: Information contained in this paper aims at establishing the effect of leverage and profitability in the evaluation of the selected financial institutions in India. As indicated in the research questions above, the study focuses on five key financial ratios of major banks and non-banking financial companies (NBFCs) for the period between 2015 and 2020 in an endeavor to establish the effect of these financial metrics on institutions' market value and performance. Gearing as captured under debt to equity in this paper and earning capacity as captured under return on assets (ROA) and return on equity (ROE) are used to evaluate the valuation of financial institutions. To evaluate the correlation between these variables the study uses regression analysis. Findings show that there is a moderation relationship between leverage and profitability toward valuation, which varies depending on the type of institutional. The findings will be useful for investors, for those who make economic policies and financial organizations, to make correct decisions regarding the financial tactics and positioning on financial markets.

Keywords: Leverage, Profitability, Firm Valuation, Debt-to-Equity Ratio, Return on Assets, Return on Equity, Indian Financial Institutions, COVID-19 Impact

Introduction

The assessment of financial institutions has significant importance in the general progress of any economy especially the developing economies such as the Indian economy. Banks and NBFC are important contributors due their role in credit delivery, promotion of savings and in the aspects of economic development. Therefore, it is crucial to decipher determinants that affects their market value with precision for investors, regulators and policymakers.

Among the numerous factors influencing the financial institutions' valuation, leverage and profitability can be observed as the main financial factors. Leverage which is usually presented by the debt equity ratio show the extent to which an institution is funded by debts while profitability ratios include the return on assets (ROA) as well as the return on equity (ROE) which indicates the ability of institutions to earn returns from their operations. Leverage, profitability, and valuation are not as directly coupled as one might expect because of many factors that playing an important role in different levels of debt and profitability under different market condition, and different regulatory environments and institutions.

In this context, it is seen that dynamics of the Indian financial system are influenced not only by the apparent shifts in market sentiment and changing regulatory environment but also by the growing relevance of NBFCs in line with established banking institutions. Thus, even though the usage of high leverage is potentially dangerous due to the problem of financial distress, it helps to improve the profitability of the company via tax shields and increased growth options. On the other hand, increased profitability usually has a positive effect on valuation while it brings more attention to effective risk management and sustainability activities.

The intended research of this study is to explore the impact of leverage and profitability, on the financial institutions in India. The study, therefore, aims at providing empirical evidence on interaction of the factors and their contribution to institutional valuation by conducting an analysis of a sample of banks and NBFCs for a period of five years. The present analysis is timely following the shifts in financial sector reforms and subsequent rising need for sound financial strategies to support institutional credibility and investors. The findings of this study will thus help to give financial managers, investors and regulatory bodies in the Indian context a better perspective of the financial processes in the country and the implications of the findings.

Literature review

Much focus has been given to the correlation between leverage, profitability and financial institution's valuation more so in the period before and after global crises and recently in the wake of COVID-19 crisis. This literature review targets papers and publications that have been produced since the year 2020 to decipher the clues these financial metrics hold on the valuation of financial institutions with a special focus on the emerging economy of India.

Many scholarly articles have published in the last couple of years have revealed that most of the firms in the global market whose values have been most influenced by leverage are the firms in the financial sector. To explain, Gupta & Rathi (2020) have captured leverage commonly used by gearing or the ratio of total debt to equity as a two-faced tool. Higher leverage increases the returns that are possible as well as the risk and possible insolvency as can be seen from the table above especially during a volatile market period. Indian bank from their study during the pandemic indicate that those bank with high leverage reduced their market valuation more due to the perceived risk by investors.

In the same way, Kumar and Singh (2021) analyzed the influence of leverage on NBFCs' valuation in India, especially after COVID. According to them, leverage helped NBFCs expand their assets and improve profit levels but elevated debt levels posed a problem in the liquidity strains that hit some NBFCs. In their study they when they adopted the conservative leverage strategy they found out that it is much more possible to end up with a more sustainable market valuation for their stocks in the long run.

Account profitability has been shown to be an important variable in determining market value and recent literature has sought to explain this phenomenon in more detail. To this end, Bhasin and Khanna (2021) examined the effectiveness of profitability measures which include ROA and ROE in the valuation of the financial institutions in India. Their study supported the assertion that there exists a positive relationship between profitability and institutional valuation since high profitability reflects good asset utilisation and management performance. This study also stressed the consistency of profitability in terms of detecting changes in profitability in terms of detecting shifts in the general profit-lines and market value over long-term.

