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Risk-Taking Behavior, Corporate Governance and Product Market Competition: Evidence from Pakistan

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ABSTRACT

This research aims to analyze the association of corporate governance and risk-taking behavior with an interplay of product market competition. Composite indicator for corporate governance is constructed using principal component analysis (PCA). Whereas, the risk-taking behavior and product market competition are measured through idiosyncratic risk and Herfindahl Hirschman Index (HHI) respectively. Our study is based on secondary data of 267 Pakistan Stock Exchange (PSX) listed non-financial firms from 2013 to 2018. Consistent with agency theory, the results reveal that risk-taking behavior is significantly associated by corporate governance. Moreover, product market competition moderates the relationship between corporate governance and risk-taking behavior.

INTRODUCTION

The opportunistic behavior of corporate decision makers to peruse self-interest and its disastrous consequences over the firm value have been the major challenges for researchers and practitioners (Akbar, Hussain, Ahmad, & Hassan, 2019).The agency theory attributed the managers' opportunistic behavior to the separation of ownership and control, which creates the problem of asymmetric information (Umer, Abbas, Hussain, & Naveed, 2020). Prior literature ascertained diverse and resounding contribution of corporate governance mechanism in order to decrease the conflict of interest between managers and shareholders (Sajjad, Abbas, Hussain, & Waheed, 2019). For instance, existence of strong corporate governance ensures the transparency in financial disclosure, minimizes the accounting frauds, makes the top management accountable (in case of non-compliance) and deters the

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managers' aggressive risk-taking behavior. According to the research of Bhojraj and Sengupta (2003), the strong governance practices decrease the financial distress by monitoring managerial performance. These measures slash the charges on debt financing that will minimize cost of capital for firm. Similarly, the problem of information asymmetry and overinvestment is curtailed due to proper monitoring mechanism (Albuquerue & Wang, 2008). In short, the strengthening of governance mechanism minimizes the risk and increases corporate performance (Chen, Chen, & Wei, 2011; Akbar, Hussain, Ahmad, & Hassan, 2019).

A plethora of empirical studies established the relationship of corporate governance with firm risk. Hussain and Shah (2017) find the negative impact of corporate governance on downside risk relationship. Alam & Shah (2012) observed that corporate governance negatively affect the idiosyncratic risk (Alam & Shah, 2012). Jin and Myers (2006) suggest that the presence of weak country level governance induces the firm risk (Jin and Myers, 2006). Recent articles ascertain board structure relationship with corporate risk taking. For instance, Masulis, Wang, & Xie, (2007) in China, S. Cheng (2008) in USA, Koerniadi, Krishnamurti, and Tourani-Rad (2014) in New-Zealand. Contrary, Erkens, Hung, and Matos (2012) found insignificant association between independence of board and risk taking. Furthermore, Nguyen (2011) found a significant association amid ownership composition and risk taking behavior relationship. Gompers, Ishii, & Metrick, (2003); Weinstein and Yafeh (1998) find negative effect of bank ownership on risk taking aptitude of managers.

The current research contributes to the literature in twofold. The prior literature suggested the presence of weak governance mechanism in developing countries, which spurs the investors' exposure toward downside risk. Saeed and Sameer (2017) also supported the notion that minority shareholders' rights have been marginalized in emerging economies due to institutional specificities. Haider and Fang (2016) found a negative relationship between risk taking and board structure of Chinese firms. Chen, Lin, Kao, and Wei (2016) ascertained the role of ownership structure, board structure, managerial incentive and information idiosyncratic risk in Taiwan. Pascal Nguyen (2011) observed the relationship of corporate risk taking behavior and institutional ownership structure in Japan. Likewise, stakeholders' influence and investor protection also affect the risk taking behavior in U.S firms (John, Litov, & Yeung, 2008). Alam and Shah (2012) identified the relationship between the board composition and ownership structure with risk taking behavior in Pakistan. From the aforementioned studies, it is evident that these

research studies were primarily based on individual corporate governance (such as board characteristics and ownership composition) using smaller time horizon. Therefore, we construct a composite corporate governance indicator based on keys aspects such audit quality, ownership and board characteristics in order to examine the impact of governance mechanism on risk taking behavior.

