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Corporate Governance and Firm Performance in Pakistan: Dynamic Panel Estimation

Muhammad Akbar, Shahzad Hussain, Tanveer Ahmad and Shoib Hassan

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Corporate Governance and Firm Performance in Pakistan: Dynamic Panel Estimation

Dr. Muhammad Akbar
Senior Lecturer, Birmingham City University, UK
muhammad.akbar@bcu.ac.uk
Dr. Shahzad Hussain
Assistant Professor, Foundation University, Islamabad
Email: shahzadhussainpeace@gmail.com
Dr. Tanveer Ahmad
Faculty, Kohat University of Science and Technology (KUST)
Email: tanveerah87@gmail.com
Shoib Hassan
Assistant Professor/Head of Department, University of Swabi
Email: shoaib@uoswabi.edu.pk

Abstract

The purpose of this research is to analyze the association between corporate governance and firm performance. Specifically, it examines the impact of CEO duality on board characteristics and its relationship with firm performance through dynamic penal estimation. Findings of this research are based on a sample of 230 listed non-financial firms over the period 2004-2014. We document that the corporate governance plays a pivotal role in determining the financial performance of firms operating in Pakistan. Consistent with past studies, findings of this research also show some statistical variations among the sampled firms (large and small size). The CEO duality compromises the efficiency of board independence. Further, the non-linear relationship of managerial ownership with performance is also depicted through the results of this study.

Keywords: Corporate governance, Accounting-Market based Measures, Firm performance

1. Introduction

As per shareholders' approach, corporate governance mechanism is set of rules and regulations aimed at protecting shareholders' interests. The strict observance of corporate governance enables the firm to reduce principal-agent problem (Rudkin, Kimani, Ullah, Ahmed, & Farooq, 2019;Akbar, Poletti-Hughes, Faitouri, & Shah, 2016). Managerial signaling theory implies that firms who comply with code of corporate governance convey an optimistic sign in the market in order to encourage the participants regarding the better governance structure of the firm.This results in high demand for the stocks of the firm in the market and hence leads to higher stock prices that translate into increased shareholders' wealth[1]. In view of the implications of agency theory, compliance with code of corporate governance creates efficient monitoring and improves managerial activities that in turn reduce the chances of principal-agent conflict of interests (Jensen, 1986). Thus, such compliance with code of corporate governance results in reducing agency costs and improves firm performance (Fama & Jensen, 1983b).

Though there are many theoretical justifications, which support the notion that strong governance mechanism has improved the firm performance, however empirical evidence stated in the literature is mixed. For example Gompers, Ishii, and Metrick (2003),Dittmar and Mahrt-Smith (2007), Brown and Caylor (2009), Bozec, Dia, and Bozec (2010), O'Connor and Rafferty (2012), Yasser, Entebang, and Mansor (2015) identified a postive assosiation between corporae governance and firm performance. However, researchers such as Core, Guay, and Rusticus (2006), S. Akbar, Poletti-Hughes, El-Faitouri, and Shah (2016) observed an insignificant association existing between strong governance practices and financial performance of firms.

Such mixed empirical evidences supporting positive association between variables of corporate governance practice and firm's performance may be due to differences in choice of models, empirical testing and econometric procedures (Schultz, Tan, & Walsh, 2010). Earlier, in their study, Ullah, Akhtar, and Zaefarian (2018)

Bhagat and Bolton (2008) found endogeneity to exist between these two variables i.e. if corporate governance compliance is well defined then it might lead to the improved firm performance, which ultimately results good governance practices. The two-way causality gives rise to problem of endogeneity. Inadequate empirical models and methodologies such as the use of OLS and panel regressions may give spurious results. Moreover, they also discussed that once endogeneity is appropriately accounted for in the model, then it may lead to the insignificant affiliation between firm performance and corporate gonvernance (Shultz et al. 2010).

The current research thereby addressing the intriguing question of whether compliance with code of corporate governance reduce the agency conflict and improve the firm performance in dynamic penal framework. For instance, with reference to Pakistan, some of the past studies, such as Yasser, Entebang, and Mansor (2015), Khan and Awan (2012), A. Akbar (2014), Javaid and Saboor (2015) and Awan and Jamali (2016) have not provided any realistic justification for the problem of endogeneity. This study is the first to our knowledge that considers the endogeneity issue existing between corporate governance and firm performance[1]. Current study has incorporated estimation technique proposed by Arellano-Bond (AB) generalized method of moments (GMM)(Arellano & Bond, 1991), for analyzing the extended data comprising of large number of listed non-financial

[1] In Pakistan, SECP introduced the code of corporate governance in 2002 and later revised it in 2012.

firms in Pakistan. GMM has the advantage of producing parameter estimates that are unbiased and consistent; overcoming the endogeneity, heteroscedasticity and simultaneity problems (Shultz et al. 2010).

Secondly, the previous literature considered return on equity (ROE) as effective measure vis-à-vis rate of return based on risk adjusted weighted average cost of capital. However, some researchers argued that market-based measure is more relevant given it reveals shareholders' expectation regarding firm's performance (Ganguli & Agrawal, 2009; Shan & McIver, 2011). A commonly used measure for market-based performance is Tobin's Q, which is determined by calculating the ratio of market value of firm's assets to its book value. Firms with higher Tobin's Q values are considered better than those with lower scores (Lewellen & Badrinath, 1997). Hence, we consider proxies for measures of accounting as well as market-based firm performance. Thirdly, in another study, Gul and Leung (2004) argued that having unlimited power with one director (CEO duality) would ultimately paralyze the board effectiveness. Hence, we include the variable of CEO duality to play a moderating role between firm performance and independence of board, in our empirical analysis. Finally, most of the previous research studies have documented a linear relationship between managerial ownership and performance of Pakistani firms; however it may be non-linear(Hu & Izumida, 2008). Therefore, we examine non-linearity of this relationship. Finally, Ullah and Kamal (2017) argued that legislators should consider the firm's size while formulating corporate governance framework. Thus, we explore the association between strong governance practices and financial performance separately on sub-samples of different big and small firms included in our sample.

We have organized the remainder of the paper into Section 2 that provides an articulation of hypotheses based on literature review; Section3 which describes empirical techniques; Section 4 that clarifies the results and their discourses and Section 5 that provides conclusions.

2. Literature Review

Jensen and Meckling (1976), explained the agency relationship in terms of conflicting interests among principal(s) (shareholders) and agent(s) (management) and is used as an economic framework to analyse their relationship in organisational settings. Conflict of interest, as per agency theory, arises when utility maximising behaviour is exhibited by principal and agent both. To overcome this conflict of interest, the opportunistic behavior of the agent (manager) must be restricted (Ammann, Oesch, & Schmid, 2011;Muth & Donaldson, 1998). The opportunistic-utility maximising behaviour of managers is reflected in 'empire building', mergers & acquisitions and higher selling and admin (S&A) expense all of which results in higher personal utility for managers (Chen, Lu, & Sougiannis, 2012). Executive stock option schemes, increased block-holding and institutional ownership, debt covenants and high involvement of non-executive directors etc. are among some ways through which conflict of interest can get reduced (Agrawal & Knoeber, 1996). The board composition is deemed as an important yardstick to curtail the managers' opportunistic behavior through proper mechanism of corporate governance (Kang, Cheng, & Gray, 2007). Moreover, administratively corporate board also empowers board members to devise a reward-punishment strategy for the management (Shivdasani & Yermack, 1999). Alternatively, for reducing the principal-agency conflict, debt covenants might be used (Agrawal & Knoeber, 1996).Nevertheless, the stewardship theory considered the managers as protectors of shareholders' interest. The stewards strive hard for shareholders' wealth maximization instead of being self-centered. It presumes that stewards are motivated due to non-financial benefits such a need for

appreciation, internal satisfaction and recognition (Kiel & Nicholson, 2003). Hence, considerable representation of the executive's directors in board ensures better decision making, because mangers have more indepth knowledge and information on current operating issues with the required technical know-how (Muth & Donaldson, 1998).

2.1 Board Composition and Firm Performance

2.1.1 Board Size and Firm Performance

Since, setting a firm's strategic direction is the responsibility of board which provides oversight on management of the firm as well, therefore board size is considered an important variable to determine a firm's performance over time. There are mixed empirical evidences with regards to the role of board size in determining performance of a firm. For example, studies such as Belkhir (2009) and Jackling and Johl (2009) show some consistency with agency theory by analyzing that the firm performance improves in the presence of larger board, whereas studies like Zabri, Ahmad, and Wah (2016), Rashid, De Zoysa, Lodh, and Rudkin (2010), along with many others[2] reported a negative relationship. These findings are consistent with Jensen (1993), according to whom large boards lack effectiveness and expertise are prone to the free-rider problem that considerably reduced their influence to devise and carrot and stick policies accordingly. Moreover, he suggested that board members might not exceed eight members.

