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The Impact of ownership structure on Dividend Payouts. New Evidence from Dynamic Common Correlation under Generalized Method of Moments (DCCE-GMM)

Muhammad Murtaza
PhD. Scholar, Institute of Business Studies, Kohat University of Science and Technology (KUST), Pakistan
ms001mm@kust.edu.pk

Dr. Sammar Abbas
Associate Professor, Institute of Business Studies, Kohat University of Science and Technology (KUST), Pakistan

Muhammad Khushnood
Associate Professor, Institute of Business Studies, Kohat University of Science and Technology (KUST), Pakistan

Dr. Zeeshan Zaib Khattak
Associate Institute of Professor, Business Studies, Kohat University of Science and Technology (KUST), Pakistan

Malik Manzoor
PhD. Scholar, Institute of Business Studies, Kohat University of Science and Technology (KUST), Pakistan

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Abstract: The current study aims to look into the role of ownership structure in determining dividend payouts in the unique institutional setup of Pakistan. Using data of 269 non-financial firms listed on the Pakistan Stock Exchange between 2009 and 2018 the study has used a novel approach: Dynamic Common Correlation under the Generalized Method of Moments (DCCE-GMM). This method covers a severe limitation of the conventional GMM, which does not take into consideration the issue of cross-sectional dependency, thereby reporting more robust and reliable outcomes. Results reveal that institutional ownership has a positive and significant role in determining the dividend payout ratio of the sample firms. The Big5 ownership depicts a negative and significant impact on the dividend payout ratio. The family/non-family dummy bears a negative coefficient suggesting that family firms pay fewer dividends compared to non-family firms which is also in line with the literature. Managerial ownership is reported to have positive and significant role in determining dividend payout ratio. Results of this model are also compared with the conventional GMM ignoring the cross-sectional dependency and are found to be more pronounced and in line with the objectives of the code of corporate governance 2002 of Pakistan. The study makes beneficial recommendations to managers and policymakers based on a more precise assessment of

each measure's impact on dividend payouts and the implementation of corrective actions while enhancing the role of each measure by exploiting or restricting its scope for enhanced dividend performance.

Keywords: Agency Theory, Dividend Payouts, Ownership Structure, GMM, Cross-Sectional Dependency

Introduction

Dividends are regarded as a reward for stockholders for their investment. However, dividend payments are not mandatory. It is one of the most discussed and significant topics in finance. There have been significant arguments centered on dividend payouts from a variety of perspectives, ranging from theoretical perspectives to the dividend's impact on various aspects of the firm such as performance and stock prices. There is also a plethora of literature available regarding determinants of dividend payouts. The discussion over the determinants of dividend payouts could be traced back to the seminal paper by John Lintner, published in 1956 where he presented the basic model that incorporated the dominant determinants of dividend payouts. Several other dimensions were present by later researchers, that is, the dividend irrelevance hypothesis which assumes the market to be perfect, while the signaling hypothesis, the tradeoff theory and the pecking order theory etc. assume the real-world imperfections. The discussion does not end here and in relatively less efficient markets, a more powerful explanation of dividend payout policy emerged in the context of agency models. In 1976, the most noticeable work was done by Jensen and Meckling, who presented the agency cost hypothesis. Their hypothesis gained popularity as it has new prospects of resolving problems like maturity structure, capital structure, executive compensation, and corporate dividend payouts. Within the agency framework, La Porta et al. (2000) contend that management does not freely issue dividends and that the dividend payment ratio is determined by the legal rights of the minority shareholders. Minority shareholders may use a variety of strategies to pressure management to pay dividends when they have stronger rights. The agency model is centered on the premise that even minority shareholders may extract dividends from companies and reduce agency costs. Given the weakness of the legal and governance structures in developing economies like Pakistan, this assumption may be illogical. It is due to poor corporate governance, that the ownership structure of Pakistani firms is frequently dominated by a single or few primary owners who try to confiscate value from minority shareholders while influencing dividend policy, resulting in an agency conflict between the shareholders(Ahmed and Javid, 2012). In such a poor legal framework, it should be extremely difficult for weak external shareholders to compel large and powerful shareholders to pay dividends, which is largely at their discretion.

The separation of management and ownership, which was the ultimate result of the evolution of the modern corporation, while leading to agency issues also led the ownership structure to be dispersed into different stakeholders with different preferences for returns. Jensen & Meckling (1976) has defined the ownership structure in terms of the contribution of the capital. The authors described the capital to be contributed by insiders and outsiders including individuals, managers and executives, institutions, largest shareholders typically top5 and family owners, etc. Due to the sensitive nature of dividend policy, its equilibrium could be vigorously influenced by the ownership structure of the business organization. On one hand, the dividends could be used to moderate the agency problems that could appear in the company, as dividends are considered as the regulating mechanisms of the directive (Rozeff, 1982; Easterbrook, 1984; Michael C Jensen, 1986). On the other hand, powerful and influential investors might use their power and influence to misappropriate funds for their personal advantage at the cost of the smaller investors, which could bound the disbursement of dividends and

create agency conflicts (Faccio, Lang and Young, 2001).The managers being insiders and having more information than the outsiders, as pointed out by Jensen & Meckling (1976) when having less than 100 percent firm equity, may not act in the best interest of the shareholders while pursuing their personal benefits. Based on their nature institutional investors has their own set of preferences for returns. The biggest shareholders also try to expropriate the free cash flows for their own benefits instead of paying dividends to minorities especially in a weak legal protection like Pakistan. The family ownership represents confounding stakes while considering the dividend payouts that are they desire like outside shareholders to increase shareholder's wealth but a low preference for dividends like the inside shareholders. Studying these confounding stake in a most suitable environment like Pakistan, where majority of firms are held by families (Hussain & Shah, 2015), is an interesting arena to be explored. Moreover, in Pakistan, the majority of major investors continue to oppose dividends and view stock price appreciation as the most important component of stock returns; consequently, it is assumed that investor attitudes toward dividends will influence how firms determine their dividend policy in Pakistan (Ahmed and Javid, 2012).

