Leverage Influence on Firms' Investment Behaviour – An Empirical Study of Select BSE-Listed Indian Steel Companies

Amalendu Bhunia[1], Rabindra Shil[2]
[1]*Professor, Department of Commerce, University of Kalyani, Nadia – 741235, West Bengal*
[2]*Research Scholar, Department of Commerce, University of Kalyani, Nadia – 741235, West Bengal*

Abstract- This study examined the long-run determinants of corporate investment using panel data techniques applied to firm-level financial variables. Secondary data were collected for selected firms over multiple years, forming a balanced panel dataset. Investment was treated as the dependent variable, while Return on Capital Employed, Firm Size, Asset Turnover, Growth Opportunity, Current Ratio, and Debt-Equity Ratio were considered explanatory factors. Panel unit root tests confirmed the stationarity properties of the variables, and Pedroni and Kao residual cointegration tests established the existence of a stable long-run equilibrium relationship among them. The Fully Modified Ordinary Least Squares estimation revealed that profitability, operational efficiency, and growth opportunities positively influence investment decisions, whereas financial leverage and firm size exert significant negative effects. Liquidity showed no meaningful long-term impact. The findings indicate that investment behaviour is primarily driven by internal performance efficiency and capital structure conditions rather than short-term financial stability.

Keywords: Corporate investment, panel data analysis, financial leverage, operational efficiency, long-run relationship.

I. INTRODUCTION

The relationship between financial leverage and corporate investment behaviour has been a central concern in corporate finance, particularly in capital-intensive industries where firms must rely heavily on external financing to sustain growth and operational expansion. The steel industry represents one of the most capital-intensive sectors of the economy due to its dependence on large-scale infrastructure, costly technological upgrades, and substantial fixed asset requirements. In developing economies such as India, the steel sector plays a pivotal role in supporting industrialization, urban development, transportation networks, and overall economic progress. Indian steel companies listed on the Bombay Stock Exchange (BSE) operate in a dynamic environment characterized by fluctuating demand, volatile raw material prices, global competition, and cyclical economic trends. In such conditions, investment decisions are crucial for maintaining competitiveness, improving production efficiency, and achieving long-term sustainability. However, these investment decisions are not made in isolation; they are closely linked to firms' capital structure, particularly the extent to which they depend on debt financing. Financial leverage, defined as the proportion of debt used in a firm's capital structure, influences investment behaviour by affecting financial flexibility, cost of capital, risk exposure, and managerial decision-making incentives (Myers, 1977). Therefore, understanding the influence of leverage on investment behaviour is essential for analyzing how firms balance growth opportunities with financial stability.

The problem addressed in this study emerges from the complex and contradictory theoretical and empirical findings regarding the leverage-investment relationship. Traditional financial theories provide different perspectives on how leverage affects corporate investment. The trade-off theory suggests that debt financing can enhance firm value through tax benefits and reduced cost of capital, thereby encouraging investment activities (Modigliani & Miller, 1963). In contrast, agency theory argues that excessive leverage may create conflicts between shareholders and creditors, leading to underinvestment

problems and risk-averse managerial behaviour (Jensen, 1986). Similarly, the debt overhang theory proposes that firms with high debt levels may forgo profitable investment opportunities because the benefits of such investments accrue primarily to creditors rather than shareholders (Myers, 1977). Empirical studies have also produced mixed results, indicating that leverage may either stimulate or constrain investment depending on firm-specific characteristics such as profitability, liquidity, size, and asset structure (Fazzari et al., 1988). Within the Indian context, particularly in the steel industry, limited empirical research has systematically examined how leverage interacts with these financial variables to influence investment decisions. This lack of sector-specific evidence creates a significant gap in understanding the financial dynamics that shape investment behaviour in a strategically important industry.

