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Article

Nexus between Board independence, CEO Duality, Board's financial Knowledge, and Firm Performance. Evidence From Indian Firms

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Abstract: This paper examined how board independence, CEO duality, and board financial knowledge affect a firm's performance. For this study, we have used 39 firms from the Nifty 50 index over the period FY-2021 to FY2025 after excluding financial firms. After employing OLS, we found that board independence, CEO duality significantly affect the firm's performance, after controlling for firm-specific characteristics. We don't find any relationship between the Board's financial knowledge and firm performance. Overall, this study provides evidence that board structure and leadership characteristics play an important role in determining firm performance. This research is meant for the academician, corporates, researcher, and policymakers who can address issues related to the board characteristics like Board independence, CEO Duality and Board financial Knowledge.
Keywords: Board Independence, CEO Duality, Board's financial Knowledge, Firm performance

1. Introduction

Numerous academic studies emphasize that the establishment of strong, interwoven relationships among stakeholders characterized by trust and transparency among the members of a company's board is a cornerstone for fostering sustainable growth and progress within the organization. This notion is widely accepted in business discourse, underlining the importance of cohesive board dynamics in steering the entity towards long-term prosperity. Various studies assert that strong bonds, trust, and transparency in the relationships among the company's board members are essential traits for achieving long-term growth and development of the entity; however, in reality, board relationships are contingent, complex, and nonlinear, as per Agency theory. Carter et al. (2003) asserts that to revoke these contingent and conflicted relationships, the firm must have more independent directors than executive directors, as they can make independent decisions to restore stakeholders' faith in corporate governance.

CEO duality advocates for deep firm knowledge in both routine and strategic decision-making, bringing operational efficiency and reducing the risk of indecisiveness on the board or rapid, panic-driven decisions and strategic conflicts. CEO duality fosters market confidence and strong organisational stability among board members, protecting firm value during severe financial downturns and adverse market conditions.

As per Resource independence theory, financial knowledge of board is quintessential for board effectiveness and robust financial performance and market outcomes, it aids through valuable advisory service to management and those charged with governance viz capital structure optimisation, financial risk management, major investment decisions of M&A decisions, moreover Board's financial expertise is a valuable asset and resource provision mechanism which enable the strategic financial firm decision with value maximisation of the entity. There are a few pros and cons of this concept that overspecialisation may lead to excessive caution, and accounting experts generally assert on the use of ROA and ROE to judge operational efficacy and historical financial reporting, whereas most investment market experts are linked with the use of Tobin's Q for framing future-oriented M&A and financing strategies. Since there must be an optimum number of financially educated and experienced people on the board, this helps to maintain board consensus over financial affairs.

Although a lot of study is carried out on Board structure and its impact on financial performance, the inclusive study of independence, CEO Duality, and Boards' financial knowledge on firm performance is lacking in the Indian context, as we are still exploring the deep and holistic impacts of board characteristics on financial outcomes and performance.

2. Literature Review

2.1 Board Independence and Firm Performance

Board independence has been widely examined as a core mechanism for improving corporate oversight. Agency theory posits that independent directors enhance monitoring quality by reducing managerial opportunism and aligning managerial actions with shareholder interests. Empirical evidence, however, has produced mixed results.

Solarino and Boyd's (2022) meta-analysis reveals that board independence exhibits a positive but modest relationship with firm performance, suggesting that independence alone is insufficient to generate substantial value. This aligns with prior studies showing that while independent directors improve transparency and accountability, their effectiveness depends heavily on contextual factors such as legal enforcement, information asymmetry, and board competence (Dalton et al., 1998; Garcia-Martin & Herrero, 2018).

Importantly, the meta-analytic evidence suggests that in environments with weaker informal institutions, independent directors may lack the authority or informational access necessary to influence strategic decisions meaningfully (Solarino & Boyd, 2022). Thus, board independence functions more as a necessary but not sufficient condition for superior firm performance.

2.2 CEO Duality and Firm Performance

Pham and Pham (2020) add up about CEO duality—where the CEO also serves as board chair—represents one of the most debated governance mechanisms. Agency theorists argue that CEO duality undermines board independence and weakens monitoring, leading to poorer firm performance. In contrast, stewardship theory contends that leadership unity enhances strategic clarity and decision-making efficiency.