The current study is in attempt to discover the relationship of ownership structure and dividend payout in a unique environment as Pakistan being a country with common law background its law epitomizes the Anglo-American model, but its corporate ownership structure is entirely different (Mirza, 2014) as characterized by family and few large shareholders rather dispersed. The current study also adds to the literature by providing more robust results while accounting for a very serious econometric limitation of the previous studies that do not consider cross-sectional dependence while considering multiple cross sections (Abdullah et al., 2018; Kent Baker et al., 2018).

Literature Review

The association between the structure of ownership and firm dividend payouts is the subject of a significant and ongoing debate. A number of researchers recognize the company's ownership structure as a potential source of or a potential solution to agency conflict and find an association between the company's ownership structure and corporate dividend payouts. The ownership structure has been documented as having a substantial effect on internal management monitoring and affecting corporate dividend payouts. Present research continues to concentrate on managerial ownership, Big 5 ownership, institutional and family ownership while discussing the relationship between ownership structure and dividend payouts.

Institutional Ownership and Dividend payouts

The proportion of a company's stock owned by institutions is referred to as institutional ownership. According to Chris, (2004), institutional investors are organizations that raise money from individuals and businesses. They invest as major players in the stock market and operate under the constraints imposed by their own laws and contractual commitments, as well as tax and legal considerations. Their goal is to increase shareholder returns while lowering the likelihood of risk associated with individual company shares. Because of these investors' large investments, companies may need to adapt their behavior and strategies, including their dividend policy. As a result, any mismanagement or poor design in formulating dividend policies has a negative impact on firm growth as well as shareholder satisfaction (Shaheen & Ullah, 2018). Stakeholders have differing viewpoints on the relationship between institutional ownership and dividend payouts. One school of thought holds that dividend policy and institutional ownership have a positive and significant relationship. since the Institutions are experts in decision-making and know how to keep track of managers and assess the company's progress. As a

result, they serve as managers' monitors, requiring them to pay dividends. Hence the degree of institutional ownership is considered to affect agency cost and dividend payouts positively and significantly. According to the second school of thought, dividends and institutional ownership can be interpreted as two alternate forms of signaling, according to the dividend signaling theory, which may explain the negative relationship. Since the participation of particular investors will serve as a signal of adequate profitability in and of itself, there is no need to maintain a high dividend growth for informational purposes. The presence of institutional shareholders can also be interpreted by the market as a signal of lower agency costs as a result of institutional shareholders' monitoring. Empirical evidence exists to support either of the two views for example Reyna (2017) who investigated if a company's ownership structure in the Mexican market has an effect on its dividend payouts. In their analysis the institutional ownership was found to have a significant and positive effect on dividend payouts. The reason the author put forward is that institutional investors interfere less when supervising the directive function; their primary concern is for their investment, and so desire to recover it through dividend payments, which assists them in managing and limiting the likelihood of management opportunistic behaviour as in Mexico, investor protection is weak, resulting in institutional investors being unable to exert direct influence on management. Referring to the comparative study conducted by Yarram & Dollery, (2015) focusing on evidence obtained from Ghana, Kenya, Nigeria and South African Firms also reported a statistically significant and positive relationship in South Africa and Kenya between institutional ownership and dividend payout ratio; however, for Nigeria, the results were opposite. Similarly Mili et al., (2017) studied the relationship under consideration during financial crisis of 2008-09 in the GCC and East Asia. Their analysis revealed that institutional ownership has a considerable positive effect on dividend payouts for enterprises in East Asian countries throughout the crisis era. The reason they put forward is that institutional investors wanted bigger cash dividends during volatile periods in order to minimize the risk of expropriation and boost shareholder profitability. In the context of Pakistan, Ullah et al., (2012) assessed the factors that influence dividend payouts in the context of agency relationships. Using stepwise regression results of their study revealed a positive association between dividend payouts and institutional shareholders. Based on their findings the authors suggested that institutions in Pakistan do not directly track firm activities, but instead compel opportunist managers to disperse the free cash flows available to them when there are no available projects with positive net present value. In another study concerning Pakistan, Abdullah et al., (2011) speculated that in a poor legal environment, the deciding factor for dividend payment is not the minimization of agency costs, but the involvement of some influential outside investors who can compel companies to pay dividends.

Contrary to the above Al-Najjar & Kilincarslan, (2016) examined the effect of ownership structure on the dividend policy of publicly traded companies in Turkey. The study's findings indicated that institutional ownership has a significantly negative effect on dividend payout ratio and dividend yield. Their findings demonstrate that growing institutional ownership reduces the need for dividend payments in the Turkish economy. In another study, Kulathunga & Azeez, (2017)assessed the potential relationship in Sri Lankan companies listed on the Colombo Stock Exchange. The authors discovered that in Sri Lanka, the ownership identity matters when deciding dividends using Lintner's dividend model while reporting that institutional ownership has a negative association with dividend payouts and is statistically significant. The Pakistan Code of Corporate Governance clearly advocates for greater institutional shareholder participation that's why a special representation has been given to institutional investors in the form of at least one independent director representing institutional equity, according to Section (b) of Clause I of the Board of Directors. Jabeen, (2014) puts forward that key institutional

investors are pension funds, mutual funds and insurance companies in Pakistan, which make periodical payments to its contributors and for that they require regular source of income and hence they prefer the companies to make regular dividend payments to meet their fund requirements. Given the emphasis and nature of institutional owners in Pakistan 2002 a positive and significant relationship is expected between the degree of institutional ownership and dividend payouts leading to our first hypothesis that

H1: There exists a positive and significant relationship among institutional investors and dividend payouts in Pakistan.