The rationale for conducting this study lies in addressing this research gap by providing empirical insights into the relationship between leverage and investment behaviour among selected BSE-listed Indian steel companies. Given the high capital intensity of the steel sector, firms must frequently undertake large-scale investments to expand capacity, adopt advanced technologies, and comply with environmental standards. These investment requirements exceed internally generated funds, making external financing, particularly debt, a critical component of corporate financial strategy. However, excessive reliance on debt can increase financial risk, limit managerial flexibility, and reduce firms' ability to pursue future investment opportunities. By analyzing firm-level financial data, this study seeks to determine whether leverage primarily facilitates investment by providing additional financial resources or constrains it by increasing financial vulnerability. Such an examination is essential for understanding how firms can achieve an optimal balance between growth and financial stability.

The motivation for this study is both academic and practical. From an academic perspective, it contributes to the literature on corporate finance by offering empirical evidence from an emerging economy context, where financial markets, institutional frameworks, and financing constraints differ significantly from those in developed economies. Existing studies have largely focused on developed markets, leaving a need for research that reflects the unique financial environment of developing countries like India. From a practical perspective, the study provides valuable insights for corporate managers, investors, and policymakers. Managers can use the findings to design effective capital structure strategies that support sustainable investment decisions. Investors can better assess the risk-return trade-offs associated with highly leveraged firms, while policymakers can develop financial policies that promote industrial growth without compromising financial stability.

The relevance of this study is further enhanced by the evolving economic landscape in India, characterized by rapid infrastructure development, increased industrial demand, and integration into global markets. In such an environment, steel companies must continuously invest to maintain competitiveness while managing financial risks associated with high leverage levels. Understanding how leverage influences investment behaviour is therefore crucial for ensuring the long-term sustainability of firms in this sector. Additionally, the study highlights the importance of firm-specific financial characteristics such as profitability, liquidity, asset tangibility, and growth opportunities in shaping investment decisions. By examining these factors alongside leverage, the research provides a comprehensive understanding of the determinants of corporate investment behaviour in a capital-intensive industry. Ultimately, this study contributes to both theoretical and practical knowledge by demonstrating how optimal leverage management can support sustainable investment growth and financial stability among Indian steel companies.

II. LITERATURE REVIEW

Investment behaviour has long been a central theme in corporate finance research, as it reflects how firms allocate resources to sustain growth, improve productivity, and enhance shareholder value. A substantial body of empirical and theoretical literature has examined the determinants of investment decisions, particularly focusing on profitability, firm size, operational efficiency, liquidity, and capital structure.

One of the earliest theoretical foundations of corporate investment behaviour is rooted in the neoclassical theory of investment, which suggests that firms invest

to maximize profits by equating marginal returns with the cost of capital (Jorgenson, 1963). According to this framework, investment decisions are primarily influenced by expected profitability and capital productivity. Later developments incorporated financial constraints into the investment function, highlighting the role of internal funds and capital market imperfections (Fazzari et al., 1988). These studies established that firms with higher profitability and stronger financial positions tend to invest more due to easier access to internal financing.

Profitability has consistently been identified as a major determinant of corporate investment. Studies by Lang et al. (1996) and Aivazian et al. (2005) found a positive relationship between firm performance indicators and investment levels. Higher profitability enhances retained earnings, reducing dependence on external financing and encouraging capital expansion. Similarly, Carpenter and Guariglia (2008) emphasized that firms with strong earnings are better positioned to undertake long-term investment projects.

Firm size also plays an important role in shaping investment behaviour. Larger firms typically possess better access to financial markets and enjoy economies of scale, which can facilitate investment activities (Beck et al., 2006). However, some studies suggest a negative relationship between size and investment growth, arguing that mature firms often experience fewer expansion opportunities compared to smaller firms with higher growth potential (Chen & Chen, 2011). This indicates that the impact of firm size may vary depending on industry characteristics and market conditions.

Operational efficiency, commonly measured through asset turnover ratios, is another key determinant of investment. Efficient utilization of resources enhances revenue generation and improves cash flow, thereby enabling firms to reinvest in productive assets. Studies by Titman et al. (2004) and Margaritis and Psillaki (2010) demonstrated that firms with higher efficiency levels tend to exhibit stronger investment performance. These findings highlight the importance of effective asset management in sustaining long-term growth.

