



Investment, Internal Finance and ESG Practices: Does Firm Size Matter?

Dr. Sakti Ranjan Dash, Dr. Maheswar Sethi

P.G. Department of Commerce, Berhampur University, Odisha-760007, India

Received: 25.06.2025 / Accepted: 11.07.2025 / Published: 15.07.2025

*Corresponding Author: Dr. Sakti Ranjan Dash

DOI: [10.5281/zenodo.15905881](https://doi.org/10.5281/zenodo.15905881)

Abstract

This study seeks to explore how ESG practices moderate the dependency of investment on a firm's internal financing i.e. cash flow, popularly termed as investment-cash flow sensitivity. Applying panel OLS (Ordinary Least Squares) regression on a dataset comprising 222 firms categorized into big and small, spanning from 2012 to 2022, the results reveal that small firms exhibit higher investment-cash flow sensitivity than their larger counterparts. This suggests that small firms encounter greater financial constraints and market friction when seeking external funding. Moreover, integrating ESG practices into operations leads to a reduction in investment-cash flow sensitivity for both large and small firms. Notably, the moderating effect of ESG is more pronounced in small firms than in large ones.

Keywords: ESG Practices, Investment-Cash Flow Sensitivity, Internal Financing, Financial Constraints, Panel OLS Regression, Firm Size, Market Friction, Small Firms, Large Firms.

Original Research Article

Citation: Dash, S. R., & Sethi, M. (2025). Investment, internal finance and ESG practices: Does firm size matter? *ISA Journal of Business, Economics and Management (ISAJBEM)*, 2(4), 357-362, July–August.

INTRODUCTION:

Investment plays a fundamental role in driving a firm's long-term growth and stability by generating future cash inflows, scaling up operations, improving production capacity, and reinforcing financial strength (Dash & Swain, 2020). However, making investment decisions is inherently complex due to the substantial capital requirement, their largely irreversible nature, and their significant implications for the firm's profitability and future trajectory (Dash et al., 2023; Sun et al., 2022). Firms typically finance these investments through internal resources such as operational cash flows or external sources, including debt and equity financing.

In real-world capital markets, the cost and accessibility of these funding sources are not uniform. Market imperfections such as information asymmetry, agency issues, taxation, and transaction costs create disparities between internal and external financing. The pecking order theory (Myers & Majluf, 1984), agency theory (Jensen, 1986), and static trade-off theory

(Myers, 1977) provide theoretical explanations for these disparities, suggesting that managers often prefer internal funds due to lower associated costs and fewer frictions (Gupta, 2022).

This uneven cost structure in the presence of imperfect markets establishes what's called investment-cash flow sensitivity (ICFS), it is the extent to which firms' investment decisions depend on internally generated cash flows (Sun et al., 2022). Greater market frictions tend to align with greater ICFS, because firms have limited access to external money. Reducing these frictions is hence strategically significant for firms interested in more financial freedom and flexibility.

Here, Environmental, Social, and Governance (ESG) practices have assumed critical functions in enhancing corporate sustainability and correcting market inefficiencies. Good ESG practice has the capacity to instil stakeholder confidence, reduce perceived risk, and enhance access to capital (Anri & Utama, 2024). Taking on ESG in business strategy, however, has some costs and trade-offs associated with it. Businesses are

increasingly being called upon to align the environment and societal responsibility more closely with financial performance. Investors now demand a more diversified conception of value, a conception incorporating not just profits, but the company's ESG footprint.

Indian regulating bodies, such as the Securities and Exchange Board of India (SEBI) and the Ministry of Corporate Affairs, have introduced various mandates to promote corporate accountability and governance. Observance of the guidelines helps firms to secure the trust of stakeholders and achieve long-term, sustainable capital (Jain, 2024). Attig et al. (2014) established in one research study that socially responsible practices strengthen relationships with key stakeholders- who range from customers to employees, to the company's suppliers, to regulators and improve financial results along with cost of capital. Effective ESG engagement could hence lower the reliance of the company's investment on internal sources of finance.

