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Corporate Governance and Cost of Capital: Evidence from Emerging Market

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Abstract: This study used a researcher self-constructed corporate governance index as a proxy to measure the firm-level corporate governance compliance and disclosure with the 2002 Pakistani Code of Corporate Governance, to examine the relationship between corporate governance and cost of capital. We found a negative and significant association between the Pakistani Corporate Governance Index (PCGI) and block ownership with the firm-level cost of capital. On average, better-governed Pakistani listed firms tend to be associated with a lower cost of capital than their poorly governed counterparts are. As an emerging market, good corporate governance practices are mainly related to minimise corporate failure and assist firms in attracting capital at a lower cost.

Keywords: corporate governance index; cost of capital; ownership structures; government; director; Pakistan

1. Introduction

The 1997 Asian financial crises were an evolving landscape for Asian policymakers and companies. Several institutional and policy weaknesses were uncovered by these crises and led to numerous economic reforms in the region. According to Demise (2006) regulations and guidelines have been legislated in developing countries with the support of international organisations such as the World Bank and Organization for Economic Cooperation and Development (OECD). The Pakistan Stock Exchanges have not been spared these significant reforms in the way companies are managed and controlled, which have swept across the world in recent times. Corporate governance reforms were the most critical part of those reforms that were aimed to restore investors' confidence. With respect to adopting corporate governance codes, and as the case with most developing countries, Pakistan issued its corporate governance code in March 2002, which is regarded as an essential development for corporate governance reforms. This corporate governance code has been established by the combined efforts of the Securities and Exchange Commission of Pakistan (SECP) and the Institute of Chartered Accountants of Pakistan (ICAP). The requirements of the code are comprehensively influenced by UK corporate governance style (Tariq and Abbas 2013). The code has a series of governance provisions that are focused on three main areas, including better disclosure, strengthening of internal control systems, and reforms of the board of directors, with the concern of making it accountable to the stockholders. Claessens and Yurtoglu (2013) find that firms with better corporate governance gain more accessible access to financing and better performance. The critical question is whether adopting similar corporate governance provisions from developed countries can effectively assist Pakistani firms to increase their firm value by reducing their cost of capital.

In addition to the level of corporate governance compliance, this study also investigates the value-creating role of corporate governance mechanisms, using a different approach to the previous studies (i.e., using individual corporate governance variables and investigating the impact corporate governance on the cost of equity only) through the cost of capital as a value-creating variable. The previous studies examine the nexus between individual governance variables and financial performance, such as Return on Assets (ROA), return on equity (ROE), and Tobin's Q. The current study investigates the effect of firm-level governance mechanisms and ownership structure on firm-level cost of capital by constructing a unique corporate governance index. The index is constructed by using another method, such as an unweighted corporate governance index based on the 2002 Pakistani Code of Corporate Governance. Pakistan has adopted the Anglo-American model in order to improve corporate governance standards in its corporate sector. This may raise a critical question as to whether the Anglo-American model of corporate governance is appropriate, given the differences in culture between Pakistan and those countries. Therefore, our study draws necessary policy implications for other emerging economies like Pakistan.

One of the main objectives of corporate governance is to protect outside investors, including both creditors and shareholders, against expropriation by managers or controlling shareholders (Cumming et al. 2019; La Porta et al. 2002; Ilyas and Jan 2017). Corporate governance mechanisms, such as better and timely disclosure, independent non-executive members working on the board of directors and in audit committee, and independent auditors, are expected to reduce the risk of investors and firms' cost of capital in several ways. First, better corporate governance serves to monitor controlling shareholders or the manager's actions, minimising the risk of expropriation (Ilyas and Jan 2017; Chen et al. 2009). Second, better corporate governance can reduce information asymmetry between the controlling shareholders and other outside investors (Verrecchia 2001), and, hence, it reduces the uncertainty of future expected cash flows (Clarkson et al. 1996). Finally, as suggested by Lombardo and Marco (1999), better corporate governance disclosure reduces the monitoring cost of outside investors, and, thus, they are likely to demand a lower required rate of return, which can increase firm value. In this study, the two main themes of corporate governance structures are used to develop various hypotheses: The first theme is the firm-level corporate governance index, and the second is ownership variables, including (i) director, (iii) institutional, (iii) government, (iv) block, and (v) foreign ownership.

Using a sample of 160 Pakistani firms from 2003 to 2013 and the governance data, which were collected manually from the annual reports, this paper investigates seven closely related and critical corporate issues that are related to the compliance of governance rules. We find that firms with a high level of corporate governance standards have a lower cost of capital. Hermalin and Weisbach (2019) suggest that assessment is a crucial factor in understanding and regulating corporate governance. Our finding suggests that good corporate governance practices in Pakistan are intended to safeguard minority shareholders and creditors among other outside investors against the expropriation of controlling shareholders. Firms with a high level of director ownership are found to have a higher cost of capital. Our finding is in line with the prediction of agency theory: A higher level of director ownership may worsen agency problems (Demsetz and Lehn 1985). Pakistani firms with a higher level of foreign investors are found to have a higher cost of capital than those with less or no foreign investors. This positive relationship between foreign ownership and the cost of capital is consistent with the prediction of information asymmetry. This issue is relatively higher among foreign investors because of language and distance obstacles (Huafang and Jianguo 2007), which may lead to a higher cost of capital. We did not find any evidence for institutional ownership and government ownership.

This paper contributes as follows. First, distinctively, the current study uses a researcher's self-constructed corporate governance index (Khan 2016) as a proxy, to measure the firm-level corporate governance compliance and disclosure with the 2002 Pakistani Code of Corporate Governance (PCCG 2000). The adoption of self-constructed the corporate governance (CG) index as a methodological approach is justified as follows. Briefly, the use of the Pakistani Corporate Governance Index (PCGI) is

suitable, as (i) it is directly applicable to Pakistani context, (ii) the PCGI is designed to incorporate most of the CG aspects that have been suggested by the literature, and (iii) there is no theoretical guidance which offers a criterion for the selection of indices to be used in the study. Furthermore, it is in line with many recent studies (e.g., Ntim et al. 2012; Hooghiemstra 2012; Allegrini and Greco 2013; Tariq and Abbas 2013) that investigated the level and determinants of CG compliance by relying on national (e.g., King 2002) codes in constructing their CG indices (Hooghiemstra 2012). The PCGI contains 70 CG provisions covering five broad aspects: (i) the board of directors; (ii) internal auditing and committees; (iii) shareholders right; (iv) transparency and disclosure; and (v) internal control, external auditor, and risk management. The PCGI is constructed from the PCCG 2002. The listing rules were also used as an additional source, in order to develop a comprehensive index. Table A2 in Appendix B explains each provision and the source included in the PCGI. An analysis of corporate governance literature advocates that a good number of studies have been conducted in developed markets to analyse the effectiveness of corporate governance codes. Therefore, investigating corporate governance compliance and disclosure in different regulatory, cultural, institutional, and corporate governance contexts is essential, as it is likely to come up with different findings. On one hand, a considerable number of studies analysing the determinants of corporate governance compliance have been performed in the developed markets with generally similar corporate governance and institutional settings. On the other hand, factors influencing the level of corporate governance compliance and disclosure in emerging markets like Pakistan, where empirical findings are rare, are vital in providing a broader picture of corporate governance compliance and disclosure behaviour.

Second, using one of the largest manually collected datasets on corporate governance in emerging markets directly from firms' annual reports (i.e., a sample of 160 Pakistani listed firms from 2003 to 2013, with 1760 firm-year observations), this study offers, for the first time, direct evidence on the effectiveness of corporate governance reforms in Pakistan. Precisely, it provides detailed findings on the level of corporate governance compliance and disclosure with the PCCG 2002 among listed firms. Similar to the limited number of prior studies in emerging markets, the introduction of the PCCG 2002 facilitates uniformity and convergence of corporate governance practices. The findings recommend that corporate governance practices still differ widely among Pakistani listed firms over the eleven-year period examined. Third, the current study offers empirical evidence on how traditional ownerships influence the level of corporate governance compliance and disclosure among Pakistani listed firms for the first time.

This paper is organised as follows. Section 2 relates to the institutional context of Pakistan. Section 3 presents hypothesis development. Section 4 explains data and empirical estimation. Section 4 provides the data sample and summary statistics. Section 5 reports the empirical findings. Section 6 concludes the paper.

2. Institutional Context: Pakistan Code of Corporate Governance

Pakistani policymakers established the SECP in the late 1990s, to bring CG reforms to the country. In 2002, the SECP introduced important CG regulations known as the Pakistani Code of Corporate Governance (PCCG). Noticeably, the introduction of the Pakistani Code of Corporate Governance has improved the corporate governance standards in the country. As shown in Figure 1, the mean score of PCGI has increased from 20.6% in 2003 to 85.2% in 2013, with an overall increase of 64.6% in eleven years. Such an increase in the level of disclosure may decrease information asymmetry (Al-Bassam et al. 2018; Al-Nodel and Hussainey 2010; Al-Abbas 2009; Khan et al. 2017).