The meta-analytic findings of Solarino and Boyd (2022) support a contingency-based interpretation of CEO duality. Their results indicate that CEO duality does not exert a universally negative effect on firm performance; rather, its impact varies depending on institutional context and board composition. This explains why empirical studies have reported negative, positive, and insignificant effects across different settings.

Pham and Pham (2020) asserts that In daily corporate practice, this suggests that CEO duality may only be performance-enhancing when balanced by strong countervailing governance mechanisms, such as high board independence or specialized expertise. Absent such safeguards, duality tends to exacerbate agency problems, consistent with the broader governance literature.

3.3 Board Financial Knowledge and Firm Performance

While structural attributes like independence and leadership separation have dominated governance research, recent studies increasingly emphasize board human capital, particularly financial expertise. Board financial knowledge enhances directors' ability to interpret complex financial information, evaluate risk, and challenge managerial decisions effectively (Bhaskar et al., 2024).

Although Solarino and Boyd (2022) do not isolate board financial expertise as a standalone variable, their meta-analysis strongly supports the argument that board effectiveness is amplified when directors possess relevant cognitive and professional skills. This finding complements empirical studies demonstrating that boards with greater financial expertise are associated with higher ROA, improved earnings quality, and stronger risk management outcomes (Uyar et al., 2021; Abubakar et al., 2018).

From a resource-based view, board financial knowledge constitutes a strategic intangible asset that enables firms to deploy capital more efficiently and respond proactively to environmental uncertainty. Consequently, financial expertise emerges as a critical mechanism through which boards translate formal governance structures into tangible performance outcomes.

3. Synthesis and Research Gap

The existing literature has primarily focused on Board independence, board duality and the financial expertise of board members as separate factors influencing firm performance, yielding inconsistent and at times contradictory results, however it could not mitigate the oppressive governance practices in family controlled firms. Board independence generally advocates less riskier and positive monitoring board strategies What is not fully understood is how these board attributes interact together through the lens of board effectiveness. Specifically, earlier studies seldom regard board effectiveness as a mediating factor that clarifies how board duality and financial expertise impact performance results. Additionally, board effectiveness is frequently assessed through structural indicators instead of the quality of decision-making, which diminishes its explanatory strength.

Here we analyzed the tendency of relationship among board independence CEO duality and board financial expertise and firm performance significantly influence a firm's performance, even when controlling for specific characteristics. However, we did not find a connection between the Board's financial knowledge and firm performance. Overall, this study shows that board structure and leadership qualities are important in determining a firm's performance.

H1: Impact of Board independence, CEO Duality & Boards' financial knowledge on Firm performance.

4. Research Methodology:

The data used in this study are exclusively secondary in nature, collected from Annual reports and the Ace-Equity database for Nifty-50 companies over the period of 5 years, from FY 2021 to FY 2025. After excluding banking and insurance companies due to their non-standardized statements, we proceeded with 39 companies. We have taken board independence (Independent directors/total number of directors), CEO Duality (whether the CEO & Chairman are the same person, represented as 1 or 0), and Board financial expertise as independent variables. For the dependent variable, firm performance, we have used its proxies, namely ROA (Profit after tax to Total asset), ROE (Profit after tax to Total equity), and Tobin's Q (Market capitalization Plus Debt by Total asset), as employed in many research papers. We have controlled for firm size (Natural log. of Total assets), leverage (Total debt by Equity), age (Current FY - Incorporation year), R&D expenditure, Free cash flow, Current ratio (Current assets to current liabilities, and Growth (Current year sales Minus Previous year sales by Previous year’s sales). We used Descriptive statistics, Correlation, and employed OLS regression to determine the relationship between the variables.

