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Evaluating the impact of liquidity and profitability on share price dynamics: Insights from Indian automobile sector

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Abstract

The Indian automobile sectors play a pivotal role in economic landscape by significantly contributing towards GDP and employment. The study investigates the impact of liquidity and profitability indicators on the share price dynamics of 8 selective automobile companies listed in Nifty Auto Index. Using secondary data from company's annual reports and financial platforms, the study examines the liquidity indicators and profitability indicators. Enterprise Value is used as the market valuation indicator.

The analysis considers data for over a period of 5 years from 2019-2020 to 2023-2024 and employs descriptive analysis as well as Karl Pearson's correlation coefficient to evaluate their relationship among these metrics and their influence on market performance.

The results indicate a strong positive correlation between profitability metrics and share price movements, which highlights the importance of operational efficiency and resource utilization in investor's decision-making process. Liquidity indicators show a moderate positive correlation, while Enterprise Value exhibit a negative correlation with liquidity metrics indicating concerns regarding underutilization of resources.

The findings emphasize the importance of efficient financial management that influence investor sentiment and share price movements. The findings aim to provide insights to policy makers and stakeholders by highlighting the financial determinants of market performance.

Keywords: Share price dynamics, liquidity analysis, profitability metrics, automobile sector, working capital efficiency.

Introduction

The Indian automobile sector stands as the cornerstone of nation's economic and industrial growth. This sector has witnessed a significant transformation that are driven by innovation, legislation and dynamic customer preferences. This sector plays a critical role in economic landscape of India by contributing significantly towards GDP as well as towards employment.

In this context, the study examines the interplay between the liquidity and profitability metrics and their impact on share price dynamics of listed companies in Indian Automobile Sector. Liquidity indicators serve as the firm's ability to meet its short-term obligations, while profitability metrics offer insights on the operational efficiency and its value creation by using its capital, equity and asset resources. Enterprise Value is used as a market valuation indicator to capture the investor's perception on this sector.

With the use of statistical tools such as descriptive analysis and Karl Pearson's correlation coefficient, the study aims to identify the relationship among these financial metrics and their implication on market performance. The study is based on data for a period of 5 years and provides a view on how liquidity and profitability indicators drive share price movements in this sector.

Data and Research Methodology

The study is focused on selective 8 companies from the automobile sector all of which are listed in Nifty Auto Index and traded in Indian Stock Exchanges meeting inclusion criteria. The study relies on secondary data that were gathered from the company's Annual Reports, Money control website. The companies chosen were those that aligned with specific criteria. Key Liquidity Indicators like Current Ratio, Quick Ratio and Cash Conversion Cycle along with Profitability Indicators like Return on Equity,

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Return on Capital Employed and Return on Asset were used for analysis. Additionally, Enterprise Value is selected as the Market Valuation Indicator for analysis among those companies. The Karl Pearson's Correlation Coefficient and descriptive statistics were used to analyse the above indicators for the study, with P-value assess the statistical significance. The results were deemed to be valid in with 95 percent confidence level both directions. Software tools such as Jamovi and Microsoft Excel were utilized for data calculation and to make statistical inference.

Objectives of the Study

- To analyse the impact of liquidity indicators on the share price of listed companies in the automobile sector.
- To evaluate the relationship between profitability indicators like ROE, ROCE and ROA, their effect on market performance of these companies.
- To evaluate the financial dynamics that drive share price fluctuations in automobile sector with a view on liquidity and profitability as key determinants.

Scope of Study

The Automobile Sector of India is the main focus of the study. The study is focused on selective 8 companies from

$$CR = \frac{\text{Current Asset}}{\text{Current Liability}} \quad QR = \frac{\text{Current Asset} - \text{Inventories}}{\text{Current Liability}}$$

Cash Conversion Cycle (CCC) is financial metric that is used to evaluate how long does it takes for a business to convert its inventory resources into cash flow. A shorter CCC cycle indicates that company has less money accumulated in its inventory and accounts receivable, while

$$CCC = \frac{(360 \times \text{Receivables (R)})}{\text{Sales}} + \frac{(360 \times \text{Inventory (I)})}{\text{Cost of Goods Sold (COGS)}} + \frac{(360 \times \text{Payables (CL)})}{X}$$

Where $X = COGS + Expense + Interest + Labour + Advertising Cost + Insurance Cost + Travel + Salaries - Depreciation$

Profitability Factors

There are various methods of analysing the company's profitability metrics. Among them, most predominantly used are ROE, ROA and ROCE. They are used to evaluate how the company is efficient in the use of assets, in terms of its operational efficiency and in providing return to the investment made into it.