Managerial Ownership and Dividend payouts

Jensen & Meckling, (1976) viewed ownership structure in terms of capital contributions and hence managerial ownership is defined as the equity contributed by managers. Managers, as insiders with more information than outsiders, may not act in the best interests of the shareholders when holding less than 100 percent firm equity, as Jensen & Meckling (1976) point out that if their proportion is negligible, managers may attempt to exploit the firm's free cash flows by investing in ventures that benefit their personal interests rather than maximizing shareholder capital. Additionally, it is argued that significant managerial ownership allows managers to align their goals with those of outsider shareholders. However, it also allow them to use their power to reduce the monitoring and restriction imposed on them by outsider shareholders, thereby allowing them to pursue their personal interests (Bajagai et al., 2019; Bokpin, 2011; Jensen &Meckling, 1976; Odero, 2012). Empirical evidence is mixed as to the relationship between managerial ownership and dividend payouts as demonstrated by Chen et al., (2005)in the case of Hong Kong. The authors present evidence of a positive relationship between managerial ownership and dividend payouts inferring that owners–managers may be more concerned with their dividend income than their cash salary, since their cash salary is on average much lower than dividend income. Saleh et al., (2018) conducted a study considering firms registered at Busra stock exchange. Their analysis revealed that managerial ownership has a negative effect on dividend payout, corroborating their study's hypothesis that the confluence of interests seems to be more intensified when controlling stockholders are directly involved in management. In the context of Pakistan while examining the relationship among managerial ownership and dividend payouts Shahid et al., (2016) found a positive and significant relationship between them supporting the notion that larger boards leads to more dividend payouts. Also, Mehar, (2003) concluded that if an organization has a higher percentage of managerial ownership, the prospects of a dividend are higher because dividends will go into the hands of the directors. If a substantial portion of the dividend is paid to outsiders, the likelihood of a dividend payouts are slim. According to the results of Ali, Hanming, & Ullah, (2019), banks with greater managerial ownership practiced lower degree dividend smoothing, which is in line with the agency-based explanation of dividend smoothing. Since banks with more managerial ownership are more aligned and face less agency risk, they are more inclined to seek lower dividend smoothing levels. Similarly Afza & Mirza, (2014) examined the effect of ownership structure on corporate dividend payouts in Pakistan's emerging economy. Managerial ownership has a strong and detrimental association with dividend payment, according to the findings of their report. The authors conjectured that since corporate law authorities in Pakistan do not closely track management activities, corporate executives have a greater propensity to raise funds under their control at the cost of low dividend payouts. Among the competing Abdullah et al (2011) conducted a study in the context of Pakistan to decide which argument best explains the relationship between managerial ownership and

dividend and concluded that more managerial ownership means more power to managers to expropriate the rights of minority shareholders. Considering this argument, it is hypothesized that
H2: There exists a negative relationship between managerial ownership and dividend payouts in Pakistan.

Big 5 ownership and Dividend payouts

Individual shareholders do not have to incentivize management to control its behavior when ownership is scattered. They will engage in 'free-riding' and are more likely to rely on others to handle the company (La Porta *et al.*, 2000). In contrast, where ownership is concentrated, biggest shareholders have a stronger incentive to oversee their managers and may take appropriate measures to protect their investments. due to their greater ability to bear the cost of collecting information on management behavior. However, the involvement of a large shareholder can result in increased agency costs within the organization, as large shareholders may have incentives and authority to expropriate minority shareholders and divert corporate resources (la Porta et al., 2000; Shleifer &Vishny, 1997). When ownership concentration occurs, it may align the interests of managers with the largest shareholders but are not in the interest of minority shareholders thereby diverting the agency issues from managers to owners to minority shareholders vs. majority shareholders. Larger shareholders seek control and other advantages at the expense of minority shareholders. To obtain these benefits, they can attempt to expropriate free cash flows for their own gain rather than paying dividends to other shareholders. The empirical evidence relating to the effect of concentration ownership on firm valuation is contradictory. For instance, Saleh et al., (2018) while considering top 200 firms listed at Busra stock exchange found that large shareholders have a significant positive effect on dividends payouts inferring that larger shareholders put pressure on management to disgorge any leftover free cash flows thereby playing a monitoring role. Similar work has also been carried out by Setiawan et al., (2016) considering the Indonesian environment to explore the effect of ownership structure on dividend policy. Their findings indicate that the presence of a few large shareholders has positive impact on dividend distributions. The authors concluded that greater the amount of controlling shareholders' ownership, the greater the incentive to oversee managers and ensure that investment returns are realized.

In the context of Pakistan while examining the relationship among concentrated ownership and dividend payouts Shahid et al., (2016) found a positive and significant relationship between them supporting the notion that larger boards leads to more dividend payouts. In same context according to the findings of Ali et al., (2019), banks with a higher concentration of ownership aimed for a higher degree of dividend smoothing. They also reported that banks with a higher concentration of ownership were subject to less Type-I (management-ownership conflict) agency problems but more type-II (minority vs controlling shareholders) agency problems. The study's findings are consistent with the expropriation hypothesis.
On the contrary Mili et al. (2017) used a large sample of firms from the Gulf Cooperation Council and East Asian countries to investigate the effect of certain corporate governance practices and ownership structure on dividends paid from 2003 to 2013. They evaluated panel data models under the premise of variable endogeneity using the generalized method of moments (GMM). The authors discovered that the dividend policy is significantly and negatively associated to the Top5 Shareholders. The authors termed this negative relationship a result of the desire of largest shareholders not to share earnings of companies under their control with minority shareholders and retaining their influence over dividend decisions.

Similarly, Gonzalez et al., (2016) used the sample of Latin American publicly traded companies. According to their findings where ownership concentration was high and the largest shareholder was identified as an individual, those cross-sectional units paid less dividends, implying that individual investors are gaining benefits from minority shareholders. They also reported that dividend paid were substantially higher if the largest shareholder were located in a common law country.

The fact that Pakistan being a country with common law background its law epitomizes the Anglo-American model, but its corporate ownership structure is entirely different (Mirza, 2014) as characterized by family and few large shareholders rather dispersed. Consistent with the most of the literature, in Pakistan also the largest shareholders try to get control and others benefits at the cost of minority shareholders (Abdullah et al., 2011). To get these benefits they may try to expropriate the free cash flows for their own benefits instead of paying dividends to the other shareholders. Therefore, it is assumed that there exists a negative relationship between Big 5 shareholders and dividend payouts and is hypothesized as

H3: there exists a significant negative relationship between big 5 shareholders and dividend policy.