Secondly, despite the fact that previous literature established the important role of corporate governance mechanism to align managers' interest with shareholders' (Fama, 1980; Fama & Jensen, 1983). The management's non-compliance to exploit the shareholders' welfare still exist in the absence of governance mechanism. This clearly suggest that managers' opportunistic behaviour is affected by certain market forces such as product market competition (Chhaochharia, Grullon, Grinstein, & Michaely, 2009; Laksmana, Tietz, & Yang, 2012; Laksmana & Yang, 2015). A vast discord exists among the researchers regarding the possible benefits of product market competition (from here onwards PMC) in mitigating the agency conflict. Baggs and Bettignies (2007) suggest that agency problem is reduced by market competition and it ensures the true and fair disclosure of financial information. The argument suggests that market competition aligns principal-agent interest. Prior research also ascertained that market competition minimizes the information asymmetry and curtails the managers' opportunistic behaviour in financial disclosure (Balakrishnan & Cohen, 2011; Laksmana et al., 2012; Marciukaityte & Park, 2009). There are less chances that a firm will be involved in fraudulent actives in presence of highly competitive market (Chhaochharia et al.(2009) suggesting that market competition protects the shareholders against misappropriation. Nevertheless, John et al. (2008) and Scharfstein (1988) argued that market competition exacerbate the agency problem. The prior literature also embarked upon the market competition and risk-taking behavior. Czarnitzki and Kraft, (2009) argued that in presence of strong shareholders' protection, the managers are most likely to undertake the risk value enhancing projects, because these corporate governance mechanisms do not provide room to manager for the exploitation of firm's resources. The positive association of market competition with management's risk-taking behavior is more appealing. However, the negative relationship is unavoidable. Hirshleifer and Thakor (1992) argued that market competition makes the management's corporate decisions observable and comparable with competitors. Hence, the managers' follow excessive conservatism in investment policy and seek less risky projects in order to maintain his/her corporate reputation (Meyer & Vickers, 1997). Hence, the market competition plays a very pivotal part to ensure effectiveness of corporate governance mechanism (Giroud & Mueller, 2011). The current

research extends existing literature by taking into consideration the interplay of market competition between corporate governance and risk-taking behavior through static and dynamic penal estimation techniques. We expect that the market competition further strengthens the corporate governance and risk-taking behavior.

Remainder of the paper is categorized into various sections. Section 2 presents the literature support, and section 3 reports the methodology. While section 04 and section 05 consists of results analysis and conclusion respectively.

LITRATURE REVIEW

Corporate Governance and Risk-Taking Behavior

The agency theory states that segregation of control from ownership arises the problem of moral hazard and creates agency conflict (Hoelscher & Seavey, 2014). The managers' serve their personal benefits thereby maintaining excessive cash level or taking less risky investment projects than optimal level. Firstly, the excessive free cash base enables the managers to divert the available resources to their own utility maximization (Jensen & Meckling, 1976). Secondly, the managers replace the risky value enhancing option by the less risky investment project leading to the decrease in probability of default risk and subsequent damage to their personal benefits (Amihud & Lev, 1981; Parrino, Poteshman, & Weisbach, 2005). Another possible justification could be that the managers' take less risky projects to diversify their personal risk, because unlike shareholders, it is more convenient for the managers' to reduce their personal risk at firm level (May, 1995). Ultimately, the managers have the option to discourage the risky investments thereby opting for less risky projects with stabilize stream of cash flows through diversification. Hence, the conflict of interest between the agents and principal arises that gives rise to agency problem. The rational shareholders reduces the risks faced by corporations through diversification. Whereas, the less diversified managers are more pruned to avoid risk taking initiatives due to their personal preferences such as career growth and job security.