Return on Equity (ROE) measures the company's

$$ROE = \frac{\text{Earnings after Tax (EAT)}}{\text{Equity}} \quad ROA = \frac{\text{Earnings after Tax (EAT)}}{\text{Total Assets}}$$

$$ROCE = \frac{\text{Earnings before Interest and Tax (EBIT)}}{\text{Capital Employed (Equity + Debt)}}$$

Market Valuation Indicator

Market Valuation Indicators are predominantly used by investors and analysts to determine the marketplace of the business and to analyse whether the firm is overvalued or

the automobile sector that are listed in Nifty Auto Index and traded in Indian Stock Market. The study examines data for a period of 5 years from 2019-2020 to 2023-2024. Liquidity Metrics, Profitability Metrics and Market Valuation Indicator is used to analyse and determine their relationship with movement of share price. The study is expected to contribute towards the understanding of financial factors that drives the investor perceptions and decisions in this sector.

Metrics Considered

Liquidity Factors

Liquidity Analysis is crucial for evaluating the company's ability to meet its short-term obligation and in managing its cash flow effectively. They help in identifying potential financial stress situation and enables the business to maintain its operations effectively.

Current Ratio (CR) and Quick Ratio (QR) is the widely used liquidity indicator in a business. They indicate the company's liquidity position with help of the current assets and current liabilities. Current assets measure the company's ability to pay its short-term obligation with its current assets. Quick ratio is a measure of company's immediate liquidity position that excludes the inventory.

a negative CCC indicates that firm receives the cash payments from their customers before they are due to suppliers. It is an important metrics for firm that hold and manage inventory and it shoes their efficiency in liquidity management.

profitability, how efficiently it uses the shareholders equity to generate profits. A higher ROE indicates that the firm is better in converting its equity into profits. Return of Assets (ROA) indicates how efficiently a company uses its assets to generate its profit. A firm with higher ROA indicates that it is better in terms of utilizing its assets base to generate the profits. Return on Capital Employed (ROCE) is used to measures how efficiently the company uses its capital resources to generate profits. Here, ROCE includes both equity financing as well as debt financing and examines how effectively it is employed in business to generate profits.

undervalued.

Enterprise Value (EV) is one of such market valuation metrics which measures the company's total value. It is used to measure the company's market value that includes equity, debt and ownership interests. EV are often used as a replacement factor of Market Capitalization as this provides more comprehensive view.

$$EV = \text{Equity Capital} + \text{Preference Capital} + \text{Total Debt} + \text{Noncontrolling Interests} \\ - \text{Cash and Cash Equivalents}$$

Table 1: Descriptive Statistics (Source: Author's Findings)

Statistics	ROE (%)	ROCE (%)	ROA (%)	CCC	CR	QR	EV
Mean	12.9	16.3	7.48	-30	1.36	1.13	131218.00
Median	16.3	16.2	5.67	-27.5	1.15	0.935	93995.00
Standard Deviation	13.3	7.57	6.91	15.9	0.609	0.579	103192.00
Minimum	-25.7	-0.25	-3.92	-74	0.58	0.36	22321.00
Maximum	37	32.5	19.7	-3	3.35	3.02	443984.00

Table 1 shows the descriptive statistics for 8 selective companies in Indian Automobile Sector that are included in Nifty Auto Index for a period of 5 years from 2019-2020 to 2023-2024.

The mean value of Current Ratio (CR) is 1.36, with a median of 1.15 and a standard deviation of 0.609. Its minimum value is 0.58, while the maximum is 3.35. The average CR indicates that most of the firms are sufficient in short-term assets to cover its liabilities. But the high variation indicates that there is difference in liquidity management practices among firms.