Despite the growing recognition of the contribution of ESG in improving company performance, limited empirical evidence has been established regarding the relationship between ESG performance and investment-cash flow sensitivity. The paper closes the gap by investigating how ESG affects ICFS, particularly in firms of different sizes. Comparative methodology has been implemented to identify whether the small and large firms differ in the way ESG affects the internal financing dependence for the purpose of investing, therefore creating a new addition to the body of knowledge.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT:

The concept of investment-cash flow sensitivity is the extent to which the firm's investment reacts to its internally generated sources of cash flow has been first identified by Fazzari et al. (1988), generating widespread academic interest in the discovery of the underlying determinants of the phenomenon. Among the newly discovered influential determinants, Environmental, Social, and Governance practices have been of strong academic interest because of the role they play in moderating the said sensitivity.

Waddock and Graves (1997) claim corporate participation in environmental and societal activities contributes to strengthening relationships with the most valued stakeholders and diminishing the perception of risk associated with firms. The statement aligns with the philosophy of the "good management theory." Likewise, the notion of ESG activities being critical in attracting and maintaining high-quality employees and customers is the idea advanced by Turban and Greening (1997). The practices result in the development of desirable intangible assets—in the form of greater brand preference and worker job satisfaction, for example—in turn driving the competitive position and financial performance of a company (Legnick-Hall & A., 1996; Attig et al., 2014). Further

empirical evidence supports the notion that socially responsible behaviour can widen a firm's investor base and lower perceived risk, especially by decreasing the chances of regulatory or legal repercussions (El et al., 2011). The collective findings from prior studies suggest that ESG contributes positively to competitiveness and effective risk mitigation.

This study argues that ESG initiatives can help address market imperfections by narrowing the gap between internal and external financing. This influence is likely to operate through two principal mechanisms. First, because ESG investments are typically long-term in nature (Johnson & Greening, 1999), they strengthen stakeholder relations, reduce informational asymmetries, improve resource allocation, and lower uncertainty surrounding firm operations. Second, effective ESG performance is associated with reduced borrowing costs (Attig et al., 2014), lower risk of unforeseen liabilities (Waddock & Graves, 1997), and robust systems for transparency, grievance redressal, and governance.

Attig et al. (2014) further emphasize that ESG practices not only enhance a firm's reputation but also help reduce agency costs. Media coverage and analyst attention tend to be higher for firms actively engaged in corporate social responsibility, which increases the demand for financial transparency (Hong & Kacperczyk, 2009). Consequently, investors with ESG preferences often favor firms with strong ESG credentials while disregarding those with poor ESG performance. This trend pushes high ESG-performing firms to disclose more comprehensive and reliable.

H1: There is a difference in investment-cash flow sensitivity between big & small-sized firms.

RESEARCH METHODOLOGY:

Data and Sample

This study utilizes a panel dataset covering an eleven-year period from 2012 to 2022. Firm-level information was sourced primarily from the Prowess database maintained by the Centre for Monitoring Indian Economy (CMIE) and supplemented with ESG-related data retrieved from Bloomberg. The focus is exclusively on publicly listed manufacturing companies, as these entities are mandated to comply with SEBI's standardized financial disclosure requirements, ensuring consistency and comparability across firms.

Companies operating in the banking, financial services, and insurance (BFSI) sectors were intentionally excluded due to their distinct financial structures and regulatory frameworks, which differ significantly from those of manufacturing firms. Additionally, observations with incomplete or missing data were removed to maintain the robustness of the analysis.

After applying these selection criteria, the final dataset comprises 2,442 firm-year observations, representing 222 manufacturing firms. To mitigate the influence of extreme values and potential data anomalies, all continuous variables were winsorized at the 1st and 99th percentiles.

Table 1: Variables used in the study		
‘Investment’	I/K	‘Net investment in fixed asset (I) (It - It-1), divided by total assets at the beginning of the period (K)’
‘Cash Flow’	CF/K	‘Profit after tax (PAT) adjusted for the effect of non-cash items divided by total assets at the beginning of the period (K)’
‘Environmental, Social and Governance’	‘ESG’	‘Combined score of firm’s ESG index’
‘Tobin’s Q’	‘Q’	“Market capitalization plus book value of total assets minus book value of equity whole divided by total assets”
‘Sales Growth’	‘SG’	‘(Current Year Sales / Previous Sales) - 1
‘Liquidity’	‘LIQ’	Liquid Asset/ Total Asset’
‘Leverage’	‘LEV’	‘Total debt/Total asset’
‘Firm Size’	‘FS’	‘Natural logarithm of Total assets’
‘Firm Age’	‘FA’	‘Number of years since incorporation
‘Profitability’	‘ROA’	(Profit after Tax/ Total asset) $\times 100$ ’
Source: Authors’ collection.		

