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How Corporate Governance and Intellectual Capital Affect Firm Performance: Evidence from Pakistani Non-Financial Firms

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Abstract
The aim of this study is to find out if there are any differences in the effect of governance monitoring mechanisms, in terms of market values and accounting profitability, between non-financial companies listed on Pakistan Stock Exchange with respect to intellectual capital efficiency. The statistical analysis is based on the Generalized Method of Moments (GMM) estimates of return on assets (ROA), return on equity (ROE) and price-earnings ratio (P/E) derived from the evidence supplied on the panel comprising the 30 firms and the six sectors that make up its sample, spanning 240 firm-year observations from 2009 to 2016. The results show a significant gap between the measures of performance. Board independence and human capital efficiency is significant for ROA and P/E; board ownership and structural capital efficiency is significant for ROE and P/E; and capital employed efficiency is significant for ROA and ROE. The size of the board is only significant in the ROA model while CEO duality is not significant in any of the three. The adjusted R^2 values of these three model explanatory powers, ROA, ROE and P/E, are 78.3%, 68.6%, and 57.8% respectively. The results indicate that governance and IP investments cannot be assessed on a single performance measure since the governance mechanisms that are linked to lower short-term accounting profitability could have a positive effect on the market.

Keywords: accounting profitability; board independence; board ownership; governance monitoring; intellectual capital efficiency; market valuation; Pakistan Stock Exchange

1. Introduction
The mechanisms and role of corporate governance and intellectual capital are also sources of organisational value, yet their impacts could be crucial to the measurement of firm performance. Although accounting ratios reflect realized profitability and outcomes of operations, market-based ratios incorporate investor expectations of future cash flows and risk, information credibility and competitive advantage. As a result, a governance mechanism may be able to create short-term monitoring or compliance costs, but may also help lower information asymmetry and enhance the information investors have to evaluate the firm. This difference in non-financial companies in Pakistan can be explored through the provided evidence. There are 240 firm-year observations across 30 firms from six sectors for 8 years. The original analysis fully takes into account the three parts of the

Pulic's VAIC framework: human capital efficiency (HCE), structural capital efficiency (SCE), capital employed efficiency (CEE), and compares them with the ROA, ROE, and P/E. The reported results reveal that there are not consistent relationships between the different measures and the statistics. Instead, therefore, this alternative manuscript turns the analytic lens away from the general question of the impacts of corporate governance and intellectual capital on accounting performance and towards the accounting–market performance split. The central question is: Do governance and intellectual-capital mechanisms that are associated with accounting profitability have the same relationship with market valuation? The evidence suggests they don't. The paper contributes in a focused way by interpreting the coefficients reported in the table comparatively across ROA, ROE and P/E. It points out to the board independence and the board ownership as governance mechanisms whose indicators vary according to the performance measures and it demonstrates that HCE, SCE and CEE do work via different performance channels. The framing does not alter, label or make up the underlying statistical observations, rather, it gives a coherent alternative research narrative.

2. Literature Review and Theoretical Development

2.1 Governance Monitoring and Performance

Agency theory claims that governance can help resolve conflicts between managers and shareholders by making managerial incentives more closely match owners' interests, and by improving the monitoring system. Board independence can enhance board oversight, but there can be costs associated with monitoring. The resulting impact of independent directors, then, can vary between short term accounting results and investor perceptions. Also, it is posited that board ownership can serve to harmonize the interests of board members and shareholders, though high insider ownership can impact management discretion and return payout.

2.2 Intellectual Capital Efficiency

In the resource-based approach, the key economic factors that are difficult to imitate and valuable to the organization are considered as sources of sustainable competitive advantage. The study used in this language provides three dimensions of intellectual capital: HCE, SCE and CEE. HCE is the value added from human capital, SCE is the added value from structural resources, and CEE is the added value from physical and financial capital. These mechanisms are various means of creating value, and therefore, need not have the same impact on profitability and valuation.

