The Impact of Return on Capital Employed (ROCE) on Market Valuation: An Empirical Analysis of India's Automobile and Paint Industries

Dr. Shireen Rosario*
CA Reginald Rosario**

Abstract

Return on Capital Employed (ROCE) is an essential metric for evaluating a company's profitability and effectiveness in utilizing equity and debt. It gives investors and managers a holistic view of operational performance and the organization's long-term sustainability. Companies with strong ROCE typically focus on strategic and operational efforts that enhance ROCE-related elements, such as productivity of fixed assets, efficiency in working capital, and robust operating margins. Although not often spotlighted in annual reports, companies with high ROCE metrics tend to align cross-functional targets to strengthen this measure. By examining the impact of ROCE, Earnings Per Share (EPS), and Dividend Ratio on stock prices of the Indian automobile and paint industries, both of which are significant to India's economic growth, this paper aims to investigate whether ROCE affects stock prices directly. The analysis shows a low correlation between ROCE and stock prices, with EPS emerging as the primary variable through which ROCE indirectly influences share prices. While EPS is a function of ROCE and is affected by ROCE, this study suggests that ROCE should be assessed in conjunction with other financial indicators to understand its role in stock price movements better.

Keywords: Capital Efficiency, Financial Health, Market Valuation, Profitability, Return On Capital Employed (ROCE)

Introduction

Return on Capital Employed (ROCE) is a vital financial metric used to assess a company's profitability and its effectiveness in utilizing capital to produce returns. ROCE is often seen as one of the most important measures for assessing a company's ability to convert its capital into profits, making it highly valued by investors, analysts, and corporate managers. Unlike other profitability ratios, ROCE incorporates both equity and debt into the analysis, providing a broader perspective on how effectively management is utilizing the total capital at its disposal.

One of the key reasons ROCE is such a powerful metric is its ability to provide insight into a company's operational performance and long-term sustainability. It not only assesses current profitability but also reflects how well a company is positioned to grow and maintain financial health over time. A high ROCE suggests that the company is using its capital efficiently to generate substantial returns, while a low ROCE indicates inefficiency or poor capital allocation.

Investors often compare a company's ROCE with its cost of borrowing to determine whether it is generating sufficient returns to justify its capital investments. For instance, if an investor could earn 5% interest by placing funds in a savings account, the same investor would expect a higher return from a business investment to compensate for the additional risk. As a rule of thumb, ROCE should exceed the company's borrowing rate, and ideally, it should be at least double the interest rates. If a company's ROCE falls below this level, it signals that the company may not be utilizing its capital resources effectively, which could affect its stock price and future growth prospects.

ROCE also serves as a useful comparison tool between companies. For example, two companies may have similar profit margins, but if one generates higher returns relative to its capital employed, it demonstrates superior capital efficiency. In a case where Company A has an ROCE of 20% and Company B has 15%, even though B may have higher absolute profits, A is making better use of its capital. This higher efficiency often results in greater reinvestment potential, which can drive long-term value creation for shareholders.

* Lecturer, College of Commerce & Business Administration, Dhofar University, Post Box 2509, Salalah, PC 211, Oman, srosario@du.edu.om
** Chief Strategy Officer, Said Salem Al Wahaibi Group (formerly The Assarain Group), Post Box 2513, PC 112, Muscat, Oman; reggie0609@msn.com

ROCE's usefulness extends across industries, enabling comparisons between companies with different capital structures. For instance, capital-intensive industries like manufacturing and power generation require significant upfront investments, while service or tech industries typically operate with less capital. Despite these variations, ROCE can highlight which companies, regardless of sector, are using their capital most effectively. A high ROCE in capital-intensive industries reflects strong management of large investments, while in less capital-intensive industries, a lower ROCE could signal inefficiencies.

ROCE is a valuable indicator of long-term growth potential. A consistently high ROCE suggests that a company is effectively reinvesting profits to fuel sustainable growth. However, a low or declining ROCE might indicate management inefficiencies or poor use of debt.

Despite its advantages, ROCE has limitations. It can be influenced by accounting practices and is a backwards-looking measure, meaning it may not always reflect future growth potential, especially in companies undergoing significant capital investments. Still, it remains a crucial tool for investors assessing a company's profitability and overall capital efficiency.

Though ROCE is an essential indicator for shareholders, companies' financial statements do not mention it. It is also observed that firms that enjoy high ROCE relentlessly work to maintain it. Such firms direct their energies towards performance metrics that would give them a good ROCE – productivity of fixed assets, operating margins, negative working capital, etc.