Growth opportunities have also been widely recognized as a significant driver of investment decisions. Firms with strong future prospects are more likely to invest in capital expansion to capture potential market opportunities (Myers, 1977). Empirical studies by Billett et al. (2007) and McConnell and Servaes (1995) confirmed that firms with higher market valuation indicators, reflecting growth expectations, tend to allocate more resources toward investment.

Liquidity is another factor frequently examined in investment literature. The availability of liquid assets allows firms to finance investment projects without relying heavily on external borrowing. Studies by Almeida et al. (2004) and Denis and Sibilkov (2010) found that liquidity positively influences investment, particularly in financially constrained firms. However, some research suggests that excessive liquidity may lead to inefficient resource allocation and reduce investment efficiency (Jensen, 1986).

Capital structure, especially financial leverage, has a complex relationship with investment decisions. According to the trade-off theory, moderate levels of debt can encourage investment by providing tax benefits and disciplining managerial behaviour (Modigliani & Miller, 1963). However, excessive leverage increases financial risk and may discourage investment due to higher debt servicing obligations. Empirical evidence from Aivazian et al. (2005) and Lang et al. (1996) indicates a negative relationship between leverage and investment, particularly for firms facing financial distress.

In recent years, panel data techniques have become increasingly popular in investment research because they allow simultaneous analysis of cross-sectional and time-series variations. Studies using panel cointegration methods, such as those by Love and Zicchino (2006) and Bond et al. (2003), have provided robust evidence of long-run relationships between investment and financial determinants. These approaches help address issues such as endogeneity, heterogeneity, and dynamic interactions among variables.

Furthermore, the application of advanced econometric techniques like Fully Modified Ordinary Least Squares (FMOLS) has improved the accuracy of long-run estimation. Research by Pedroni (2000) and Kao (1999) demonstrated that FMOLS provides consistent and unbiased estimates in the presence of cointegration, making it suitable for analyzing long-term financial relationships.

Recent empirical research continues to expand our understanding of the factors that shape firm-level investment behaviour, using advanced panel data

methods and broader contextual variables. Panel data analysis remains the predominant approach in investment literature, as it accounts for cross-section and time-series variations in firm characteristics, helping control for unobserved heterogeneity and endogeneity problems (Sahoo & Bishnoi, 2023). A 2025 study focusing on non-financial firms listed on the Dhaka Stock Exchange highlights operating efficiency and financial leverage as significant determinants of capital expenditure decisions. The authors find that firms with higher asset turnover allocate more towards investment in long-term assets, whereas financial leverage exerts a negative effect, constraining investment due to higher risk and debt servicing obligations (Ahmed & Akhter, 2025). This aligns with long-standing empirical findings that efficient utilization of resources facilitates internal financing and lowers reliance on external funding for investment. Complementing this, Thi (2023) investigates the influence of leverage on investment decisions in the Vietnamese context, confirming that higher leverage is generally associated with reduced investment activity. This negative relationship reflects a common theme in the literature: when debt levels rise, firms face financial constraints that hamper capital projects, especially in the absence of adequate internal funds. Similar dynamic panel evidence from Nigerian listed firms shows that financial leverage negatively relates to investment, supporting agency theory views that excessive debt increases underinvestment risk by amplifying financial distress concerns (Uche-Udah et al., 2024).

The literature consistently highlights profitability, efficiency, growth opportunities, liquidity, and leverage as key determinants of corporate investment. While most studies confirm the positive role of profitability and efficiency, there is mixed evidence regarding the effects of firm size and liquidity. The negative influence of excessive leverage, however, remains widely supported across empirical findings.

Despite extensive research, gaps still exist in understanding investment behaviour within specific institutional and industry contexts. Panel-based empirical studies focusing on firm-level financial indicators continue to provide valuable insights into how internal financial conditions shape long-term investment decisions.

III. DATA AND METHODOLOGY

3.1 Data sources and sample selection

The present study is based on secondary data collected from reliable and publicly available financial sources. The required firm-level financial data were obtained primarily from annual reports, company financial statements, and recognized financial databases. The sample consists of 10 selected firms observed over a period from 2014 to 2024, forming a balanced panel dataset. The time span was chosen to ensure adequate coverage of different economic conditions and to capture long-term investment behaviour. The selection of firms was guided by the availability and consistency of financial information across the study period. Only those firms with complete data for all relevant variables were included in the final sample to maintain uniformity and reliability in panel estimation. This approach helps minimize missing data issues and enhances the robustness of the empirical results.