Variables and Estimation Strategy

In line with the methodological framework adopted by Dash et al. (2023) and Gupta (2022), firm size is measured by taking the natural logarithm of total assets. Subsequently, the average size of each firm across the entire sample period is computed. Based on this average size, firms are classified into two categories: large and small. Firms with an average size equal to or exceeding the sample median are categorized as large-sized, while those below the median are considered small-sized.

Following established literature, the dependent variable in the analysis is investment, whereas cash flow serves as the key independent variable, representing internal financing capacity. Investment is operationalized as the year-over-year change in fixed assets, normalized by total assets. The role of ESG performance is examined as a moderating factor. To control for other potential influences, the model incorporates Tobin’s Q, sales growth, firm size, firm age, liquidity, and return on assets (ROA) as control variables, mitigating concerns related to omitted variable bias. The baseline regression models are estimated separately for large and small firms, as outlined below:

$$(I/K)_{it} = \beta_0 + \beta_1(CF/K)_{it} + \beta_2(CF/K)_{it} * ESG_{it} + \beta_3Q_{it} + \beta_4SG_{it} + \beta_5LIQ_{it} + \beta_6LEV_{it} + \beta_7FA_{it} + \beta_8ROA_{it} + \gamma_t + \phi_j + \varepsilon_{it}$$

An overview of all variables incorporated into the empirical models is provided in Table 1. To control for temporal and industry-level heterogeneity, the models also include a ‘time fixed effect (γ_t) and an industry-specific component (ϕ_j)’. Here, the subscript “i” denotes individual firms, “t” stands for time in years, “j” identifies industry classification, and ε captures the unexplained variation or error term.

RESULTS AND DISCUSSION:

Figure 1 highlights how business organizations deal with ESG factors in India. ESG has moved into the spotlight in boardrooms and is now seen as a crucial element of long-term strategy¹, as opposed to the prior perception that it was primarily an issue of compliance and legislation. This transition has been accelerated by the onset of Business Responsibility Report by SEBI, Companies Act 2013 and National Guideline on Responsible Business Conduct, 2018 by MCA; GOI, Sustainable Development Goals -2016 by United Nations, the pandemic, and growing consumer awareness of social responsibility and environmental effects. The implications of climate change, water shortages, air pollution, biodiversity loss, and waste production are now alarming the business firms regarding future uncertainties both from an economic & resources perspective. As a result, firms are sincerely working to improve their ESG footprint. Over the years, we have witnessed an increasing trend in ESG performance.

¹<https://planet.outlookindia.com>

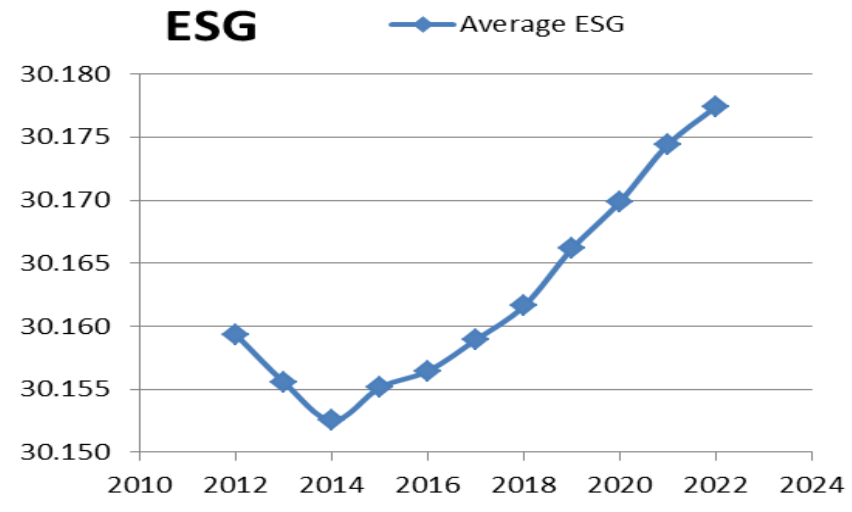


Fig. 1: ESG performance trend of listed Indian manufacturing firms
Source: Author's calculation

Correlation Matrix and Multi-collinearity Test

The correlation coefficient values ranges between '0.001 to 0.734 (<0.80) which indicate no collinearity, as

recommended by Gujarati, (2004). Further, the highest VIF is 2.839 (<10), indicating the absence of a multi-collinearity problem as suggested by Chatterjee & Hadi (1977) and O'Brien (2007)'.