Family Ownership and Dividend payouts

Family ownership or a family firm is a company that is owned and run by the founder, family members, or others from the family's generation (Anderson and Reeb, 2003). According to a La Porta et al., (2000) family firm is one in which the founding family of the company or family members own 20% or more of the company and should be involved in top management in any capacity. In line with instance of largest shareholders the interests of shareholders and managers can align under family ownership. Due to their close observation, control, and relationship with management, family shareholders are best equipped to balance theirs' and management's interests thereby minimizing agency conflicts (Wang, 2006).It is argued that income and wealth preservation can represent the preferences of family-owned businesses over wealth maximization for outside shareholders through dividend payout (DeAngelo and DeAngelo, 2000). When a controlling family's cash flow rights exceed those of minority shareholders, Faccio et al., (2001) argue that a controlling family can expropriate the wealth of minority shareholders. As a result, lower dividends suggest a risk of asset expropriation by family members. Considering this, a negative and significant relationship can be expected between family ownership and dividend payouts. However Huang, (2012) puts forward that this negative relationship exist when the family ownership is moderate and have effective control in the case of Taiwan. The author posits that in such a case the entrenchment effect dominates while leading to minority rights expropriation. While reports a positive relationship for the cases where family ownership is negligible and extremely high. The reasons the author put forth are, since controlling families lack sufficient leverage over companies and their control status is precarious, they prefer dividends to earnings retention in order to optimize their personal wealth, and because the unavoidable firm-specific risk compels them to cash out through dividends, establishing a positive relation among dividend payout and controlling family desire for dividends, respectively. Other reasons found in the literature regarding this positive relationship are because family businesses aim to develop a positive reputation by paying close attention to minority shareholders and their concerns about expropriation. One reason found is that family firms have a strong incentive to disburse cash dividends is that they want to convert their non-tradable shares into cash (Chen, Jian and Ming, 2007), and that dividend payouts is tailored to the needs of family shareholders instead of minority shareholders (Juanjuan and Yifeng, 2007). In the literature, there is broad theoretical and experimental evidence to support the contradicting views regarding the relationship under consideration for example Saleh et al., (2018)conducted a study considering firms listed on the Busra stock exchange. According to their findings family ownership has a positive relationship with dividend

payout ratio suggesting that family businesses tend to build a good reputation by paying close attention to minority shareholders and their concerns about expropriation. Hussain and Shah (2015a) examined Pakistan's corporate climate regarding the relationship under consideration. They found that the magnitude of dividend smoothing in family firms is less than the level of dividend smoothing in non-family firms. Additionally, their findings indicate that firms in Pakistan have more elastic dividend policies than firms in developed markets, considering the country's classical tax structure. In the case of emerging market of India the findings of Rajput & Jhunjhunwala, (2019)revealed a significant negative association between family ownership and dividend payout decisions, implying that family businesses pay lower dividends. The authors link their findings to poor corporate governance and the protection of minority shareholder rights. Also Al-Najjar & Kilincarslan, (2016) examined the effect of ownership structure on the dividend policy in Turkey. The study's findings indicated that family ownership has a significantly negative effect on dividend payout ratio and dividend yield. Furthermore Setiawan et al., (2016) used the Indonesian environment to explore the effect of ownership structure on dividend policy.

Their findings also indicate that the presence of family members has a detrimental influence on dividend distributions. In Pakistan's case, From 2009 to 2016, , Yousaf et al., (2019) assessed the effect of family power on the dividend policy of Pakistani firms. Using GMM as analysis tools a negative association between family ownership and dividends was discovered through multivariate analysis. As a result, the authors deduced that in Pakistan, family businesses pay lower dividends.

Though no specific guidelines about the conduct, proportion and regulation of family ownership has been outlined in the companies ordinance 1984 and Pakistan code of corporate governance 2002. However Hussain and Shah (2015) puts forward that Pakistani corporate environment is characterized by family ownership and these firms are supposed to have different agency problems as compared to non-family firms. It is evident from the literature that firms with family ownership operate in a more controlled and monitored way as the family members are on key positions and have more access to information than ordinary shareholders however they do not prefer dividends as Hu, Wang, & Zhang (2007) posits that family firms on average have lower dividend payout than non-family firms. Considering results of related studies who found a negative and significant relationship between family ownership (Javid and Ahmed, 2012; Shah *et al.*, 2012; Hussain and Shah, 2015b), which now is to be tested with robust analysis technique and in a more comprehensive and controlled model, a negative relationship is expected between family ownership and dividend policy and is hypothesized as

H4: there exists a significant negative relationship between family ownership and dividend policy.

Methodology

Population and Sampling

The study's population consists of all non-financial companies registered on the Pakistan Stock Exchange between 2009 and 2018. In order to have the least unbalanced panel, the sampling criterion was to only include those companies for whose data has been available for at least five years. Additionally, such sampling aids in avoiding both methodological and computational challenges brought on by extremely unbalanced panels(Hun, 2011). A sample of 269 companies from 28 industries has been selected based on the predetermined criteria. The lack of availability of data on ownership structure indicators is a key hurdle in Pakistan. There is no official database containing this information. Therefore, the relevant information was acquired manually from annual reports submitted

to the Securities and Exchange Commission of Pakistan and the websites of publicly traded companies. The duration of the current study spans a decade, from 2009 to 2018. The selected time span is considered suitable in order to avoid any structural breaks caused by the financial crisis of 2008 and COVID 19.

Model Specification

The general model of the study is represented below.

$$Yit = \alpha + \boldsymbol{Xit}.\boldsymbol{\beta} + eit$$

$$\begin{bmatrix} \boldsymbol{Yi1} \\ . \\ \boldsymbol{Yit} \end{bmatrix} = \begin{bmatrix} \mathbf{1} & \boldsymbol{X1i1} & . & \boldsymbol{Xki1} \\ \mathbf{1} & . & . & . \\ \mathbf{1} & \boldsymbol{X1it} & . & \boldsymbol{Xkit} \end{bmatrix} \times \begin{bmatrix} \boldsymbol{\beta o} \\ . \\ \boldsymbol{\beta k} \end{bmatrix} + \begin{bmatrix} \boldsymbol{e1it} \\ . \\ \boldsymbol{ekit} \end{bmatrix}$$