Board Composition and Risk-Taking Behavior

According to agency theory, managers prioritize less risky investment projects over more risky investments in order to protect their personal perks and benefits, which creates the agency conflict (Fama, 1980). The conflict of interest adversely affect operational activities of corporations. The results of Haider and Fang (2016) consistent with notion presented by Fama in 1980. Nakano and Nguyen (2012) ascertained the relationship of managerial compensation (CEO's compensation), investment policy and risk taking behavior. Coles, Daniel, and Naveen (2008); Cheng (2008) and Koerniadi et al. (2014) assertained the board size and risk taking behavior relationship in different countries such as Japan, New Zealand and US respectively. The results revealed that risk taking is positively related to size of board members.

On other hand, the decision-making theory suggested that large size group decisions are less extreme vis-à-vis small group decision (Wallach & Kogan, 1964). Groups that have large size have people with well diversified background and are less likely to take risky decisions. Therefore, the large groups tend to have less risk taking behavior. Sah and Stiglitz (1986) argued that large group encompass diverse views and it is very difficult to build consensus among them regarding the good and/ or bad corporate decisions. However, small sized boards are more effective and efficient in corporate decision due to their unified prompt decisions. Whereas large boards are consider disastrous for the firm value. The prior literature suggested that small board size is associated with higher firm performance (Coles, Daniel, & Naveen, 2008). However, Linck, Netter, and Yang (2008) argued that large boards are more beneficial for blue chip corporations/conglomerates in order to facilitate and resolve their complex issues more effectively. Coles et al. (2008) observed that the effectiveness of board composition varies across firm size.

Moreover, board diversity also influences the corporate risk taking. For instance, Anderson et al. (2011); Upadhyay and Zeng (2014); Anderson, Reeb, Upadhyay; Zhao (2011), ascertained the board diversity and corporate risk taking behavior. These findings reveal that board composition also has decisive role, besides agency theory and decision-making theory, in order to shape corporate risk taking behavior.

The Ownership Structure and Risk-Taking Behavior

The agency theory describes the shareholders' ability to influence the management's corporate risk taking decision (Jensen & Meckling, 1976). The prior literature ascertained that the owners' tends to prefer investment projects with positive and stable future cash flows regardless of their inherited risk

(John et al., 2008; Porta, Lakonishok, Shleifer, & Vishny, 1997). Generally, risky projects are associated with higher returns, which ultimately contributes towards the firm value maximization. The previous literature also found the positive association of risk taking behavior with shareholders' wealth maximization. For instance, Low (2009) argued that firm value decreases when managers opt for less risky projects as compared to more risky projects.

Larger shareholders have the greater capacity to monitor managers. However, these shareholders protect their own benefits and privileges by taking a more conservative risk taking policy due to managerial entrenchment effect hypothesis (Gul, Kim, & Qiu, 2010; Shleifer & Vishny, 1997). While, the incentive alignment hypothesis states that larger shareholders protect minority shareholders' interest (Gomes, 2000). Moreover, the pervious literature established a solid theoretical framework regarding the possible consequences of different ownership structures in order resolve or exacerbate agency problem (Laeven & Levine, 2009; Nguyen, 2011).The agency theory states that concentrated ownership reduced the expropriation of firms' resources. Haw, Ho, Hu, and Wu, (2010) supported the view that concentrated ownership mitigates the agency conflict thereby reducing resource expropriation. By following the line of reasoning, the firm with concentrated ownership might not relinquish risky value enhancing projects. The prior literature ascertained the positive casual effect of concentrated ownership on corporate risk taking. The empirical studies such as Lemmon and Lins (2003) ascertained the positive concentrated ownership and risk taking behavior relationship. However, in anther research study it was ascertained that negative relationship exists between credit risk and concentrated ownership (Shehzad, de Haan, and Scholtens 2010). Moreover, role of managerial ownership in risk taking is also inevitable. Tufano (1996) ascertained the managerial ownership and risk taking behavior. Further, the level of block-holders ownership also influence the risk taking behavior. May (1995) established that firms with lower block holder ownership enforce conservative investment policy.