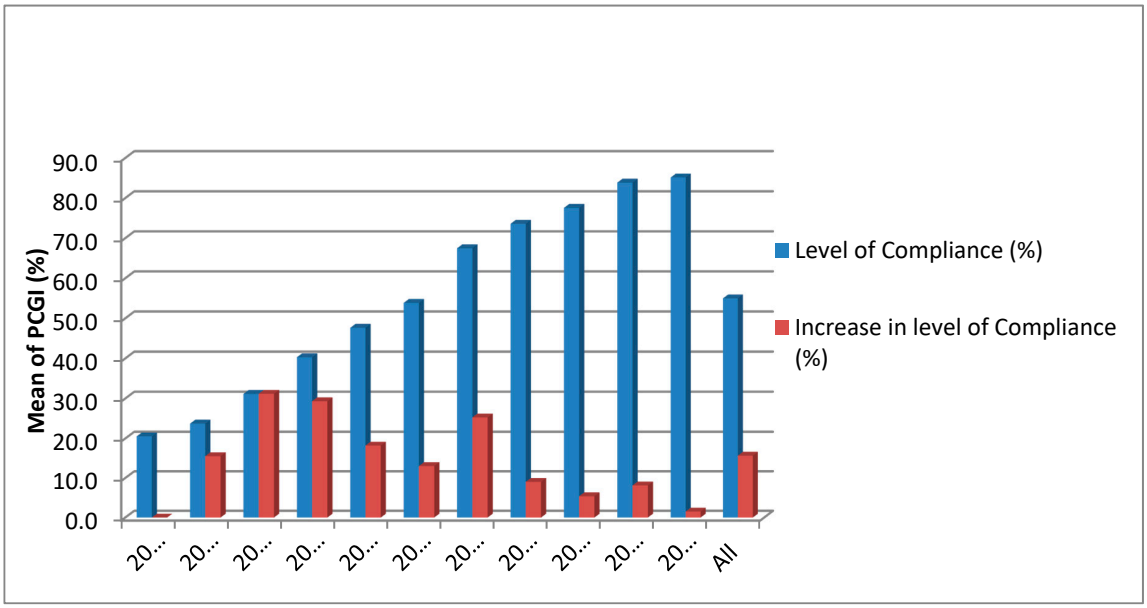

Figure 1. The compliance level with Pakistani Corporate Governance Index (PCGI) based on the full sample. Note on the authors' calculation: The level of compliance is calculated by using the yearly average of PCGI. The year-wise increase in the level of compliance is also presented in Figure 1. The blue bar of the graph shows a constant increase in the level of compliance over the sample period. However, the increase in the level of compliance varies from year to year. For instance, in the beginning, years, there is a rise of 10 to 30%, which decreases to less than 5% in the last years. This is because most of the firms started following the corporate governance (CG) standards.

Pakistan makes it unique for this study due to some reasons. First, like most countries in the developing world, Pakistani companies have controlling shareholders in the form of family ownership. This provides the controlling shareholders with both the incentive in the case of low cash flow rights and opportunity in the case of high free cash flows to expropriate outsider minority shareholders (Bozec and Laurin 2008). Similarly, strong corporate governance and investor protection found in the developed countries are believed to be more effective, as compared to Asian countries (Dyck and Zingales 2004). Notably, the Pakistani corporate setting shares some level of similarities and differences with the UK corporate environment.

On the one hand—contrary to the Berle and Means model of separation of ownership and control—foremost Pakistani firms' ownership structure bears a resemblance to a concentrated family ownership structure. Arguably, this concentrated ownership structure of Pakistani firms is different from those of the Anglo-American structure of dispersed ownership. The corporate governance mechanisms formulated by following markets with dispersed ownership structure may not offer the right remedy to the governance issues for a market with concentrated ownership. Therefore, this study may provide exciting and different findings than those from the Anglo-American countries.

Second, Pakistan's constitution requires that all laws conform to Islam. Although the fiduciary duties set by the Security and Exchange Commission of Pakistan are initially based on Anglo-American common law and shareholding model of corporate governance, more importantly, they must also conform to Islamic business ethics (Ibrahim 2006; Arslan and Abidin 2019). In this regard, strong Islamic notions are incorporated in Pakistani corporate governance code, such as accountability, transparency, and responsibility. These can have important implications for the level of CG compliance and disclosure (Abu-Tapanjeh 2009; Ahmad 2011; Ilyas and Jan 2017).

Third, Pakistan has adopted the Anglo-American model to improve corporate governance standards in its corporate sector. The agency problem is expected to be different in developing countries like Pakistan, due to the nature of ownership structures, where the conflict of interests is between minority (outsider) and majority (insider) shareholders instead of managers and shareholders as is the

case in UK and US (Bozec and Bozec 2011). Therefore, this study sheds light on whether the adaptation of commonly accepted corporate governance standards, as proposed by Anglo-American countries, can improve the corporate governance practices in emerging economies like Pakistan.

3. Hypothesis Development

3.1. Firm-Level Corporate Governance and Cost of Capital

Theoretically, corporate governance encompasses different mechanisms that can assure creditors and shareholders of the firm on a return on their investments (Shleifer and Vishny 1997). In the case of most developing countries, when firms have controlling shareholders (see Claessen et al. 2000; Faccio and Lang 2002), corporate governance mitigate agency problems between insiders shareholders and outside investors, including both creditors and minority shareholders. Insider shareholders enjoy the control of the firm's operation by having a large portion of voting rights and, therefore, may expropriate outside investors, including minority shareholders and creditors (Cumming et al. 2019; La Porta et al. 2002). In this context, good corporate governance practices are intended to safeguard minority shareholders and creditors among other outside investors against the expropriation of controlling shareholders (Ilyas and Jan 2017). Arguably, when investors feel protected, they are motivated to participate in the capital market more active and are more likely willing to pay more for such firms' securities. Firms can enjoy a lower cost of raising capital, which in turn raises the firms' value. Thus, we postulate the first hypothesis:

Hypothesis 1. *There is a statistically significant and negative relationship between firm-level corporate governance and firms' cost of capital.*

3.2. Ownership Structures and Cost of Capital (COC)

In this subsection, the hypotheses of different ownership variables are developed with firms' cost of capital. The ownership variables include director ownership, institutional ownership, government ownership, block ownership, and foreign ownership.

From a managerial signalling perspective, Bebchuk and Weisbach (2010) argue that the directors have more information about the firms, compared to outsiders (minority shareholders and creditors). Therefore, it is more likely that the executives can use the firms' statistics for the personal interests that shift risk to, rather than share risk with, outside shareholders (Demsetz and Lehn 1985), which, in turn, may increase the information asymmetry problem between directors and outside investors (minority shareholders and creditors). Therefore, it is likely that the firm with higher director ownership can have a higher cost of borrowing and a negative impact on profitability. It can be argued that director ownership may worsen the agency problem, as the outsider and insider can have conflicting interests (Demsetz and Lehn 1985). The second hypothesis is as follows:

Hypothesis 2. *There is a positive and statistically significant association between director ownership and firms' COC.*

A limited number of studies only provide evidence on the relationship between institutional ownership and one component of the cost of capital. Institutional investors usually have a higher monitoring power, and it has been suggested that they can play a crucial role by forcing managers to make decisions in the best interest of shareholders (Shleifer and Vishny 1986). Crutchley et al. (1999) argue that institutional investors can have an impact on firms' capital structure.

Theoretically, monitoring can be beneficial to reduce the agency cost by minimising the conflicts of directors and investors (Solomon et al. 2003; Jensen and Meckling 1979). Arguably, intuitional investors with a significant shareholding are proposed as important CG mechanism for three main reasons (Diamond and Verrecchia 1991; Donnelly and Mulcahy 2008). First, having a considerable portion of shareholding and voting power permits them to take necessary actions (Donnelly and Mulcahy 2008).

Second, institutional investors have resources and capabilities to have more information than minority shareholders (Smith 1976). Third, with better knowledge and expertise, they can evaluate the firm's decisions and can interpret the disclosed information in annual reports (Chung et al. 2003; Bos and Donker 2004; Khan 2016; Elshandidy and Neri 2015). Thus, it is expected that institutional ownership can increase firm value by decreasing the firm's cost of capital. Therefore, the following is predicted:

Hypothesis 3. *Institutional ownership and firms' COC are significantly negatively associated.*

From the resources dependence theory perspective, firms with higher government ownership can easily access financing from the government (Eng and Mak 2003). Arguably, firms may take the benefit of higher government cost of capital and, in turn, may increase the firm value. Similarly, (Siebels and Knyphausen-Aufseß 2012) argue that government ownership may not affect the managers due to their aligned interests with other corporate owners. Individually, executives may strive for improvement in the firm performance to improve and protect their reputation (Conyon and He 2011). In contrast, (Eng and Mak 2003) argue that higher state-owned firms may origin the agency problem. In this regard, government ownership may cause intervention in firms' operations, which may bring about weak corporate governance practices (Konijn et al. 2011). For example, the government may employ directors and a CEO irrespective of qualification (Cornett et al. 2010; Tsamenyi et al. 2007). Hence, we expect the following:

Hypothesis 4. *Firms' COC and government ownership are significantly and negatively associated.*

The dominance of majority shareholders in publically traded firms demonstrates the willingness to accept risk by minority shareholders. (Bozec et al. 2014) argue that such risks are accepted by minority shareholders based on compensation. High-risk results in higher cost of capital for firms. Arguably, a higher cost of capital means a higher rate of return for investors that can be a form of compensation to them. Hence, it can be argued that block ownership is expected to have a more direct link with the cost of capital rather than financial performance and firm value, mainly as value is not only affected by risk but also by the firm's growth opportunities (Hail and Leuz 2006).

Empirical studies report mixed evidence in the relationship of block holders and firm-level cost of capital. For instance, Bozec et al. (2014) report significant empirical evidence of a positive correlation between excess control and the weighted average cost of capital. Similarly, Elston and Rondi (2007) report empirical evidence that concentrated inside ownership is significantly and positively associated with the firm cost of capital for Italian firms while having no significant relationship between the variables for German firms. In contrast, Pham et al. (2012) report significant empirical evidence of a negative relationship between concentrated ownership and the weighted average cost of capital.