5. Results and Discussion

5.1 Descriptive statistics

Descriptive statistics of the variables used for this study are depicted in Table 1. The mean of our dependent variable ROA is 0.11, while ROE shows extreme dispersion, with a significant standard deviation and negative minimum values, suggesting the presence of financially distressed firms. Tobin’s Q average is 4.85, suggesting that many firms enjoy strong market valuation, though the right-skewed distribution implies a few high-growth firms. The mean board size of directors is 11.53, which is more than the median (10), indicating moderate board structures among sample firms, though the wide range suggests substantial heterogeneity in board composition. Independent directors have a mean of 6.11, emphasizing better compliance with governance norms. The mean CEO duality (35%) reflects variation in leadership positions. Firm-level control variables, such as size and leverage, show relatively stable distributions, whereas R&D expenditure, free cash flow, and growth are highly dispersed and positively skewed, reflecting uneven investment and financing capacities across firms.

Table 1: Descriptive statistics

Variables	**mean**	**s.d.**	**median**	**min**	**max**
No. of Directors	11.53	8.44	10	6	122
No. of Independent Director	6.11	5.2	6	1	74
CEO Duality	0.35	0.48	0	0	1
Board financial Knowledge	8.07	2.36	8	3	14
ROA	0.11	0.11	0.08	-0.13	0.66
ROE	-0.21	5.91	0.15	-82.21	4.23
TOBINS_Q	4.85	4.34	3.53	0	24.04
Size	10.97	1.14	11.04	8.63	13.85
Leverage	0.12	0.16	0.05	0	0.61
Age	58.41	29.73	50	11	166
R & D	634	867.24	297.26	0.18	4185
Free cash flow	8115.04	10873.79	4084.12	-12620	45568
Current Ratio	1.96	1.57	1.48	0.32	11.06
Growth	0.24	1.19	0.13	-0.59	16.39

5.2 Correlation Matrix

Table 2. reports the pairwise correlation coefficients among the variables used in the study.

Overall, the correlations are moderate in magnitude, indicating multicollinearity is not likely to be a severe concern. Governance variables show limited correlation with firm performance measures, indicating that they capture distinct aspects of corporate governance. Among governance-associated characteristics, the no.of independent directors is positively correlated with the board's financial knowledge (r = 0.471), demonstrating that boards with higher independence tend to possess greater financial expertise. CEO duality exhibits weak correlations with most variables, implying sufficient variation for empirical analysis. Firm's accounting measure ROA is strongly positively correlated with Tobin's Q (r = 0.511), pointing to consistency between accounting-based and market-based performance. Firm size is negatively associated with Tobin's Q (r = –0.533), suggesting that larger firms tend to have lower growth opportunities. Correlation between liquidity and profitability is negative, and Firm liquidity, consistent with financial distress and agency cost arguments. Overall, the correlation structure supports the validity of the regression framework adopted in the study.

Table 2: Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
No. of Directors (1)	1.000	0.100	-0.029	-0.071	0.024	0.011	0.026	0.047	0.070	-0.008	-0.049	-0.014	0.013	-0.028
Ind. Directors (2)	0.100	1.000	-0.053	0.471	0.074	0.028	-0.026	-0.038	-0.120	0.082	0.027	-0.026	0.103	0.001
CEO Duality (3)	-0.029	-0.053	1.000	-0.024	0.137	0.057	-0.005	0.148	0.162	0.106	0.271	0.152	0.022	0.088

Board financial Knowledge (4)	-0.071	0.471	-0.024	1.000	-0.052	0.164	-0.324	0.317	0.008	-0.099	0.362	0.061	0.054	-0.011
ROA (5)	0.024	0.074	0.137	-0.052	1.000	0.178	0.511	-0.177	-0.416	0.289	-0.219	0.361	0.305	-0.081
ROE (6)	0.011	0.028	0.057	0.164	0.178	1.000	0.076	0.010	0.017	0.109	-0.230	0.083	0.042	0.048
TOBINS_Q (7)	0.026	-0.026	-0.005	-0.324	0.511	0.076	1.000	-0.533	-0.282	0.349	-0.229	-0.077	0.057	-0.021
Size (8)	0.047	-0.038	0.148	0.317	-0.177	0.010	-0.533	1.000	0.438	-0.070	0.288	0.553	-0.396	-0.153
Leverage (9)	0.070	-0.120	0.162	0.008	-0.416	0.017	-0.282	0.438	1.000	-0.265	0.157	-0.068	-0.382	-0.047
Age (10)	-0.008	0.082	0.106	-0.099	0.289	0.109	0.349	-0.070	-0.265	1.000	-0.071	0.052	-0.128	-0.106
R & D (11)	-0.049	0.027	0.271	0.362	-0.219	-0.230	-0.229	0.288	0.157	-0.071	1.000	0.139	-0.126	-0.057
Free cash flow (12)	-0.014	-0.026	0.152	0.061	0.361	0.083	-0.077	0.553	-0.068	0.052	0.139	1.000	-0.056	-0.049
Current Ratio (13)	0.013	0.103	0.022	0.054	0.305	0.042	0.057	-0.396	-0.382	-0.128	-0.126	-0.056	1.000	0.087
Growth (14)	-0.028	0.001	0.088	-0.011	-0.081	0.048	-0.021	-0.153	-0.047	-0.106	-0.057	-0.049	0.087	1.000