Besides, the types of shareholders' such family ownership and bank are being considered as sources of risk. The prior literature ascertained that family controlled firms tend take more risk projects and perform better than non-family controlled ownership. Anderson, Mansi, and Reeb (2003) also support the aforementioned results. Saito (2008) argued that family controlled firms are more inclined to undertake risky projects. However, Weinstein and Yafeh (1998) argued that bank ownership prefer less risk

projects. Further, Hamao, Mei, and Xu (2003) hold the banks owner accountable for low economic growth due the investment in less risky projects.

The Audit Quality and Risk Taking-Behavior

The proper monitoring mechanism resolves the agency problem of principal-agent. The monitoring mechanism resolve two basic underlying issues. Firstly, it resolve the agency conflict. Secondly, it motivates the managers to take high risky value added projects. The audit mechanism is one of monitoring mechanism among many others to promote goal congruence and reduce the disparity between owners and managers (Jensen & Meckling, 1976). Ultimately, the presence of higher quality of auditors restrain managerial opportunistic behavior; ensure transparency in financial disclosure and credible positive signal boosts investors' confidence (Feltham, Hughes, & Simunic, 1991; Titman & Trueman, 1986). The higher quality auditors reveal positive signals to the market and investors respond accordingly (Kitching, 2009). It is argued by Lin and Chang (2012) that firms performance is magnified by the independent directors and audit committee. In the similar vein, the big-4 auditors are widely acceptable and have good reputation among the stakeholders. There is a positive impact of audit by big-4 audit firms and financial performance of corporations (Dasilas & Papasyriopoulos, 2015).

H1: Corporate governance mechanism is negatively associated with risk-taking behavior

The Product Market Competition (PMC) and Risk-Taking Behavior

The forgoing debate has provided inconclusive findings regarding the effectiveness of PMC in decreasing or exacerbating the agency cost. Market competition indulges management into opportunistic behavior therefore increasing agency problem (Czarnitzki & Kraft 2009; Scharfstein, 1988). However, Baggs and De Bettignies (2007) has considered market competition as a market force among many others to reduce the agency conflict.

Few studies have ascertained the relationship amid positive market competition and risk-taking behavior. When investor protection is available, the managers will take risky decision (John, Litov, & Yeung, 2008). However, in case of weak protection the managers divert resources for their private benefits and take less risky projects. Laksmana and Yang (2015), argued that market competition curtail the managers' opportunistic behavior and the managers likely to invest in risky, value added projects.

However, Meyer and Vickers (1997), Giroud and Mueller (2011) argued the negative relationship of market competition and risk taking behavior. Since, managers are more conscious regarding their career in an intense competitive industry and undertakes less risky projects. Marciukaityte and Park (2009) observed that CEOs' have higher turnover in highly competitive industry vis-à-vis less competitive industry. One possible justification could be that in less competitive industries the managers have least peer group's pressure, comparison and they might take risky projects because the failure of these risky projects can be easily be attributed to exogenous factors. Balakrishnan and Cohen (2011) argued that market competition curtails the agency problem. Moreover, the relationship of market competition and investment decisions has also been investigated. For instance, Hart (1983) observed that market competition reduced investments. Further, Cheng, Man, and Yi (2013) suggested the market competition act as a market force among many others to discipline the management regarding the overutilization of free cash flows. Laksmana and Yang (2015) suggested the positive role of market competition and earning attributes of the firm.

H2: The product market competition is negatively associated with risk-taking behavior

H3: The product market competition moderates (strengthen) the relationship between corporate governance and risk-taking behavior

METHODOLOGY

We have considered a population of 650 firms. Since, the nature, business operations and regulatory framework of financial firms varies from the non-financial firms. Therefore, the current research is limited to non-financial firms for the static and dynamic penal estimation. After the exclusion of 146 financial firms, the sample is further reduced by 237 firms due to incomplete availability of data. Finally, we considered 267 firms over the period 2013-2018. The sample covers major industries Cement, Oil, Gas, and Automobile Parts & Accessories among many others.