Hypothesis 5. *There is a statistically significant association between block ownership and firms' COC.*

A firm's choice of issuing debt or equity to finance their activities can be affected by foreign investors. Theoretically, information asymmetry is relatively higher among foreign investors because of language and distance (Huafang and Jianguo 2007). Higher foreign ownership may lead to debt financing as a governance mechanism; thus, it may force firms to issue debt over equity (Phung and Le 2013). Additionally, firms may prefer debt rather than equity as they may take advantage of foreign investors' relationship and reputation to have easy access to international capital markets, which will usually provide a lower cost of borrowing and, thus, lower cost of capital. As a result, it the following can be argued:

Hypothesis 6. *Firms' COC and foreign ownership are significantly and negatively associated.*

4. Data and Research Design

4.1. Data Sample and Summary Statistics

The sample used in analysing the CG compliance level (PCGI) and its impact on the cost of capital (COC) was made up of the Karachi Stock Exchange (KSE) listed firms. The majority of KSE listed firm's annual reports became publicly available in 2003 with required CG information after the issuance of Pakistani CG code in 2002. This makes it possible to gather data from 2003, when the code was effectively implemented, and firms started to publish their annual reports. The sample ends in 2013, as it was the most recent year with available data at the time of data's being manually collected.

To be included in the sample of this study, a firm has to meet two conditions. First, the firms' eleven-year annual reports from 2003 to 2013, inclusive, must be available. Second, its corresponding eleven-year financial and stock market information had to be available. In this study, the financial industry is not included in the final sample for three main reasons. First, financial firms have a different capital structure than those of nonfinancial firms, which may have an impact on firm value (Lim and Wang 2007; Ali Shah and Butt 2009). Second, financial firms have been suggested to be heavily regulated. In the case of Pakistan, financial firms are required to comply with more regulations than their industrial counterparts do. We ended up with 160 firms for the period 2003 to 2013 and with 1760 firm-year observations.

There are three types of data being used in this study, namely (i) corporate governance variables, (ii) financial variables, and (ii) Stock Market variables. First, using a content analysis approach, corporate governance variables were manually collected from the annual reports of the sampled firms. These annual reports were collected from different sources: Rest of World Filings of the Perfect Information Database, the companies' website, and the KSE website. Firms' annual reports that were not available in the above sources were obtained from the SECP head office in Islamabad, Pakistan. Second, the data on financial variables of 130 firms were collected from Datastream, while the data for the remaining 30 firms were collected from Balance Sheet Analyses of State Bank of Pakistan's publication. Sampled firms' monthly stock prices, Government of Pakistan T-Bill rates, and Market indices variables constitute the third type of data used in this study, which were collected from Datastream. Missing or insufficient data related to the Company's monthly stock prices, Government of Pakistan T-Bill rates, and market indices data were collected from the website of the business recorder.

Table 1 presents summary statistics. The minimum of PCGI is 0.00, and the maximum is 97.18, while the mean score of the index is 54.23 for 1760 firm-year observations. There is a relatively large variation in the CG compliance among Pakistani listed firms, as shown by a standard deviation of 33.57. The findings are in line with the previous corporate governance literature (e.g., Ntim et al. 2012; Henry 2008), indicating that corporate governance standards improve over time. The mean of director ownership is 20.88%, with a minimum of 0% and a maximum of 98%. The average of director ownership is relatively high among Pakistani listed firms[1] (Samaha et al. 2012; Henry 2008).

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[1] Samaha et al. (2012) report 9% of director ownership in Egyptian firms. Similarly, Henry (2008) reports 6% of director ownership in Australian firms.

Table 1. Summary statistics.

Variables	Observations	Mean	Median	SD	Maximum	Minimum
			Panel A: Dependent variables			
COC	1760	0.209	0.156	0.276	0.976	−0.470
COD	1760	0.196	0.072	0.258	0.700	0.000
COE	1760	0.255	0.212	0.303	0.932	−0.307
			Panel B: Independent variables			
PCGI	1760	54.230	74.648	33.572	97.183	0.000
DOWNP	1760	20.879	9.001	24.811	98.371	0.000
IOWNP	1760	10.699	5.543	14.674	95.471	0.000
GOWNP	1760	6.397	1.741	12.564	95.023	0.000
BOWNP	1760	55.451	55.220	26.727	99.806	0.000
FOWNP	1760	9.967	0.000	21.624	93.187	0.000
BIG4	1760	0.551	1.000	0.498	1.000	0.000
BSZ	1760	8.220	8.000	1.683	17.000	6.000
BGEN	1760	11.398	0	23.376	1	0
			Panel C: Control variables			
LTA	1760	16.017	15.641	2.082	21.304	12.636
ROE	1760	0.146	0.103	0.225	0.692	−0.212
SALESG	1760	0.163	0.127	0.388	1.655	−0.728
LVG	1760	30.605	25.853	30.491	147.877	0.000
β	1760	0.590	0.567	0.564	2.106	−0.529

Notes: This table reports the summary statistics for a sample period of 160 Pakistani firms from 2003 to 2013. Appendix A presents the definitions of variables. COC denotes the cost of capital, COD denotes the cost of debt, COE denotes the cost of equity, PCGI denotes the Pakistani Corporate Governance Index, DOWNP represents director ownership, IOWNP represents institutional ownership, GOWNP represents government ownership, BOWNP represents block ownership, FOWNP represents foreign ownership, BIG4 represents the audit firm size, BSZ represents the size of the board of directors, BGEN represents board diversity on the basis of gender, BNAT represents board diversity on the basis of nationality, LTA represents firm size as the log of total assets, ROE represents return on equity as a measure of profitability, SALESG represents growth opportunities, LVG represents leverage, and β represents Beta—a measure of risk.

The mean of institutional ownership is 10.70%, with a minimum of 0 and a maximum of 95%, revealing that there is a substantial variation in this variable. However, this average institutional ownership is consistent with some of the previous studies. For instance, Aggarwal et al. (2011) report average institutional ownership of 8%, 8%, and 9% in Greece, Hong Kong, and New Zealand, respectively. On the other hand, Chung and Zhang (2011) report over 50% of institutional ownership among US firms.

Concerning government ownership, the average is 6.39% with a minimum of 0 and a maximum of 95%, revealing that the Pakistani government relatively holds a high percentage of firms' share and is expected to have an impact on the willingness of firms to comply with CG provisions. The average of block ownership is 55.45%, with a minimum of 0 and a maximum of 99.80%, revealing a higher level of ownership concentration among Pakistani listed firms. The high level of block ownership may suggest a low CG compliance and disclosure, as it is expected that the market for control may not be working well, as compared with a low concentration of ownership.

Regarding foreign ownership, its mean is 9.97%, with a minimum of 0 and a maximum of 93%, with a standard deviation of 21.62%. This may suggest that the presence of foreign ownership can have an important role in improving the CG standards among Pakistani listed firms. This is supported by a correlation coefficient. Appendix C shows the correlation matrix in more detail.

4.2. Empirical Model

The impact of the level of CG compliance and its relationship with COC for Pakistani listed firms is estimated by the following ordinary least square model:

$$\begin{aligned} COC_{it} = \; & \alpha_0 + \beta_1 PCGI_{it} + \beta_2 DOWNP_{it} + \beta_3 IOWNP_{it} + \beta_4 GOWNP_{it} \\ & + \beta_5 BOWNP_{it} + \beta_6 FOWNP_{it} + \beta_7 BIG4_{it} + \beta_8 BSZ_{it} \\ & + \beta_9 BGEN_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

where i and t subscript represents firm and time, respectively. COC is the cost of capital calculated by the weighted average cost of capital. PCGI is the Pakistani Corporate Governance Index. DOWNP is the percentage of shares owned by directors, and IOWNP is the percentage of shares owned by institutions. GOWNP indicates the percentage of shares owned by the government. BOWNP represents the percentage of shares owned by shareholders with at least 5%. FOWNP accounts for the percentage of shares owned by the foreigner.

A set of control variables includes firm size (LTA), profitability (ROE), sales growth (SALESG), leverage (LEVG), capital expenditure (CETA), and Beta (β). Beta (β) measures the Beta of the firm by using a regression of stock return to market returns. Industry and year fixed effects are included in all models; ε is the error term.

5. Empirical Results

5.1. Main Findings

In this study, the impact of the level of corporate governance compliance and its relationship with the cost of capital for Pakistani listed firms were investigated. As shown in Table 2, we find that the coefficient on PCGI is negative and statistically significant at 5% level, suggesting that firms with a high level of corporate governance standards have a lower cost of capital. Our finding is consistent with our first hypothesis. In the case of most developing countries, when firms have controlling shareholders (see Claessen et al. 2000; Faccio and Lang 2002), corporate governance mitigates agency problems between insider shareholders and outside investors, including both creditors and minority shareholders. Similarly, good corporate governance practices in Pakistan are intended to safeguard minority shareholders and creditors among other outside investors against the expropriation of controlling shareholders.

Table 2 shows the findings of the influence of ownership variables on firms' cost of capital. First, the coefficient on director ownership is positive and statistically significant, suggesting that firms with a high level of director ownership have a higher cost of capital. Our finding is in line with the second hypothesis, and the prediction of agency theory a higher level of director ownership may worsen agency problems (Demsetz and Lehn 1985). In a similar vein, it has been suggested that higher director shareholdings may make a firm more vulnerable to collusion between directors and firm management (Vafeas and Theodorou 1998; Konijn et al. 2011). In this regard, Bennedsen and Wolfenzon (2000) argue that one of the three ways by which multiple block-holders can influence firm value is that they can use their power to form a coalition to expropriate value at the expense of other shareholders.

Second, the coefficient on institutional ownership on the cost of capital is positive and statistically insignificant, meaning that the percentage of institutional ownership has no explanatory power in explaining the variation in the firm-level cost of capital. This is contrary to the formulated third hypothesis. Theoretically, the relationship between institutional ownership and cost of capital being negative can be useful, as monitoring can be beneficial in reducing the conflicts of interest between investors and directors (Jensen and Meckling 1979; Solomon et al. 2003). However, the current study does not lend empirical support to the CG literature in regard to Pakistan (e.g., Bhojraj and Sengupta 2003; Piot and Missonier-Piera 2009), and it documents a negative relationship between institutional ownership and firm-level cost of capital.