The mean value of Quick Ratio (QR) is 1.13, with a median of 0.935 and a standard deviation of 0.579. Its minimum value is 0.36, while the maximum is 3.02. The lower median suggests a tendency towards more conservative liquidity management practices.

The mean value of Cash Conversion Cycle (CCC) is -30.0 days, with a median of -27.5 days and a standard deviation of 15.9 days. Its minimum value is -74 days, while the maximum is -3 days. Negative CCC value indicate efficient working capital management, implying cash are received from suppliers they are due.

The mean value of Return on Asset (ROA) is 7.48 percent, with a median of 5.67 percent and a standard deviation of 6.91 percent. Its minimum value is -3.92 percent, while the maximum is 19.7 percent. The average ROA is indicative of profitable asset utilization, but the dataset includes significant underperformance.

The mean value of Return on Equity (ROE) is 12.9 percent, with a median of 16.3 percent and a standard deviation of 13.3 percent. Its minimum value is -25.7 percent, while the maximum is 37.0 percent. The higher variability in ROE indicates disparities in the efficiency of generating equity returns.

The mean value of Return on Capital Employed (ROCE) is 16.3 percent, with a median of 16.2 percent and a standard deviation of 7.57 percent. Its minimum value is -0.25 percent, while the maximum is 32.5 percent. The consistent mean and median indicate overall capital utilization among firms, though some underperformer exists.

The mean of Enterprise Value (EV) is Rs. 131,218 crores, with a median of Rs. 93,995 crores and a standard deviation of Rs. 103,192 crores. Its minimum value is Rs. 22,321 crores, while the maximum is Rs. 443,984 crores. The wide range of EV is indicative of substantial difference in firm size and market valuation. Which are likely to be influenced by growth expectations and industry dynamics.

Correlation Matrix

Table 2 shows the results of correlation, where some of the correlations are statistically significant at 0.05 level implying that they are important.

Profitability Metrics (Return on Equity, Return on Capital Employed, Return on Assets)

Table 2: Correlation Matrix (Source: Author's Findings)

Correlation Matrix	ROE	ROCE	ROA	CCC	CR	QR	EV
ROE	Pearson's r	—	0.817	0.685	0.445	0.235	0.144
	p-value	—	<0.001	<0.001	0.004	0.145	0.144
ROCE	Pearson's r	0.817	—	0.871	0.364	0.36	0.028
	p-value	<0.001	—	<0.001	0.021	0.348	0.028
ROA	Pearson's r	0.685	0.871	—	0.466	0.508	0.003
	p-value	<0.001	<0.001	—	0.002	<0.001	0.003
CCC	Pearson's r	0.445	0.364	0.466	—	0.226	0.211
	p-value	0.004	0.021	0.002	—	0.162	0.211
CR	Pearson's r	0.235	0.36	0.508	0.226	—	0.993
	p-value	0.145	0.348	<0.001	0.162	—	<0.001
QR	Pearson's r	0.144	0.028	0.003	0.211	0.993	—
	p-value	0.144	0.028	0.003	0.211	<0.001	—
EV	Pearson's r	-0.008	-0.16	-0.066	-0.146	-0.332	-0.359
	p-value	0.959	0.324	0.687	0.369	0.036	0.023

The high positive correlation ($r=0.817$, $p<0.001$) between Return on Equity (ROE) and Return on Capital Employed (ROCE) indicates a strong alignment between the equity returns and capital efficiency. Firms that employ their capital resource efficiently tend to generate relatively higher

return for the equity holders, which could positively influence the share. The substantial correlation ($r=0.685$, $p<0.001$) between Return on Equity (ROE) and Return on Asset (ROA) indicates that efficient utilization of the assets drives equity growth, emphasizing on the interdependence

between asset management and value creation for the shareholders. The highly strong correlation ($r=0.871$, $p<0.001$) between the Return on Capital Employed (ROCE) and Return on Asset (ROA) demonstrates that firms skilled at utilising capital also maximize its profitability. This reflects the firm's operational efficiency and stands as an attractive indicator to investors.

