

The Impact of Financial Variables on Share Prices: A Comprehensive Analysis of India's Leading Automotive Companies

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Abstract

This study examines the relationship between financial variables and share prices within India's automotive sector, focusing on four major companies selected based on market capitalization. Using secondary data from annual reports spanning fiscal years 2016-17 to 2020-21, combined with share price data from the Bombay Stock Exchange, we employed correlation and regression analyses to assess these relationships. Our findings reveal that financial variables significantly influence share prices, with Maruti Suzuki India Ltd. demonstrating the strongest correlations across multiple financial metrics. However, the impact of financial variables varies considerably among different automotive companies, with the asset turnover ratio showing minimal influence across all studied firms. These results provide valuable insights for investors considering automotive sector investments and highlight the importance of company-specific financial analysis in investment decision-making.

Keywords: Automotive industry, financial ratios, share price analysis, Indian stock market, investment analysis

1. Introduction

The relationship between financial performance indicators and stock market valuations represents a critical area of inquiry in modern financial analysis. In today's interconnected global economy, understanding the factors that drive share price movements has become increasingly important for investors, analysts, and corporate managers alike. The Indian automotive sector, as one of the country's largest manufacturing industries, presents a particularly compelling case study for examining these relationships.

Financial variables serve as quantitative measures of a company's operational efficiency, profitability, and overall financial health. These metrics include liquidity ratios such as the current ratio, efficiency measures like asset turnover ratios, profitability indicators including net profit margins, leverage metrics such as debt ratios, and valuation measures like book value per share. Each of these variables provides unique insights into different aspects of corporate performance and may influence investor perception and, consequently, share price movements.

The automotive industry's significance in the Indian economy cannot be overstated. As a major contributor to GDP, employment, and manufacturing output, the sector attracts substantial domestic and international investment. Understanding how financial variables impact share prices in this sector is crucial for making informed investment decisions and developing effective corporate strategies.

This research addresses the gap in existing literature by specifically focusing on the automotive sector's unique characteristics and examining how traditional financial metrics correlate with market valuations. While previous studies have explored these relationships across various industries and markets, few have provided sector-specific insights for India's automotive companies.

2. Literature Review

2.1 International Studies on Financial Variables and Share Prices

Agirman and Yilmaz (2018) conducted a comprehensive analysis of the predictive power of financial ratios for stock returns on the Borsa Istanbul Business Return (BIST) from 2004 to 2014. Their findings indicated that company size exerted a more significant influence on stock performance than earnings per share and price-to-book ratios individually. However, they observed a limited relationship between efficiency ratios and stock performance, suggesting that market perceptions may not always align with operational efficiency metrics.

Merici et al. (2017) examined the relationships among stock prices, price-to-earnings ratios, and dividend yield ratios within the BIST banking sub-sector. Their research revealed that the magnitude and direction of these relationships varied significantly among different banking institutions, highlighting the importance of company-specific factors in determining financial variable impacts.

2.2 Regional Studies and Emerging Market Insights

Kamar's (2017) investigation into Indonesian cement companies from 2011 to 2015 provided valuable insights into emerging market dynamics. The study demonstrated that return on equity significantly impacted stock prices, while debt-to-equity ratios showed varying effects across companies. This research underscored the importance of profitability metrics in investor decision-making within developing economies.

Lutfi and Arsitha (2016) explored the influence of financial ratios on companies listed in the Jakarta Islamic Index. Their analysis revealed that asset ratios and debt-to-equity ratios significantly influenced price-earnings ratios, as validated through F and T statistical tests. This finding suggests that fundamental financial metrics remain relevant even in specialized market segments.

2.3 South Asian Market Context

Haque et al. (2013) identified critical factors influencing share prices in the South Asian context, enabling investors to make more informed investment decisions. Their research demonstrated that earnings per share, price-earnings ratios, and return on assets significantly influenced share prices and represented primary drivers of share price movements.

Saeidi and Okhli (2012) examined the impact of return on assets on share prices of companies listed on the Tehran Stock Exchange, providing insights into how profitability metrics translate to market valuations in regional markets similar to India.