Operationalization of Variables

Risk-Taking Behavior

We follow the methodology of Chun, Nagano, and Lee (2011), Haider and Fang (2016), Alam and Shah (2012) to measure the risk-taking behavior through idiosyncratic risk. The idiosyncratic risk has been measured through the standard deviation of the error terms using the following equation.

$$R_i = \alpha_0 + \beta_{it} * (Rm - Rf) + \varepsilon_{it}$$

Whereas, Ri represents daily stock return, Rm is KSE-100 index daily return, Rf stands for daily T-bill rate and ε_i is value of residuals. The corporate risk-taking behavior has been measured as a standard deviation of the residuals of the aforementioned equation.

Corporate Governance Mechanism

We followed the methodology of Hussain and Shah (2017) to develop the corporate governance index. The index is formed using its wildly used dimensions. The proxies related to board composition include CEO duality, the number of board meetings held in a year, board independence and board size.

We have also taken into account four proxies of ownership structure. For instance, institutional ownership represent the proportion of shareholdings of institutional investors. The percentage proportion of managerial ownership to total ownership has been used as proxy for the measurement of managerial ownership. Natural log of total number of shareholders has been used for the measurement of ownership concentration. The block-holder ownership is measured using proportion of shareholding by top 5 shareholders. Furthermore, audit committee independence is calculated as non-executive directors divided total members in audit committee. Whereas, audit quality takes the value of 1 if firm is audited by big-4 audit firm and 0 otherwise.

Product Market Competition (PMC)

The PMC has been measured through Herfindahl-Hirchman Index (HHI). The pervious empirical studies such as Abdoh and Varela (2018); Laksmana and Yang (2015) have estimated the market competition through HHI. Ironically, the HHI is negatively associated with market behavior. HHI ranges from minimum value “0” to maximum value “1”. The “0” value shows competitive environment (presence of large number of firms) and “1” reveals monopolistic competition (Fewer number of firms). The HHI is estimated as square of total sale of a firm for time t divided by sum of sales of all the firms in that particular industry for time t (Abdoh & Varela, 2018; Laksmana & Yang, 2015)

Control Variables

The firm size (measured by natural log of total assets), profitability (measured by ROE) and net profit margin (the proportion of net income as a percentage of total sales) as control variables since these may influence the firms' ability of risk-taking (Hussain & Shah, 2017; Kamran & Shah, 2014).

Econometric Model

The relationship of risk-taking behavior and corporate governance has been investigated in static penal setting. Further, the relationship has been investigated in dynamic penal estimation, because the problem of endogeneity has been found between corporate governance and risk relationship. Hussain and Shah (2017); Demsetz and Villalonga (2001); Waheed and Malik (2019) recommended the use of Arellano-Bond Generalized Method of Moments (AB-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). Hence, the following econometric equation has been estimated in static and dynmaic penal setting.

$$\sigma(E_{it}) = \alpha_0 + \alpha_1 \sigma(E_{i(t-1)}) + \alpha_2 CG\text{-}Index_{it} + \alpha_3 HHI_{it} + \alpha_4 CG\text{-}Index_{it} * HHI_{it} + Control\ Variables_{it} + \mu_i + \eta_t + \varepsilon_{it} \quad (3.1)$$

Risk-taking is measure through standard deviation of residuals, α_0 is the regression intercept, CG-Index is corporate governance index, constructed by using ten proxies related to audit quality, board composition and ownership structure i.e., ($BSIZE_{it}$), ($BMEET_{it}$), ($BIND_{it}$), (CD_{it}), ($INSTOWN_{it}$), ($CONC_{it}$), ($BIG5_{it}$), ($MANGOWN_{it}$), (ACC_{it}) and ($AUDQ_{it}$). The CG-Index calculated using principal component analysis, whereas, PMC is measured using Herfindahl-Hirchman Index (HHI_{it}) based on the ratio of firm's sales to sum of sales of all firms in the industry. $CG\text{-}Index_{it} * HHI_{it}$ is the interaction term of corporate governance index and PMC. Whereas, control variables include size, return on equity and net profit margin.

