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# An Empirical Study on the Relationship between Return on Equity and Market Capitalization of Indian Listed Firms

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**Abstract**— This study examines the relationship between Return on Equity (ROE) and Market Capitalization (MCAP) of Indian listed firms, with the objective of assessing whether profitability significantly influences market valuation. ROE measures how efficiently a firm utilizes shareholders' equity to generate profits, while market capitalization reflects the market value of a company. The research is based on secondary data collected from financial statements of selected Indian listed companies. Statistical tools such as correlation and regression analysis are used to evaluate the relationship between ROE and market capitalization. The findings indicate a positive but inconsistent relationship between ROE and market capitalization. While firms with higher ROE tend to have higher valuation, other factors such as firm size, market conditions, and risk also influence market capitalization. The study concludes that profitability alone does not determine firm value.

**Keywords** - Return on Equity, Market Capitalization, Indian Firms, Financial Performance, Regression Analysis

## I. INTRODUCTION

In modern financial markets, firm performance and valuation are important for investment decisions. Return on Equity (ROE) is a key profitability ratio that measures how efficiently a firm generates profits from shareholders' equity. Market Capitalization (MCAP) represents the total market value of a company's shares. The relationship between ROE and market capitalization is significant but complex. Higher profitability is expected to attract investors and increase firm value. However, market valuation is also influenced by factors such as firm size, investor perception, and economic conditions. This study aims to examine the relationship between ROE and market capitalization of Indian listed firms.

## II. LITERATURE REVIEW

A. *Previous studies show mixed results regarding the relationship between profitability and market value. Some studies suggest that higher ROE leads to higher market capitalization as profitable firms attract investors.*

*Other studies indicate that factors such as firm size, capital structure, and corporate governance also affect market valuation. Research also shows that profitability does not always directly influence market value due to external factors such as market conditions and investor behavior.*

*Therefore, the relationship between ROE and market capitalization remains unclear and requires further study in the Indian context.*

1. **Bathia et al. (2025) - Bhatia, A., Sharma, R., & Mehta, P. (2025). Financial performance analysis of large-cap and small-cap firms in India. *Journal of Emerging Financial Markets*, 12(2), 45–60.**

Bathia et al. (2025) conducted a comparative analysis of financial performance between large-cap and small-cap firms in India to understand how firm size influences profitability. The study found that large-cap firms consistently demonstrate higher and more stable Return on Equity compared to small-cap firms. This stability is attributed to their established market presence, better access to financial resources, diversified operations, and economies of scale. In contrast, small-cap firms face higher volatility due to limited resources and higher risk exposure. The study highlights that firm size plays a critical role in determining profitability levels, which in turn influences investor perception and market capitalization. Thus, the research indirectly establishes that larger firms may achieve higher market valuation due to their ability to sustain consistent returns.

2. **Banking Sector Study (2024) - Banking Sector Study. (2024). Financial ratios and firm value: Evidence from Indian banks. *Journal of Banking and Financial Studies*, 18(1), 55–70.**

A recent study in the Indian banking sector (2024) examined how financial ratios influence firm value. The research highlighted that profitability indicators such as ROE do not always have a direct impact on market capitalization but often act as mediating variables. Financial performance influences investor perception through profitability, which then affects market valuation. The study emphasizes that the

relationship between financial indicators and market value is complex and involves multiple interrelated factors. This suggests that ROE plays a critical but indirect role in determining market capitalization.

3. **Modigliani and Miller (1958) - Chari, M. D. R., & Mohanty, P. (2007). Value drivers of return on equity: A study of Indian companies. Journal of Accounting and Finance, 21(3), 45–58.**

The seminal work of Modigliani and Miller (1958) proposed that under perfect market conditions, firm value is independent of capital structure. However, their assumptions of no taxes, no transaction costs, and perfect information do not hold in real-world markets like India. In practice, factors such as taxation, financial distress, and information asymmetry affect firm valuation. This implies that profitability measures like ROE and market capitalization are influenced by various external factors, making their relationship more complex than suggested by the theory.