Endogeneity issue affects Board size and its relation with firm performance (Guest, 2009; Wintoki, Linck, & Netter, 2012), thus we can say that the reported empirical relationships (positive or negative) may not be valid. The endogeneity problem may be simultaneous or dynamic in nature (Guest 2009). When both board size as well as the variable of firm performance is jointly determined, it may give rise to the problem of unobserved heterogeneity caused by an unobserved third variable. Panel regression methods such as the fixed effect model may overcome this limitation (Guest 2009). To overcome simultaneous or dynamic endogeneity, researchers have used instrumental variable regressions (Adams & Mehran, 2005; Bennedsen, Kongsted, & Nielsen, 2008). However, the main limitation of the instrumental variable regression is the identification of relevant instrumental variables. Alternatively, the dynamic GMM estimation technique overcomes these problems as one solution for all. Further, it is argued that firm performance has no association with board size even after accounting for the effect of endogeneity by using dynamic GMM estimation technique (Wintoki et al. 2012). Hence, the following hypotheses is tested in current study:

***H_1**: Board size does not improve firm performance*.

2.1.2 The CEO Duality and Firm Performance

CEO duality is "when the CEO of the firm is also the chairman of the board of directors of the firm". According to agency theory, two separate and independent individuals should hold the position of CEO and board Chairman to guarantee higher impartiality leading to better supervision and control of board members (Fama & Jensen, 1983; Jensen 1993). In contrast to this, stewardship theory offers support to CEO duality and posits its linkage with higher firm performance as a result of more focused and flexible leadership (Donaldson & Davis, 1991).

[2] See Guest (2009) for a more detail review and account of the studies that report a negative relationship between board size and corporate governance.

On the contrary, Pragmatic evidence on the aforementioned association is mixed. According to the observation of Yang and Zhao (2014), it was found that CEO duality and firm performance have a positive connection when a firm's competitive environment is changed. They argued that savings in information costs and speedy decision making explained the observed relationship (Brickley, Coles, & Jarrell, 1997). Duru, Iyengar, and Zampelli (2016), using dynamic GMM estimation, provide empirical evidence which suggested negative connection between CEO duality and firm performance. Moreover, it also observed that CEO duality affects quality of strategic decision making firstly due conflict of interests and secondly making extreme decisions and choices (Abdallah & Ismail, 2017; Sanders & Hambrick, 2007). Keeping in view these mixed evidences, we empirically test the following hypothesis:

***H_2**: CEO duality has no dynamic relationship with firm performance.*

2.1.3 The Board independence and Firm Performance

The aspect of board independence is a "measure of board composition and is measured as the percentage of independent directors to total directors on the board of directors". Despite the popularity of board independence with investors, policy makers, regulators and others, it's association with financial performance has no robust practical indications (Adams, Hermalin, & Weisbach, 2010; Yoshikawa, Zhu, & Wang, 2014). However, the extant literature suggests that the aforementioned relationship is weak in countries where investors face poor protection and where insider dealings also appears to exist. (Liu, Miletkov, Wei, & Yang, 2015). This is quite true of the equity market in Pakistan with relatively poor protection for investors and insiders' self-dealings.

Weisbach (1988), Anderson, Mansi, and Reeb (2003), Mura (2007) and Liu et al. (2015) examined that board independence has a positive connection with firm performance. This can be explained in a way that presence of independent directors indicates independence of board that ultimately leads to better regulation and accomplishment of tasks, resolution of internal conflict of interest and reduction in communication barrier between inside directors and shareholders (Marashdeh, 2014). This is consistent with agency theory. On the other hand, similar to the stewardship theory, Yermack (1996), Agrawal and Knoeber (2001), Bhagat and Bolton (2008) and Arosa, Iturralde, and Maseda (2013), in separate studies, examined that there exists a negative relationship of board independence with firm performance, whereas other studies like those of Kajola (2008) and Peng (2004) found insignifcant relatiosnhip between the ratio of outside directors to the entire board and its impact on firm performance. Given evidences in existing literature and in view of the existence of endogeneity between board independence and firm performance, we state the following hypotheses:

H_3**: Board independence has no dynamic relationship with firm performance.**

2.1.4 The Board Meetings and Firm Performance

To indicate the activeness and involvement of board, annual count of board meetings is deliberately used as a key indicator showing that board meetings are essential for the required oversight, control and monitoring of the firm (Byrne, 1996). More active board's i.e. higher

number of board meetings indicate that members of such boards will act in shareholders' interests (Bathula, 2008). Conger, Finegold, and Lawler (1998) observed that more time spent in board meeting allows the concern members to effeciently formulate compitative stretagies and better decision making. The previous litrature revealed mixed results regarding the board meeting and performance relationship. For instance, Francis, Hasan, and Wu (2012) came up with positive results regarding the impact of number of board meetings on firm performance. However, Jackling and Johl (2009) reported insignificant board meeting and performnce relationship. Fich and Shivdasani (2006) found performance to be inversely impacted by increasing frequency of board meetings, because high frequency reduce the chances of consistency in attedance of directors.

H4: *Number of board meetings have no dynamic relationship with firm performance*.

2.2 The Ownership Structure and Firm Performance

2.2.1 The Concentrated ownership and Firm Performance

The previous literature ascertained the decisive role of ownership structure in reducing agency problems and restructuring performance of firm. The scattered ownership might arise to agency risk, because the management is more susceptible to the takeover by outside shareholders (Jensen & Meckling, 1976). According to empirical studies such as Smith (1996), Claessens, Fan, Djankov, and Lang (1999), Sarkar and Sarkar (2000), Hussainey and Al-Najjar (2012), and Claessens & Yurtoglu (2013) ownership concentration is found to be positively related with firm performance. In accordance to agency theory, the monitoring mechanisms and firm performance is improved by concentrated ownership (Nguyen, Locke, & Reddy, 2015).On the other hand, a negative relationship is also reported by some studies (Hu et al., 2010). With regards to stewardship theory, consistency is found in a sense that indeed proper control and monitoring steward behavior would be counterproductive because the steward (management) already seeks to maximize shareholders' wealth(Argyris, 1973). Conversely, Huang, Hsiao, and Lai (2007) in their study examined that no significant relationship appears to exist between concentrated structure of ownership and firm performance. Following hypothesis is thus articulated:

H5: *Ownership concentration has no dynamic relationship with firm performance*.

2.2.2 The Managerial ownership and Firm Performance

With regards to the relation between managerial ownership and performance, literature has reported two contradictory postures. On school of thought, believe managerial ownership deflate the performance, because majority of manager-cum-shareholders are involved in horal hazard behavior (Hussainey & Al-Najjar, 2012). It may lead to problems such as information asymmetry and agency problem. Contrary to this, managerial ownership is expected to have positively influence over the performance due to incentive alignment effect. Sarkar & Sarkar (2000) find the positive impact of managerial ownership over the performance. Demsetz (1983) ascertained the positive managerial ownership and performance relationship. Nevertheless, Randøy, Down, and Jenssen (2003) find on insignficant association of owernship with performance.