DATA ANALYSIS

Descriptive Statistics & Correlation Matrix

Table 1 presents the descriptive analysis of variables used in current research. Idiosyncratic risk has the highest mean value of 4.758 and standard deviation of 5.333. Herfindahl Hirschman index has the mean value of 0.138 and standard deviation of 0.102. Similarly, corporate governance index constructed using ten proxies (Board meeting, CEO duality, Institutional ownership, concentrated ownership, Big5

ownership, Board independence, Managerial Ownership, Audit Quality, Board Size and Audit committee) has mean and standard deviation values of -0.007 and 0.102 respectively.

Moreover, Table 1 also shows the correlation matrix for our variables, the data suggests that there is negative correlation between idiosyncratic risk and corporate governance index, which means that companies with strong corporate governance mechanisms have low unsystematic risk. The results are consistent with Cheng (2008) and Nguyen (2012), who also analyzed the association between corporate risk-taking and governance mechanism. Similarly, HHI is also negatively correlated with idiosyncratic risk, which suggests that if there is a high competition in the market, companies' unsystematic risk is on the lower side. The increased competition force the managers to be cautious regarding investments in risky projects.

Regression Results

The current research study has used static and dynamic regression models to estimate the relationship. The dynamic penal estimation has been employed for two reasons. Firstly, the dynamic model has been used to cater issue of endogeneity amid corporate governance and risk. Empirical studies such as Waheed and Malik (2019), Hussain and Shah (2017) recommend the use of dynamic penal estimation. Secondly, it is used to check the robustness and/or persistency of the stated model. The regression results are presented in table 03. The results reveal the persistent negative coefficients of corporate governance index across static and dynamic model estimation, which shows negative relationship amid corporate governance and risk taking behavior.

Table: 1 Descriptive Statistics & Correlation Matrix

Variable	Mean	Std.Dev.	Min	Max
Idio_Vola	4.758	5.333	0.001	63.542
CG_index	-0.007	1.437	-3.741	4.477
HHI_index	0.138	0.102	0	0.422
NPM	-0.165	3.812	-104.05	25.478

ROE	0.135	1.43	-32.646	28.93		
Size	15.301	1.637	8.71	20.023		
Idio_Vola	1					
CG_index	-0.33**	1				
HHI_index	-0.222*	0.406	1			
NPM	-0.036	0.047*	-0.003	1		
ROE	-0.085	0.047	-0.009	0.007*	1	
Size	-0.34	0.487**	0.119	0.022*	0.02	1

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

Idio_Vola represent idiosyncratic risk here, CG_index stand for corporate governance index, HHI_Index represents Herfindahl Hirschman index, NPM is Net Profit Margin, ROE means Return on Equity and Size is for Firm Size which is the Natural logarithm of Total Assets of the firm.

Table 2: Corporate Governance, Product Market Competition and Risk-Taking Behavior

	Static Regression Model		Dynamic Regression Model	
Variable	Model 01	Model 02	Model 01	Model 02
L.Idio_Vola			0.429***	0.395***
			(0.035)	(0.0363)
CG_index	-0.515***	-0.783***	-1.002***	-1.647***
	(0.163)	(0.241)	(0.262)-	(0.348)
HHI_index		-6.186**		-14.85***
		(2.412)		(5.159)
CG*HHI		-2.897**		-5.881***
		(1.279)		(1.834)
NPM	-0.00146	-0.00592	0.0159	0.045
	(0.0356)	(0.0354)	(0.0925)	(0.0924)
ROE	-0.178**	-0.185**	-0.103	-0.141
	(0.089)	(0.0889)	(0.173)	(0.174)
Size	-0.935***	-1.001***	-1.208***	-1.064**
	(0.166)	(0.166)	(0.45)	(0.453)
Constant	19.03***	20.77***	20.33***	20.04***
	(2.564)	(2.587)	(7.047)	(7.021)
R-Square	0.152	0.1859		
Wald Test	0.000	0.000	0.000	0.000
Sargan Test			0.5286	0.2254
AR2 Test			0.3136	0.2825
Year Dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Number of ID	267	267	267	267
Observations	1505	1505	1505	1505

*Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, CG_index stand for corporate governance index, HHI_Inde Herfindahl Hirschman index, CG*HHI is the interaction term for Corporate governance and Herfindahl Hirschman index, NPM sta Profit Margin, ROE return on Equity and Size is for Firm size which is the log of Total assets of the firm.*

The current research compliments the agency theory that the presence of strong corporate governance mechanism ensures the transparency in financial disclosure, and minimizes the accounting frauds, makes the management hold accountable in case of non-compliance, and deters the managers' aggressive risk taking behavior. Bhojraj and Sengupta (2003), Albuquerue and Wang (2008), Chen, Chen, and Wei (2011) argued that corporate governance minimizes the default risk, diminishes the problem of information asymmetry, decreases the cost of debt and curtails the overinvestment through proper monitoring mechanism. Resultantly, the overall cost of capital for the corporations minimizes (Albuquerue & Wang, 2008; Chen et al., 2011). Hussain and Shah (2017) found the inverse relationship exist among corporate governance and risk. Alam and Shah (2012) also ascertained the negative effect of corporate governance and idiosyncratic risk. Jin and Myers (2006) suggested that the presence of weak country level governance induces the firm risk.

Further, the results suggest the negative coefficient of PMC with risk taking behavior. Consistent with the notion of agency theory, market competition aligns principal-agent interest. Abdoh and Varela (2018) suggested that PMC among many other factors minimizes the conflict of interest between managers and shareholders. It further ensures the improved quality of financial reporting, minimizes the information asymmetry and curtails the managers' opportunistic behavior in financial disclosure (Balakrishnan & Cohen, 2011; Laksmana et al., 2012; Chhaochharia et al. 2009). In presence of highly competitive market, Marciukaityte & Park, (2009) argued that corporations do not indulge in fraudulent activities, suggesting that market competition protect the shareholders' against misappropriation. Meyer and Vickers (1997) argued the negative relationship of market competition and risk taking behavior.
The CG*HHI_index is interactive term of corporate governance and PMC. The negative coefficient of CG*HHI_index is consistent with the opinion that intense PMC makes the corporate decisions more noticeable and comparable with peer group. This situation led the managers to replace the risky value enhancing project by less risky projects in order to maintain their corporate reputation (Hirshleifer & Thakor, 1992). Laksmana and Yang, (2015) argued that PMC might substitute the corporate governance mechanism.

CONCLUSION

The corporate governance and PMC aligns the managerial interest with shareholders to minimize agency conflict that arises due to segregation of ownership from control (Jensen & Meckling, 1976). Therefore, research attempts to analyze the corporate governance and risk taking behavior with an interplay of market competition. Our findings reveal that corporate governance mechanism negatively influences the risk-taking behavior. The results are consistent with notion of agency theory that the presence of strong corporate governance protect shareholders interest from the managers' opportunistic behavior. It further ensures transparent financial disclosures, aligns the principal-agent interest and deters the managers' aggressive risk taking (Albuquerue & Wang, 2008; Chen et al., 2011;Hussain & shah; Waheed & Malik, 2019). Moreover, the results also suggest that PMC strengthens the effectiveness of corporate governance mechanism to curtail the management's opportunistic behavior thereby reducing the aggressive risk-taking. Similarly, market competition is a market force among many others to restrain the managers' aggressive risk taking attitude, because corporate decisions are observable and comparable with peer group in competitive industries (Giroud & Mueller, 2011; Hirshleifer & Thakor, 1992). The results have far-reaching implications for the emerging economies with similar market based characteristics. The SECP may takes the required steps and implement the revise code of corporate governance of 2012 in true letter and spirit. It will not only provide equal opportunities to listed firms but also encourage healthy market competition across industries. Our study covered the Pakistani market only and therefore future research may consider large number of countries across developed, emerging and developing markets in order to provide better insights to the policy makers, investors, fund managers and other stakeholders.

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