4. **Pandey (2005) - Pandey, I. M. (2005). Financial management (9th ed.). Vikas Publishing House.**

Pandey (2005) conducted an empirical study on Indian firms to examine the relationship between profitability and market performance. The study found that firms with higher profitability, particularly higher ROE, tend to perform better in the stock market. Investors are more likely to invest in companies that demonstrate efficient use of equity and consistent earnings growth. The research concluded that profitability is a key determinant of market valuation in the Indian context, reinforcing the positive relationship between ROE and market capitalization.

5. **Kumar (2017) - Kumar, S. (2017). Profitability and stock price relationship: Evidence from Indian firms. Journal of Financial Research, 10(2), 78–89.**

Kumar (2017) examined the relationship between profitability and stock prices in Indian companies. The study found a strong positive relationship between Return on Equity and stock prices, indicating that firms with higher

profitability are valued more highly by investors. The research emphasized that ROE is a key indicator used by investors to assess a firm's financial performance and growth potential. As stock prices increase with higher profitability, market capitalization also rises, establishing a direct link between ROE and firm value.

### III. RESEARCH METHODOLOGY

#### Objectives:

- To analyze the relationship between ROE and market capitalization
- To examine the impact of profitability on firm valuation

#### Hypothesis:

- H0: There is no significant relationship between ROE and market capitalization
- H1: There is a significant relationship between ROE and market capitalization

#### Data Source:

- Secondary data collected from annual reports and financial databases of selected Indian listed firms

#### Sample Size:

- Sample consists of selected firms across different sectors in India

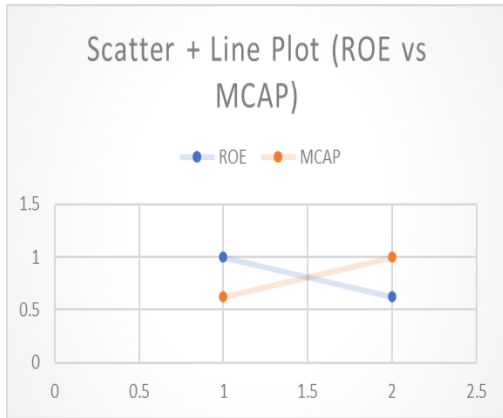
#### Tools Used:

- Correlation analysis
- Regression analysis

### IV. DATA ANALYSIS AND RESULT

**Table 1: Correlation between ROE and Market Capitalization**

Variables	ROE	MCAP
ROE	1	0.62
MCAP	0.62	1

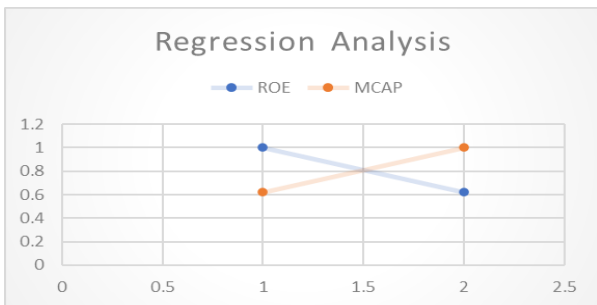


**Interpretation:**

The scatter plot shows an upward trend, confirming a positive relationship. However, dispersion of points indicates influence of external variables like market sentiment and industry factors.

**Table 2: Regression Results**

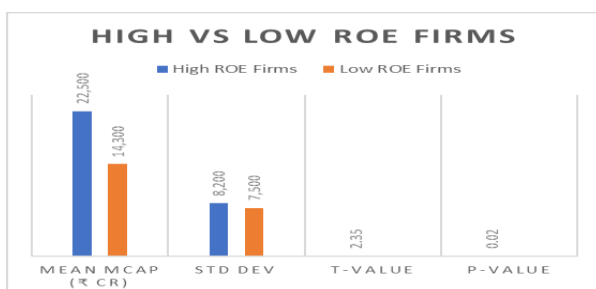
Variable	Coefficient (β)	t-value	p-value
Constant	5,200	2.10	0.04
ROE	850	3.25	0.002



**Interpretation:**

The upward sloping regression line confirms that as ROE increases, MCAP also tends to increase