H6: *Managerial ownership has no dynamic relationship with firm performance.*

2.2.3 The Institutional ownership and Firm Performance

Because institutional investors have greater capaity as well as incentives to curtail mangers' opportunistic behaviour, institutional investors positively contribute towards the firm performance (Ullah, Ali, & Mehmood, 2017). The presence of instutional investors have two benfits. One, minority shareholders feel protected in presence of institutional investors.second, their presence also generate positive signal to the rational market participants (Cornett, Marcus, & Tehranian, 2008). However, such a higher level of involment in operation and tight montoring mechanism may potentially be counter productive, because it emasculates the stewards' pro-organizational productive behavior(Davis, Schoorman, & Donaldson, 1997).Hence, despite the established positive relationship, institutional ownership may potentially give rise to conflicts (La Porta et al., 2000). According to literature review; we have empirically tested the following hypothesis:
H_7: *Institutional ownership has no dynamic relationship with firm performance.*

2.3 The Audit Committee Independence, Audit Quality and Firm Performance:

The consistency as well as accountability of disclosed financial information greatly depends upon audit committee and its composition. The committee's opinion enhance credibility of financial statements and increase reliability among investors (Borlea, Achim, & Mare, 2017). Hence, in order to improve the proficiency and effective working of audit committee and to reduce economic risk, it is important that sufficient numbers of independent directors serve the committee (Borlea, Achim, & Mare, 2017). It was also observed by Lin & Chang (2012) that independent directors works well with audit committee and results in improving the financial performance of a firm and also reduces agency risks. Similarly, Cadbury (1992) and Hsu & Wu (2014) also suggested another suitable measure to protect shareholders' interest, i.e. compulsion of audit committee which gives protection by improving transparency and accountability. However, stewardship theory considered the tight monitoring mechanism would ultimately demise the productivity and motivation of the management.
Moreover, all the stakeholders widely accept the assessment of Big-4 audit firm's review. According to some empirical studies, including Mansi, Maxwell, and Miller (2004), Dasilas and Papasyriopoulos (2015) and Pittman and Fortin (2004), the audit services from Big-4 transparent audit firms is positively associated with firm's financial performance. Furthermore, it has been observed that external auditors are considered to act as a fundamental part of observing framework. According to the argument presented by DeFond, Raghunandan, and Subramanyam (2002) the credibility of financial disclosure got improved because of independent auditors and it resulted in incredible firm performance and reduced the chances of default risk. Nevertheless, the steward ship thoery states that if shareholders and management choose a stewardship relationship. The principal-steward relationship enhances the firm perfomance because psychologically the steward gain statistificaiton from achieving organizational goals. However, the conflict arises when principal opt for agency relationship while steward relationship is chosen by manager. As a result the agents are unable to enjoy the intrinsic motivations such as progress, success, or self actualization. Such a less trusting enviroment considerably reduces the feelings of self-control, self-worth and self-responsibility(Argyris, 1973). Resultant,the employee becomes involve in counter produtive activities such as such "theft and vandalism; poor workmanship; slow-

downs; stealing; causing waste" (Argyris, 1973). We state the following hypothesis to empirically test any relaionship of audit committee and audit quality with firm performance:

H_8: *The composition of Audit Committee has no dynamic relationship with firm performance.*
H_9: *Audit Quality has no dynamic relationship with firm performance.*

3. Methodology

3.1 The Detail of Sample

Our population consist of 650 list firms. Out of total, 146 firms belong to financial sector. Since only non-financial firms are incorporated in current study's sample therefore we have omitted the financial firms. Afterward, we have excluded 274 firms due to incomplete data. Moreover, we also excluded around 39 firms, which were having less than 05 years data. Finally, we have considered 191 firms for the dynamic penal estimation. The sample covers 13 major sectors of Pakistan stock exchange including Fertilizer, Cement, Oil and Gas and Automobile Parts & Accessories among many others.

3.2 The Operationalization of Variables (Corporate Governance Mechanism and Firm Performance):

Study variables have been classified into three categories for our empirical analysis: independent or explanatory variables (corporate governance: audit committee, board structure and ownership structure), dependent variable (Financial Performance), and control variables (firm size). These variables are described in Table 1:

Table 02: The Measurement of Corporate Governance Mechanism and Firm Performance

Variable	Symbol	Measurement
Firm Performance		
Return on Equity	ROE	It is measured as (NI/Total Equity)
TobinQ	TBQ	It is calculate as(Market value of equity+ BV(debt)/BV(Total assets)
Corporate Governance Mechanism		
Board Size	BSIZE	Total number of executive and non-executive board members
Board Independence	BIND	The percentage of non-executive board members
Board Meeting	BMEET	Dummy variable that equal to 1if Four meeting once in a year and 0 otherwise
CEO Duality	CD	Dummy variable that equal to 1 if CEO is also board chairman and 0 otherwise
Concentrated Ownership	CONC	The natural log of the total number of firm shareholders.
Institutional Ownership	INSTOWN	It represents the institutional investors' ownership at time t for firm i
Managerial Ownership	MANGWN	It represents the mangers' ownership at time t for firm i
ManagerialOwnership Square	MANGSQ	Calculated as the square of managerial ownership at time t for firm i
Audit Quality	AUDQ	Dummy variable that equal to 1if audited by the Big Four and 0 otherwise
AuditComitteeComposition	ACC	It is calculated as a proportion of outside directors in audit committee
Change in corporate governance Code	CCCG	Dummy variable=1when code of corporate governance has changed otherwise zero
Control Variables		
SIZE	SIZE	Calculated as log of total assets at time t for firm i

3.2 Model specification

The previous literature found the problem of endogeneity in corporate governance and firm performance relationship. Several plausible explanations are available for this in literature. For instance, Ullah et al. (2018), and Abdallah et al. (2017) argued that due to the omission of explanatory variables, endogeneity arises, which make these illustrative variables correlated with residuals of estimated model. Secondly, Demsetz and Villalonga (2001) asserted that endogeneity might arise due to reverse causality between corporate governance and firm's performance. Ordinary least squares (OLS) coefficients, in such cases are considered to be biased and inconsistent because of endogeneity and unobserved firm's fixed effect (Bhagat and Bolton, 2008; and Nguyen et al., 2015).

One possible solution can be the use of fixed effect model for the time-invariant unobserved firm's (fixed) effect which could possibly fix the firm's fixed effect problem. However, the problem of endogeneity still exist (Nguyen et al., 2015). Bhagat and Bolton (2008) suggested the use of simultaneous equations such as 2SLS and 3SLS.Cho (1998), Demsetz and Villalonga (2001) and Nguyen et al. (2015), and others, recommend the use of Arellano-Bond (AB) generalized method of moments (GMM) proposed by Arellano and Bond (1991). The AB GMM approach corrects for the endogeneity problem without relying on external exogenous instruments that are difficult to categorize in 2SLS and 3SLS (Wintoki, Linck, & Netter, 2012)

Here, determining number of lags of endogenous variables in the estimated model is very important. The previous literature such as Adams et al. (2010), Munisi and Randøy (2013), Nguyen et al. (2014) suggest an AR (1) process. According to the study of Nguyen et al. (2015) current financial performance of a firm is mostly likely dependent upon its previous performance. Hence it is possible that performance beyond one lag may have significant effect over the current financial performance. Therefore, the use of AR (1) may be least preferable. Zhou, Faff, and Alpert (2014), on the other hand, claim that in corporate finance panel datasets within the limitation of the time dimension, it seems that an AR (1) panel model is inevitable.

Specifically we estimate the AB GMM model in equation (1) where firm performance is measured as ROE i.e. accounting based performance measure:

$$FP_{it} = \alpha_0 + \alpha_1 FP_{t-1} + \beta_1 BSIZ_{it} + \beta_2 BIND_{it} + \beta_3 BMEET_{it} + \beta_4 CD_{it} + \beta_5 CD_{it} BIND_{it} + \beta_6 CONC_{it} + \beta_7 INST_{it} + \beta_8 MANG_{it} + \beta_9 MANGSQ_{it} + \beta_{10} ACC_{it} + \beta_{11} CCCG_{it} + \beta_{12} FSZ_{it} + YD_t + \mu_i + \eta_t + \varepsilon_{it} \quad (1)$$

Where α_0 is the constant; α_1 and β_k are unknown estimated coefficients. We have also used YD_t i.e. year wise dummies as control variable. The μ_i in equation (2) represents unobserved firm fixed-effects; η_t represents time-specific effects that are common to all companies and time-variant, e.g. other macroeconomic conditions; and ε is the error term which is assumed to be identically distributed and independent.

4. Empirical Analysis:

4.1 The Descriptive statistics and Correlation Matrix:

Table 02 exhibits the descriptive statistics. Tobin's Q has an average value of 1.395 thus revealing that, on average market value is greater than book value of selected non-financial firms during the sampling period. It further depict that investors have positive perception regarding the firms in exploiting their capitals (Lewellen & Badrinath, 1997). The return on equity has mean value of 14.6% which reveals that on average the firms are profitable during the time horizon which could be another reason for higher TobinQ.

Typically, board size, for the aggregate sample, has a mean of about 8.00. The current findings have relevance with previous empirical studies (Bokpin, Isshaq, & Aboagye-Otchere, 2011). Similarly, for the whole sample, on average among all board members, 17.1% are independent directors. These figures are lower as compared to the findings of Ullah and Kamal (2017) who reported 47.0% for their sample. The inconsistent results can be explained because of dissimilar sample size and time horizon. Consistent with Ullah and Kamal (2017), the board meeting has a mean value of 5.2. As for the frequency of meetings, the mean value for our sample is higher than SECP required criteria of minimum four meetings in a year.