Table 2. The ordinary least squares (OLS) regression of CG and COC.

Dependent Variable: COC				
Independent Variables	**Expected Sign**	**Coefficient**	**SE**	***t*-Statistic**
Panel A: CG variables				
PCGI	−	−0.00026 **	0.000108	−2.36741
DOWNP	+	0.000448 **	0.000189	2.378413
IOWNP	−	0.00011	0.000113	0.96854
GOWNP	−	0.000242	0.000219	1.10389
BOWNP	+/−	−0.00017 ***	0.000487	−3.3948
FOWNP	−	0.000782 ***	0.000161	4.871608
BIG4	−	−0.00039	0.00646	−0.0599
BSZ	−	0.002998	0.001825	1.642575
BGEN	−	0.011861 **	0.005159	2.29886
Panel B: Control variables				
LTA		−0.01866 ***	0.004099	−4.5532
ROE		−0.00052 *	0.000284	−1.83358
SALESG		−0.00168	0.005707	−0.29502
LVG		−0.0007 ***	0.000166	−4.23521
β		0.152732 **	0.06078	2.512878
Industry fixed effects		Yes		
Year fixed effects		Yes		
Constant		0.493347 ***	0.037561	13.13452
Adjusted R-square		0.540825	Sample: 2003 2013	
F-statistic		60.19378	Cross-sections included: 160	
Prob(F-statistic)		0.00000	Total panel (balanced) observations: 1760	

Notes: Variables are defined as follows. Cost of capital (COC), Pakistani Corporate Governance Index (PCGI), director ownership (DOWNP), institutional ownership (IOWNP), government ownership (GOWNP), block ownership (BOWNP), foreign ownership (FOWNP), audit firm size (BIG4), size of the board of directors (*BSZ*), board diversity on the basis of Gender (BGEN), firm size as log of total assets (LTA), profitability (ROE), growth opportunities (SALESG), leverage (LVG) and systematic risk (β). Parameter estimates were obtained by OLS estimation (panel least squares). The year 2003 and Auto industry were excluded from the analysis in order to avoid the dummy variable trap. The asterisks *, **, and *** denote the 10%, 5%, and 1% level of significance, respectively.

Third, the coefficient on government ownership is positive and statistically insignificant, suggesting that there is no statistically significant association between government ownership and firms' COC. This finding shows that the level of government ownership has no explanatory power in explaining the variation in firm-level COC. Theoretically, this positive relationship between government ownership and COC is consistent with the prediction of agency theory. Eng and Mak (2003) argue that higher government ownership may cause agency problems where government ownership may lead to intervention in firms' operations, which may result in poor corporate governance practices (Konijn et al. 2011; Elshandidy and Neri 2015). For instance, the government may appoint the CEO and directors regardless of experience and qualification (Tsamenyi et al. 2007; Cornett et al. 2010).

Fourth, unlike the institutional and government ownership, the coefficient on block ownership is negative and statistically significant at 1% level, suggesting that there is a relationship between the block ownership and firm-level cost of capital. This shows that Pakistani firms with a higher level of block ownership have a lower cost of capital than those firms with a smaller percentage of block ownership. This is consistent with the prediction of agency theory in which the dominance of majority shareholders in publicly traded firms demonstrates that minority shareholders have the risk of expropriation. Bozec et al. (2014) argue that minority shareholders can accept such a risk as long as they are compensated. Empirically, this finding is in line with the previous literature (e.g., Pham et al. 2012) that provides empirical evidence of a negative relationship between ownership concentrations on the firm-level weighted average cost of capital.

Finally, the coefficient on foreign ownership is positive and statistically significant at the 1% level, indicating that there is a statistically significant and positive relationship between foreign ownership and firm-level cost of capital, inconsistent with the sixth hypothesis. This finding shows that Pakistani

firms with a higher level of foreign investors have a higher cost of capital than those with less or no foreign investors. Theoretically, this positive relationship between foreign ownership and the cost of capital is consistent with the prediction of information asymmetry. This issue is relatively higher among foreign investors because of language and distance obstacles (Huafang and Jianguo 2007), which may lead to a higher cost of capital. Empirically, the finding of this positive relationship between foreign ownership with firm-level COC is in line with the prior literature (e.g., Boubakri et al. 2016).

5.2. Unweighted Index Versus Weighted Index

The current study responds to the literature in order to address the possibility that the main findings may be sensitive to the type of corporate governance index. Hence, a weighted corporate governance index instead of an unweighted corporate governance index is employed by assigning 20% weight to each sub-index of PCGI, whereas the unweighted corporate governance index has different weights assigned to each sub-index[2]. This procedure is line with prior studies (e.g., Beiner et al. 2006; Ntim et al. 2012) that used the same method to test whether their main findings are sensitive to the weighted corporate governance index (WPCGI) or not. Therefore, the PCGI in Equation (1) is replaced by the WPCGI. Table 3 shows a comparison for results using the unweighted index versus those using the weighted index.

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[2] The corporate governance index that is used in the current study to measure corporate governance compliance and disclosure among Pakistani listed firms consists of 70 corporate governance provisions divided into five sub-indices, which are equally weighted, but the number of corporate governance provisions are different in the five sub-indices and leads to different weights being assigned to each sub-index.

Table 3. Results based on weighted CG index.

Dependent Variable: COC					
		Unweighted Index		Weighted Index	
Independent Variable	**Expected Sign**	**Coefficient**	***t*-Statistic**	**Coefficient**	***t*-Statistic**
Panel A: CG variables					
PCGI	−	−0.000256 **	−2.367414	−0.000285 ***	−2.692242
DOWNP	+	0.000448 **	2.378413	0.000453 **	2.409312
IOWNP	−	0.000110	0.968540	0.000111	0.990667
GOWNP	−	0.000242	1.103890	0.000253	1.140036
BOWNP	+/−	−0.000165 ***	−3.394800	−0.000169 ***	−3.466370
FOWNP	−	0.000782 ***	4.871608	0.000787 ***	4.904898
BIG4	−	−0.000387	−0.059896	−0.000282	−0.043382
BSZ	−	0.002998	1.642575	0.003034 *	1.659411
BGEN	−	0.011861 **	2.298860	0.011793 **	2.280540
Panel B: Control variables					
LTA		−0.018664 ***	−4.553196	−0.018612 ***	−4.569124
ROE		−0.000520 *	−1.833582	−0.000519 *	−1.825441
SALESG		−0.001684	−0.295017	−0.001598	−0.280165
LVG		−0.000704 ***	−4.235213	−0.000706 ***	−4.250991
B		0.152732 *	2.512878	0.152671 **	2.514698
Industry fixed effects		Yes			
Year fixed effects		Yes			
Constant		0.493347 ***	13.13452	0.493092 ***	13.17160
Adjusted R-square		0.540825		0.550872	
F-statistic		60.19378 ***		60.41580 ***	
Balanced panel observations		1760		1760	

Notes: Variables are defined as follows. Cost of capital (COC), Pakistani Corporate Governance Index (PCGI), director ownership (DOWNP), institutional ownership (IOWNP), government ownership (GOWNP), block ownership (BOWNP), foreign ownership (FOWNP), audit firm size (BIG4), size of the board of directors (BSZ), board diversity on the basis of gender (BGEN), firm size as log of total assets (LTA), profitability (ROE), growth opportunities (SALESG), leverage (LVG) and systematic risk (β). Parameter estimates were obtained by OLS estimation (panel least squares). The year 2003 and Auto industry has been excluded from the analysis in order to avoid the dummy variable trap. The asterisks *, **, and *** denote the 10%, 5%, and 1% level of significance, respectively.

Adjusted R-square is 0.540825 for unweighted index and 0.550872 for weighted index, suggesting that 54% and 55% variability in PCGI and WPCGI, are jointly explained by independent variables in Equation (1). Similarly, the F-statistic is 60.19378, using unweighted index, and 60.41580, using the weighted index, and both are statistically significant at 1% level. This suggests that both analyses are appropriate, and all the parameters in the analyses are jointly significant. Generally, the findings of both analyses are similar, as both predict the same sign of coefficient, magnitude of coefficient, and level of significance, either using PCGI or WPCGI.

5.3. Robustness Tests

The current study employs alternative proxies for the cost of capital in order to account for the possibility that the main findings are sensitive to different proxies. In particular, and in line with past studies (e.g., Pham et al. 2012), the cost of equity and cost of debt is used as an alternative cost of capitals' measurement. The cost of debt is considered for the cost of selecting debt covenants; therefore, it signals credit risk and agency problems (Kim 2018; Elshandidy and Neri 2015). Tables 4 and 5

report results for the cost of equity and cost of debt, respectively. We find consistent results with our main findings.

Table 4. Results based on cost of equity.

Dependent Variable: COC/COE					
		Dependent Variable: COC		Dependent Variable: COE	
Independent Variable	**Expected Sign**	**Coefficient**	***t*-Statistic**	**Coefficient**	***t*-Statistic**
Panel A: CG variables					
PCGI	−	−0.000256 **	−2.367414	−0.000158 **	−2.204032
DOWNP	+	0.000448 **	2.378413	0.000176	1.101021
IOWNP	−	0.000110	0.968540	0.000121	0.082011
GOWNP	−	0.000242	1.103890	0.000146	0.605721
BOWNP	+/−	−0.000165 ***	−3.394800	−0.000101	−1.558801
FOWNP	−	0.000782 ***	4.871608	0.000411 ***	2.638581
BIG4	−	−0.000387	−0.059896	0.006483	0.905017
BSZ	−	0.002998	1.642575	0.004159	1.500352
BGEN	−	0.011861 **	2.298860	0.007951	1.085436
Panel B: Control variables					
LTA		−0.018664 ***	−4.553196	0.001458	0.795485
ROE		−0.000520 *	−1.833582	−0.000397 **	−2.385347
SALESG		−0.001684	−0.295017	−0.006968	−0.894314
LVG		−0.000704 ***	−4.235213	0.000589	0.881462
β		0.152732 *	2.512878	0.262360 ***	2.959989
Industry fixed effects		Yes			
Year fixed effects		Yes			
Constant		0.493347 ***	13.13452	0.217037 ***	3.344781
Adjusted R-square		0.540825		0.744496	
F-statistic		60.19378 ***		147.4412 ***	
Balanced panel observations		1760		1760	

Notes: Variables are defined as follows. Cost of capital (COC), Pakistani Corporate Governance Index (PCGI), director ownership (DOWNP), institutional ownership (IOWNP), government ownership (GOWNP), block ownership (BOWNP), foreign ownership (FOWNP), audit firm size (BIG4), size of the board of directors (BSZ), board diversity on the basis of gender (BGEN), firm size as log of total assets (LTA), profitability (ROE), growth opportunities (SALESG), leverage (LVG), and systematic risk (β). Parameter estimates were obtained by OLS estimation (panel least squares). The year 2003 and Auto industry were excluded from the analysis in order to avoid the dummy variable trap. The asterisks *, **, and *** denote the 10%, 5%, and 1% level of significance, respectively.