3.2 Variables used

Investment is considered the dependent variable, representing firms' capital allocation decisions over time. The independent variables were selected based on financial theory and prior empirical literature relating to investment behaviour. Return on Capital Employed (ROCE) was used as a measure of profitability and operational efficiency. Firm Size (FS) was included to capture the scale of business operations and its potential influence on investment capacity. Asset Turnover (AT) represents the efficiency with which firms utilize their assets to generate revenue. Growth Opportunity (GO) was used to reflect future expansion prospects. The Current Ratio (CR) served as an indicator of liquidity position, while the Debt-Equity Ratio (DER) was used to measure financial leverage and capital structure. All variables were computed using standard financial formulas to ensure consistency and comparability across firms.

3.3 Econometric methodology

The study employs panel data analysis techniques to examine the long-run relationship between investment and its determinants. Panel data methods were chosen because they allow simultaneous consideration of cross-sectional and time-series variations, thereby improving estimation efficiency and reducing potential bias. The analysis began with panel unit root

tests to determine the stationarity properties of the variables. The Levin–Lin–Chu (LLC) test and the Im–Pesaran–Shin (IPS) test were applied, as these are widely used first-generation panel unit root tests. These tests help identify whether the variables contain unit roots and ensure that the regression results are not spurious.

After confirming the order of integration, panel cointegration tests were conducted to examine the existence of a long-run equilibrium relationship among the variables. The Pedroni residual cointegration test was used because it allows for heterogeneity across cross-sectional units and provides both within-dimension and between-dimension statistics. In addition, the Kao residual cointegration test was applied as a confirmatory approach under the assumption of homogeneous cointegrating relationships.

Once cointegration was established, the long-run relationships were estimated using the Fully Modified Ordinary Least Squares (FMOLS) method. FMOLS is particularly suitable for panel cointegration analysis because it corrects for serial correlation and endogeneity issues that commonly arise in long-run estimations. This method produces unbiased and consistent parameter estimates, making it appropriate for examining long-term financial relationships.

The empirical model was constructed by expressing investment as a function of profitability, firm size, operational efficiency, growth prospects, liquidity, and financial leverage. The panel regression framework enables identification of both the direction and magnitude of the long-run effects of these variables on investment. The combination of panel unit root testing, cointegration analysis and FMOLS estimation provides a comprehensive and reliable methodological framework for examining long-term investment dynamics. This approach ensures statistical validity while capturing the complex interactions between financial performance indicators and investment behaviour.

IV. EMPIRICAL RESULTS AND ANALYSIS

Table – 1: Panel Unit Root Test Results

	At the Level			At First Difference		
Variable	LLC	IPS	Conclusion	LLC	IPS	Conclusion
INV	-5.82***	-4.93***	Stationary	-9.44***	-8.37***	Stationary
FS	-2.76***	-3.21***	Stationary	-6.88***	-7.02***	Stationary
AT	-6.14***	-5.32***	Stationary	-10.33***	-9.11***	Stationary
GO	-4.63***	-3.98***	Stationary	-8.51***	-7.64***	Stationary
NPM	-1.02	-0.89	Non-stationary	-9.21***	-7.43***	Stationary
ROCE	-2.18**	-2.56**	Stationary	-7.86***	-6.72***	Stationary
ROA	-2.33**	-2.71**	Stationary	-8.14***	-6.95***	Stationary
CR	-0.91	-0.72	Non-stationary	-8.33***	-6.85***	Stationary
DER	-1.45	-1.22	Non-stationary	-7.62***	-5.98***	Stationary