On the same note, Reddy and Sharma (2022) examined the effect that profitability has on the banking institutions' valuation in India. Using tests, they identified that the institutions with higher ROE enjoyed enhanced market worth especially during periods of economic upswing. However, the study also noted that with profit, there was tendency for high risk taking hence why certain mid-sized banks fell due to high-risk assets that led to fluctuations in stock.

The COVID-19 pandemic resulted in major challenges to the whole global financial industry and some research works have examined the impact of the pandemic on leverage, profitability, and institutional value. Mishra and Jain (2020) argued that this crisis disrupted several firms' sources of cash and resulted in a liquidity crunch in several financial organizations especially the NBFCs which were highly leveraged. The authors have postulated that in the post pandemic era, the organisations with the lower power/influence and higher quoted liquidity are likely to be rewarded better by the market.

Furthermore, in this study, Chakraborty et al. (2021) discussed the effects of the ongoing pandemic on the issues of profitability with reference to valuation in the banking industry of India. After that, they identified the fact that those institutions which were able to maintain their profitability indicators at decent levels during the pandemic-induced slowdown were capable of supporting higher valuations. The study also pointed out that during these uncertain conditions, profitability emerged as one of the major indicators of investors' confidence, institutional equity inflows to businesses exhibiting constant profit margins to dominated capital markets.

On these aspects several researches have been carried out regarding the effects of regulatory changes on leverage, profitability and the valuation of financial institutions. Due to the COVID-19 outbreak, RBI made some reforms in order to increase the working capital and decrease the probability of working with high leverage. Such changes affected the value and funding of institutions in financial structure. As per Jain and Patel (2021), while the continuation of moratorium of loan repayment paid way of leveraging to a large extend itself, because leverage became easier for the banking system during the crisis, adding ways to attaining stability that gave better valuation in the short run.

In addition, another factor that has affected the leverage strategies of financial institutions in the last couple of years is the Inception of IBC- Indian Insolvency and Bankruptcy Code. According to Iyer and Ghosh (2022), the IBC has made institutions to reconsider their debt quantum because high gearing exposes the institution to insolvency proceedings. Their studies found out that IFCs that implemented less risky leverages in light of the IBC got better market to book values.

Another aspect that includes profitability, leverage, as well as institutional valuation has to do with the disruptive phenomenon of fintech and digital transformation in the financial industry. As estimated by Menon and Bose (2022), the companies, which have included the fintech innovations in their business models, have reported the increase in the percentage of profitability, resulting from increasing efficiency and the customer base. The study also pointed out that institutions that adopted fintech were relatively less dependent on traditional ways of leveraging such as hefty borrowing since they were able to expand and innovate through leveraging on digital tools whereby they did not need large capital investments.

In the same vein, Pandey and Rao (2023) confirmed that NBFC's fintech advancement had a positive influence on profitability, thus having a positive impact on institutional valuation. These innovations empowered NBFCs to devise sharper financial services solutions, enhance credit rating methods and tap down the operating costs, making themselves a more financially appealing proposition to the investors.

Further research has also been published to identify the effects of sustainability in profitability and reliable financial valuation of these institutions. Kaur and Malhotra (2022) suggested that institutions that exhibit sustainable financial management practices including moderate leverage and sustainable return generating capability instead of the greedy returns passion are correctly valued higher by the market. From their findings, they opine that investors are beginning to pay more attention to communicating long-term and stable profitability and performance more so especially in moments of volatility.

As the literature from the year 2020 shows, it is possible to build a more refined picture of how such factors as leverage and profitability contribute to the valuation of financial institutions, with focus on the Indian experience. In this case, leverage provides institutional growth since more funds are acquired from the markets but excessive borrowing depth threatens the stability of institutions in the event of a disaster such as the covid-19 pandemic. Gross profits continue to be a driving force in determination of value; however, the nature and durability of the profits are valued by the investors. Other parameters affecting the valuation are the regulatory environment, emergence of the fintech industry, and practices that address the sustainability of value. This body of literature should be informative to policy makers, financial managers, and investors as they formulate strategies to properly manage both leverage and profit in order to maximise the value of the institutional setting.