2.3 Accounting Versus Market Performance

ROA and ROE capture actual performance over the accounting period, while P/E is market-based and indicates investors' expectations. Just because an accounting measure has a negative coefficient does not mean that investors see it as harmful. On the other hand, if the accounting association is positive, it doesn't necessarily mean that this is seen in the market valuation. The results supplied allow for an empirical test of this distinction.

3. Research Questions and Hypotheses

RQ1: Are there different relationships between governance monitoring mechanisms and accounting profitability and market valuation?
RQ2: Do the three components of intellectual capital efficiency contribute in different ways of performance?
RQ3: What governance and intellectual-capital variables are statistically significant in more than one dimension of performance?
H1: There is a significant association between board independence and firm performance as measured by accounting measures or market measures, which may be in opposing directions.
H2: The relationship between board ownership and firm performance is significant and could be different depending on the performance measure, accounting or market.
H3: The size of the board is an important factor in business performance.
H4: CEO duality significantly relates to firm performance.
H5: There is a strong relationship between efficiency of human capital and firm performance. The overall hypothesis is that there is a significant structural capital efficiency-performance relationship. The hypothesis is that there is a meaningful relationship between the efficiency of capital employed and firm performance.

4. Methodology

4.1 Sample and Data

The empirical evidence is based on the supplied panel study of 30 non-financial firms listed on the Pakistan Stock Exchange. The sample includes 2009 to 2016 data and 240 firm-year observations over the six sectors and five firms per sector. There is a lack of financial institutions since their regulatory and capital organization is different from that of the non-financial companies.

4.2 Variables

Three dependent measures are utilized in the analysis – ROA (net income/total assets), ROE (net income/shareholders' equity), and P/E (market price per share/earnings per share). Explanatory variables are board size (BSIZE), CEO duality (CEOD), board independence (BOARD_INDP), board ownership (BOARD_OWN), the number of the company's senior employees on the board (HCE), the number of the company's senior employees on the board who are not also CEOs (SCE), and CEE (SCE). Firm size is measured as the natural log of total assets and leverage is measured as total debt/total equity.

4.3 Estimation Strategy

Governance and intellectual-capital variables could be endogenous to firm performance, which is why the supplied analysis uses GMM. Heteroscedasticity, serial autocorrelation and endogeneity were found at the diagnosis stage. For this reason, the three performances models were estimated by employing GMM with lagged endogenous regressors as instruments. The reported J-statistics are insignificant for ROA ($p = .311$), ROE ($p = .244$),

and P/E (p = .773), indicating that the reported over-identifying restrictions were not rejected.

5. Results

5.1 Descriptive Evidence

The average size of the director board is 8.575 directors. The mean board independence is 25.517% and mean board ownership is 15.467%. Mean HCE is 5.730, compared with 0.716 for SCE and 0.424 for CEE. Average ROA is 9.977%, average ROE is 14.566%, and average P/E is 8.704. Dispersion and negative values for the performance measures suggest a high level of heterogeneity between firm-years.

Variable	ROA Coef. (p)	ROE Coef. (p)	P/E Coef. (p)
BSIZE	1.988 (.005)**	0.274 (.723)	0.372 (.584)
CEOD	-0.173 (.906)	0.935 (.650)	3.264 (.165)
BOARD_INDP	-0.054 (.004)**	-0.070 (.007)**	0.021 (.038)*
BOARD_OWN	0.040 (.319)	-0.069 (.000)**	0.072 (.018)*
HCE	0.057 (.000)**	0.178 (.352)	0.109 (.007)**
SCE	1.185 (.532)	20.158 (.007)**	2.059 (.016)*
CEE	4.748 (.002)**	2.239 (.004)**	-1.551 (.192)
LN(SIZE)	5.946 (.000)**	5.901 (.000)**	1.283 (.194)
LEVERAGE	-2.433 (.000)**	-2.005 (.000)**	-0.264 (.659)

*Table 1. Reported GMM coefficients from the supplied study. *p < .05, **p < .01.*