*** Significant at 1%. ** Significant at 5%.

Table 1 presents the results of the panel unit root tests conducted to examine the stationarity properties of the variables used in the study. Stationarity testing is a fundamental prerequisite in panel data analysis because non-stationary variables may produce misleading or spurious regression results. To ensure reliability, two widely accepted panel unit root tests, namely the Levin–Lin–Chu (LLC) test and the Im–Pesaran–Shin (IPS) test were applied. These tests were performed both at the level form and at the first difference to determine the order of integration of each variable. At the level form, the results indicate mixed stationarity behaviour among the variables. The investment ratio (INV) shows strong stationarity as both the LLC and IPS statistics are highly significant at the 1 percent level. This suggests that investment behaviour across firms does not exhibit persistent stochastic trends and remains stable over time. Similarly, firm size (FS), asset tangibility (AT), and growth opportunity (GO) are also stationary at the level form. The statistical significance of these variables implies that their fluctuations are temporary

and tend to revert to a long-run mean. Profitability indicators present slightly varied outcomes. Return on capital employed (ROCE) and return on assets (ROA) are stationary at the 5 percent level, indicating moderate stability in profitability measures. Although their test statistics are not as strong as some other variables, they still reject the null hypothesis of a unit root, confirming that these indicators do not follow a random walk pattern. In contrast, net profit margin (NPM), current ratio (CR), and debt-equity ratio (DER) are found to be non-stationary at the level form. The LLC and IPS statistics for these variables are statistically insignificant, suggesting the presence of unit roots. This indicates that these variables are influenced by persistent shocks, meaning their movements over time are not mean-reverting. Such behaviour is common in financial ratios related to liquidity and leverage because these measures are often affected by long-term structural changes within firms. To address the issue of non-stationarity, the tests were repeated at the first difference. The results show a clear and consistent pattern: all variables become stationary after first differencing. Both the LLC and IPS statistics for every variable are highly significant at the 1 percent level, confirming the rejection of the null hypothesis of unit roots. This indicates that the non-stationary variables at the level form are integrated of order one, meaning their stochastic trends are removed after differencing. The transformation to first difference effectively stabilizes the mean and variance of these variables over time, ensuring that they are suitable for panel regression analysis. The presence of stationarity at first difference also suggests that long-run equilibrium relationships among the variables may exist, which justifies the application of panel cointegration techniques in subsequent analysis. Table 2 presents the results of the Pedroni residual cointegration test, which is applied to examine the existence of a long-run equilibrium relationship among the panel variables included in the study. The Pedroni test is particularly appropriate in panel data analysis because it allows for heterogeneity in both the intercepts and slope coefficients across cross-sectional units.

Table – 2: Pedroni Residual Cointegration Test Results

Within Dimension			Between Dimension		
Statistic	Value	Prob	Statistic	Value	Prob
Panel rho-Statistic	-2.68	0.00	Group rho-Statistic	-2.17	0.01
Panel PP-Statistic	-4.51	0.00	Group PP-Statistic	-5.33	0.00
Panel ADF-Statistic	-3.92	0.00	Group ADF-Statistic	-4.62	0.00

The test provides two sets of statistics: within-dimension (panel statistics) and between-dimension (group statistics), each of which offers complementary evidence regarding cointegration. The within-dimension results include the Panel rho-Statistic, Panel PP-Statistic, and Panel ADF-Statistic. These statistics pool the autoregressive coefficients across cross-sections for the unit root tests on the estimated residuals. The Panel rho-Statistic has a value of –2.68, which is statistically significant at the 1 percent level. The negative and significant value indicates rejection of the null hypothesis of no cointegration. Similarly, the Panel PP-Statistic and Panel ADF-Statistic are both highly significant. These results provide strong evidence that the residuals are stationary, confirming the presence of a long-run relationship among the variables in the panel framework. The between-dimension statistics, Group rho-Statistic, Group PP-Statistic, and Group ADF-Statistic allow for heterogeneity in the autoregressive coefficients across cross-sectional units. These statistics test whether cointegration exists when individual cross-sectional dynamics are considered separately. The Group rho-Statistic is –2.17 with a probability value of 0.01, which is significant at the 5 percent level. This indicates rejection of the null hypothesis of no cointegration at the group level. Furthermore, the Group PP-Statistic and Group ADF-Statistic are highly significant at the 1 percent level, reinforcing the evidence of cointegration across individual panel units. The consistency of significance across all group statistics confirms that the long-run equilibrium relationship is not driven by only a few cross-sections but is broadly present across the panel dataset. Taken together, both within-dimension and between-dimension results provide strong and consistent

evidence against the null hypothesis of no cointegration. The statistical significance of all Pedroni test statistics indicates that the variables included in the model are cointegrated, implying the existence of a stable long-run equilibrium relationship among them despite short-run fluctuations. This finding is crucial for the study because it validates the use of long-run estimation techniques. It also suggests that any short-term deviations from equilibrium among the variables are temporary and will adjust back to the long-run path over time.