Definitions

ROCE

ROCE = (EBIT)/(Capital Employed)

Where, EBIT refers to Earning or Operating Profit before Interest and Taxes

The study calculates capital employed as follows:

Equity Capital + Shareholders' Reserves + Long Term Borrowings + Short Term borrowings

EPS

EPS indicates the amount of profits earned by a share. The calculation for EPS is: (Profit After Tax – Preference Dividends)/Common Shares outstanding.

Dividend Ratio

The dividend ratio indicates the percentage of a company's profits after tax that is distributed to its shareholders as dividends. It provides insight into how much profit a company returns to its shareholders versus how much it retains for reinvestment in the business. A high Dividend Ratio reflects a company's practice of disbursing a large portion of its profits to shareholders as dividends. This is common among mature companies with stable profits and fewer growth opportunities. A low Dividend Ratio indicates that the company retains most of its earnings for reinvestment in growth, business expansion, or debt repayment. This is often observed in companies operating in growth-focused industries.

Dividend Ratio is calculated as: Dividend paid per share/EPS

Indian Automobile and Paint Industries

We selected the Automobile and Paint industries for this study because both industries are key drivers of economic growth and technological advancement in India and both industries have been in existence for a long time. Two-wheelers dominate India's market, driven by a growing middle-class and youth population. The sector's expansion stems from rural demand, electrification trends, and logistics growth. Being a world leader in heavy vehicles, India produced 25.9 million vehicles in FY23. Government initiatives, such as the Automotive Mission Plan and production-linked incentives, aim to boost India's auto exports and market leadership (Source: IBEF Report, August 2024).

According to the leading paint manufacturer Akzo Nobel India, India's paints and coatings industry is expected to reach US$ 12.22 billion (Rs. 1 lakh crore) in the next five years from the current US$ 7.57 billion (Rs. 62,000 crore). The company reports that architectural paints dominate with a 69% share, industrial paints hold 31%, and raw material prices declined in FY 2022-23, benefiting the paints and coatings industry. Despite crude price fluctuations, macroeconomic risks, and inflation, the industry remains promising, with India projected to grow at 6-7%.

Both industries comprise very old enterprises as well as new entrants. Industries are competitive and a barometer of Indian economic growth. Considering these aspects, the automobile and paint industries have been considered for this study.

Review of Literature

Research done by Price Waterhouse Coopers – Pattabiraman (2013) on BSE 100 companies indicates that companies that deliver a better Return on Capital Employed (ROCE) experience higher valuation that is measured in terms of Price to Book (P/B) multiple

at which the stocks trade. The analysis of this study, where the companies are arranged in the ascending order of ROCE, shows a progressively increasing P/B multiple means good performance. The findings of this study demonstrate that ROCE significantly influences a firm's valuation. By increasing its ROCE, a firm can increase its value. In other words, markets reciprocate favourably to firms that can compound their capital employed at high rates of return by placing a premium on them, compared to firms that compound the capital employed at low rates of return.

Numerous studies, including Ball and Brown (1968) and Beaver (1968), have examined financial statement line items, information content, and earnings components. These studies consistently show that earnings, revenues, and related financial disclosures influence stock market reactions. The significance of stock market reactions to earnings has far-reaching implications such as equity valuation, forecasting, debt rating, securities regulation, and fundamental analysis. Market-based research often overlooked financial ratios like asset turnover, financial leverage, and profit margin.

Within financial performance, net profits are derived from three distinct activities: operating, investing, and financing. Consequently, analysts typically deconstruct ROCE into three components: Net Profit Margin (NPM), Asset Turnover (ATO), and Financial Leverage (LEV). This breakdown, known as the DuPont decomposition, is given by the following equation:

ROCE = NPM x ATO x LEV

Previous research has established that markets respond more significantly to net profits than any other indicator (Ertimur *et al.*, 2003; Jegadeesh & Livnat, 2006). Expanding on this, NPM is expected to exert a more decisive influence than ATO and LEV, considering that it primarily represents profits. Financial analysts have traditionally regarded NPM as the primary driver behind ROCE, which has resulted in heightened dividend expectations (Reilly, 1997).

Amir and Kama (2005) investigated market reactions to ROCE and different constituent components of ROCE—NPM, ATO, and LEV—by analyzing quarterly results. Their research unveils a positive correlation between stock returns and ROCE during the quarterly results period.