Table 5. Results based on cost of debt.

Dependent Variable: COC/COD					
		Dependent Variable: COC		Dependent Variable: COD	
Independent Variable	**Expected Sign**	**Coefficient**	***t*-Statistic**	**Coefficient**	***t*-Statistic**
Panel A: CG variables					
PCGI	-	−0.000256 **	−2.367414	−0.000556 ***	−3.764441
DOWNP	+	0.000448 **	2.378413	0.000150 **	2.021592
IOWNP	-	0.000110	0.968540	4.21×10^{-5}	0.209547
GOWNP	-	0.000242	1.103890	−0.000204	−1.365303
BOWNP	+/-	−0.000165 ***	−3.394800	−0.000258 ***	−7.090828
FOWNP	-	0.000782 ***	4.871608	0.000926 ***	5.473368
BIG4	-	−0.000387	−0.059896	−0.016931 ***	−3.138824
BSZ	-	0.002998	1.642575	−0.001615	−0.854725
BGEN	-	0.011861 **	2.298860	0.006309	1.638559

Table 5. *Cont.*

Dependent Variable: COC/COD					
		Dependent Variable: COC		Dependent Variable: COD	
Independent Variable	**Expected Sign**	**Coefficient**	***t*-Statistic**	**Coefficient**	***t*-Statistic**
Panel B: Control variables					
LTA		−0.018664 ***	−4.553196	−0.029582 ***	−8.405904
ROE		−0.000520 *	−1.833582	−0.000696 ***	−2.721204
SALESG		−0.001684	−0.295017	−0.006232	−1.136623
LVG		−0.000704 ***	−4.235213	−0.000348 ***	−9.934225
β		0.152732 *	2.512878	0.005018	1.022498
Industry fixed effects		Yes			
Year fixed effects		Yes			
Constant		0.493347 ***	13.13452	0.756528 ***	9.673746
Adjusted R-square		0.540825		0.270132	
F-statistic		60.19378 ***		19.60072 ***	
Balanced panel observations		1760		1760	

Notes: Variables are defined as follows. Cost of capital (COC), Pakistani Corporate Governance Index (PCGI), director ownership (DOWNP), institutional ownership (IOWNP), government ownership (GOWNP), block ownership (BOWNP), foreign ownership (FOWNP), audit firm size (BIG4), size of the board of directors (BSZ), board diversity on the basis of gender (BGEN), firm size as log of total assets (LTA), profitability (ROE), growth opportunities (SALESG), leverage (LVG), and systematic risk (β). Parameter estimates were obtained by OLS estimation (panel least squares). The year 2003 and Auto industry were excluded from the analysis in order to avoid the dummy variable trap. The asterisks *, **, and *** denote the 10%, 5%, and 1% level of significance, respectively.

We further employed lagged structure to examine the extent to which the main findings were affected by the endogeneity problem. Table 6 presents the results. Generally, the findings of both analyses are similar, as both analyses predict almost the same sign and magnitude of coefficient with the level of significance.

Table 6. Results based on lagged structure.

Dependent Variable: COC					
		Un-Lagged Structure		Lagged Structure	
Independent Variable	**Expected Sign**	**Coefficient**	***t*-Statistic**	**Coefficient**	***t*-Statistic**
Panel A: CG variables					
PCGI (−1)	−	−0.000256 **	−2.367414	−0.000250 *	−1.838121
DOWNP (−1)	+	0.000448 **	2.378413	0.000496 ***	2.613038
IOWNP (−1)	−	0.000110	0.968540	0.000270 *	1.802866
GOWNP (−1)	−	0.000242	1.103890	−0.000892	−0.285109
BOWNP (−1)	+/−	−0.000165 ***	−3.394800	−0.000196 ***	−2.968802
FOWNP (−1)	−	0.000782 ***	4.871608	0.000795 ***	4.081046
BIG4 (−1)	−	−0.000387	−0.059896	0.001296	0.151817
BSZ (−1)	−	0.002998	1.642575	0.002940	1.359421
BGEN (−1)	−	0.011861 **	2.298860	0.010384	1.204158
Panel B: Control variables					
LTA (−1)		−0.018664 ***	−4.553196	−0.018774 ***	−8.242142
ROE (−1)		−0.000520 *	−1.833582	−0.000559 *	−1.820631
SALESG (−1)		−0.001684	−0.295017	−0.001323	−0.135539

Table 6. *Cont.*

Dependent Variable: COC					
		Un-Lagged Structure		Lagged Structure	
Independent Variable	**Expected Sign**	**Coefficient**	***t*-Statistic**	**Coefficient**	***t*-Statistic**
LVG (−1)		−0.000704 ***	−4.235213	−0.000705 ***	−8.992319
B (−1)		0.152732 *	2.512878	0.152765 ***	19.22891
Industry fixed effects		Yes			
Year fixed effects		Yes			
Constant		0.493347 ***	13.13452	0.496610 ***	12.83157
Adjusted R-square		0.540825		0.540752	
F-statistic		60.19378 ***		58.53265 ***	
Balanced panel observations		1760		1600	

Notes: Variables are defined as follows. Cost of capital (COC), Pakistani Corporate Governance Index (PCGI), director ownership (DOWNP), institutional ownership (IOWNP), government ownership (GOWNP), block ownership (BOWNP), foreign ownership (FOWNP), audit firm size (BIG4), size of the board of directors (BSZ), board diversity on the basis of gender (BGEN), firm size as log of total assets (LTA), profitability (ROE), growth opportunities (SALESG), leverage (LVG), and systematic risk (β). Parameter estimates were obtained by OLS estimation (panel least squares). The year 2003 and Auto industry were excluded from the analysis in order to avoid the dummy variable trap. The asterisks *, **, and *** denote the 10%, 5%, and 1% level of significance, respectively.

5.4. Two-Stage Least Squares Result

After carrying out the Durbin–Wu–Hausman exogeneity investigation, the current study rejects the null hypothesis of no endogeneity as the coefficient on P-PCGI is statistically significant (0.000) at 1% level of significance with PCGI. The finding of this investigation shows that the endogeneity problem exists. Therefore, following, the current study uses the Two Stage Least Square (2SLS) technique as robust to find out how far the findings are biased and inconsistent due to this problem.

2SLS is performed in two stages. In the first stage, the PCGI is regressed on four alternative CG variables, namely board diversity based on nationality, the number of non-executive directors on the board, the number of board of directors' meetings, and capital expenditure, besides, to controlling variables. The alternative CG variables' selection is based on literature (e.g., Ntim et al. 2012; Pham et al. 2012; Ntim and Soobaroyen 2013; Tariq and Abbas 2013). The equation below specifies this regression, where the predicted value of PCGI and residuals will be saved as P-PCGII and R-PCGI, respectively. The study accepts the P-PCGII as a valid instrumental variable as P-PCGII is significantly associated with PCGI and insignificantly related to R-PCGI. This decision is taken based on the correlation matrix that includes PCGI, P-PCGII, and R-PCGI.

$$PCGI_{it} = \alpha_0 + \beta_1 BNAT_{it} + \beta_2 NEXD_{it} + \beta_3 BMF_{it} + \beta_4 CE_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (2)$$

where PCGI refers to the Pakistani CG index, and BNAT, NEXD, BFM, and CE are defined as board diversity based on nationality, the number of non-executive directors on the board, the number of board of directors' meetings, and capital expenditure, respectively. Control variables remain the same, as explained in Equation (2).

In the second stage, Equation (2) is re-estimated, using P-PCGII instead of PCGI, as follows:

$$\begin{aligned} COC_{it} = \; & \alpha_0 + \beta_1 P - PCGII_{it} + \beta_2 DOWNP_{it} + \beta_3 IOWNP_{it} + \beta_4 GOWNP_{it} \\ & + \beta_5 BOWNP_{it} + \beta_6 FOWNP_{it} + \beta_7 BIG4_{it} + \beta_8 BSZ_{it} \\ & + \beta_9 BGEN_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \end{aligned} \quad (3)$$

where all variables remain the same as in Equation (1), except the P-PCGII that is being used as an instrumental variable for the primary independent variable.

The findings of 2SLS (robust results) and OLS estimation (primary analysis) are presented in Table 7, simultaneously, in order to compare the results.

Table 7. Two-stage least-square result.