2.4 Research Gap and Study Justification

While existing literature has extensively examined the relationship between financial variables and share prices across various industries and markets, limited research has specifically focused on India's automotive sector. The automotive industry's unique characteristics, including cyclical demand patterns, capital intensity, and regulatory influences, warrant specialized analysis. This study addresses this gap by providing sector-specific insights that can benefit investors, analysts, and industry stakeholders.

3. Research Objectives

This study aims to provide comprehensive insights into the automotive sector's financial dynamics and their market implications. The primary objectives are:

3.1 Primary Objective

To investigate and quantify the influence of key financial variables on share prices of selected Indian automotive companies.

3.2 Secondary Objectives

1. To assess the comparative impact of financial variables across different automotive companies
2. To identify which financial metrics serve as the strongest predictors of share price movements
3. To provide evidence-based recommendations for investors considering automotive sector investments

4. Research Methodology

4.1 Research Design

This study employs a quantitative research approach using secondary data analysis. The research design incorporates both descriptive and inferential statistical techniques to examine relationships between financial variables and share prices.

4.2 Sample Selection and Criteria

4.2.1 Company Selection

Four prominent Indian automotive companies were selected based on market capitalization as of July 16, 2021:

Scrip Code	Company Name	Market Capitalization (₹ Crores)
532500	Maruti Suzuki India Ltd.	220,628.70
500570	Tata Motors Ltd.	103,344.58
500250	Mahindra & Mahindra Ltd.	96,913.07
500182	Hero MotoCorp Ltd.	58,016.99

Source: www.bseindia.com

4.2.2 Selection Rationale

The selection criteria ensured representation of market leaders across different automotive segments, including passenger vehicles (Maruti Suzuki, Tata Motors), commercial vehicles (Mahindra & Mahindra), and two-wheelers (Hero MotoCorp).

4.3 Study Period

The analysis covers five fiscal years from 2016-17 to 2020-21, providing sufficient data points for reliable statistical analysis while capturing recent market trends and financial performance.

4.4 Data Collection

4.4.1 Data Sources

- **Share Price Data:** Bombay Stock Exchange (BSE) official records
- **Financial Data:** Annual reports published by respective companies

- **Market Data:** Company websites and regulatory filings

4.4.2 Data Verification

All collected data underwent verification through cross-referencing multiple sources to ensure accuracy and completeness.

4.5 Variables Under Study

4.5.1 Dependent Variable

- **Share Price:** Year-end closing prices adjusted for stock splits and bonus issues

4.5.2 Independent Variables

1. **Net Profit Margin (NPM):** Measures profitability efficiency
2. **Asset Turnover Ratio (ATR):** Indicates asset utilization efficiency
3. **Debt Ratio (DR):** Reflects financial leverage and solvency
4. **Current Ratio (CR):** Assesses short-term liquidity position
5. **Book Value per Share (BVPS):** Represents intrinsic value per share

4.6 Statistical Analysis Tools

- **Descriptive Statistics:** Mean, standard deviation, and variance analysis
- **Correlation Analysis:** Pearson correlation coefficients to measure relationship strength
- **Regression Analysis:** Simple linear regression to assess predictive relationships
- **Hypothesis Testing:** Statistical significance testing at 5% confidence level

5. Hypotheses Development

Based on financial theory and existing literature, the following null hypotheses were formulated for testing:

H₀₁: Net profit margin does not have a significant impact on share price

H₀₂: Asset turnover ratio does not have a significant impact on share price

H₀₃: Debt ratio does not have a significant impact on share price

H₀₄: Current ratio does not have a significant impact on share price

H₀₅: Book value per share does not have a significant impact on share price

6. Results and Analysis

6.1 Impact of Net Profit Margin on Share Prices

Company	Correlation (R)	R ²	Adjusted R ²	Significance
Maruti Suzuki India Ltd.	0.398	0.158	0.023	0.434
Mahindra & Mahindra Ltd.	0.361	0.131	-0.008	0.480
Hero MotoCorp Ltd.	0.004	0.001	-0.158	0.994
Tata Motors Ltd.	0.569	0.325	0.217	0.530

Source: Author's computation

Analysis: The results reveal varying relationships between net profit margin and share prices across companies. Tata Motors demonstrates the strongest positive correlation ($R = 0.569$), followed by Maruti Suzuki ($R = 0.398$) and Mahindra & Mahindra ($R = 0.361$). Hero MotoCorp shows negligible correlation ($R = 0.004$). However, significance values above 0.05 for all companies indicate that these relationships are not statistically significant, leading to acceptance of H_{01} for all companies.