Moreover, the study highlights that the market's reaction to NPM surpasses that of ATO and LEV. Interestingly, the researchers also observed an inverted U-shaped market reaction to LEV, which aligns with the trade-off theory between tax benefits and financial distress (Modigliani & Miller, 1963; Scott, 1976). The researchers contend that the market's response to ROCE components follows a hierarchical pattern, most pronounced for changes in NPM, followed by ATO and LEV. This study effectively demonstrates that among the three ROCE components, NPM has the most substantial influence, succeeded by ATO and LEV.

Mukherjea *et al.* (2021) also highlight the importance of ROCE for the long-term sustainability of businesses. The authors argue that companies with competitive advantage consistently grow at a rate greater than 10% annually, plow back a large portion of their earnings into expansion and have superior management thereby generating superior ROCE compared to their competitors. The researchers give examples of various companies in India, like Asian Paints in the Paints industry, Divi's Laboratories in the pharmaceutical sector, HDFC Bank in the banking sector, Relaxo Footwear in the footwear sector, Dr. Lalpath Labs in the healthcare sector.

ROCE sheds light on the contribution of various assets, encompassing fixed assets, intellectual assets, and others listed under asset classifications in the balance sheet.

Additional studies further reinforce the link between ROCE, Earnings Per Share (EPS), and stock prices. For example, Seetharaman and Roy (2011) found a strong connection between EPS and stock price volatility, with similar conclusions from Sharma (2011) on the influence of book value per share, dividend per share, and EPS on stock prices. Further research by Hemadivya and Devi (2013) validated a statistically significant positive relationship between EPS and stock price, while Talinishi and Mittal P. K. (2001) affirmed that EPS positively impacts stock prices across companies. Zahir and Khanna (1982) identified dividends per share as a key driver of share prices, and Islam *et al.* (2014) highlighted that while stock prices may not always immediately track EPS changes, they are significantly correlated with both microeconomic and macroeconomic factors.

Objective of this Study

This study aims to determine whether ROCE (Return On Capital Employed) directly influences stock prices or if other profitability metrics play a significant role in stock price movements. Prior research has shown that company profits are a primary driver of stock prices, with additional factors such as management quality, board composition, competitive advantage, and market share also impacting price fluctuations (Rosario & Mazumdar, 2023; Mukherjea *et al.*, 2016). This study specifically seeks to establish if ROCE is the most influential profitability metric in driving stock price movements.

Research Methodology

We use www.screener.in to obtain an exhaustive list of companies in the Indian automobile and paint industries. The stock prices considered are the closing prices as of March 31st (the last day of the financial year) every year. The stock prices are obtained from https://www.nseindia.com/ the website of the National Stock Exchange of India. Out of the 21 automobile companies and 8 paint companies listed on the National Stock Exchange of India, our study focuses on those that have been in existence for 10 years or more as of March 31, 2024. After applying this criterion, we shortlisted 12 companies from the automobile industry and 6 companies from the paint and varnish industry. The data collected spans 10 years, covering the financial years from 2015 to 2024, and includes only companies that have continuously operated during this period. Hence, there is no sample selection bias as our criterion is orthogonal to the effect we study.

Variables and Tests

The variables used in this study are ROCE, Dividend Ratio (Div. Ratio), Earnings Per Share (EPS), and stock prices.

The data on ROCE and Dividend Ratio are expressed in percentages. Whereas EPS and Share price are absolute values. Our aim is to compare the effect of different variables on market price. We standardize the variables using Z scores to be able to compare the coefficients across variables of different scales.

Pearson's correlation and linear regression are used to evaluate the impact of independent variables on the dependent variable. In regression, we use stock prices as the dependent variable and the others as independent variables.

Data Analysis and Interpretations

Our analysis reveals a stronger correlation between EPS (Earnings Per Share) and Share Price than between ROCE and Share prices in both the paint and automobile industries, as illustrated in Tables 1 and 2.

In a joint regression with ROCE, EPS and Div Ratio, the coefficients of ROCE and Div Ratio are not significant. The variables are correlated with EPS and the coefficient estimates are not consistent in linear regression. Therefore, we run the linear regression one variable at a time and compare the coefficient and variance explained by each variable, as shown in Tables 3 to 8 and Figures 1 and 2.