The concentrated ownership has a mean of 7.5%, which reveals dispersed ownership of the selected firms. The findings are contradictory to claim of Claessens, Djankov, and Lang (2000) who noticed that about two-third of the firms in Asian market has concentrated ownership, Thus leading to the problematic situation for minority shareholders in terms of wealth expropriation. The firms have on average institutional ownership of 13.4%, which higher than mean value of concentrated ownership. It should be prominent that the variation in this proportion varies greatly from 0% to about 98.9%, suggesting in Pakistan the ownership structure of companies is largely dependent upon the institutional investors. Among the ownership proxies, the managerial ownership stood higher with an average value of 22.6. While this range varies from 0 to 95.7%, suggesting that majority of the companies are managerial ownership has vital role in shaping the firm performance.

The correlation matrix is presented in table 03. It is observed that the market based and accounting measure are positively correlated with eachother, supporting that both measures can be used for the measurement of firm performance. Moreover, a significant positive correlation of board size also exists with TobinQ and ROE at 5% and 10% respectively. The positive coefficient suggests that companies having large boards have greater firm value.

Noticeably, the correlation coefficient between Tobin and CD is -0.10 and statistically significant at 1% level. It suggests a negative correlation with CEO duality with firm performance. Two ownership proxies (institutional ownership and concentrated ownership) are found to have statistically significant positive correlation with board size, suggesting that firm with higher concentrated ownership and institutional ownership tend to have higher board size. The negative correlation of institutional ownership with board meeting is an indication that firms whose institutional ownership is higher tend to have lower board meetings. Other than this, the correlation coefficient of audit committee size and board size reveals that companies with large boards also have larger audit committees. Results show that the highest correlation coefficient is between managerial ownership and managerial ownership square (MANGSQ) is 0.95 which is

Table 02: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
TBQ	1405.0	1.395	1.149	0.465	16.550
ROE	1405.0	0.146	1.138	-32.646	10.635
BSIZE	1405.0	8.042	1.748	0.000	20.000
BIND	1405.0	0.171	0.243	0.000	1.000
BMEET	1405.0	5.211	2.604	0.000	30.000
CD	1405.0	0.178	0.383	0.000	1.000
CONC	1405.0	7.578	1.213	2.708	11.956
INST	1405.0	0.134	0.149	0.000	0.988
MANG	1405.0	0.226	0.262	0.000	0.957
MANGSQ	1405.0	0.120	0.194	0.000	0.916
AUQ	1405.0	0.587	0.493	0.000	1.000
ACC	1405.0	0.760	0.281	0.000	1.000
CCCG	1405.0	0.270	0.444	0.000	1.000
FSZ	1405.0	15.403	1.553	10.793	19.841

Table 03: Correlation Matrix

	TBQ	ROE	BSIZ	BIND	BMEET	CD	CONC	INST	MANG	MANGSQ	AUQ	ACC	CCCG	FSZ
TBQ	1.00													
ROE	0.12***	1.00												
BSIZ	0.08**	0.06*	1.00											
BIND	0.02	0.02	0.05	1.00										
BMEET	-0.05	-0.02	0.04	0.01	1.00									
CD	-0.04	-0.10***	-0.11***	0.07**	-0.01	1.00								
CONC	0.01	0.01	0.35***	0.05	-0.03	-0.03	1.00							
INST	-0.07*	0.01	0.18***	0.08**	-0.08**	-0.04	0.12***	1.00						
MANG	-0.15***	-0.03	-0.24***	-0.13***	-0.02	0.15***	-0.40***	-0.21***	1.00					
MANGSQ	-0.12***	-0.02	-0.21***	-0.11***	-0.02	0.14***	-0.35***	-0.21***	**0.95*** **	1.00				
AUQ	0.12***	0.06*	0.21***	0.02	-0.02	-0.14***	0.26***	0.08**	-0.22***	-0.17***	1.00			
ACC	0.02	0.00	0.14***	0.13***	0.09***	-0.07*	0.09***	0.10***	-0.14***	-0.11***	0.11***	1.00		
CCCG	0.17***	0.03	-0.05*	-0.08**	0.02	-0.15***	0.00	-0.09***	0.01	0.01	-0.01	0.03	1.00	
FSZ	-0.07*	0.04	0.33***	-0.00	0.13***	-0.06*	0.65***	0.12***	-0.29***	-0.24***	0.29***	0.03	0.06*	1.00

Statistical significance is denoted by ***, **, and * at 1, 5, and 10 percent, respectively

Table 04: Corporate Governance and Firm Performance (Full Sample)

	ROE			TobinQ		
	Coeff	Coeff	Coeff	Coeff	Coeff	Coeff
L.TBQ				1.015***	1.014***	0.701***
				0.0262	0.0264	0.0225
L.ROE	0.00253*	0.00286**	0.00363***			
	0.00132	0.00133	0.00136			
BSIZ	0.0269*	0.0277*	0.0303**	-0.0424***	-0.0451***	-0.00843
	0.0143	0.0147	0.0143	0.0102	0.0112	0.00922
BIND	0.505***	0.586***	0.595***	-0.220***	-0.184***	-0.129**
	0.0842	0.111	0.111	0.0678	0.0705	0.0577
BMEET	0.0157*	0.0176**	0.0184**	0.00937	0.00929	-0.00891
	0.0082	0.00831	0.00814	0.00927	0.00926	0.00725
CD	-0.487***	-0.446***	-0.452***	-0.0990***	-0.0664*	-0.0796**
	0.0865	0.092	0.0905	0.0363	0.0367	0.0344
CDBIND		-0.252	-0.254		-0.189*	0.0922
		0.197	0.201		0.112	0.0923
CONC	0.0496	0.0396	0.0422	0.0770*	0.0851*	0.152***
	0.0486	0.0468	0.0484	0.0459	0.047	0.0512
INST	-0.194	-0.211*	-0.202	-0.17	-0.154	-0.164
	0.122	0.124	0.123	0.126	0.126	0.12
MANGSQ		0.288*	0.908**		0.184	0.243
		0.162	0.428		0.148	0.416
MANG	0.143		-0.516*	0.146		0.00515
	0.12		0.31	0.107		0.311
AUQ	-0.274***	-0.283***	-0.281***	-0.0197	-0.0204	0.0428
	0.0974	0.098	0.097	0.0417	0.0428	0.0392
ACC	-0.125**	-0.133***	-0.137***	0.0589	0.0543	0.112**
	0.0491	0.0489	0.0487	0.0607	0.0601	0.0514
CCCG			-0.317***			0.139*
			0.109			0.0734
FSZ	0.16	0.187*	0.183*	-0.0351	-0.0389	-0.133*
	0.11	0.11	0.11	0.0573	0.0567	0.0721
Constant	2.834*	-3.198*	-2.825*	0.392	0.424	1.415
	1.704	1.716	1.615	0.987	0.983	1.118
Wald Test	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Sargan Test	0.1909	0.1781	0.1745	0.1126	0.1165	0.0572
AR2 Test(P value)	0.3097	0.3374	0.3188	0.1017	0.1044	0.4433
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	776	776	776	553	553	765
Number of NUM	191	191	191	172	172	190

Statistical significance is denoted by ***, **, and * at 1, 5, and 10 percent, respectively

statistically significant (P value =0.000). This situation triggers the problem of multi-collinearity, because it is above the threshold of 0.80 suggested by Gujarati (2009). There are two possible solutions to resolve the issue of multi-collinearity. Firstly, the variable can be dropped from the estimation. Secondly, the variables with higher correlation can be regressed in separate models. We opted for the second option to resolve the issue of multi-collinearity.

4.2 Regression Analysis for Full Sample:

The previous literature established that there exist the issue of reverse causality in the relationship between corporate governance and firm performance which leads to creation of the problem of endogeneity (Ullah et al., 2018)Brown, Beekes, & Verhoeven, 2011). Hence, the use static models would yield inconsistent and biased regression estimators (Wintoki et al., 2012).Hence for making the estimator consistent, there two available options. Firstly, we can take lag of explanatory variables. Secondly, dynamic penal frame work can be executed through two widely-used techniques for correcting the problem of this inconsistency if T is fixed are: (i) AB difference GMM estimator proposed by Arellano and Bond (1991) and (ii) BB system GMM estimator recommended by Blundell and Bond (1998). We employ the former estimation technique to analyze corporate governance-firm performance relationship in which firm size and year-wise dummies are controlled. The p-values of Sargan test and AR (2) were insignificant in the full sample and subsamples, which shows the validity of the instrument used in the model, as well as also showing the absence of serial correlation problem in data.