Liquidity Metrics (Current Ratio, Quick ratio)

The near perfect significant correlation ($r=0.993$, $p<0.001$) between Current Ratio (CR) and Quick Ratio (QR) suggests that both ratios are closely aligned with the assessment of the firm's short term financial. However, the Quick Ratio focuses on the immediate liquidity position of the enterprise which excludes the inventory. The moderate positive correlation among Current Ratio (CR) and Return on Asset (ROA) underscores that firms with better liquidity management operations support asset profitability. Similar to CR, Quick Ratio's (QR) relationship with Return on Asset (ROA) highlights the need of maintaining immediate liquidity to maintain higher operational efficiency.

Working Capital Efficiency (Cash Conversion Cycle)

A higher positive correlation among Cash Conversion Cycle (CCC) and Return on Equity (ROE) is indicative that an efficient working capital management, could lead to achieve higher equity returns. This could increase the investors' confidence. Similarly, the relationship ($r=0.466$, $p=0.002$) with that of Return on Asset (ROA) highlights that efficient conversion of cash contributes to asset profitability, indirectly influences the share price.

Market Valuation Metric (Enterprise Value)

The negative correlation between Enterprise Value (EV) and Liquidity metrics (Current Ratio: $r=-0.332$, $p=0.036$; Quick Ratio: $r=-0.359$, $p=0.023$) may suggest that higher liquidity position enjoyed by the firms may be perceived as an opportunity cost because resources are underutilized. This could negatively impact Enterprise value, as investors would prefer to invest in growth-oriented activities.

The negligible correlation between Enterprise Value (EV) and Profitability Metrics ($r=-0.008$ to -0.160 , $p>0.05$) imply that EV is influenced by the factors that are beyond immediate profitability, such as market condition, investor sentiment and future growth potential.

Findings Analysis

- The strong correlation exists between ROE, ROCE and ROA underline the pivotal role in influencing share price. This emphasizes the importance of profitability in determining the financial soundness of the firms and market valuation. Investor would tend to prefer to prefer firms with superior asset and capital efficiency, as these metrics indicative of stable and sustainable returns.
- Liquidity Metrics (CR and QR) show a moderate positive relationship with ROA, which underscores that maintaining adequate liquidity enables the firms to manage its operation effectively. However, excess liquidity position may be perceived as a conservative strategy, potentially limiting future growth avenues and investor appeals.
- The positive correlation among the Cash Conversion Cycle (CCC) and Profitability metrics (ROE; ROA)

underlines the crucial role of efficient working capital management. Firms that have the ability and are capable of converting its resources into cash are better positioned to generate better return and maintain its market competitiveness.

- Enterprise Value (EV) exhibit a negative correlation with other metrics, suggesting that the share price dynamics are influenced by many other factors including some qualitative factors. Market Perception, expectations regarding future growth potential, industry positioning and sentiment of the investors are likely to influence the immediate financial ratios in determining Enterprise Value.

Limitations of the Study

- The study is solely based on secondary data that are sourced from company's annual report and from websites like Moneycontrol. This reliance could lead to inaccuracies if the source data have reporting errors.
- The study emphasizes on quantitative financial indicators. It doesn't account for qualitative factors which might have impact on share price.
- The study is based on the data for the period of 5 years, this time frame could consist of some disruptions which may not reflect typical market condition.

Future Research

Future research on these analysis and findings could expand more time frame to make the results more accurate and reliable, aims to incorporate various qualitative factors like industry positioning, investor's sentiment and expectations of growth potential to the analysis that could have significant influence on the share price of the company.

Conclusion

The study underscores the importance of profitability, liquidity and working capital management as a key factor of financial performance of the company. The analysis also underscores the interdependencies between the liquidity, profitability and market valuation metric in shaping the share price outcomes. The findings highlight that profitability is most significant driver of share price, while liquidity and working capital management serves as enablers of operational and financial stability. Market Valuation being represented by Enterprise Value reflect broader dynamics that extends beyond these metrics. Also, the findings emphasize the importance of balanced approach to financial management, combining all these metrics with strategic positioning to maximize the returns for shareholders. Policy holders and stakeholders can use these findings to devise strategy that could increase their operational efficiency and attract the investors' confidence.

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