Dependent Variable: COC					
		Ordinary Least Square		2SLS	
Independent Variable	**Expected Sign**	**Coefficient**	***t*-Statistic**	**Coefficient**	***t*-Statistic**
Panel A: CG variables					
PCGI	−	−0.000256 **	−2.367414	−0.003473 **	−2.368299
DOWNP	+	0.000448 **	2.378413	0.000808 ***	2.755872
IOWNP	−	0.000110	0.968540	0.000451	1.036336
GOWNP	−	0.000242	1.103890	0.001057 *	1.668139
BOWNP	+/−	−0.000165 ***	−3.394800	−0.000312 ***	−2.802401
FOWNP	−	0.000782 ***	4.871608	0.001167 ***	4.033018
BIG4	−	−0.000387	−0.059896	0.012895	0.909296
BSZ	−	0.002998	1.642575	−0.001324	−0.341998
BGEN	−	0.011861 **	2.298860	−0.002020	−0.148545
Panel B: Control variables					
LTA		−0.018664 ***	−4.553196	−0.015608 ***	−3.683365
ROE		−0.000520 *	−1.833582	−0.001147 ***	−2.668026
SALESG		−0.001684	−0.295017	−0.008931	−0.574553
LVG		−0.000704 ***	−4.235213	−0.000756 ***	−6.888064
β		0.152732 *	2.512878	0.151077 ***	13.68539
Industry fixed effects		Yes			
Year fixed effects		Yes			
Constant		0.493347 ***	13.13452	0.565122 ***	8.267790
Adjusted R-square		0.540825		0.264234	
F-statistic		60.19378 ***		28.47540 ***	
Balanced panel observations		1760		1760	

Notes: Variables are defined as follows. Cost of capital (COC), Pakistani Corporate Governance Index (PCGI), director ownership (DOWNP), institutional ownership (IOWNP), government ownership (GOWNP), block ownership (BOWNP), foreign ownership (FOWNP), audit firm size (BIG4), size of the board of directors (BSZ), board diversity on the basis of gender (BGEN), firm size as log of total assets (LTA), profitability (ROE), growth opportunities (SALESG), leverage (LVG), Two Stage Least Square (2SLS) and systematic risk (β). Parameter estimates were obtained by OLS estimation (panel least squares). The year 2003 and auto industry were excluded from the analysis in order to avoid the dummy variable trap. The asterisks *, **, and *** denote the 10%, 5%, and 1% level of significance, respectively.

The 2 stage least square (2SLS) finds a negative and significant association between PCGI and block ownership with the cost of capital. Similarly, a positive and significant nexus between director ownership and foreign ownership with the cost of capital is also consistent with the findings of the main analysis. However, minor sensitivity in the magnitude of coefficients and level of significance can be observed. For instance, director ownership is statistically significant at the 1% level, which was previously significant at the 5% level in the main analysis. Similarly, government ownership is

significant at the 10% level in the 2SLS analysis, whereas it was insignificant in the principal analysis. The findings of control variables in 2SLS are mainly similar to the primary analysis by using OLS.

6. Conclusions

This paper has sought to empirically ascertain whether Pakistani listed firms that comply with 2002 PCCG have improved firm value and lowered the cost of capital than those with less or no compliance. Specifically, using a sample of 160 Pakistani listed firms from 2003 to 2013, this study has examined the relationship between corporate governance structure and firm cost of capital. The level of compliance with PCGI and factors influencing the level of compliance and disclosure are also examined in this study.

We found a negative and statistically significant relationship between PCGI and the cost of capital. The evidence of a statistically significant PCGI and cost of capital relation implies that, on average, better governed Pakistani listed firms tend to be associated with a lower cost of capital than their poorly governed counterparts. Firms with a high level of director ownership have a higher cost of capital. The percentage of institutional ownership and government ownership do not explain the variation in the firm-level cost of capital. The coefficient of block ownership is negative and statistically significant at 1% level of significance, suggesting that Pakistani firms with a higher level of block ownership have a lower cost of capital than those firms with a smaller percentage of block ownership. As an emerging market, good corporate governance practices are particularly relevant to minimise corporate failure and assist firms to attract capital at a lower cost, as compared to other counterparts.

Contributions and Policy Implications

This study makes numerous contributions and extensions to the extant CG literature. For instance, this study offers for the first-time direct evidence on the effectiveness of CG reforms in Pakistan. Precisely, it provides detailed findings on the level of CG compliance and disclosure with the 2002 PCCG among listed firms. Similar to a limited number of prior studies in emerging markets, the introduction of 2002 PCCG facilitates uniformity and convergence of CG practices; the findings recommend that CG practices still differ largely among Pakistani listed firms over the eleven-year period examined. Additionally, to study the value-creating role of CG mechanisms by using an alternative approach (COC) to those which were used in the previous literature (ROA, ROE, and Tobin's Q) is another contribution to the literature, as there is a lack of empirical evidence on CG compliance and COC.

Similarly, the findings obtained from investigating the nexus between the CG standards and COC have several implications, and recommendations can be drawn from these findings. For instance, the findings of the current study demonstrate that there is a negative and significant association between the PCGI and block ownership with firm-level COC. This implies that, on average, better governed Pakistani listed firms tend to be associated with lower COC than their poorly governed counterparts. To an emerging market, good CG practices are particularly important, and, as such, practices may not only assist in minimising corporate failure but may also assist firms in attracting capital at a lower cost, as compared to their counterparts. Additionally, director ownership and foreign ownership are positively and significantly associated with firm-level of COC. This implies that firms can minimise director ownership to attract external financings at a lower cost. Hence, policymakers may encourage firms to further improve their CG structures in order to attract foreign investors. Finally, using a relatively old dataset could be a limitation of this study. However, in the CG studies, such time differences are somehow acceptable because of several reasons. For instance, the data collection is a tough job because of its nature of being hand-collected. Furthermore, as CG rules do not change quickly and also do not impact the firms' decisions so quickly, findings can still be generalised. However, the latest dataset with latest techniques and with additional statistical tests can be the future avenue of this area of research. Additionally, weighted index can also be used in this regard.

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Appendix A

Table A1. Summary of variables used in CG mechanisms and firm COC model.

Dependent Variable	
WACC	Weighted average COC (WACC) is computed by using the after-tax cost of debt and cost of equity by using weights of total debt and total equity to the total market capitalisation of the firm.
Independent Variables	
PCGI	Pakistani Corporate Governance Index (PCGI) consists of 70 provisions from Pakistani Code of Corporate Governance, which takes a value of 1 if a particular CG provision is disclosed in annual reports of company, and 0 otherwise; scaled to a value between 0% and 100%.
DOWNP	Percentage of shares owned by directors to the total shares held by firm.
IOWNP	Percentage of shares owned by institutions to the total shares held by firm.
GOWNP	Percentage of shares owned by government to the total shares held by firm.
BOWNP	Percentage of shares owned by shareholders with at least 5% of total shares to the total shares held by firm.
FOWNP	Percentage of shares owned by foreigner to the total shares held by firm.
BIG4	1 if firm is audited by one of the big-four[3] audit firms, and 0 otherwise.
BSZ	The total number of directors on the board of firm at the time of AGM.
BGEN	1 if firm has a female board member, and 0 otherwise.
The Control Variables	
LTA	Natural log of total book value of assets of the firm.
ROE	Earnings before interest and tax to total equity of the firm.
SALESG	Sales in current year menus sales in last year to sales of last year.
LEVG	Total book value of debt to total book value of assets.
β	Three years monthly stock returns are used to calculate Beta of firm by using a regression of stock return to market returns.

[3] Big-four refers to Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers.

Appendix B

Table A2. Pakistani CG Index (PCGI) list of provisions and measurement.

	CG Variables	Code	Reference CO and PCCG *	Measurement
1.	**Board of Directors**			
1.	Directors Categorization[4] Disclosed in Reports	DCDA	PCCG, 2002 (i.c) LR, p. 34 (1) PCCG, 2012 (i)	A binary number 1 is assigned if it discloses the categorisation of directors in annual reports, and 0 otherwise.
2.	Board Composition (Ratio of Independent Directors)	BCOM	PCCG, 2002 (i.b) PCCG, 2012 (i.b)	A binary number of 1 is assigned if at least one member of the board is independent, and 0 otherwise.
3.	Director Representing Minority Shareholders	DRMS	PC, 2002 (i.a) PCCG, 2012 (i.a)	A binary number 1 is assigned if director representing minority shareholders, and 0 otherwise.
4.	Board Classification (Ratio of Non-Executive Directors)	RNED	PC, 2002 (i.c) PCCG, 2012 (i.d)	A binary number of 1 if at least one-fourth of the board is non-executive, and 0 otherwise.
5.	The Membership of Directors in Other Boards	MDOB	PC, 2002 (iii) PCCG, 2012 (ii)	Binary number 1 is assigned if it discloses the director's membership in other boards of listed companies in their annual reports, and 0 otherwise.
6.	Maximum Directorship in Other Boards of Listed Companies	MDSB	PCCG, 2002 (iii) PCCG, 2012 (ii)	Binary number 1 is assigned if directors are not serving at the same time for the board of more than ten/seven, and 0 otherwise.
7.	Non-Executive Chairman	NECH	PCCG, 2002 (ix) PCCG, 2012 (vi)	Binary number 1 is assigned if the chairman of the board is a non-executive director, and 0 otherwise.
8.	Clear Definition of Respective Role of Chairman and CEO[5]		PCCG, 2002 (ix) PCCG, 2012 (vi)	Binary number 1 is assigned if there is a description that categorises the role of chairman and CEO, and 0 otherwise.
9.	CEO Duality Role	CEOD	PCCG, 2002 (ix) PCCG, 2012 (vi)	Binary number 1 is assigned if the chairman position is separate from the CEO, and 0 otherwise.
10.	Orientation Courses for the Directors to enable them to Manage the Affairs on Behalf of Shareholders	OCDS	PCCG, 2002 (xiv) PCCG, 2012 (xi)	A binary number of 1 if the firm discloses the directors' attendance in the orientation course, and 0 otherwise.
11.	Board Meeting Disclosure	BRMD	PCCG, 2002 (xi) PCCG, 2012 (xvi, h)	A binary number of 1 if the board meetings are disclosed in annual reports, and 0 otherwise.