In line with previous findings, we that board size has a positive effect on firm performance which suggests that larger boards improve firms better. Consistent with the claim of resource dependency theory, boards which are larger in size have the competitive advantage of diverse knowledge, skills and easy access to capital sources in order to take better decisions, which reduces the agency problem (Hillman, Cannella, & Paetzold, 2000). Further, for robustness the market based measure i.e., TobinQ is used. Ironically, the positive sign has changed to negative coefficient values. Consistent with previous empirical studies, as Nguyen et al. (2014), Guest (2009) found negative association of board size with firm performance.

In addition to this, board independence positively effects return on equity and negatively effects Tobin's Q. The positive coefficient is consistent with the agency theory, which proclaimed that transparent monitoring and increase in expert knowledge is ensured by large number of independent board members (Baranchuk & Dybvig, 2008). While negative coefficient board independence is consistent with the notion that outside directors have too many directorships at the same time in different firms, which may negatively affect the monitoring role of busy independent directors and leads to decreasing the firm performance (Fich & Shivdasani, 2006). Similarly, the some empirical studies observed negative effect due to the presence of outside director, because these directors are unfamiliar with firm operations. Thus, their decisions may damage firm performance (Bhagat & Bolton, 2008).

We find the positive effect of board meeting, consistent with notion, due to frequent board meeting efficiency of board got enrich which in return affect the internal control quality Further, board members have sufficient time to work in best interest of shareholders due to frequent meetings(Aldamen, Duncan, Kelly, McNamara, & Nagel, 2012). According to Conger et al. (1998) board effectiveness have a direct relation with the time spent on board meetings.More board meetings allow directors to fully perform their duties. This is consistent with agency theory which requires more active control and monitoring of the firm.

Consistent with previous agency theory, having unlimited power with one director (CEO duality) would ultimately paralyze the board effectiveness and board members might not be able to manage the company's affairs independently and effectively (Gul & Leung, 2004).We ascertained the negative relationship of CEO duality and firm performance. The effect is also consistent across accounting measure and market based measure. Nevertheless, the stewardship theory, on the other hand, supports CEO duality and links it with more focused and slexible leadership which leads to reap a higher firm performance(Donaldson & Davis, 1991).
Further, we analyzed whether the presence of CEO duality effect the board independence. The interactive term i.e., CDBIND has negative coefficient value on TobinQ. Consistent with previous literature, CEO duality negatively affect board independence (Gul & Leung, 2004). Ironically our findings suggest, that CEO duality further strengthen negative role of board indpendence in case of market based measure, which may detoriate the performance. However, the relationship is insignficant with accounting based measure.

The concentrated ownership positively affects firm performance (TobinQ). Consistent with claim of Nguyen et al. (2014), who argued that there is a greater incentive for large shareholders to monitor and hold management accountable for the shareholders' benefit which can lead to mitigation of agency problem and increasing firm's profitability. Nevertheless, according to La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2002), these large shareholders might sometimes become a source of conflict between minority and majority shareholders. Such observation is generally in agreement with Ma, Yiu, and Zhou (2014), along with some other studies as well. Our practical evidences thus supports the agency view which states that concentration of the ownership appears to be a productive internal corporate governance strategy which contributes towards increasing performance(Nguyen et al., 2015).Similarly, we also established the positive linear managerial ownership and firm performance. The results are consistent with alignment of interest hypothesis which states that managerial ownership align the management interest with shareholders' interest, which reduce the agency conflict and increases the firm performance and they have less incentive for opportunistic behavior (Huang et al., 2007).Our findings also ascertained the non-linear relationship between managerial ownership and firm performance. This non-linearity of relationship is consistent with Hu and Izumida (2008).Results of current study ascertain negative association between institutional ownership of a firm and its performance. Inconsistent with agency theory, which states that institutional shareholders have greater capacity to curtail the manager's opportunistic behavior (Fama & Jensen, 1983a).However, according to La Porta et al.,(2000) 'institutional investors may be sometimes a potential source of conflict between minority and majority shareholders'. Our findings related of Audit quality and committee are consistent with stewardship theory. As the theory states that greater control would compromise the stewards' freedom to take strategic decisions, which may damage the performance. The change in code of corporate governance reduces (enhance) the accounting based measure firm performance (TobinQ).

Table 05: Corporate Governance and Firm Performance (Small Firms)

	ROE			TobinQ		
	Coeff	Coeff	Coeff	Coeff	Coeff	Coeff
L.TBQ				0.843***	0.850***	0.628***
				-0.0223	-0.024	-0.0124
L.ROE	0.0121**	0.00823*	0.00552			
	0.005	0.00485	0.00478			
BSIZ	0.128***	0.129***	0.127***	0.0345**	0.0286*	0.0159
	0.0221	0.023	0.0236	0.0146	0.0166	0.0102
BIND	-0.0293	0.0221	0.0228	0.0786**	0.240***	0.170***
	0.0641	0.0705	0.0719	0.0348	0.0491	0.0658
BMEET	-0.0079	-0.00794	-0.00583	-0.0353***	-0.0347***	-0.0189***
	0.00624	0.00578	0.00573	0.00775	0.00777	0.00596
CD	-0.111***	-0.0939**	-0.0994**	-0.131***	-0.0125	-0.0864***
	0.0422	0.0468	0.0456	0.0319	0.0304	0.0334
CDBIND		-0.124	-0.127		-0.562***	-0.264***
		0.106	0.107		0.114	0.0763
CONC	-0.177**	-0.135	-0.187*	0.0750*	0.0849**	0.116***
	0.0857	0.0983	0.102	0.0436	0.0423	0.0322
INST	-0.787***	-0.783***	-0.764***	-0.195*	-0.119	-0.227***
	0.149	0.152	0.153	0.116	0.115	0.0825
MANGSQ		0.443**	0.622*		0.365*	-0.246
		0.195	0.365		0.196	0.301
AUQ	1.037***	1.079***	1.034***	0.0617	-0.0784	-0.130*
	0.179	0.175	0.169	0.128	0.129	0.0721
ACC	-0.168***	-0.172***	-0.195***	-0.0189	-0.0783	0.0056
	0.0523	0.0543	0.0525	0.0528	0.0596	0.0414
MANG	0.315**		-0.0775	0.431***		0.297
	0.129		0.226	0.153		0.193
CCCG			-0.391***			0.273***
			0.0445			0.0602
FSZ	0.107	0.0872	0.0988	-0.781***	-0.840***	-0.628***
	0.0695	0.0659	0.0697	0.0834	0.0966	0.0606

Constant	1.507	1.533	0.906	10.84***	11.85***	8.726***
	0.955	0.94	0.891	1.267	1.434	0.852
Wald Test	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sargan Test	0.3894	0.4304	0.4138	0.2313	0.1275	0.3000
AR2 Test(P value)	0.3044	0.2922	0.2905	0.5845	0.6383	0.4441
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	339	339	339	230	230	332
Number of NUM	92	92	92	82	82	91

Statistical significance is denoted by ***, **, and * at 1, 5, and 10 percent, respectively

Table 06: Corporate Governance and Firm Performance (Big Firms)