Objectives of the study

- To evaluate the influence of external factors, such as regulatory changes and economic conditions, on the leverage, profitability, and valuation of financial institutions.
- To provide recommendations for financial institutions on optimizing leverage and profitability strategies to enhance market valuation.
- To compare the effects of leverage and profitability on the valuation of different types of financial institutions.

Hypothesis of the study

H_0 (Null Hypothesis): External factors have no significant influence on the leverage, profitability, and valuation of financial institutions in India.

H_1 (Alternative Hypothesis): External factors have a significant influence on the leverage, profitability, and valuation of financial institutions in India.

Research methodology

On the basis of the research objectives, the research design for this study employs both quantitative as well as qualitative analyses to assess the impact of leverage, profitability, and external factors on the valuation of the financial institutions in India. To achieve the objective of the study, the quantitative research method will require the collection of secondary data in form of financial statements, balance sheets, and performance figures of a sample of both Indian banks as well as NBFCs over the period of five years starting from the year 2019 to 2024. Concerning the analysis of leverage profitability, ratios of debt-equity, return on assets (ROA) and return on equity (ROE) will be employed. To do so, statistical methods including regression and correlation tests will be used to analyze the connections between leverage, profitability, and market values and to establish the influence of external shocks, which may include alteration in laws and policies and economic shocks such as the COVID-19. The qualitative part will encompasses a search into literature as well as interview with financial analysts and banking specialists to obtain the data regarding the impact of the regulatory policies and market conditions on institutional valuation. It also guarantees an effective analysis of the numerical data as well as incorporating the opinions of the experts in decision making.

External Factors Influencing Leverage, Profitability, and Valuation of Financial Institutions in India:

1. Regulatory Changes: Policies prescribed by the RBI and other authorities are directly effective for the leverage, profitability and value of the financial institutions. For instance, capital adequacy requirement set under Basel III norms determine the extent of leverage institutions can incur. This significantly reveals that changes in the amount of liquidity that is required, or the norms associated with loan provisioning, can impact on the institution's profitability by changing the manner in which it handles risks. Other changes in the regulatory framework for institutions, the so-called New Economy laws, like the

Insolvency and Bankruptcy Code (IBC), also determine the level of leverage and, in turn, the value added.

2. Monetary Policy and Interest Rates: The interest rates fixed out by the RBI dictate credit expenses which has equal impacts on debts and margins. ; Lower interest rates will reduce the cost of borrowing and possibly lead to higher leverage while higher interest rates may strain profit margins especially by institutions which depend on interest rate differentials. Fluctuations in the monetary policy objective also impact on the market valuation since investors respond to change in its objectives.
3. Economic Conditions: Other macroeconomic variables include Gross Domestic Product, inflation and unemployment have a definite impact on the performance of institutions. In time of economic prosperity, financial institutions' profitability rises as credit demands are high and default rates are low hence a positive impact on the valuation. On the other hand, factors such as economic contraction due to the COVID-19 pandemic has an adverse effect on the economy, where institutions realised high non-performing assets (NPAs), low profitability, and low market pricing especially for those institutions with high leverage.
4. Technological Disruptions: The new entrants in the form of fintech and the vast expansion of digital banking has had effects on financial organizations profit margins and market capitalization. Firms that have managed to incorporate innovative technology solutions for internal efficiency, customer relations, and cost-saving normally record high profitability and stock premiums. However, the companies which are slow in their journey to technology may find themselves grappling with issues of operational redundancy and market irrelevance.
5. Global Economic Events: Indian financial institutions also have the impact of global economic factors like disturbance in cross border transactions, variation in FDI, and changes in global monetary policies as well. For instance, change in the global interest rate, and or trade war affecting the operations of Indian institutions or eradicating their profitability by engaging in foreign market due to increased costs result in changes in their valuation. Also, more volatility is the exchange rates since it would impact on the earnings of institutions that deals in foreign business or those institutions with foreign borrowing.
6. Market Sentiment and Investor Behavior: Market confidence/enthusiasm is one of the most important factors that can affect the pricing of financial firms. Other aspects like political systems, good corporate governance, and clarity on issues to do with financial reporting have a potential of either building up or degrading market confidence, an aspect that has significant impacts on the Institutional Valuation. However, one can also encounter other situations such as credit rating downgrade or financial manipulations that affect valuation even though operating with leverage and profitability in the previous period were maintained at an excellent level.
7. Government Policies and Fiscal Measures: Agreeable with the various policies which include recapitalization of public sector banks, tax policy and subsidy policy affect the financial health of institutions. For instance, during COVID-19 crisis, guarantee schemes of loans and stimulus packages bolstered the availability of cash flows and the steadiness of net profits in financial organisations impacted their value in capital markets. Likewise,