5.2 Comparative Interpretation

The difference in the relationship between board independence and performance is the most obvious. Board independence is negative and significant for ROA (β = −0.054, p = .004) and ROE (β = −0.070, p = .007), but positive and significant for P/E (β = 0.021, p = .038). That indicates that there is a divergence between accounting and market views on the issue of independent directors. Another pattern specific to the board is found in the ownership of the board. ROE has a negative and significant coefficient (β = −0.069, p < .001), P/E has a positive and significant coefficient (β = 0.072, p = .018), and the ROA coefficient is positive but not significant. So, in the estimated reports, insider ownership seems more related to market valuation and ROE than to ROA. The intellectual-capital variables do show distinct patterns. The significance of HCE is that it is not significant for ROE but is significant for ROA and P/E. SCE is important to ROE but not ROA. CEE is positive and significant for ROA and ROE while insignificant for P/E. None of the three models provides one specific intellectual-capital component as an important factor. This is consistent with the idea that various capital types work via various performance channels. The results indicate that among the other governance factors, board size has no impact on ROA, while CEO duality has no impact for all three performance models. The control variables also exhibit consistency with respect to profitability of the firms as measured by ROA and ROE; firm size is positively related and significant for both ROA and ROE, while leverage is negatively related and significant for both ROA and ROE.

6. Discussion

The results indicate that accounting profitability is not the only indicator of the quality of governance. The negative relationship between board independence and ROA/ROE could be reflective of the accounting recognition of monitoring, compliance and/or restructuring expenses, and the positive relationship with P/E aligns with investors valuing increased monitoring and governance risk reduction. This is an interpretation, which accounts for the observed pattern, and not evidence of a causal mechanism that is not included in the provided GMM estimates. The findings on intellectual capital also confirm that it is multi-dimensional. The relationship between CEE and accounting profitability is the closest one and that is understandable because it is directly related to the productive utilization of physical and financial capital. The relationship of SCE with ROE and P/E is very strong, indicating that organizational processes and structures may be particularly salient for equity performance and investor sentiment. HCE is correlated with ROA and P/E, suggesting that it is linked to value creation by employees both at the operational and at the market level. This insight is a significant finding, as there isn't a universally applicable predictor across all three dependent variables. It warns against lumping together firm performance as one product measure in its entirety and urges that accounting and market outcomes should be taken separately into account.

7. Implications

The results show that for managers: the governance aspect and the investments in intellectual capital are to be judged on the performance perspective and the performance indicator of the investment decision. It is important to note that for boards, enhancements to independence must be judged on more than just immediacy of profitability, as the market-based association is positive. Board independence, board ownership, and structural capital efficiency to the investors may contain information relevant to value. The observations and conclusions highlight the significant role of governance and disclosure of intellectual capital in an emerging market environment that regulators need to reinforce.

8. Limitations and Future Research

The analysis carries over the limitations of the study supplied. Sample size (N = 30 firms) and number of firm-year observations (N = 240) decrease the generalizability and power of this sample. It is important to note that the effects of instrument proliferation can be sensitive in GMM results, and that going forward the number of instruments and instrument-to-firm ratio should be explicitly reported in the manuscript. A financial-statement-based proxy, VAIC fails to fully measure relational capital, employee capability, or innovation. Future studies should employ higher numbers of subjects, longer time periods, comparisons across sectors, and/or complementary measures of intellectual capital, such as disclosure-based or survey based measures.

9. Conclusion

This alternative perspective is more proof of the strong contextual nature of the association between governance, intellectual capital, and firm performance. The sign changes are

found in the relationship between the board independence and accounting outcomes as well as the market accounting outcomes, while the HCE, SCE, and CEE demonstrate different patterns across ROA, ROE, and P/E. Thus the evidence suggests a performance contingent interpretation of governance effects and intellectual-capital effects in non-financial firms in Pakistan. Instead of "performance" being an improvement, one should consider which dimension of performance is enhanced, how, and how it creates value through the value-creation channel.

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