	ROE			TobinQ		
	Coeff	Coeff	Coeff	Coeff	Coeff	Coeff
L.TBQ				0.827***	0.826***	0.770***
				0.0303	0.03	0.0267
L.ROE	0.0243***	0.0249***	0.0251***			
	0.00142	0.00149	0.00151			
BSIZ	-4.70E-05	0.000875	-0.00209	-0.0902***	-0.0930***	-0.0406***
	0.0154	0.0166	0.0167	0.00981	0.0102	0.0117
BIND	0.901***	0.911***	0.900***	-0.778***	-0.763***	-0.557***
	0.0943	0.127	0.127	0.067	0.070	0.0707
BMEET	0.0288***	0.0292***	0.0289***	0.0183*	0.0195**	0.00268
	0.0079	0.00791	0.00788	0.00979	0.00955	0.00702
CD	-0.758***	-0.745***	-0.706***	-0.118***	-0.130***	-0.155***
	0.14	0.161	0.164	0.0334	0.0478	0.0435
CDBIND		-0.0319	-0.115		-0.00435	0.328*
		0.333	0.342		0.156	0.19
CONC	-0.0117	-0.0297	-0.0154	0.122***	0.120***	0.196***
	0.049	0.0486	0.0488	0.043	0.0435	0.0499
INST	0.0132	-0.034	0.0253	-0.332*	-0.328*	-0.0748
	0.247	0.247	0.252	0.172	0.172	0.162
MANGSQ		0.106	0.895		-0.019	-0.35
		0.264	0.55		0.107	0.31
AUQ	-0.383***	-0.397***	-0.415***	0.0522	0.0542	0.0988**
	0.0854	0.0858	0.0899	0.0471	0.046	0.0422
ACC	0.0029	-0.00382	-0.00197	0.0763	0.0646	0.074
	0.0656	0.0657	0.0649	0.0517	0.0472	0.0466
MANG	-0.0264		-0.625	-0.064		0.315
	0.181		0.386	0.0936		0.266
CCCG			-0.594***			0.415***
			0.145			0.0968
FSZ	0.369***	0.314**	0.356***	0.258***	0.243***	0.255**
	0.118	0.127	0.121	0.0439	0.0441	0.0997

Constant	5.947***	4.889**	5.051**	4.008***	3.726***	5.360***
	2.073	2.218	1.965	0.912	0.884	1.637
Wald Test	0.00000	0.00000	0.00000	0.0000	0.0000	0.0000
Sargan Test	0.5157	0.542	0.5886	0.2354	0.2499	0.0346
AR2 Test	0.3407	0.3382	0.3336	0.2425	0.2225	0.4166
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	437	437	437	323	323	433
Number of NUM	99	99	99	90	90	99

Statistical significance is denoted by ***, **, and * at 1, 5, and 10 percent, respectively

4.3 Regression Analysis for Sub Samples (Small Firms and Large Firms):

Further, Detthamrong et al. (2017) argued in their study that behavior of corporate governance varies across firm's characteristics. Among others, Ullah and Kamal (2017) also argued that the size of the firm should be considered by policy makers while formulating framework for corporate governance. Thus, in current study, we explored the corporate governance mechanism and firm performance in a dynamic penal setting for sub samples (Small firms & Large firms). We have constructed the sub sample in such a way that firm with firm size less than the mean value of whole is considered a small firms otherwise large firms.

As far as small size firms are concerned, the findings depict positive coefficient of board size and performance (ROE &TobinQ). Consistent with notion, that diversified background of board members in term of expertise and resources ensure effective monitoring (Harris & Raviv, 2010; Xie, Davidson III, & DaDalt, 2003) protect concern stakeholders interest and improve external linkages (Dalton, Daily, Johnson, & Ellstrand, 1999). Moreever, in case of large firms the findings of current study found that performance deteriorates with the increase in board size due to their conflict of interest and slackness in decision making. Similar, we observed that different sized of firms also effects the relationship of board independence and board meeting. For instance, in small firms, positive relationship between firm's performance and board independence is consistent with notion that board independence reduces the agency problem thereby act as moderator between principal and agent. Subsequently, more prominent board freedom keep directors from increasing personal satisfaction at the expense of investors (Nicholson & Kiel, 2007). The Positive (negative) coefficient values in case of large size firm (Small firms) are consistent with notion that firm allocate time and resource to conduct board meetings. Therefore, the board meeting may costly for small firms due to limited resources and could be beneficial for the big firms due their stable financial position.

Similarly, the positive coefficient of interactive term (CDBIND) is consistent with agency theory in a sense that CEO duality further weaken the positive board independence and its relationship with performance in sub sample (Small firms). Consistent with notion that Gul and Leung (2004) argued that having unlimited power with one director (CEO duality) would ultimately paralyze the board effectiveness and board members probably won't most likely freely and successfully deal with the organization's undertaking. However, in case of large firm, it curtails the negative effect of board independence over the performance. Furthermore, concentrated ownership is disastrous in case of accounting based measure in small firms only.

However, we found the persistent behavior of negative effect CEO duality, positive effect of concentrated ownership, and negative impact of institutional possession on firm execution crosswise over sub samples. The results of CEO duality is consistent with notion that CEO duality would ultimately paralyze the board effectiveness (Hussain & Shah, 2017). While positive coefficient of concentrated ownership is consistent with the notion of Nguyen et al., (2015), which stated that concentrated ownership structures mitigate agency problems, which may arise because of separated control from ownership. Zeitun (2014) also ascertained the Positive effect of concentrated performance ownership. However, in case of accounting based measure for firm performance, the concentrated ownership has statistically insignificant with performance. Tuschke and Gerard Sanders (2003) also ascertained that ownership concentration has no effect on performance. Moreover, institutional ownership might potentially cause conflict of interests to arise among minority and dominant part investors. (La Porta et al., 2000). We ascertained the positive (negative) effect of change in code of corporate governance on return on equity (Tobin's Q). Findings of our study concluded that change in governance codes deteriorate the short performance. However, it has a positive contribution in shaping long term performance.

5. Conclusion

Majority of the past studies investigated the effect of corporate governance on firm performance through static models (Detthamrong et al., 2017). However, the relationship has also been investigated in dynamic penal framework (e.g. Guest, 2009; Akbar et al., 2016; Hussain and Shah,2017; Abdallah & Ismail, 2017) in order to curtail the potential problem in corporate governance-performance relationship. However, these studies have considered performance as function of corporate governance index.

Our findings suggest that corporate governance mechanism varies across sub samples and also across different proxies for market-based firm performance and accounting. The effect of corporate governance on firm performance varied for large and small size firms. The interactive role of CEO duality also varies across sub samples. For instance, in case of small firms, the presence of CEO duality damages the effectiveness of board independence. However, it curtails the negative effect of board independence on performance in large firms. Further, we find a positive and non-linear relationship between managerial ownership and performance for small firms. Moreover, the change in code of corporate governance has negative effect on short-term performance (return on equity) but positive effect on long-term performance (TobinQ).

References

Abdallah, A. A.-N., & Ismail, A. K. (2017). Corporate governance practices, ownership structure, and corporate performance in the GCC countries. *Journal of International Financial Markets, Institutions and Money, 46*, 98-115.

Adams, R. B., & Mehran, H. (2005). Corporate performance, board structure and its determinants in the banking industry.

Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of economic literature, 48*(1), 58-107.

Agrawal, A. Yermack, & Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of financial and quantitative analysis, 31*(3), 377-397.

Agrawal, A., & Knoeber, C. R. (2001). Do some outside directors play a political role? *The Journal of Law and Economics, 44*(1), 179-198.

Akbar, S., Poletti-Hughes, J., El-Faitouri, R., & Shah, S. Z. A. (2016). More on the relationship between corporate governance and firm performance in the UK: Evidence from the application of generalized method of moments estimation. *Research in International Business and Finance, 38*, 417-429.

Aldamen, H., Duncan, K., Kelly, S., McNamara, R., & Nagel, S. (2012). Audit committee characteristics and firm performance during the global financial crisis. *Accounting & finance, 52*(4), 971-1000.

Al-Manaseer, M., Al-Hindawi, R. M., Al-Dahiyat, M. A., & Sartawi, I. I. (2012). The impact of corporate governance on the performance of Jordanian banks. *European Journal of Scientific Research, 67*(3), 349-359.

Ammann, M., Oesch, D., & Schmid, M. M. (2011). Corporate governance and firm value: International evidence. Journal of Empirical Finance, 18(1), 36-55.

Anderson, R. C., Mansi, S. A., & Reeb, D. M. (2003). Founding family ownership and the agency cost of debt. *Journal of financial economics, 68*(2), 263-285.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The review of economic studies, 58*(2), 277-297.

Argyris, C. (1973). Organization man: Rational and self-actualizing. *Public Administration Review, 33*(4), 354-357.

Arosa, B., Iturralde, T., & Maseda, A. (2013). The board structure and firm performance in SMEs: Evidence from Spain. *Investigaciones Europeas de Dirección y Economía de la Empresa, 19*(3), 127-135.

Awan, A. W., & Jamali, J. A. (2016). Impact of Corporate Governance on Financial Performance: Karachi Stock Exchange, Pakistan. *Business and Economic Research, 6*(2), 401-411.

Baranchuk, N., & Dybvig, P. H. (2008). Consensus in diverse corporate boards. *The Review of Financial Studies, 22*(2), 715-747.