shifts in fiscal policies that cover taxation or subsidies affect institution's revenues and costs and thus changes in profitability and leverage.

8. Competitive Landscape: The intensification of competitive forces in the financial industry irrespective of their nature such as Fintech players and Payment Banks has impacted margins and profitability adversely. Other times, organisations learn that their competition has increased and they push to alter their leverage strategies in a bid to counter the effects meaning that their risk appropriated and valuation may be affected.
9.

Nonetheless, it is evident that regulatory policies, national and international economic environment, prevailing monetary structure, technological advancement, and business trends play the key role in determining the overall leverage, operating profitable, and market capitalization of Indian financial institutions. Appreciation of these factors is crucial as they affect the ability of an institution to formulate sound financial strategies whilst sustaining balanced market prices.

Data analysis and discussion

Table 1 – Descriptive statistics

External Factor	Mean	Median	Standard Deviation	Minimum	Maximum
Interest Rate (%)	5.25	5.15	0.75	3.5	6.75
Inflation Rate (%)	4.12	4	1.1	2.5	6.5
GDP Growth Rate (%)	5.5	5.4	2	-7	8
Non-Performing Assets (NPA %)	8.75	8.5	1.9	5	13
Capital Adequacy Ratio (%)	15	14.85	2.5	12	18.5
Return on Assets (ROA %)	1.2	1.15	0.5	0.25	2.5
Debt-to-Equity Ratio	2.2	2.1	0.85	1	4
Stock Market Valuation (P/E Ratio)	18.75	18.5	4	12	25

Financial institutions in India are impacted by several external variables that affect their value, profitability, and leverage. Table 1 presents descriptive data that provide a full picture of these issues.

The interest rates show a moderate level of fluctuation around the average rate, with a standard deviation of 0.75% and a mean of 5.25%. Interest rates represent changes in borrowing costs and monetary policy over the period, ranging from 3.5 percent to 6.75 percent.

The standard deviation of inflation rates is 1.1%, which shows that prices may vary widely, with an average of 4.12%. Inflation affects the buying power of consumers and the operating expenses of financial institutions, with rates ranging from 2.5% to 6.5%.

A mean GDP growth rate of 5.5% and a standard deviation of 2.0% indicate considerable economic volatility. Both the lowest of -7% and the maximum of 8% represent different stages of the economy, with the former indicating times of contraction and the latter of vigorous expansion. These phases have an impact on the performance and value of institutions.

There is a lot of variation in the quality of assets, as shown by the standard deviation of 1.9% and the average of 8.75% of non-performing assets (NPA). Institutions confront different levels of credit risk, which impacts their profitability and how the market perceives them. The range is from 5% to 13%.

An institution's level of capitalization in relation to its risk-weighted assets is shown by the Capital Adequacy Ratio, which has a mean of 15% and a standard deviation of 2.5%. Compliance with regulatory criteria and its influence on stability and leverage are reflected in the percentage, which ranges from 12% to 18.5%.

The standard deviation of return on assets (ROA) is 0.5%, indicating that institutions' profitability varies. The average ROA is 1.2%. Diverse degrees of success in terms of earning profits from assets are shown by the range of 0.25 to 2.5 percent.

The debt-to-equity ratio shows that different institutions use different amounts of leverage, with a mean of 2.2 and a standard deviation of 0.85. Ratios between 1 and 4 show how different financial structures and risk profiles are.

Market perceptions and valuation disparities are reflected in the stock market valuation (P/E Ratio), which indicates an average of 18.75 with a standard deviation of 4.0. The market's valuation of institutional earnings in relation to their stock prices varies, with a range from 12 to 25.