Table 2: Correlation Matrix and Variation Inflation Factors(VIFs) Report

	I/K	CF/K	'Q'	'SG'	'LIQ'	'LEV'	'FS'	'FA'	'ROA'	VIFs
I/K	1									
CF/K	0.087	1								2.226
'Q'	0.007	0.481	1							1.603
'SG'	0.186	0.091	0.011	1						1.034
'LIQ'	-0.12	0.155	0.141	-0.018	1					1.164
'LEV'	-0.064	-0.397	-0.287	0	-0.086	1				1.386
'FS'	0.06	-0.091	-0.017	0.025	-0.311	0.111	1			1.545
'FA'	-0.004	0.039	0.106	-0.024	-0.062	-0.097	0.083	1		1.037
'ROA'	0.048	0.734	0.577	0.101	0.212	-0.484	-0.065	0.042	1	2.839

Source: Author's calculation

Regression Results

Table 3 highlights the OLS regression results of Model-I and Model-II that examine the investment-cash flow sensitivity and moderating impact of ESG for big & small size listed manufacturing firms respectively. The results highlight that small firms have more investment-cash flow sensitivity

than big-size firms. It is evident that small firms are financially constrained and face more friction in the market for external funds. Further, the inclusion of ESG by the firm demonstrates a reduction of investment-cash flow sensitivity for both big and small-size firms. Further, the moderating impact of ESG is more pronounced in small firms than big firms.

Table 3: Regression results measuring the impact of ESG on ICFS

Variables	Model-I: Big Size Firm		Model-II: Small Size Firm	
	Coefficient	p-value	Coefficient	p-value
‘Cash Flow’	0.054	0.417	0.231***	0.000
‘Cash Flow X ESG’	0.004**	0.015	-0.006***	0.000
‘Tobin’s Q’	-0.002	0.284	0.001	0.701
‘Sales Growth’	0.080***	0.000	0.028***	0.000
‘Liquidity’	-0.094***	0.000	-0.062***	0.000
‘Leverage’	-0.019	0.208	-0.035***	0.000
‘Firm Age’	0.001	0.784	-0.001	0.945
‘ROA’	-0.001	0.135	-0.001	0.757
‘Intercept’	0.021	0.325	0.043	0.233
‘Time Effect’	Yes		Yes	
‘Industry Effect’	Yes		Yes	
r ²	0.156		0.069	
Adjusted r ²	0.136		0.046	
P value (F)	0.000		0.000	

Source: Author’s calculation

CONCLUSION AND IMPLICATIONS

This research explores how Environmental, Social, and Governance (ESG) performance influences the Investment-Cash Flow Sensitivity (ICFS) among Indian manufacturing firms, distinguishing between larger and smaller entities. The findings reveal that strong ESG practices play a significant role in lowering market frictions and reducing a firm’s reliance on internal financing for investment.

The Implications of this Study Span across Multiple Stakeholders:

- **For project managers**, the insights can support more informed strategic decision-making, encouraging a focus on sustainability practices that may reduce financial constraints and promote long-term growth.
- **Investors** may view high ESG-performing firms as less risky and better positioned for sustainable returns, which could inform portfolio choices and enhance investment decisions.
- **Policymakers and regulators** can draw upon these findings to craft targeted reforms that promote ESG adoption—such as improved access to credit, reduced regulatory barriers, or incentivized green financing—to stimulate economic development and financial inclusion.
- **Lenders and financial institutions** may use ESG indicators as part of their credit assessment tools, considering such firms to be more reliable and resilient in financial terms.

- **Academic institutions** can utilize the study's conclusions to enrich business and finance education, highlighting the real-world value of sustainability performance.
- **Corporate boards** that champion ESG values reinforce their credibility and strengthen stakeholder confidence, enhancing the firm’s reputation and long-term value creation.