Table 1: Correlation in the Paint Industry

	ROCE	EPS	Div. ratio	Share price
ROCE	1.00			
EPS	0.64	1.00		
DIV ratio	0.47	0.47	1.00	
Share price	0.50	0.63	0.46	1.00

Table 2: Correlation in the AUTOMOBILE Industry

	ROCE	EPS	Div. Ratio	Market price
ROCE	1.00			
EPS	0.03	1.00		
DIV ratio	-0.01	0.35	1.00	
Market price	0.00	0.88	0.26	1.00

The Effect of ROCE on Stock Prices

Table 3: The Effect of ROCE on Stock Prices in Automobile Industry

	Coefficients	Standard error	t Stat	p-value
Intercept	5.3576E-16	0.09	6.13E-15	1
ROCE	0.00	0.09	0.00	1.00

Table 4: The effect of ROCE on Stock prices in Paint Industry

	Coefficients	Standard Error	t Stat	p-value
Intercept	-1.4E-16	0.11	-1.3E-15	1
ROCE	0.50	0.11	4.63	0.00

The Effect of EPS on Stock Prices

Table 5: The Effect of EPS on Stock Prices in Automobile Industry

	Coefficients	Standard Error	t Stat	p-value
Intercept	3.0581E-16	0.04	7.51E-15	1
EPS	0.88	0.04	21.65	6.07E-45

Table 6: The Effect of EPS on Stock Prices in Paint Industry

	Coefficients	Standard Error	t Stat	p-value
Intercept	-1.3E-16	0.10	-1.4E-15	1
EPS	0.63	0.10	6.56	0.00

The Effect of Dividend Payout Ratio on Stock Prices

Table 7: The Effect of Dividend Ratio on Stock Prices in Automobile Industry

	Coefficients	Standard Error	t Stat	p-value
Intercept	6.3697E-16	0.08	7.56E-15	1
Div ratio	0.26	0.08	3.10	0.00

Table 8: The Effect of Dividend Ratio on Stock Prices in Paint Industry

	Coefficients	Standard Error	t Stat	p-value
Intercept	-1.5E-16	0.11	-1.4E-15	1
Div ratio	0.46	0.11	4.17	0.00

Figure 1: Effect of Variables on Stock Prices – Automobile Industry.

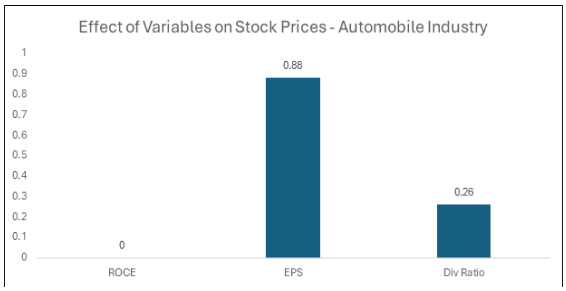
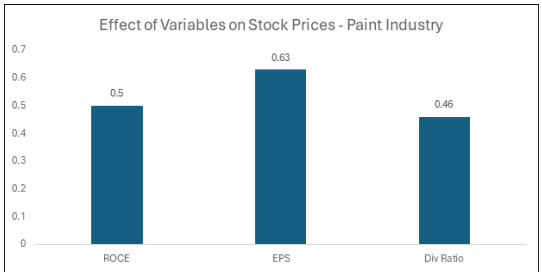


Figure 2: Effect of Variables on Stock Prices – Paint Industry.



It is evident from the show results that EPS has a greater bearing on share prices than ROCE or Dividend ratio. This suggests that ROCE does not directly impact stock prices but affects them indirectly through EPS, as EPS is influenced by ROCE.

Conclusion

ROCE stands as a vital metric in financial analysis, providing valuable insights into a company's operational efficiency, profitability, and long-term sustainability. Its ability to measure returns on both equity and debt capital makes it a comprehensive tool for investors and managers alike. By revealing how effectively a company uses its capital to generate profits, ROCE helps identify firms that are well-positioned for sustainable growth and value creation.

The power of ROCE lies in its clarity and utility across industries, making it a favored metric in comparing companies with varying capital requirements. However, while ROCE is an essential tool, it should be considered alongside other financial metrics to gain a more holistic view of a company's performance. Our study amply demonstrates that ROCE itself does not influence stock prices. The stock prices are influenced

largely by Earnings Per Share (EPS) which is a function of ROCE. Used wisely, ROCE is an invaluable measure for assessing a company's potential to thrive and deliver returns over the long term.

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