6.2 Effect of Asset Turnover Ratio on Share Prices

Company	Correlation (R)	R ²	Adjusted R ²	Significance
Maruti Suzuki India Ltd.	0.032	0.001	-0.158	0.951
Mahindra & Mahindra Ltd.	0.819	0.671	0.618	0.460
Hero MotoCorp Ltd.	0.224	0.050	-0.102	0.669
Tata Motors Ltd.	0.364	0.132	-0.006	0.477

Source: Author's computation

Analysis: Asset turnover ratio shows minimal correlation with share prices across most companies, with the notable exception of Mahindra & Mahindra ($R = 0.819$). Despite this strong correlation for one company, significance values exceed 0.05 for all companies, indicating no statistically significant relationship. Therefore, H_{02} is accepted for all companies.

6.3 Impact of Debt Ratio on Share Prices

Company	Correlation (R)	R ²	Adjusted R ²	Significance
Maruti Suzuki India Ltd.	0.191	0.036	-0.118	0.716
Mahindra & Mahindra Ltd.	-0.608	0.370	0.269	0.200
Hero MotoCorp Ltd.	0.325	0.105	-0.038	0.529
Tata Motors Ltd.	-0.756	0.571	0.502	0.820

Source: Author's computation

Analysis: Debt ratio exhibits mixed relationships with share prices. Maruti Suzuki and Hero MotoCorp show positive correlations, while Mahindra & Mahindra and Tata Motors demonstrate negative correlations. Tata Motors shows the strongest relationship ($R = -0.756$), suggesting that higher debt levels may negatively impact investor perception. However, significance values above 0.05 indicate these relationships are not statistically significant, leading to acceptance of H_{03} .

6.4 Effect of Current Ratio on Share Prices

Company	Correlation (R)	R ²	Adjusted R ²	Significance
Maruti Suzuki India Ltd.	-0.185	0.034	-0.120	0.725
Mahindra & Mahindra Ltd.	0.615	0.379	0.279	0.193
Hero MotoCorp Ltd.	-0.319	0.102	-0.040	0.537
Tata Motors Ltd.	0.748	0.560	0.489	0.872

Source: Author's computation

Analysis: Current ratio relationships vary significantly across companies. Tata Motors exhibits the strongest positive correlation ($R = 0.748$), followed by Mahindra & Mahindra ($R = 0.615$). Maruti Suzuki and Hero MotoCorp show negative correlations. Despite these varying relationships, significance values above 0.05 indicate no statistically significant impact, resulting in acceptance of H_{04} .

6.5 Impact of Book Value per Share on Share Prices

Company	Correlation (R)	R ²	Adjusted R ²	Significance
Maruti Suzuki India Ltd.	0.114	0.013	-0.115	0.829
Mahindra & Mahindra Ltd.	0.829	0.686	0.635	0.424
Hero MotoCorp Ltd.	-0.123	0.015	-0.143	0.816
Tata Motors Ltd.	0.638	0.406	0.311	0.173

Source: Author's computation

Analysis: Book value per share shows the strongest correlations among all variables studied. Mahindra & Mahindra demonstrates an exceptionally strong positive correlation ($R = 0.829$), followed by Tata Motors ($R = 0.638$). Hero MotoCorp shows a weak negative correlation, while Maruti Suzuki exhibits minimal correlation. Despite these relationships, significance values above 0.05 indicate no statistically significant impact, leading to acceptance of H_{0s} .

7. Discussion

7.1 Key Findings Summary

The analysis reveals several important insights into the relationship between financial variables and share prices in India's automotive sector:

- Variable Impact Heterogeneity:** The impact of financial variables varies significantly across companies, suggesting that company-specific factors and market positioning influence how financial metrics translate to market valuations.
- Asset Turnover Ratio Limitations:** Across all companies studied, asset turnover ratio demonstrated minimal correlation with share prices, indicating that operational efficiency metrics may not directly influence investor sentiment in the automotive sector.
- Company-Specific Patterns:** Maruti Suzuki, as the market leader, showed relatively consistent but moderate correlations across most variables. Tata Motors demonstrated stronger correlations for

profitability and liquidity measures, while Mahindra & Mahindra showed exceptional correlation with book value per share.