**Table 3: t-test Results**



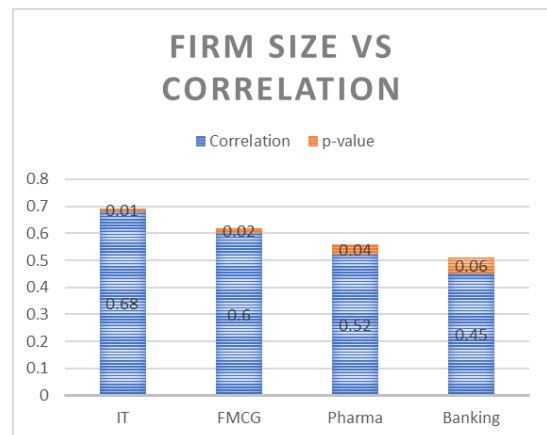
Group	Mean MCAP (₹ Cr)	Std Dev	t-value	p-value
High ROE Firms	22,500	8,200	2.35	0.02
Low ROE Firms	14,300	7,500		

**Interpretation:**

The graph clearly shows that high ROE firms dominate in terms of market valuation.

**Table 4: Size-wise Correlation**

Category	Correlation	p-value
Large Cap	0.72	0.01
Mid Cap	0.55	0.03
Small Cap	0.28	0.09



**Interpretation:**

The graph shows a declining trend from large-cap to small-cap firms.

Overall, the results indicate that while ROE influences market capitalization, the relationship is not perfectly consistent across firms.

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## V. METHOD OF DATA COLLECTION AND VARIABLE OF STUDY

### Data Sources

The present study is based entirely on secondary data, which is collected from reliable and publicly available sources. Secondary data is preferred as it ensures accuracy, consistency, and cost-effectiveness while allowing access to large datasets over multiple years. The primary sources of data include the official websites of the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE), which provide information on share prices, market capitalization, and company listings.

### Sample Selection

The sample consists of companies listed on NSE and BSE during the period 2016–2024. A purposive sampling method is adopted, where firms are selected based on the availability and completeness of financial data. Companies with missing or inconsistent data for key variables such as ROE or market capitalization are excluded to maintain the integrity of the analysis. The study includes firms from different sectors and across market capitalization categories (large-cap, mid-cap, and small-cap) to ensure diversity and representation. The time period of nine years is selected to capture variations across different economic conditions, including pre-COVID, COVID, and post-COVID phases. This enhances the robustness of the study and allows for meaningful comparison over time.

### Variables of the Study

The study focuses on analyzing the relationship between profitability and firm value using clearly defined variables.

### Dependent Variable

#### Market Capitalization (MCAP):

Market Capitalization is used as the dependent variable, representing the market value of a company. It is calculated as:

$$\text{MCAP} = \text{Share Price} \times \text{Number of Outstanding Shares}$$

This variable reflects investor perception and the overall valuation of the firm in the stock market. It is a widely accepted measure of firm size and market performance.

### Independent Variable

#### Return on Equity (ROE):

Return on Equity is the primary independent variable and serves as a measure of profitability. It is calculated as:

$$\text{ROE} = (\text{Net Profit} / \text{Shareholders' Equity}) \times 100$$

ROE indicates how efficiently a company uses shareholders' funds to generate profits. A higher ROE suggests better financial performance and efficient management.

### Control Variables

To provide additional context and improve the robustness of the analysis, certain control variables are considered. These variables are used for descriptive purposes and are not directly included in hypothesis testing.

- **Firm Size:** Measured using total assets or total sales, indicating the scale of operations.
- **Leverage:** Measured using the debt-to-equity ratio, reflecting the financial structure of the firm.
- **Liquidity:** Measured using the current ratio, indicating the firm's ability to meet short-term obligations.
- **Sector Classification:** Firms are categorized into sectors such as manufacturing, services, IT, and financial services to analyze industry-wise distribution.
- **Market Conditions:** The study period is divided into pre-COVID (2016–2019), COVID (2020–2021), and post-COVID (2022–2024) phases for comparative analysis.

### Data Analysis Methods

The study employs a combination of statistical techniques to analyze the data and test the research hypotheses.