REFERENCES

- Anri, N., & Utama, C. A. (2024). ESG Performance on Investment-Cash Flow Sensitivity : Case Study of Non-Financial Companies Listed on the Indonesian Stock Exchange. *Quantitative Economics and Management Studies*, 5(1). <https://doi.org/https://doi.org/10.35877/454RI.qems2323>
- Attig, N., El Ghoul, S., Guedhami, O., & Suh, J. (2011). *Corporate social responsibility and credit ratings*.
- Attig, Najah, Cleary, S. W., & El, S. (2014). Corporate Legitimacy and Investment–Cash Flow Sensitivity. *J Bus Ethics*, 121, 297–314. <https://doi.org/10.1007/s10551-013-1693-3>
- Chatterjee, S., & Hadi, A. S. (1977). *Regression Analysis by Example* (5th ed.). John Wiley & Sons Inc. <https://books.google.co.in/books>
- Dash, S.R., & Swain, R. . (2020). *Determinants of Corporate Financial Performance (An Indian Perspective)*. LAP Lambert Academic Publishing, Mauritius.

- Dash, Sakti Ranjan, Sethi, M., & Swain, R. K. (2023). Financial condition, working capital policy and profitability: evidence from Indian companies. *Journal of Indian Business Research*, 15(3), 318–355. <https://doi.org/10.1108/JIBR-12-2020-0378>
- Dhaliwal, D., Li, O. Z., Tsang, A. H., & Yang, Y. G. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *Accounting Review*, 86, 59–100.
- El Ghoul, S., Guedhami, O., Kwok, C. C., & Mishra, D. (2011). Does corporate social responsibility affect the cost of capital? *Journal of Banking & Finance*, 35, 2388–2406.
- Gujarati, D. (2004). *Basic econometrics* (4th ed.). The McGraw-Hill Companies.
- Gupta, G. (2022). CEO 's educational background , economic policy uncertainty and investment-cash flow sensitivity : evidence from India. *Applied Economics*, 54(5), 568–579. <https://doi.org/10.1080/00036846.2021.1967279>
- Gupta, G., & Mahakud, J. (2020). *The impact of macroeconomic condition on investment-cash flow sensitivity of Indian firms*. 9(1), 19–42. <https://doi.org/10.1108/SAJBS-06-2018-0073>
- Hong, H., & Kacperczyk, M. (2009). The price of sin: The effects of social norms on markets. *Journal of Financial Economics*, 93, 15–36.
- Jain, S. (2024). The Role of Finance and ESG Leaders in Indian Context. *The Chartered Accountant*, March, 1146–1150.
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, 76(2), 323–329.
- Kim, Y., Park, M. S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *Accounting Review*, 87, 761–796.
- Legnick-Hall, & A., C. (1996). Customer contributions to quality: A different view of the customer-oriented firm. *Academy of Management Review*, 21, 791–824.
- Myers, S.C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221.
- Myers, Stewart C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), 147–175. [https://doi.org/https://doi.org/10.1016/0304-405X\(77\)90015-0](https://doi.org/https://doi.org/10.1016/0304-405X(77)90015-0)
- O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality and Quantity*, 41(5), 673–690. <https://doi.org/10.1007/s11135-006-9018-6>
- S.Fazzari, , Hubbard, R.G., Peterson, B. C. (1988). Financing constraints and corporate investment. *Brookings Paper on Economic Activity*, 141–195.
- Sun, J., Zu, N., & Liu, Z. (2022). The Trends and Gaps in the sensitivity of Investment to Cash Flow: Evidence from China. *Sustainability*, 14.
- Turban, D. B., & Greening, D. W. (1997). Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal*, 40, 658–672.
- Waddock, S. A., & Graves, S. B. (1997). The corporate social performance–financial performance link. *Strategic Management Journal*, 18, 303–319.
- Waddock, S. A., & Graves, S. B. (1997). The corporate social performance–financial performance link. *Strategic Management Journal*, 18(4), 303–319. [https://doi.org/https://doi.org/10.1002/\(SICI\)1097-0266\(199704\)18:4<303::AID-SMJ869>3.0.CO;2-G](https://doi.org/https://doi.org/10.1002/(SICI)1097-0266(199704)18:4<303::AID-SMJ869>3.0.CO;2-G)