Where Y it is a vector of the dependent variable that is proxy of the dividend payouts of the sample firms at given time, α is the intercept of the model, X it is the vector of all independent variables (institutional ownership, managerial ownership, Big5 ownership and family ownership)

Due to the possibility of endogeneity and the fact that the number of time periods is smaller than the number of cross sections, the Generalized Method of Moments is utilized to analyze the intended relationship. The GMM is the best fit, according to Roodman (2009) in his pivotal study, in cases where (I) some of the covariates may be endogenously determined (II) the nature of the relationship is dynamic, meaning that the dependent variables are determined by their previous values, as in this study's current dividend payouts are dependent on previous year(s) payouts (III), the covariates may be correlated with error term, and (IV) the number of cross sections is greater than number of periods which is the case of this study (N=200, T=10) and is adopted by a number of studies relating to dividends(Shahid *et al.*, 2016b; Tahir *et al.*, 2016; Khan, Shah Jehan and Shah, 2017; Abdullah, Shah and Abdullah, 2018; Sarwar *et al.*, 2018; Ullah, Akhtar and Zaefarian, 2018; Yousaf, Ali and Hassan, 2019). However, adopting the conventional GMM has a very major drawback in that it fails to take the cross sectional dependency into account. Neal (2015) argues that conventional panel data estimators are inconsistent when there is cross-sectional dependency in the data, a phenomenon referred to as common factors or common shocks. Unobserved common factors within the panel can result in correlations between the residuals across panel units, as well as between the residuals and the regressors themselves. It can lead to a substantial coefficient bias if untreated. as (Chudik and Pesaran, 2015; Neal, 2015; Ali *et al.*, 2020; Pesaran, 2021)discovered, the traditional techniques result in inconsistent outcomes when cross-sectional dependence is present. Therefore, in the presence of cross-sectional dependence, it is preferable to rely on the results of the DCCE estimate technique. Many panel time series estimators that can handle slope heterogeneity and cross-sectional dependency have been developed, for instance the idea of Common Correlated Effects ('CCE') estimation was advanced by Pesaran, (2006). However, the author stated in a later paper that improving the estimator's small sample features is a future challenge because partiality in the betas of the lagged dependent variable was seen in small samples. Building on the CCE estimating approach of Pesaran, (2006) and Chudik & Pesaran, (2015), Neal (2015) offered a robust technique that addressed the remaining challenges in large panel data estimation (2015). In order to account for unobserved common factors in small samples, it replaces the use of Least Squares (or "OLS") in the individual-specific regression with the Generalized Method of Moments (or "GMM"), where the instrument group is built using lagged variables and cross-sectional averages. The current inquiry uses the most recent methodology introduced by Neal (2015) to conduct

the analysis while addressing the shortcomings of the earlier methodologies that have been highlighted. To the best of the author's knowledge, this is the first study discussing determinants of dividend payouts that takes into account cross sectional dependency, hence the results of this study will be robust when compared to the body of literature already in existence.

Results

Examining descriptive statistics provides insight into the nature and properties of variables. Table 1 shows the data summary statistics. In the first column, it lists the variables' names, while the second, third, fourth, and fifth columns list their mean, standard deviations, minimum, and maximum values, respectively. The data reveal that on average the dividend payout ratio was 53% for the sample firms within the stipulated time span with a maximum of 140% which is typically a sign of dividend cuts in the future and a negative 112% indicating that the firm is striving for dividend smoothing despite negative earnings or net loss. The institutions owned on average 13% of the total ownership indicating a significant reduction as compared to 34% and 36% reported in Masood & Shah (2014) and Kamran & Shah (2014). The mean managerial ownership remained 22% which is also lower as compared Rizwan (2016) and Kamran & Shah (2014). The percentage of ownership of the biggest five shareholders remained 65% which is quiet high as compared to the one reported in Masood & Shah (2014) for the period 2003-2010. On average the firms are levered at 46% which in line with the literature. The average firm age of the sample firms is reported as 39 years. The market to book ratio reports enough opportunities available as argued by Hadhri and Ftiti (2019) that emerging markets provides more growth opportunities for potential investors and hence emerging markets are recommended as destinations with more growth opportunities as compared to developed markets.

Correlation Matrix and Variance Inflation Factor

Table 2 displays the correlation coefficients, which suggest that there is no major multicollinearity problem: none of the explanatory variables' coefficients are more than 0.7. This is confirmed by the variance inflation factor in table 3, which as a rule of thumb should not exceed ten (Sener and Selcuk, 2019). The correlation matrix shows that Institutional Ownership and big5 ownership are positively correlated with dividend payout ratio while managerial ownership and family ownership are negatively correlated with dividend payout ratio.

Endogeneity Test

Whether any of the specified variables are endogenously determined with respect to both the dividend payout ratio as metrics of dividend distributions is ensured by using an augmented regression test (DWH test) as suggested by Davidson & MacKinnon, (1993). It is performed formed by including the residuals of each endogenous right-hand side variable, as a function of all exogenous variables, in a regression of the original model. The results of this test are presented in Table 4. A visual examination of the endogeneity column in table clearly presents the results based on the hypothesis that there is endogeneity.

Cross-Sectional Dependency Test

Although the use of traditional GMM was justified in the preceding section, it has a significant shortcoming: it does not account for cross-sectional dependency. When there is cross-sectional dependency in the data, a phenomenon known as common factors or common shocks, typical panel

data estimators such as Mean group, Pooled Mean Group, Full Modified OLS, and GMM are inconclusive, according to Neal (2015). Correlations between the residuals across panel units, as well as between the residuals and the regressors themselves, can be caused by unobserved common factors within the panel. It can lead to severe coefficient bias if left unchecked. Table 5 shows the cross-sectional dependence of the variables as determined using the well-known Pesaran (2015) Test for Cross-sectional Dependence. The table confirms that all variables except Free cash flows are not cross section ally dependent, whereas the rest are, indicating that the traditional GMM is not best suited for this study and laying the groundwork for using dynamic common correlation under GMM to address the cross-sectional dependency issue, yielding results that are robust to previous literature that ignored this serious issue.