Table A2. *Cont.*

	CG Variables	Code	Reference CO and PCCG *	Measurement
12.	Board Meeting Frequency	BRMF	PCCG, 2002 (xi) PCCG, 2012 (xvi, h)	A binary number of 1 if the board meets at least four times in a year, and 0 otherwise.
13.	National Tax Payer Director	NTPD	PCCG, 2002 (iv, a) PCCG, 2012 (xi, 3)	A binary number of 1 if the name of the directors is born on the register of National Tax Payers is disclosed, and 0 otherwise.
14.	No Defaulter Director in the Board	NDDB	PCCG, 2002 (iv, b) PCCG, 2012 (xi, 3)	A binary number of 1 if no defaulter information about directors is disclosed, and 0 otherwise.
15.	Directors and their Spouses involvement in Brokerage Business	DSBB	PCCG, 2002 (xix, j) PCCG, 2012 (xvi, l)	Binary number 1 is assigned if no director's involvement in brokerage business is disclosed in annual reports, and 0 otherwise.
16.	Statement of ethics and Business Practices	SEBP	PCCG, 2002 (viii, a) PCCG, 2012 (xxxiv)	A binary number of 1 if firm discloses that the statement of ethics and business practices is prepared and circulated, and 0 otherwise.
17.	Power and duties of Board of Directors (BOD)	PBOD	PC, 2002 (vii) PCCG, 2012 (iv)	Binary number 1 is assigned if it discloses their fiduciary powers are exercised by the board of directors, and 0 otherwise.
18.	Future outlook	FUTO	PCCG, 2002 (xix, f) PCCG, 2012 (xvi, f)	Binary number 1 is assigned if it discloses the future outlook by board members, and 0 otherwise.
Committees and Auditing				
19.	Existence of R&HR[6] Committee	RHRC	PCCG, 2002 (xxx) PCCG, 2012 (xxv)	Binary number 1 is assigned if it has HR committee or a remuneration one, 0 otherwise.
20.	Committee Composition	CCOM	PCCG, 2002 (xxx) PCCG, 2012 (xxv)	A binary number of 1 is assigned if committee has at least three members with a majority of non-executive directors, and 0 otherwise.
21.	Committee Meetings held During the Year	CMDY	PCCG, 2002 (xxxi) PCCG, 2012 (xxv)	Binary number 1 is assigned if it discloses different committees' meetings with numbers held during the year, and 0 otherwise.
22.	Committee Meeting Attended by each Directors	CMAD	PCCG, 2002 (xxx) LR p. 27 (16a2) PCCG, 2012 (16h)	Binary number 1 is assigned if it discloses committees' meetings attended by each director, and 0 otherwise.
23.	The Names of the Members of the Committees of the Boards	NMCB	PC 2002 p. 6 (xxx) LR p. 29 (26) PCCG, 2012 (xxvi)	Binary number 1 is assigned if it discloses the names of member who attended committees of the board in each annual report, and 0 otherwise.

Table A2. *Cont.*

	CG Variables	Code	Reference CO and PCCG *	Measurement
24.	Existence and Disclosure of Audit Committee Members in Annual Reports	EDAC	PCCG, 2002 (xxx) PCCG, 2012 (xxiv)	A binary number of 1 is assigned if the names of the audit committee are disclosed in annual reports, and 0 otherwise.
25.	Minimum Members of Audit Committee	MMAC	PCCG, 2002 (xxx) PCCG, 2012 (xxiv)	A binary number of 1 is assigned if minimum members of audit committee is at least three, and 0 otherwise.
26.	Non-Executive Chairman of the Committee	NECC	PCCG, 2002 (xxx) PCCG, 2012 (xxiv)	A binary number of 1 if con-executive director is the chairman of the audit committee, and 0 otherwise.
27.	Majority of Non-Executives in Audit Committee	MNEC	PCCG, 2002 (xxx) PCCG, 2012 (xxiv)	Binary number 1 is assigned if its non-executives have the majority in audit committee, and 0 otherwise.
28.	Minimum Meetings of the Audit Committee in a Financial Year	MMAC	PCCG, 2002 (xxxi) PCCG, 2012 (xxvii)	Binary number 1 is assigned if the audit committee meets at least four times in a year and this information is available in annual reports, and 0 otherwise.
29.	CFO, The Head of Internal Audit Committee and a Representative of External Auditors attendance	CIEA	PCCG, 2002 (xxxii) PCCG, 2012 (xxviii)	Binary number 1 is assigned if the CFO, the Head of Internal Audit Committee and a Representative of External Auditors attended audit committee meetings and this information is disclosed in annual reports, and 0 otherwise.
30.	Review of quarterly, half-yearly and annual financial statements prior to the approval of the board of directors	RQHY	PCCG, 2002 (xxxiii, c) PCCG, 2012 (xxix, b)	A binary number of 1 if audit committee reviews quarterly, half-yearly, and annual financial statements prior to the approval of board of directors and discloses in annual reports, and 0 otherwise.
31.	Review of Management letter issued by the external auditor	RMLE	PCCG, 2002 (xxxiii, e) PCCG, 2012 (xxix, e)	A binary number of 1 if Review of Management letter issued by external auditors and discloses in annual reports, and 0 otherwise.
32.	Appointment of Secretary by the Committee of Audit	ASAC	PCCG, 2002 (xxxiv) PCCG, 2012 (xxx)	Binary number 1 is assigned if its audit committee appointed a secretary and this information is disclosed in the annual reports, and 0 otherwise.
Right of Shareholder and Annual General Meeting				
33.	Notice of the Annual General Meeting (AGM) to shareholders	NAGM	CO 1984 p.111 (160a)	Binary number 1 is assigned if they issued a notice of AGM about the meeting to shareholders, and 0 otherwise.

Table A2. *Cont.*

	CG Variables	Code	Reference CO and PCCG *	Measurement
34.	Well in Time Notice of the AGM to shareholders	WITN	CO 1984 p.111 (160a)	Binary number 1 is assigned if they issued a notice of AGM at least 21 days before the meeting date, and 0 otherwise.
35.	AGM within a Period of Four Months Following the Close of it Financial Year	AFFY	CO 1984 p.108 (158/1)	Binary number 1 is assigned if it held AGM within three/four[7] months following the close of its financial year, and 0 otherwise.
36.	AGM in the same Town as Registered Office of the Company	ASRO	CO 1984 p.108 (158/2)	Binary number 1 is assigned if the firm held AGM within the same town as the company has a registered office, and 0 otherwise.
37.	Notice of the Meeting with Specifying the Following Details[8]	NMFD	CO 1984 p.111 (160/1a)	A binary number of 1 if the notice of the AGM specifies the date, place, time, and the business to be transacted, and 0 otherwise.
38.	Right of Shareholder to Appoint a Proxy for AGM to Vote for Directors	RSAP	CO 1984 p.111 (160/1d)	A binary number of 1 if the notice of the AGM specify that shareholder can participate personally or through a proxy, and 0 otherwise.
Transparency and Disclosures				
39.	Disclosure of Ownership pattern	DOWS	PCCG, 2002 (xix, i) PCCG, 2012 (xvi, j)	Binary number 1 is assigned if it publishes ownership pattern reports, and 0 otherwise.
40.	Directors, CEO, their Spouse and Minor Children's' Ownership Disclosure	BDOD	PCCG, 2002 (xix, i) PCCG, 2012 (xvi, j)	A binary number of 1 if a firm discloses the name-wise details of shareholdings of directors, CEO, their spouse, and their minor children's, and 0 otherwise.
41.	Shareholding Ten/five[9] Percent or More Voting Rights	STMV	PCCG, 2002 (xix, i) PCCG, 2012 (xvi, j)	A binary number of 1 if firm discloses the shareholdings of ten/five per cent or more voting rights, and 0 otherwise.
42.	Going Concern Disclosure in Annual Reports	GCDR	PCCG, 2002 (xix, a) PCCG, 2012 (xvi, f)	A binary number of 1 if it is disclosed that the firm is a going concern entity and explanation if not, and 0 otherwise.
43.	Outstanding Taxes and Other Charges disclosed	OTOC	PCCG, 2002 (xix, e) PCCG, 2012 (xvi, e)	Binary number 1 is assigned if it discloses its outstanding taxes and other charges with reason in annual reports, and 0 otherwise.
44.	Presentation of Operations, Cash Flows, and Change in Equity	POCE	PCCG, 2002 (xix, a) PCCG, 2012 (xvi, a)	Binary number 1 is assigned if it discloses the operations, cash flows, and change in equity in annual reports, and 0 otherwise.