Table – 3: Kao Residual Cointegration Test Results

Test Statistic	Value
ADF Statistic	-4.87
Probability	0.00

Table 3 reports the results of the Kao residual cointegration test, which is employed to examine the presence of a long-run equilibrium relationship among the panel variables used in the study. The Kao test is a widely applied residual-based panel cointegration technique that is conceptually similar to the Engle–Granger two-step method but adapted for panel data structures. Unlike the Pedroni test, the Kao approach assumes homogeneity in the cointegrating relationship across cross-sectional units, making it particularly useful as a confirmatory test of long-run association. The key statistic reported in the table is the Augmented Dickey–Fuller (ADF) test statistic, which is calculated based on the residuals obtained from the estimated panel regression. The ADF statistic has a value of –4.87, with a significant probability value. The null hypothesis of the Kao test states that there is no cointegration among the variables, implying that the residuals contain a unit root and are therefore non-stationary. The alternative hypothesis suggests that the residuals are stationary, indicating the existence of a long-run equilibrium relationship among the variables. In this case, the ADF statistic is negative and highly significant at the 1 percent level, as indicated by the significant probability value. This strong level of statistical significance leads to the rejection of the null hypothesis of no cointegration. The stationarity of the residuals confirms that the variables included in the model move together over time and maintain a stable long-run relationship despite short-term fluctuations. From an economic perspective, this result implies that although the individual variables may exhibit short-run volatility, they are bound by a long-term equilibrium mechanism. Any temporary deviations from this equilibrium path are likely to be corrected over time through an adjustment process. This finding strengthens the reliability of the panel model and suggests that the relationships among the variables are not spurious. Moreover, the Kao test results complement the earlier Pedroni cointegration findings. While Pedroni allows for heterogeneity across panel units, the Kao test provides additional confirmation under the assumption of a common long-run structure. The consistency between these two tests enhances the robustness of the overall conclusion regarding long-run association.

Table – 4: Panel FMOLS Long-Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob
ROCE	0.0046	0.0017	2.71	0.008
FS	-0.032	0.010	-3.18	0.002
AT	0.118	0.029	4.07	0.000
GO	0.071	0.033	2.13	0.035
CR	0.002	0.004	0.52	0.603
DER	-0.046	0.014	-3.29	0.001
$R^2 = 0.72$	Adjusted $R^2 = 0.69$		Long-run variance = 0.003	

Table 4 presents the long-run estimation results obtained from the Panel Fully Modified Ordinary Least Squares (FMOLS) technique. The FMOLS method is widely used in panel cointegration analysis because it corrects for both serial correlation and endogeneity problems that commonly arise in long-run relationships. Since prior tests confirmed the existence of cointegration among the variables, the FMOLS estimates provide reliable and consistent long-term coefficient values. The dependent variable in the model is investment (INV), while ROCE, firm size (FS), asset turnover (AT), growth opportunity (GO),

current ratio (CR), and debt-equity ratio (DER) are treated as explanatory variables.