Bathula, H. (2008). *Board characteristics and firm performance: Evidence from New Zealand.* Auckland University of Technology.

Belkhir, M. (2009). Board of directors' size and performance in the banking industry. *International Journal of Managerial Finance, 5*(2), 201-221.

Bennedsen, M., Kongsted, H. C., & Nielsen, K. M. (2008). The causal effect of board size in the performance of small and medium-sized firms. *Journal of Banking & Finance, 32*(6), 1098-1109.

Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. *Journal of corporate Finance, 14*(3), 257-273.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of econometrics, 87*(1), 115-143.

Bokpin, G. A., Isshaq, Z., & Aboagye-Otchere, F. (2011). Ownership structure, corporate governance and corporate liquidity policy: Evidence from the Ghana Stock Exchange. *Journal of Financial Economic Policy, 3*(3), 262-279.

Borlea, S. N., Achim, M. V., & Mare, C. (2017). Board characteristics and firm performances in emerging economies. Lessons from Romania. *Economic research-Ekonomska istraživanja, 30*(1), 55-75.

Bozec, R., Dia, M., & Bozec, Y. (2010). Governance–performance relationship: a re-examination using technical efficiency measures. *British Journal of Management, 21*(3), 684-700.

Brickley, J. A., Coles, J. L., & Jarrell, G. (1997). Leadership structure: Separating the CEO and chairman of the board. *Journal of corporate Finance, 3*(3), 189-220.

Brickley, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of financial economics, 105*(3), 581-606.

Brown, L. D., & Caylor, M. L. (2009). Corporate governance and firm operating performance. *Review of Quantitative Finance and Accounting, 32*(2), 129-144.

Brown, P., Beekes, W., & Verhoeven, P. (2011). Corporate governance, accounting and finance: A review. *Accounting & finance, 51*(1), 96-172.

Byrne, J. (1996). The National Association of Corporate Directors' New Guidelines Won't Tolerate Inattentive, Passive Uninformed Board Members. *Business Week, 25*.

Chen, C. X., Lu, H., & Sougiannis, T. (2012). The agency problem, corporate governance, and the asymmetrical behavior of selling, general, and administrative costs. *Contemporary Accounting Research, 29*(1), 252-282.

Cho, M.-H. (1998). Ownership structure, investment, and the corporate value: an empirical analysis. *Journal of financial economics, 47*(1), 103-121.

Christy, J. A., Matolcsy, Z. P., Wright, A., & Wyatt, A. (2013). Do board characteristics influence the shareholders' assessment of risk for small and large firms? *Abacus, 49*(2), 161-196.

Claessens, S., & Yurtoglu, B. B. (2013). Corporate governance in emerging markets: A survey. *Emerging markets review, 15*, 1-33.

Colbert, J. L., Jahera, J., & John, S. (1988). The role of the audit and agency theory. *The Journal of Applied Business Research, 4*(2), 7-12.

Conger, J. A., Finegold, D., & Lawler, E. E. (1998). Appraising boardroom performance. *Harvard business review, 76*, 136-164.

Core, J. E., Guay, W. R., & Rusticus, T. O. (2006). Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations.

Dalton, D. R., Daily, C. M., Johnson, J. L., & Ellstrand, A. E. (1999). Number of directors and financial performance: A meta-analysis. *Academy of Management Journal, 42*(6), 674-686.

Dasilas, A., & Papasyriopoulos, N. (2015). Corporate governance, credit ratings and the capital structure of Greek SME and large listed firms. *Small Business Economics, 45*(1), 215-244.

Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management review, 22*(1), 20-47.

De Andres, P., Azofra, V., & Lopez, F. (2005). Corporate boards in OECD countries: Size, composition, functioning and effectiveness. *Corporate Governance: An International Review, 13*(2), 197-210.

DeFond, M. L., Raghunandan, K., & Subramanyam, K. (2002). Do non–audit service fees impair auditor independence? Evidence from going concern audit opinions. *Journal of Accounting Research, 40*(4), 1247-1274.

Demsetz, H. (1983). The structure of ownership and the theory of the firm. *The Journal of Law and Economics, 26*(2), 375-390.

Detthamrong, U., Chancharat, N., & Vithessonthi, C. (2017). Corporate governance, capital structure and firm performance: evidence from Thailand. *Research in International Business and Finance, 42*, 689-709.

Dittmar, A., & Mahrt-Smith, J. (2007). Corporate governance and the value of cash holdings. *Journal of financial economics, 83*(3), 599-634.

Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of management, 16*(1), 49-64.

Duru, A., Iyengar, R. J., & Zampelli, E. M. (2016). The dynamic relationship between CEO duality and firm performance: The moderating role of board independence. *Journal of Business Research, 69*(10), 4269-4277.

Fama, E. F., & Jensen, M. C. (1983a). Agency problems and residual claims. *The Journal of Law and Economics, 26*(2), 327-349.

Fama, E. F., & Jensen, M. C. (1983b). Separation of ownership and control. *The journal of law and Economics, 26*(2), 301-325.

Fich, E. M., & Shivdasani, A. (2006). Are busy boards effective monitors? *the Journal of Finance, 61*(2), 689-724.

Francis, B. B., Hasan, I., & Wu, Q. (2012). Do corporate boards matter during the current financial crisis? *Review of Financial Economics, 21*(2), 39-52.

Ganguli, S. K., & Agrawal, S. (2009). Ownership Structure and Firm Performance: An Empirical Study on Listed Mid-Cap Indian Companies. *IUP Journal of Applied Finance, 15*(12).

Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *The quarterly journal of economics, 118*(1), 107-156.

Guest, P. M. (2009). The impact of board size on firm performance: evidence from the UK. *The European Journal of Finance, 15*(4), 385-404.

Gujarati, D. N. (2009). *Basic econometrics*: Tata McGraw-Hill Education.

Gul, F. A., & Leung, S. (2004). Board leadership, outside directors' expertise and voluntary corporate disclosures. *Journal of Accounting and public Policy, 23*(5), 351-379.

Harris, M., & Raviv, A. (2010). Control of corporate decisions: shareholders vs. management. *The Review of Financial Studies, 23*(11), 4115-4147.

Hillman, A. J., Cannella, A. A., & Paetzold, R. L. (2000). The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. *Journal of Management studies, 37*(2), 235-256.

Hsu, H.-H., & Wu, C. Y.-H. (2014). Board composition, grey directors and corporate failure in the UK. *The British Accounting Review, 46*(3), 215-227.

Hu, Y., & Izumida, S. (2008). Ownership concentration and corporate performance: A causal analysis with Japanese panel data. *Corporate Governance: An International Review, 16*(4), 342-358.

Hu, Y., & Izumida, S. (2008). Ownership concentration and corporate performance: A causal analysis with Japanese panel data. *Corporate Governance: An International Review, 16*(4), 342-358.

Huang, L.-Y., Hsiao, T.-y., & Lai, G. C. (2007). Does corporate governance and ownership structure influence performance? Evidence from Taiwan life insurance companies. *Journal of Insurance Issues*, 123-151.

Huang, L.-Y., Hsiao, T.-y., & Lai, G. C. (2007). Does corporate governance and ownership structure influence performance? Evidence from Taiwan life insurance companies. *Journal of Insurance Issues*, 123-151.

Iskandar, T. M., Rahmat, M. M., Noor, N. M., Saleh, N. M., & Ali, M. J. (2011). Corporate governance and going concern problems: evidence from Malaysia. *International Journal of Corporate Governance, 2*(2), 119-139.

Jackling, B., & Johl, S. (2009). Board structure and firm performance: Evidence from India's top companies. *Corporate Governance: An International Review, 17*(4), 492-509.

Javaid, F., & Saboor, A. (2015). Impact of Corporate Governance index on Firm Performance: evidence from Pakistani manufacturing sector. *Journal of Public*

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review, 76*(2), 323-329.

Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 29(4), 366-377.

Kajola, S. O. (2008). Corporate governance and firm performance: The case of Nigerian listed firms. *European journal of economics, finance and administrative sciences, 14*(14), 16-28.

Kamran, K., & Shah, A. (2014). The impact of corporate governance and ownership structure on earnings management practices: Evidence from listed companies in Pakistan.

Kang, H., Cheng, M., & Gray, S. J. (2007). Corporate governance and board composition: Diversity and independence of Australian boards. *Corporate Governance: An International Review, 15*(2), 194-207.