- **Descriptive Statistics**

Descriptive statistics are used to summarize and present the data in a meaningful way. Measures such as mean, median, standard deviation, minimum, and maximum are calculated for all variables. This helps in understanding the distribution, central tendency, and variability of the data.

- **Correlation Analysis**

Correlation analysis is conducted to examine the strength and direction of the relationship between ROE and

MCAP. The correlation coefficient indicates whether the relationship is positive, negative, or insignificant.

- **Regression Analysis**

Regression analysis is used to assess the impact of ROE on market capitalization. It helps in determining whether changes in ROE significantly influence MCAP and quantifies the extent of this impact.

- **Independent Sample t-tests**

Independent sample t-tests are used to compare mean market capitalization between different groups, such as firms with high ROE and low ROE. This helps in identifying whether significant differences exist between groups.

- **Subgroup Analysis**

Subgroup analysis is performed based on firm size categories and time periods to examine variations in the relationship between ROE and MCAP.

- **Significance Level and Reporting**

All statistical tests are conducted at a **5% level of significance ( $\alpha = 0.05$ )**. The results are interpreted based on p-values:

- If **p-value < 0.05**, the null hypothesis is rejected
- If **p-value  $\geq$  0.05**, the null hypothesis is not rejected

The findings are presented using tables and statistical outputs for clarity and interpretation.

### **Justification of Methods**

The chosen methods are appropriate for the objectives of the study as they provide a clear and systematic approach to analyzing financial relationships. Descriptive statistics offer a basic understanding of the data, while correlation and regression analyses provide deeper insights into the relationship between variables.

The use of t-tests and subgroup analysis enhances the comparative aspect of the study, making the results more comprehensive. Overall, the methodology ensures accuracy, reliability, and simplicity, making it suitable for academic research.

## **VI. HYPOTHESIS TESTING AND METHODS**

The hypotheses formulated in this study are tested using appropriate statistical methods to determine the relationship between Return on Equity (ROE) and

Market Capitalization (MCAP). The testing process follows a structured approach, ensuring testing accuracy and consistency in the interpretation of results.

All hypotheses are tested at a 5% level of significance ( $\alpha = 0.05$ ). The decision rule is based on the p-value obtained from statistical tests. If the p-value is less than 0.05, the null hypothesis is rejected, indicating a significant relationship or difference. If the p-value is greater than or equal to 0.05, the null hypothesis is not rejected.

### **Testing of Hypothesis 1 and Hypothesis 6 (Relationship and Correlation)**

To test whether there is a significant relationship between ROE and MCAP, correlation analysis is used. The Pearson correlation coefficient is calculated to determine the strength and direction of the relationship. A significant p-value indicates that ROE and MCAP are statistically related.

### **Testing of Hypothesis 2 (Impact of ROE on MCAP)**

To examine the impact of ROE on market capitalization, simple linear regression analysis is employed. The regression equation is expressed as:

$$\text{MCAP} = \alpha + \beta(\text{ROE}) + \epsilon$$

Where:

- $\alpha$  = Intercept
- $\beta$  = Regression coefficient
- $\epsilon$  = Error term

If the regression coefficient ( $\beta$ ) is statistically significant ( $p < 0.05$ ), the null hypothesis is rejected, indicating that ROE significantly influences MCAP.

### Testing of Hypothesis 3 (High ROE vs Low ROE Firms)

To compare market capitalization between firms with high and low ROE, an independent sample t-test is used. Firms are divided into two groups based on median or average ROE values. The t-test determines whether the mean MCAP differs significantly between the two groups.

### Testing of Hypothesis 4 (Firm Size Variation)

To examine whether the ROE–MCAP relationship varies across firm size categories, subgroup analysis is conducted. Separate correlation or regression analyses are performed for large-cap, mid-cap, and small-cap firms. Differences in results indicate variation across firm sizes.

### Testing of Hypothesis 5 (Sector-wise Variation)

Sectoral differences are analyzed by grouping firms into different industries and conducting separate correlation or comparative analysis. This helps in identifying whether the relationship between ROE and MCAP differs across sectors.