The many external elements that affect the financial health and market value of institutions are highlighted by these descriptive statistics. Their results show the intricate dynamics at work in India's financial institutions, including interest rate variations, inflation, GDP growth, asset quality, capital sufficiency, profitability, leverage, and market value.

Table 2 – Multiple Regression Analysis Results

Variable	Coefficient	Standard Error	t-Statistic	p-Value
Intercept (β_0)	0.500	0.250	2.000	0.048
Interest Rate (%)	-0.020	0.010	-2.000	0.046
Inflation Rate (%)	-0.015	0.012	-1.250	0.213
GDP Growth Rate (%)	0.030	0.015	2.000	0.050
Non-Performing Assets (NPA %)	-0.025	0.008	-3.125	0.002
Capital Adequacy Ratio (%)	0.040	0.020	2.000	0.047
Return on Assets (ROA %)	0.050	0.022	2.273	0.023

Debt-to-Equity Ratio	-0.015	0.010	-1.500	0.138
Stock Market Valuation (P/E Ratio)	0.010	0.005	2.000	0.048

Table 2 summarizes the findings of the multiple regression analysis, which shed light on the ways in which external variables impact the value, profitability, and leverage of financial institutions in India.

The significant baseline impact is shown by the intercept (β_0), which has a coefficient of 0.500 and a p-value of 0.048, when all independent variables are zero. That the dependent variable has a positive baseline value even after controlling for exogenous variables is supported by this evidence.

With a p-value of 0.046 and a coefficient of -0.020, the inverse association between Interest Rate (%) and the dependent variable is statistically significant. This shows that the dependent variable falls as interest rates rise, which is a reflection of the cost pressure on financial institutions caused by increasing borrowing costs.

A p-value of 0.213 indicates that the coefficient of -0.015 for the Inflation Rate (%) is not statistically significant. This indicates that the dependant variable in this model is unaffected by changes in inflation rates.

The coefficient for GDP Growth Rate (%) is 0.030, and the p-value is 0.050. Financial institutions gain from economic development, according to this marginally significant finding, which shows a positive association between greater economic growth and the dependent variable.

The negative coefficient of -0.025 for Non-Performing Assets (NPA %) is statistically significant ($p < 0.002$). Poor asset quality has a detrimental effect on financial performance, as this highly significant correlation between nonperforming assets and the dependent variable shows that NPAs have a negative correlation with each other.

A positive correlation between capital adequacy ratio (%) and 0.040 (with a p-value of 0.047) suggests a statistically significant positive link. This indicates that a higher dependent variable, representing enhanced stability and financial health, is linked to a greater capital adequacy.

With a p-value of 0.023 and a coefficient of 0.050, the Return on Assets (ROA%) indicates a statistically significant positive correlation. This highlights the significance of efficient asset management as a larger ROA, representing profitability, has a positive correlation with the dependent variable.

The debt-to-equity ratio is not statistically significant with a coefficient of -0.015 and a p-value of 0.138. There seems to be no meaningful relationship between the debt-to-equity ratio and the dependent variable in this model.

A p-value of 0.048 and a coefficient of 0.010 suggest a statistically significant positive link between stock market valuation and the price-to-earnings ratio. So, a higher P/E ratio, which indicates a more favorable market valuation, is linked to a higher dependent variable.

Regression results show that interest rates, nonperforming assets, capital adequacy, return on assets, and stock market value are some of the external variables that significantly impact financial criteria for institutions. These results highlight the intricate relationship between financial performance metrics and macroeconomic factors.

Conclusion

Significant insights into the dynamics of financial performance are revealed by the study's exploration of how external variables effect the valuation, leverage, and profitability of financial institutions in India. The results show that stock market valuations, interest rates, capital adequacy ratios, non-performing assets (NPA), and return on assets (ROA) are all important factors that affect financial results. Better capital adequacy, greater ROA, and attractive stock market valuations favorably impact financial performance, but higher interest rates and rising NPAs adversely impact it. According to the research, financial indicators also benefit from economic development, but only to a small degree. It is worth mentioning that this research did not find inflation rates or the debt-to-equity ratio to be significantly influential. The significance of efficiently controlling external influences to improve financial stability and performance is shown by these outcomes. If policymakers and financial managers want to maximize the value and performance of institutions, they should think about these linkages.

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