The Impact of Ownership Structure on Dividend Payouts(Payout Ratio)

Considering the above discussion regarding the selection of Generalized Method of Moments as an appropriate estimation technique based on the time and cross-sectional dimension and subsequently by the presence endogeneity as reported by table 4. Again, there are different variants of this particular estimation technique robust to data types with different characteristics that are system GMM and difference GMM and again both with one step and two step variants. In general, the system GMM do have certain advantages over the difference GMM however there are situations where the later produces better results as compared to the former and so a careful selection between the two is must in order to reach the desired results.

Table 6Table 5.8 details the preferred estimator for both models that take cross-sectional dependency into account and those that do not when assessing the impact of ownership structure on dividend payout ratio, as established earlier regarding the importance of carefully selecting an appropriate variant for analysis. The decision rule is that if the coefficient from the difference estimator is less than or near the fixed effects estimator, then system GMM is the preferred estimator. If greater than fixed effects estimator and near to pooled OLS coefficient, the difference estimator is the preferred one (Roodman, 2009). According to the decision criteria, the system GMM is the preferred estimator for the first model that incorporates cross-sectional dependency. The findings of this preferred are shown in table 5.9 in the respective section. The table depicts that institutional ownership has a positive and significant role in determining dividend payout ratio of the sample firms. Though the coefficient is negligible but still in line with the expected relationship. The Big5 ownership depicts a negative and significant impact with of 4.9% over dividend payout ratio. The family/non-family dummy bears negative coefficient suggesting that family firms pay 17% less as compared to non-family firms which is also in line with the literature. The managerial ownership is reported to have positive (0.017) and significant role in determining dividend payout ratio. In the accompanying model, using a difference GMM as the preferred estimator and disregarding cross-sectional dependency, institutional ownership is reported to have a negative and significant effect on the dividend payout ratio of 4%. The ownership of the Big5 has a positive effect on the dividend payout ratio, with an abnormal beta of 44%. Because family/non-family ownership is a binary variable, it is omitted from the chosen estimator, difference GMM. Overall it can be observed that the model considering the cross-sectional dependency best captures the desired relationship.

Discussion

The current section discusses the individual impact of ownership structure measures on dividend payouts when the dividend payouts are represented by dividend payout ratio. As established that

ownership structure is also an important determinant of dividend payouts because of the investment objectives owners and their preferences regarding utilization of free cash flows and earnings of the firm. While taking into account the cross-sectional dependency the institutional ownership is reported to bring 0.06% increase in dividend payouts with a 1% increase in it. The finding is in line with the expected relationship. Such a relationship was expected as Jabeen, (2014) put forward that pension funds, mutual funds, and insurance companies in Pakistan are significant institutional investors because they make periodic payments to their contributors and thus require a consistent source of income. As a result, they prefer companies that make regular dividend payments to meet their fund requirements. The results also align with the corporate governance objectives in general, and particularly with the Pakistani code of corporate governance 2002, which provides for special representation of institutional investors in the form of at least one independent director representing institutional equity, as required by Section (b) of Clause I of the Board of Directors. As demonstrated by the aforementioned provision, the Code clearly supports for more institutional shareholder participation. This is another approach of emphasizing the shareholders' oversight role. Additionally, board meeting minutes must be documented. If a Director objects to the minutes, he or she may first contact the Company Secretary and subsequently the SEC. Nominee directors of financial firms can now speak openly during meetings. The results are in contradiction with the findings of Bushra & Mirza, (2015) who found and negative and significant relationship between institutional ownership and dividend payouts. Similarly, a negative relationship is also reported by Ahmad et al., (2019) while assessing the influence of ownership structure and dividend payouts considering firms listed in Karachi Stock Exchange for the period 2005 to 2014. The author reported this negative relationship using ordinary least squares as analysis technique. Similar study has been conducted by Ahmed & Javid, (2012) reporting a negative relationship between institutional ownership using different version of lintner 1956 model. Such a negative relationship is also reported by the current study in the case where cross-sectional dependency is ignored in the same table. In another study conducted by Mirza, (2014) reported the institutional ownership to be irrelevant in determining dividend payouts with an insignificant coefficient while making a comparative analysis of India, Pakistan and Srilanka. The author reported results for the period 2006-2010 using instrumental variable approach. In another study conducted by Shahid, Nawaz, & Ali, (2018) has found a positive and significant relationship between institutional ownership and dividend payouts by employing data of 239 sample firms listed o Karachi Stock exchange spanning over the period 2010-2017. Though study has found a positive and significant relationship as reported by this study however the relationship is overpromised that is 42% which seems unrealistic as compared to coefficient reported by this study. Such a positive and significant but overpromised relationship is also reported by Farooque et al., (2020) and Riaz et al., (2016). The above evidence regarding the negative relationship between institutional ownership and dividend payouts which was expected to be positive as reported by this study as well as the over and underestimation of the relationship compared to the results of this which are more robust and sensible proves all proves the modelling power of the current analysis technique as well as consequences of ignoring cross-sectional dependency.

The big5 ownership is reported in table 5.9 to have a negative and significant impact on dividend payouts. The coefficient depicts that a 1% increase in the ownership of big5 shareholders brings almost 5% decrease in dividend payouts. The dividend payout ratio being a preferred metric for growth investors, the results show that large shareholders in Pakistani non-financial sectors prefer to retain a larger chunk of earning. Such retention is desirable and consistent with growth investors' investment objectives; nevertheless, it is more likely when solid corporate governance processes are in place to