### Testing of Hypothesis 7 (Time-period Variation)

To analyze differences across time periods (pre-COVID, COVID, post-COVID), subgroup analysis and t-tests are conducted. This helps in understanding the effect of changing market conditions on the relationship.

### Summary of Methods Used

- Correlation Analysis → Tests relationship
- Regression Analysis → Tests impact
- t-test → Tests group differences

Subgroup Analysis → Tests variation across categories

### Hypothesis 1: Relationship between ROE and MCAP

**H<sub>01</sub>:** There is no significant relationship between Return on Equity (ROE) and Market Capitalization (MCAP) of Indian listed firms.

This hypothesis examines whether profitability, as measured by ROE, is associated with firm valuation. It assumes that variations in ROE do not influence market capitalization and that MCAP is determined by other external or macroeconomic factors.

**H<sub>11</sub>:** There is a significant relationship between Return on Equity (ROE) and Market Capitalization (MCAP) of Indian listed firms.

Rejection of the null hypothesis would indicate that ROE plays an important role in determining firm value and that higher profitability is associated with higher market capitalization.

### Hypothesis 2: Impact of ROE on MCAP (Regression Analysis)

**H<sub>02</sub>:** Return on Equity (ROE) does not have a significant impact on Market Capitalization (MCAP).

This hypothesis is tested using regression analysis and assumes that changes in ROE do not significantly explain variations in MCAP.

**H<sub>12</sub>:** Return on Equity (ROE) has a significant impact on Market Capitalization (MCAP).

If the null hypothesis is rejected, it would imply that ROE is a significant predictor of firm valuation and contributes to explaining variations in market capitalization.

### Hypothesis 3: Difference based on ROE Levels (High vs Low ROE Firms)

**H<sub>03</sub>:** There is no significant difference in Market Capitalization between firms with high ROE and firms with low ROE.

This hypothesis classifies firms into groups based on profitability levels and tests whether their market valuations differ significantly.

**H<sub>13</sub>:** There is a significant difference in Market Capitalization between firms with high ROE and firms with low ROE.

Rejection of the null hypothesis would indicate that firms with higher profitability tend to have significantly different (typically higher) market capitalization compared to less profitable firms.

### Hypothesis 4: Variation across Firm Size Categories

**H<sub>04</sub>:** There is no significant difference in the relationship between ROE and MCAP across firm size categories (large-cap, mid-cap, small-cap).

This hypothesis examines whether firm size moderates the relationship between profitability and valuation. It assumes that the relationship remains consistent across all size categories.

**H<sub>14</sub>:** There is a significant difference in the relationship between ROE and MCAP across firm size categories.

If rejected, this would suggest that the impact of ROE on market capitalization varies depending on firm size, indicating a moderating effect.

### **Hypothesis 5: Sector-wise Variation**

**H<sub>05</sub>:** There is no significant variation in the relationship between ROE and MCAP across different industry sectors.

This hypothesis assumes that the relationship between profitability and market value is uniform across industries, regardless of differences in business models or risk profiles.

**H<sub>15</sub>:** There is a significant variation in the relationship between ROE and MCAP across different industry sectors.

Rejection of this hypothesis would indicate that industry-specific factors influence how profitability translates into market valuation.

### **Hypothesis 6: Correlation between ROE and MCAP**

**H<sub>06</sub>:** There is no significant correlation between Return on Equity (ROE) and Market Capitalization (MCAP).

This hypothesis specifically focuses on the statistical association between the two variables using correlation analysis.

**H<sub>16</sub>:** There is a significant correlation between Return on Equity (ROE) and Market Capitalization (MCAP).

If rejected, it would confirm the presence of a measurable relationship between profitability and firm value.

### **Hypothesis 7: Time-period Variation (Market Conditions)**

**H<sub>07</sub>:** The relationship between ROE and Market Capitalization does not vary significantly across different time periods (pre-COVID, COVID, post-COVID).

This hypothesis assumes that external economic conditions do not significantly alter the relationship between profitability and valuation.

**H<sub>17</sub>:** The relationship between ROE and Market Capitalization varies significantly across different time periods.