5.3 Regression Analysis

Table 3. reports the results of the baseline OLS regressions examining the relationship between board characteristics and firm performance proxied through ROA, ROE, and Tobin's Q. All the models, including year fixed effect & F-statistic, indicate that the models are jointly significant. The model's explanatory power is high, with adjusted R^2 values ranging from 0.47 to 0.66, indicating that the inclusion of governance and firm-specific controls explains variation in firm performance. The results demonstrate that the board's independence and CEO duality are significant with firm performance, though their effects vary across accounting-based and market-based measures. Firm size consistently exhibits a negative, highly significant relationship with performance, while liquidity, growth, and leverage also play important roles in explaining this relationship. Overall, the findings provide preliminary evidence that board structure and leadership characteristics are important determinants of firm performance

Table 3: OLS Regression

	ROA OLS 1		**ROE OLS2**		**Tobin's Q OLS 3**	
No. of Directors	0.000		0.000		0.030	
	0.000		0.000		0.029	
No. of Independent Director	0.010	**	0.024	**	0.450	*
	0.004		0.008		0.212	
CEO Duality	0.012		0.104	***	1.811	*
	0.012		0.029		0.740	
Board financial Knowledge	-0.004		-0.010		-0.319	.
	0.003		0.007		0.181	
Size	-0.029	***	-0.086	***	-3.344	***
	0.008		0.018		0.469	
Leverage	-0.136	.	0.067		3.490	
	0.074		0.174		4.455	
Age	0.005		0.005		0.141	
	0.004		0.009		0.232	
R & D	0.000		0.000		0.000	
	0.000		0.000		0.000	
Free cash flow	0.000	*	0.000	*	0.000	.
	0.000		0.000		0.000	
Current Ratio	-0.002		-0.035	*	-1.094	**
	0.006		0.014		0.367	
Growth	-0.009	**	-0.014	.	-0.337	.

	0.003	0.008	0.194
Year Effect	Yes	Yes	Yes
R2	**0.546**	**0.7105**	**0.6942**
Adjusted R2	0.4678	0.6606	0.6414
F-Statistics	6.977	14.24	13.17
p-value	**1.09E-09**	**< 2.2e-16**	**< 2.2e-16**
Significance. codes: 0 '*' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**			

6. Finding and Conclusion:

The aforementioned findings suggest that the board's independence and the CEO's dual role have a significant impact on firm performance, with differing effects on accounting- and market-based metrics. Firm size consistently shows a highly significant negative correlation with performance, while liquidity, growth, and leverage also play important roles in this relationship. Overall, the results provide preliminary evidence that the composition of the board and leadership characteristics are important factors affecting firm performance.

The major limitations are contextual heterogeneity (country ownership) may limit generalizability; some moderating variables (e.g., CEO financial education) are underexplored; causality is often inferred rather than directly tested; data on informal institutions and board dynamics may be limited in some regions

Further research should examine the interactive and conditional effects of board duality and financial expertise across institutional settings, ownership structures, and industry contexts. Ultimately, integrating diverse performance indicators—such as market-oriented, sustainability, and innovation-related results—would yield a more thorough insight into how board governance mechanisms affect firm performance over time.

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