The coefficient of ROCE is positive and statistically significant at the 1 percent level. This indicates that an increase in return on capital employed leads to a rise in investment in the long run. The positive relationship suggests that firms with higher profitability are more capable of generating internal funds and are therefore more willing to expand their investment activities. It reflects the importance of operational efficiency in sustaining long-term investment growth. Firm size shows a negative and significant coefficient at the 1 percent level. This implies that larger firms tend to experience lower incremental investment growth compared to smaller firms. One possible explanation is that large firms may already operate near optimal capacity and therefore have fewer expansion opportunities. It may also indicate that larger firms adopt more conservative investment strategies due to bureaucratic decision-making and risk considerations. Asset turnover exhibits a positive and highly significant coefficient at the 1 percent level. This suggests that efficient utilization of assets strongly enhances investment in the long run. Firms that generate higher sales relative to their asset base are likely to reinvest their earnings to maintain or expand operational capacity. This finding highlights the role of operational efficiency in driving sustainable investment behaviour. The coefficient of growth opportunity is positive and statistically significant at the 5 percent level. This indicates that firms with higher growth prospects tend to increase their investment levels over time. Growth opportunities signal potential future profitability, encouraging firms to allocate more resources toward expansion and capital formation. The current ratio shows a positive but statistically insignificant coefficient with a high probability value. This suggests that liquidity does not have a meaningful long-run impact on investment in the sample firms. While adequate liquidity is necessary for short-term financial stability, it may not significantly influence long-term investment decisions once other financial and operational factors are considered. The debt-equity ratio has a negative and highly significant coefficient at the 1 percent level. This implies that higher financial leverage reduces investment in the long run. Excessive debt obligations increase financial risk and interest burdens, which can restrict firms' ability to undertake new investment projects. This result aligns with financial theory suggesting that higher leverage can crowd out productive investment. The model demonstrates strong explanatory power, with an R^2 value of 0.72 and an adjusted R^2 of 0.69. This indicates that approximately 72 percent of the variation in investment is explained by the included explanatory variables. The relatively small long-run variance value (0.003) further suggests that the estimated long-run relationships are stable and reliable.

The FMOLS results clearly indicate that investment is significantly influenced by profitability, operational efficiency, growth prospects, firm size, and capital structure in the long run. Profitability, asset efficiency, and growth opportunities stimulate investment, whereas large firm size and high financial leverage tend to restrain it. Liquidity, however, does not appear to play a significant role in long-term investment decisions.

V. CONCLUSION

The empirical analysis provides strong evidence of a stable long-run relationship between investment and selected firm-specific financial variables. The panel unit root tests confirm that all variables are either stationary at level or become stationary after first differencing, indicating that the dataset is suitable for long-run panel analysis and free from spurious regression issues. Both Pedroni and Kao cointegration tests consistently reject the null hypothesis of no cointegration, confirming that investment and its determinants share a long-term equilibrium relationship. This implies that although short-term fluctuations may occur, the variables tend to move together over time and adjust toward a stable path. The FMOLS long-run estimation results reveal that profitability, efficiency, and growth opportunities positively and significantly influence investment. Return on Capital Employed and Asset Turnover show strong positive effects, indicating that firms with better operational performance and efficient resource utilization tend to invest more. Growth opportunity also positively affects investment, suggesting that firms respond to favourable market prospects by expanding their capital base. Conversely, firm size and financial leverage exhibit significant negative effects on investment. The negative impact of firm size suggests that larger firms may face limited expansion

opportunities or adopt conservative investment policies. The debt-equity ratio also negatively influences investment, indicating that excessive dependence on debt restricts firms' capacity to undertake new investment due to higher financial risk and repayment obligations. Liquidity, measured by the current ratio, does not show a significant long-run effect, implying that short-term financial strength alone does not drive long-term investment decisions.

The findings suggest that firms should focus on improving profitability and operational efficiency to enhance investment capacity. Efficient utilization of assets and better performance management can generate internal funds necessary for sustained investment growth. Maintaining an optimal capital structure is also crucial. Policymakers and financial managers should encourage balanced financing strategies by reducing excessive reliance on debt and promoting access to equity financing. This would help lower financial risk and support long-term investment expansion. Furthermore, creating a supportive business environment that fosters growth opportunities is essential. Policies that encourage innovation, improve infrastructure, and reduce regulatory constraints can stimulate investment by enhancing firms' future prospects.

The study confirms that investment decisions are primarily influenced by profitability, efficiency, growth potential, and capital structure rather than liquidity conditions. The presence of a strong long-run equilibrium relationship highlights the importance of sound financial and operational management in sustaining investment growth. These findings provide valuable insights for corporate decision-makers and policymakers aiming to promote long-term financial stability and economic development.

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