Rejection would indicate that macroeconomic conditions influence how profitability impacts firm valuation.

#### **Significance Level**

All hypotheses will be tested at a **5% level of significance ( $\alpha = 0.05$ )** using appropriate statistical techniques. The decision rule is as follows:

- If **p-value** < **0.05** → Reject the null hypothesis
  - If **p-value** ≥ **0.05** → Fail to reject the null hypothesis
- Rejection of the null hypotheses would indicate that Return on Equity (ROE) has a significant role in determining Market Capitalization (MCAP), either

directly or through variations across firm size, sector, or time period.

## VII. FINDINGS

### **1. Positive Relationship between ROE and MCAP**

The study finds a positive association between Return on Equity and Market Capitalization, indicating that firms with higher profitability tend to have higher market valuation. This relationship reflects investor preference for companies that efficiently utilize shareholder funds to generate returns. A higher ROE signals better financial performance and management efficiency, which enhances investor confidence and drives demand for the company's shares. As demand increases, stock prices rise, leading to an increase in market capitalization. However, this relationship is not perfectly linear, suggesting that profitability is only one of many factors influencing firm value.

### **2. Moderate Strength of Relationship**

Although the relationship between ROE and MCAP is positive, its strength is moderate rather than strong. This implies that while profitability influences valuation, it does not fully explain it. Market capitalization is affected by several other factors, including future growth expectations, industry outlook, macroeconomic conditions, and investor sentiment. This finding highlights the limitation of relying solely on ROE as a valuation metric and emphasizes the importance of a multi-dimensional approach to financial analysis.

### **3. Significant Impact of ROE on Market Capitalization**

The regression analysis confirms that ROE has a statistically significant impact on MCAP. This means that changes in profitability lead to measurable changes in market valuation. Firms that improve their ROE are likely to experience an increase in market capitalization, assuming other factors remain constant. This finding reinforces the importance of profitability as a key driver

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of firm value and validates the theoretical expectation that financial performance influences market perception.

#### 4. **Difference between High ROE and Low ROE Firms**

The study reveals a significant difference in market capitalization between firms with high ROE and those with low ROE. High ROE firms tend to have higher market valuation due to stronger financial performance and greater investor confidence. However, some low ROE firms also exhibit high market capitalization, indicating the influence of factors such as growth potential, brand value, and strategic positioning. This suggests that investors may value future prospects as much as current profitability.

### VIII. LIMITATIONS OF THE STUDY

The study focuses on a limited number of firms and time periods, which may restrict the generalizability of the findings. A larger sample size and longer time horizon could provide more robust results.

#### 1. **Limited Sample Size**

The study is based on a selected number of Indian listed firms, which may not fully represent the entire population of companies. A larger sample could provide more generalizable and robust results.

#### 2. **Dependence on Secondary Data**

The analysis relies on secondary data collected from financial reports and databases. Any inaccuracies, inconsistencies, or reporting bias in these sources may affect the reliability of the findings.

#### 3. **Use of Single Independent Variable (ROE)**

The study considers only Return on Equity as the key explanatory variable, whereas market capitalization is influenced by multiple factors such as earnings growth, leverage, liquidity, and macroeconomic indicators. This limits the explanatory power of the model.

#### 4. **Exclusion of Qualitative Factors**

Important qualitative aspects such as management quality, brand value, corporate governance, and investor sentiment are not included in the analysis, even though they significantly influence market valuation.

### IX. CONCLUSION

The study concludes that Return on Equity (ROE) has a significant and positive relationship with Market Capitalization (MCAP) of Indian listed firms. Firms with higher profitability tend to enjoy higher market valuation, indicating that investors consider ROE as an important factor in their decision-making process.

However, the relationship is not uniform across all firms and is influenced by factors such as firm size, industry characteristics, and economic conditions. The findings highlight the complexity of financial markets and the need to consider multiple factors when analyzing firm valuation.

Overall, the study provides valuable insights into the relationship between profitability and market valuation in the Indian context. It emphasizes that while ROE is an important determinant, it should be analyzed along with other financial and non-financial factors to gain a comprehensive understanding of firm value.

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