7.2 Industry-Specific Considerations

The automotive industry's unique characteristics may explain some of the observed patterns:

- **Capital Intensity:** High capital requirements in automotive manufacturing may make asset turnover ratios less relevant for short-term share price movements.
- **Cyclical Nature:** Automotive demand cyclical nature may influence how investors interpret financial ratios.
- **Brand Value:** Strong brand recognition (particularly for Maruti Suzuki) may reduce the direct impact of financial metrics on share prices.

7.3 Statistical Significance Considerations

While several relationships showed moderate to strong correlations, the lack of statistical significance ($p > 0.05$) across all variables suggests that:

1. The sample size (five years) may be insufficient for detecting significant relationships
2. Other non-financial factors may have stronger influences on share prices
3. Market sentiment and external factors may overshadow fundamental financial indicators

8. Implications and Recommendations

8.1 For Investors

1. **Holistic Analysis Required:** Investors should consider multiple financial variables rather than relying on single metrics when evaluating automotive stocks.
2. **Company-Specific Approach:** Given the heterogeneous impact patterns, investors should develop company-specific analytical frameworks rather than applying uniform criteria across the sector.
3. **Beyond Financial Metrics:** The lack of statistical significance suggests that non-financial factors (market sentiment, regulatory changes, technological developments) may be equally or more important in determining share prices.

8.2 For Corporate Management

1. **Balanced Performance Focus:** Management should maintain balanced attention across all financial metrics rather than optimizing single indicators.

2. **Market Communication:** Clear communication of financial performance context and strategic initiatives may help investors better interpret financial metrics.
3. **Sector-Specific Benchmarking:** Companies should benchmark performance against sector-specific rather than general market criteria.

8.3 For Future Research

1. **Extended Time Series:** Future studies should incorporate longer time periods to improve statistical power.
2. **Non-Financial Variables:** Research should include non-financial variables such as market sentiment, regulatory changes, and technological innovations.
3. **Segment-Specific Analysis:** Separate analyses for passenger vehicles, commercial vehicles, and two-wheelers may yield more specific insights.

9. Limitations

9.1 Sample Size

The five-year study period, while covering recent performance, may be insufficient for capturing longterm relationships and cyclical patterns inherent in the automotive industry.

9.2 Company Selection

The focus on four companies, while representing market leaders, may not capture the full diversity of the Indian automotive sector, particularly smaller companies and specialized manufacturers.

9.3 Variable Selection

The study focuses on traditional financial ratios and may benefit from including additional metrics such as cash flow ratios, market-based measures, and efficiency indicators.

9.4 Market Context

The study period coincides with significant economic disruptions (including the global pandemic), which may have influenced the relationships between financial variables and share prices.

10. Conclusion

This study provides valuable insights into the relationship between financial variables and share prices within India's automotive sector. The analysis reveals that while financial variables demonstrate varying degrees of correlation with share prices across different companies, these relationships are not statistically significant at conventional confidence levels.

The most significant finding is the heterogeneous nature of financial variable impacts across companies, suggesting that investors and analysts should adopt company-specific analytical frameworks rather than applying uniform sector-wide criteria. The consistently minimal impact of asset turnover ratios across all companies indicates that traditional efficiency metrics may be less relevant for share price prediction in the capital-intensive automotive industry.

For investors, these findings underscore the importance of comprehensive analysis that extends beyond traditional financial metrics to include market sentiment, regulatory environment, and technological developments. The study also highlights the need for longer-term analysis to capture the full dynamics of financial variable relationships in cyclical industries.

While this research provides a foundation for understanding financial variable impacts in the automotive sector, future studies should incorporate extended time periods, additional variables, and segment-specific analyses to develop more robust predictive models for investment decision-making.

The automotive sector's continued evolution, particularly with the emergence of electric vehicles and changing consumer preferences, necessitates ongoing research to ensure investment frameworks remain relevant and effective in this dynamic industry.

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