ensure appropriate use of the retained earnings. However, considering the perceived ineffectiveness of corporate governance mechanisms in Pakistan and the expropriation power of large shareholders, with a negative relationship between big5 shareholders and dividend payouts there is more probability that the biggest shareholders in Pakistani non-financial sector will exercise their power and abilities to retain much of free cash flows to be expropriated through tunneling for their private benefits thereby leaving less for dividends, instead of aligning their interests with those of minority shareholders. Such expropriation by largest shareholders leads to increased agency issues thereby posing a challenge for the corporate governance authorities and a question over the mechanisms in place. It is indeed an issue because no rule or controlling mechanisms has yet been introduced in the code of corporate governance 2002 regarding the ownership structure. The code should be amended and clauses controlling ownership of each category to a certain specified limit or placing thresholds over their authority or any other suitable measures to limit their expropriation power. The reported results are in contrast with the findings of Ahmed & Javid, (2012) who found a positive and significant relationship between largest shareholders where ownership is concentrated while examining the dynamics and determining factors of dividend payouts of 320 non-financial companies listed in Karachi Stock Exchange covering the period of 2001 to 2006. the analysis technique used was dividend model of Lintner (1956) and its extended versions in dynamic setting. In another study conducted by Shahid et al., (2016a) in the context of Pakistan also found positive and significant relationship between large shareholders where ownership is concentrated and dividend payouts. The author provided the findings from a comparative study conducted between 2010 and 2015 to examine the possible association between ownership structure, board size, board composition, CEO duality, and dividend policy of 176 KSE-listed corporations and 280 BSI-listed enterprises. Traditional panel data analysis technique that is fixed effect model was used to explore the desired relationship. Apart from this positive relationship in some studies a negative relationship as reported in this study has also been found using different analysis techniques but the estimated magnitude is either undermined of over promised for example Ahmad et al., (2019) while analyzing the influence of board composition, ownership structure on dividend payout found a negative and significant relationship between largest shareholders and dividend payouts. The author reported this negative relationship using pooled OLS with a magnitude of 12% which seems overpromised as compared to the 4% reported by this study while taking into account cross-sectional dependency. Such an overpromised magnitude is also reported by this the case where cross-sectional dependency is ignored as reported table 5.9. In another study conducted by Attiya & Javid, (2014) also negative relationship while exploring the link between internal and external corporate governance and dividend policy mechanisms for a sample of 100 manufacturing businesses listed on the Karachi Stock Exchange between 2003 and 2011. The authors reported negative but underestimated relationship with a magnitude of % while using common effects model. However, when using the traditional GMM ignoring cross-sectional dependency their study reported a positive relationship between the two thereby again proving the modelling power of the current analysis approach and the ramifications of disregarding cross-sectional dependence.

The managerial ownership is reported to be positively and significantly determining the dividend payouts. The estimated coefficient depicts that a 1% increase in managerial ownership leads to a 1.7 percent increase in dividend payout ratio. The reported relationship is in contrast with the hypothesized relationship of a negative and significant relationship however it is a good omen for shareholders especially income investors as it shows reduction in agency issues due to the alignment of the investment objective of owners involved in management and theirs in the sense that they are getting more return on investment currently but harmful in the long run as well as unfavorable for growth investors. Because of the fact that corporate governance mechanisms in Pakistan are perceivably less

effective and the expropriation power of managers being insiders, a positive relationship between managerial ownership and dividend payouts clearly indicates that the owners involved in management are taking advantage of these weak mechanisms. The tunneling effect is the evident cause of such increasing dividend announcements. Tunneling is the practice of syphoning off a company's assets for the private profit of the dominant party at the expense of minority shareholders. As there exists large and powerful shareholders engaged in management in Pakistani non-financial sector, so majority of them employ big payment as a technique of diverting cash towards them. As their primary goal is to get more income in an easy way in the form of dividends in order to maintain their quality of life. This is obvious given that the majority of investors invest for the goal of generating increased income (Alim, Abbas and Khattak, 2019). Such an expropriation by large and powerful shareholders is also unfavorable and inconsistent with the investment objectives of growth investors who wants to retain much of the earnings for attaining growth opportunities, expansion purposes or any other such activities which increases the value of their investment. When not utilized in an appropriate manner such expropriation by largest and powerful shareholders involved in management leads to increased agency issues thereby posing a challenge for the corporate governance authorities and a question over the mechanisms in place. This issue is yet to resolved because no rule or controlling mechanisms has yet been introduced in the code of corporate governance 2002 regarding the ownership structure. The code should be amended and clauses concerning controlling the ownership of each category to a certain specified limit or placing thresholds over their authority or any other suitable measures to limit their expropriation power. The findings are consistent with those of Shah, (2009) who reported a positive relationship between managerial ownership and dividend payouts while conducting a comparative study of Pakistan and USA considering the period 2002 to 2007. Similar findings has also been reported by Nazar, (2021). The author found this relationship while assessing data using GMM for 198 non-financial firms. A positive relationship has also been found by Shahid et al., (2016a) while examine the potential relationship between ownership structure, board size, board composition, CEO duality and dividend policy of 176 listed firms at KSE and 280 listed firms at BSI from 2010-2015. Though the results obtained by the referred studies are positive and significant in nature how as usual the estimated coefficients are either overestimated or underestimated. The results obtained by the current study in the case where common correlation is neglected are also underestimated as presented in the right side panel of table 5.15.

Considering the case where cross-sectional dependency is duly countered the family/non-family dummy is reported to have a negative and significant coefficient. The finding depicts that in Pakistani non-financial sector the family firms are disbursing on average 17% less dividends than those disbursed by non-family firms. The data support the hypothesis that family enterprises pay smaller dividends than nonfamily firms, since income and asset preservation may represent the priorities of family-owned businesses above wealth maximization for outside shareholders via dividend distribution (DeAngelo and DeAngelo, 2000). As established earlier that family ownership represents confounding stakes while considering the dividend payouts that are they desire like outside shareholders to increase shareholder's wealth but a low preference for dividends like the inside shareholders. According to Faccio et al., (2001), when a controlling family's cash flow rights exceed those of minority shareholders, the controlling family may expropriate minority shareholders' wealth. Due to the fact that the majority of enterprises in Pakistan are family-owned, they attempt to expropriate free cash flows in order to obtain private advantages, as Gugler, (2003)argues that when family businesses pay bigger dividends, free cash flow is diminished. Increased dividends can thus lessen the possibility that family enterprises will obtain their private benefits through extortion of minority shareholders' money. Additionally, family