Table A2. *Cont.*

	CG Variables	Code	Reference CO and PCCG *	Measurement
45.	Key Operating and Financial Data for Last Six Years	OFSY	PCCG, 2002 (xix, c) PCCG, 2012 (xvi, c)	Binary number 1 is assigned if it discloses the last six years financial and operating performance in annual reports, and 0 otherwise.
46.	Significant Deviation from Last Year Operating Outcomes	SDOR	PCCG, 2002 (xix, b) PCCG, 2012 (xvi, b)	Binary number 1 is assigned if it discloses operating results and significant deviation from last year, if any, and the reasons are explained in annual reports, and 0 otherwise.
47.	Trades of Share Carried out by the director and Other Executives[10]	TSDE	PCCG, 2002 (xix, j) LR p. 28 (16l) PCCG, 2012 (xvi, l)	Binary number 1 is assigned if it discloses the trade of shares of companies carried out by directors, executives, their spouses, and their minor child, and 0 otherwise.
48.	Disclosure of Objectives and Corporate Strategy	DOCS	PCCG, 2002 (viii, b) PCCG, 2012 (v, c)	A binary number of 1 if firm discloses mission, vision, and corporate strategies in annual reports, and 0 otherwise.
49.	Statement on Compliance with Corporate Governance Code	SCCG	PCCG, 2002 (xlv) LR p. 34 (11) PCCG, 2012 (xl)	Binary number 1is assigned if it provides a positive statement on PCCG[11] in the reports, and 0 otherwise.
50.	Disclosure of Dividend Policy (Reason for any bonus share or no dividend)	DODP	PCCG, 2002 (xix, d) PCCG, 2012 (xvi, d)	Binary number 1 is assigned if it discloses the reason for a bonus share (if any) or not paying a dividend, and 0 otherwise.
51.	Disclosure of Detail of Related Party Transaction	DRPT	PCCG, 2002 (xiii, b) PCCG, 2012 (x)	A binary number of 1 if firm discloses facts of any contract in which executives or any director was an interested and clear statement in case of no such transaction, and 0 otherwise.
52.	Director's Detailed Remuneration Disclosure	DDRD	PCCG, 2012 (xvii, b)	Binary number 1 is assigned if it publishes board members' remuneration in annual reports, and 0 otherwise.
2.	**Internal Control, External Auditor, and Risk Management**			
53.	Presence of Effective Internal Control System	EICS	PCCG, 2002 (viii, c) PCCG, 2012 (xxix, i)	Binary number 1 is assigned if it publishes that there is an effective and sound internal control system established, implemented, and monitored by the BOD, and 0 otherwise.
54.	Disclosure of Firm Risk in Annual Reports	DFRR	PCCG, 2002 (xix, f) PCCG, 2012 (ix)	Binary number 1 is assigned if it offers an explanation of the actual and potential risk of the company, and 0 otherwise.

Table A2. *Cont.*

	CG Variables	Code	Reference CO and PCCG *	Measurement
55.	Risk Management Policies by the BOD	RMPB	PCCG, 2002 (viii, b) PCCG, 2012 (ix)	A binary number of 1 if the firm provides a clear description of risk management policies in the annual report, and 0 otherwise.
56.	Auditor review of Internal Control System	ARIS	PCCG, 2002 (xxxiii, j) PCCG, 2012 (xiv, d)	A binary number of 1 if auditor reports provide a narrative that internal control system has been reviewed by the auditor, and 0 otherwise.
57.	Auditor Review of Firm Financial Reports	ARFR	PCCG, 2002 (xxxiii, c) PCCG, 2012 (xxix, b)	Binary number 1 is assigned if its auditor reports provide description financial reports have been reviewed by the auditor, and 0 otherwise.
58.	Approval of Firm Financial Reports	AFFR	PCCG, 2002 (xxiv) PCCG, 2012 (xxi)	Binary number 1 is assigned if its reports are ratified by BOD and signed by the authorised executives, CFO, and CEO earlier than rotation, and 0 otherwise.
59.	Proper Book of Account Maintained	PBAM	PCCG, 2002 (xix, b) PCCG, 2012 (xvi, b)	Binary number 1 is assigned if it publishes that proper book of accounts is maintained in annual reports, and 0 otherwise.
60.	Appropriate Accounting Policies Applied in Preparation of Accounting Estimations and Financial Statement	APAE	PCCG, 2002 (xix, c) PCCG, 2012 (xvi, c)	Binary number 1 is assigned if it discloses appropriate accounting rules applied in the preparation of accounting estimations and financial statements in annual reports, and 0 otherwise.
61.	Financial Statements According to IAS[12]	FIAS	PCCG, 2002 (xix, d) PCCG, 2012 (xxix)	A binary number of 1 if firm discloses that financial statements are according to IAS, and 0 otherwise.
62.	External Auditor's Satisfactory Rating by Institute of Charted Accountants of Pakistan	EARI	PCCG, 2002 (xxxvii) PCCG, 2012 (xxxiii)	A binary number of 1 if external auditors have satisfactory rating under the Quality Review Program by Institute of Charted Accountants of Pakistan and this information is disclosed, and 0 otherwise.
63.	Compliance with IFAC[13] Gridlines on Code of Ethics as Adopted by ICAP[14].	CGCE	PCCG, 2002 (xxxviii) PCCG, 2012 (xxxiii)	A binary number of 1 is assigned if compliance with International Federation of Accountants Gridlines on code of ethics is published in annual reports, and 0 otherwise.
64.	Auditor Duties According to IFAC	ADIM	PCCG, 2002 (xl) PCCG, 2012 (xxxiv)	A binary number of 1 is assigned if the auditor performs duties according to IFAC, no management role, and this information is disclosed in annual reports, and 0 otherwise.

Table A2. *Cont.*

	CG Variables	Code	Reference CO and PCCG *	Measurement
65.	Attendance of AGM[15] by external Auditor	AAGM	PCCG, 2002 (xliv) PCCG, 2012 (xli)	A binary number of 1 is assigned if external auditor of the company attends the annual general meeting and this information is disclosed in annual reports, and 0 otherwise.
66.	Statutory Auditor's Review of Corporate Governance Compliance Statement	SARC	PCCG, 2002 (xlvi) PCCG, 2012 (xli)	A binary number of 1 is assigned if statutory auditors of company review the Corporate Governance Compliance Statement and disclose this information in annual reports, and 0 otherwise.
67.	Half-yearly financial statements with statutory auditor's review	HYFS	PCCG, 2002 (xxi) PCCG, 2012 (xxix, b)	A binary number of 1 is assigned if half-yearly financial statements with statutory auditor's review information are disclosed in annual reports, and 0 otherwise.
68.	Annual audited financial statements not later than four-month from the close of the financial year	AAFS	PCCG, 2002 (xxii) PCCG, 2012 (xxix)	A binary number of 1 if annual audited financial statements no later than four months from the close of financial year are disclose in annual reports, and 0 otherwise.
69.	Determination of Compliance with relevant Statutory Requirements	DCSR	PCCG, 2002 (xxx, l) PCCG, 2012 (xxix, l)	A binary number of 1 is assigned if compliance with relevant statutory requirements is determined by external auditors and is disclosed in annual reports, and 0 otherwise.
70.	Monitoring Compliance with Best Practices of Corporate Governance and Identification of Violence	MCGV	PCCG, 2002 (xxx, m) PCCG, 2012 (xxix, m)	A binary number of 1 if external auditors are Monitoring Compliance with Best Practices of Corporate Governance and Identification of Violence if any discloses in annual reports, and 0 otherwise.

* CO stands for Companies Ordinance 1984 by Pakistani Government and PCCG stands for Pakistani Code of CG.

[4] Categorization of directors in terms of independent, non-executive, or executive.
[5] Chief Executive Officer.
[6] Remunerations and Human Resource Committee
[7] According to Companies Ordinance 1984, till 2008, this period was four months and then changed to three months. Data are collected accordingly.
[8] Notice of AGM to shareholders contains the date, place, time, and the business to be transacted.
[9] Shareholding to be disclosed was ten percent in PCCG 2002, but it was changed to five percent shareholding in PCCG 2012.
[10] Here "executives" means the CEO, COO, CFO, head of internal audit, and company secretary.
[11] PCCG stands for Pakistani Code of Corporate Governance.
[12] IAS stands for International Accounting Standards, and Pakistan follows these standards in preparation of financial statements.
[13] IFAC stands for International Federation of Accountants and this institute issued guidelines on code of ethics.
[14] ICAP stands for Institute of Charted Accountants of Pakistan, and this institute adopted the same code of ethics.
[15] AGM stands for annual general meeting of a company.

Appendix C

Table A3. Correlation matrix of dependent and independent variables: CG and COC model.

	COC	PCGI	DOWNP	IOWNP	GOWNP	BOWNP	FOWNP	BIG4	BSZ	BGEN	BNAT	LTA	ROE	SALESG	LVG	B
COC	1.000															
PCGI	−0.138	1.000														
DOWNP	−0.015	−0.010	1.000													
IOWNP	−0.013	0.027	−0.163	1.000												
GOWNP	0.015	0.011	−0.194	0.277	1.000											
BOWNP	−0.008	−0.008	−0.027	0.531	0.336	1.000										
FOWNP	0.079	−0.012	−0.265	0.254	0.264	0.464	1.000									
BIG4	0.046	0.062	−0.373	0.092	0.149	0.066	0.248	1.000								
BSZ	0.003	0.025	−0.251	0.232	0.184	0.087	−0.006	0.278	1.000							
BGEN	−0.009	0.001	0.275	−0.018	−0.077	0.081	−0.022	−0.152	−0.097	1.000						
BNAT	0.028	0.017	−0.435	0.165	−0.002	0.169	0.408	0.390	0.122	−0.185	1.000					
LTA	−0.120	0.161	−0.036	0.108	0.071	0.076	−0.054	0.054	0.086	−0.130	0.066	1.000				
ROE	−0.039	−0.048	0.171	0.006	−0.076	0.012	−0.083	−0.185	−0.074	0.066	−0.139	−0.115	1.000			
SALESG	−0.042	0.031	0.051	−0.017	−0.017	−0.023	−0.033	−0.028	−0.002	0.010	−0.007	0.101	−0.004	1.000		
LVG	−0.153	−0.015	0.200	−0.034	−0.089	−0.014	−0.139	−0.181	−0.139	0.097	−0.128	−0.091	0.129	−0.003	1.000	
B	0.320	0.072	−0.067	−0.028	−0.001	0.010	−0.024	0.061	0.014	0.005	0.033	0.089	0.019	−0.021	−0.035	1.000

Notes: PCGI denotes the Pakistani Corporate Governance Index, DOWNP represents director ownership, IOWNP represents institutional ownership, GOWNP represents government ownership, BOWNP represents block ownership, FOWNP represents foreign ownership, BIG4 represents the audit firm size, BSZ represents the size of the board of directors, BGEN represents board diversity on the basis of gender, BNAT represents board diversity on the basis of nationality, LTA represents firm size as log of total assets, ROE represents a return on equity as a measure of profitability, SALESG represents growth opportunities, LVG represents leverage, CE represents capital expenditures and β represents the systematic risk.

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