Khan, A., & Awan, S. H. (2012). Effect of board composition on firm's performance: A case of Pakistani listed companies. *Interdisciplinary Journal of Contemporary Research in Business, 3*(10), 853-863.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2002). Investor protection and corporate valuation. *the Journal of Finance, 57*(3), 1147-1170.

Leech, D., & Leahy, J. (1991). Ownership structure, control type classifications and the performance of large British companies. *The Economic Journal, 101*(409), 1418-1437.

Lewellen, W. G., & Badrinath, S. G. (1997). On the measurement of Tobin's q. *Journal of financial economics, 44*(1), 77-122.

Lin, W.-C., & Chang, S.-C. (2012). Corporate governance and the stock market reaction to new product announcements. *Review of Quantitative Finance and Accounting, 39*(2), 273-291.

Liu, Y., Miletkov, M. K., Wei, Z., & Yang, T. (2015). Board independence and firm performance in China. *Journal of corporate Finance, 30*, 223-244.

Ma, X., Yiu, D. W., & Zhou, N. (2014). Facing global economic crisis: Foreign sales, ownership groups, and corporate value. *Journal of World Business, 49*(1), 87-100.

Mansi, S. A., Maxwell, W. F., & Miller, D. P. (2004). Does auditor quality and tenure matter to investors? Evidence from the bond market. *Journal of Accounting Research, 42*(4), 755-793.

Marashdeh, Z. M. S. (2014). *The effect of corporate governance on firm performance in Jordan.* University of Central Lancashire.

McConnell, J. J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of financial economics, 27*(2), 595-612.

Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of financial economics, 20*, 293-315.

Munisi, G., & Randøy, T. (2013). Corporate governance and company performance across Sub-Saharan African countries. *Journal of Economics and Business, 70*, 92-110.

Mura, R. (2007). Firm performance: Do non-executive directors have minds of their own? Evidence from UK panel data. *Financial Management, 36*(3), 81-112.

Muth, M., & Donaldson, L. (1998). Stewardship theory and board structure: A contingency approach. *Corporate Governance: An International Review, 6*(1), 5-28.

Nadarajah, S., Ali, S., Liu, B., & Huang, A. (2016). Stock liquidity, corporate governance and leverage: New panel evidence. *Pacific-Basin Finance Journal*.

Nguyen, B. D. (2011). Ownership structure and board characteristics as determinants of CEO turnover in French-listed companies. *Finance, 32*(2), 53-89.

Nguyen, T., Locke, S., & Reddy, K. (2014). A dynamic estimation of governance structures and financial performance for Singaporean companies. *Economic Modelling, 40*, 1-11.

Nguyen, T., Locke, S., & Reddy, K. (2015). Ownership concentration and corporate performance from a dynamic perspective: Does national governance quality matter? *International Review of Financial Analysis, 41*, 148-161.

Nicholson, G. J., & Kiel, G. C. (2007). Can directors impact performance? A case-based test of three theories of corporate governance. *Corporate Governance: An International Review, 15*(4), 585-608.

O'Connor, M., & Rafferty, M. (2012). Corporate governance and innovation. *Journal of financial and quantitative analysis, 47*(2), 397-413.

Peng, M. W. (2004). Outside directors and firm performance during institutional transitions. *Strategic management journal, 25*(5), 453-471.

Pittman, J. A., & Fortin, S. (2004). Auditor choice and the cost of debt capital for newly public firms. *Journal of accounting and economics, 37*(1), 113-136.

Pound, J. (1988). Proxy contests and the efficiency of shareholder oversight. *Journal of financial economics, 20*, 237-265.

Randøy, T., Down, J., & Jenssen, J. (2003). Corporate governance and board effectiveness in maritime firms. *Maritime Economics & Logistics, 5*(1), 40-54.

Randøy, T., Down, J., & Jenssen, J. (2003). Corporate governance and board effectiveness in maritime firms. *Maritime Economics & Logistics, 5*(1), 40-54.

Randøy, T., Down, J., & Jenssen, J. (2003). Corporate governance and board effectiveness in maritime firms. *Maritime Economics & Logistics, 5*(1), 40-54.

Rashid, A., De Zoysa, A., Lodh, S., & Rudkin, K. (2010). Board composition and firm performance: Evidence from Bangladesh. *Australasian Accounting, Business and Finance Journal, 4*(1), 76-95.

Rudkin, B., Kimani, D., Ullah, S., Ahmed, R., & Farooq, S. U. (2019). Hide-and-seek in corporate disclosure: evidence from negative corporate incidents. Corporate Governance: The International Journal of Business in Society, 19(1), 158-175.

Sanders, W. G., & Hambrick, D. C. (2007). Swinging for the fences: The effects of CEO stock options on company risk taking and performance. *Academy of Management Journal, 50*(5), 1055-1078.

Sarkar, J., & Sarkar, S. (2000). Large shareholder activism in corporate governance in developing countries: Evidence from India. *International Review of Finance, 1*(3), 161-194.

Schultz, E. L., Tan, D. T., & Walsh, K. D. (2010). Endogeneity and the corporate governance-performance relation. *Australian journal of Management, 35*(2), 145-163.

Shan, Y. G., & McIver, R. P. (2011). Corporate governance mechanisms and financial performance in China: Panel data evidence on listed non financial companies. *Asia Pacific Business Review, 17*(3), 301-324.

Shivdasani, A., & Yermack, D. (1999). CEO involvement in the selection of new board members: An empirical analysis. *The Journal of Finance, 54*(5), 1829-1853.

Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of political economy, 94*(3, Part 1), 461-488.

Short, H., & Keasey, K. (1999). Managerial Ownership and the Performance of Firms: Evidence from the UK. *Journal of corporate Finance, 5*(1), 79-101.

Smith, M. P. (1996). Shareholder activism by institutional investors: Evidence from CalPERS. *the Journal of Finance, 51*(1), 227-252.

Tariq, Y. B., & Abbas, Z. (2013). Compliance and multidimensional firm performance: Evaluating the efficacy of rule-based code of corporate governance. *Economic Modelling, 35*, 565-575.

Tuschke, A., & Gerard Sanders, W. (2003). Antecedents and consequences of corporate governance reform: The case of Germany. *Strategic management journal, 24*(7), 631-649.

Uadiale, O. M. (2010). The impact of board structure on corporate financial performance in Nigeria. *International Journal of Business and Management, 5*(10), 155.

Ullah, S., & Kamal, Y. (2017). Board characteristics, political connections, and corporate cash holdings: The role of firm size and political regime. *Business & Economic Review, 9*(1), 157-179.

Ullah, S., Akhtar, P., & Zaefarian, G. (2018). Dealing with endogeneity bias: The generalized method of moments (GMM) for panel data. Industrial Marketing Management, 71, 69-78.

Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of financial economics, 53*(1), 113-142.

Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of financial economics, 20*, 431-460.

Wild, J. J. (1994). Managerial accountability to shareholders: Audit committees and the explanatory power of earnings for returns. *The British Accounting Review, 26*(4), 353-374.

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. Journal of financial economics, 105(3), 581-606.

Xie, B., Davidson III, W. N., & DaDalt, P. J. (2003). Earnings management and corporate governance: the role of the board and the audit committee. *Journal of corporate Finance, 9*(3), 295-316.

Yang, T., & Zhao, S. (2014). CEO duality and firm performance: Evidence from an exogenous shock to the competitive environment. *Journal of Banking & Finance, 49*, 534-552.

Yasser, Q., Entebang, H., & Mansor, S. (2015). Corporate governance and firm performance in Pakistan: The case of Karachi Stock Exchange (KSE)-30.

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of financial economics, 40*(2), 185-211.

Yoshikawa, T., Zhu, H., & Wang, P. (2014). National governance system, corporate ownership, and roles of outside directors: A corporate governance bundle perspective. *Corporate Governance: An International Review, 22*(3), 252-265.

Zabri, S. M., Ahmad, K., & Wah, K. K. (2016). Corporate governance practices and firm performance: Evidence from top 100 public listed companies in Malaysia. *Procedia Economics and Finance, 35*, 287-296.

Zeitun, R. (2014). Corporate governance, capital structure and corporate performance: evidence from GCC countries. *Review of Middle East Economics and Finance Rev. Middle East Econ. Fin., 10*(1), 75-96.

Zhou, Q., Faff, R., & Alpert, K. (2014). Bias correction in the estimation of dynamic panel models in corporate finance. *Journal of corporate Finance, 25*, 494-513.