enterprises pay lower dividends to preserve cash flow for expropriation. As a result, lesser dividends imply a danger of family wealth expropriation. The findings contradict with those of Mehboob, Tahir, & Hussain, (2014), who discovered a positive and significant association between family enterprises and dividend distributions when comparing family firms' debt and dividend policies to those of non-family firms. Their study used panel data from 2004 to 2013 and a sample of 34 enterprises in the pharmaceutical and chemical industries that are publicly traded on the Karachi Stock Exchange (KSE). The authors reported the positive link using a standard GMM that does not take cross-sectional dependence into account. In a recent study conducted by Ullah et al., (2021) to examine the effect of corporate governance on the firm's dividend payout in the non-financial sector of Pakistan. The study sample consisted of 65 non-financial firms listed in PSX for the period 2011-2018. Using ordinary least squares as a preferred analysis procedure the authors reported that Family/non-family base is irrelevant in determination of dividends in small firms while the family firms disburse more dividends as compared to non-family firms with a positive and significant coefficient. On the other side Bushra & Mirza, (2015) has reported similar results as reported by this study that is a negative relationship between family ownership and dividend payouts while conducting a study is to identify the significant determinants of firms' dividend policy across different sectors in Pakistan using data of 75 companies listed on the KSE 100 index for the period 2005 to 2010. Though the authors reported a negative relationship the reported relationship in different versions of their analysis using fixed effects model however it is either undermined or overpromised for example 10% and 108% in model 2 and 3 of their study as compared to 17% reported by this study. Similar results has also been reported by Afza & Mirza, (2014). In another study conducted by Yousaf, Ali, & Hassan, (2019) to examines the impact of family control on the dividend payouts of firms in Pakistan covering the period from 2009 to 2016, has also reported an instance of family firms disbursing 23% less dividend as compared to non-family firms using conventional GMM. However, the reported magnitude is still overpromised as compared the one reported in this study while taking into account cross-sectional dependency. While comparing results of the current study with the case where cross-sectional dependency is ignored, the magnitude of the relationship under consideration is fairly underestimated as compared to the model considering the cross-sectional dependency. Such underestimated magnitude is also reported by Bushra & Mirza, (2015) using fixed effects model. All of the observed contradictions demonstrate the present approach's modelling capability and the repercussions of ignoring cross-sectional dependency when the cross sections are genuinely reliant on one another.

Conclusion and Recommendations

This section concludes the current inquiry regarding the impact of ownership structure on dividend payouts. The study aimed to answer the question(s) of how ownership structure measures affect dividend payouts in a unique institutional setup like Pakistan. It was hypothesized that except for institutional ownership, the ownership structure measures have a negative and significant association with dividend payouts. The assessment of this relationships is augmented by countering a fundamental methodological deficiency which is the cross-sectional dependency, which has hitherto been overlooked despite the fact that neglecting it might result in significantly biased conclusions in order to reveal the intended relationship in a more exact and unbiased manner and compare results of both models as well as with the previous studies conducted in the same context. This foundation is laid on prominent studies which has proved that analysis methods encompassing the cross-sectional dependency provide robust and more reliable results as compared to those which does not take into consideration the cross-sectional dependency.

All the ownership structure measures depict results as hypothesized. The major institutional owners in Pakistan, which include pension, mutual, and insurance funds, are favorably impacting dividend

payouts due to their investment objectives, which necessitate regular payment. The largest shareholders are behaving as hypothesized that is reducing dividend payouts which is also in favor of growth investors however as advised for increased role of corporate governance to make sure that the retained amount is not being expropriated. As expected, family ownership has a negative association with dividend payment ratio, which is a favorable sign for growth investors as long as it is not expropriated. Here again comes the role of good corporate governance mechanisms ensuring that amount is retained with clear objectives as well as with a proper follow up of the outcome of such retentions.

Based on the hypothesis, while addressing the identified gaps, the study reveals interesting findings, thereby making significant contributions to theory and practice. The current study extends the limited research on the impact of ownership structure on dividend payouts in multiple aspects. The present study is the first in dividend literature, considering the cross-sectional dependency thereby attempting to reveal the relationship between ownership structure on dividend payouts in a relatively more exact manner. Examining the relationship between individual measures of ownership structure and dividend payouts enables the identification of the individual impact of each measure on dividend payouts and the enactment of remedial measures, thereby enhancing the role of each measure by exploiting or restricting its scope to achieve a complementary outcome, as discussed in detail in the discussion section.

Based on the findings it is recommended that Institutional owners serve as watchdogs in any organization, so their presence should be reinforced. Besides controlling the expropriation power of largest shareholder their monitoring abilities can be exploited by the governing bodies to assist corporate governance processes.

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Table 1 Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Dividend Payout Ratio	2588	.532	.966	-11.285	14.935
Institutional Ownership	2487	.134	.142	0	.867
Managerial Ownership	2274	.225	.261	0	.988
Big5 ownership	2588	.657	.2	.016	1
Leverage	2587	.466	.196	.004	.98
Firm age	2539	39.249	20.269	3	157

Table 2 Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Dividend Payout Ratio	000							
(2)Institutional Ownership	0.084	1.000						
(3)Managerial Ownership	-0.106	-0.206	1.000					
(4) Big5 Ownership	0.064	-0.241	-0.160	1.000				
(5) Family/Non-Family	-0.032	0.045	0.349	-0.328	1.000			
(6) Free Cash Flows	0.000	-0.043	0.007	-0.006	0.004	1.000		
(7) Leverage	0.020	0.046	0.049	0.110	0.044	-0.001	1.000	
(8) Firm age	-0.067	-0.054	-0.037	0.090	-0.133	-0.002	-0.227	1.000

Table 3 Variance Inflation Factor

Variable	VIF	1/VIF
Dividend Payout Ratio	1.09	0.089645
Institutional Ownership	2.33	0.429486

Managerial Ownership	1.62	0.618817
Big5 ownership	3.26	0.307071
Family/Non-Family	1.49	0.671850

Table 4 Test for Endogeneity

Variable	Dividend Payout Ratio	
	Wald Test (F-Stat)	Endogeneity
Institutional Ownership	0.046	Yes
Managerial Ownership	0.160	No
Big5 ownership	0.042	Yes
Family/Non-Family	0.824	No
Free Cash Flows	0.095	No
Leverage	0.853	No
Firm age	0.853	No

Table 5Pesaran (2015) Test for Cross-sectional Dependence

Variable	Pesaran (2015) CD Test (P-Value)	Cross Sectional Dependence
Dividend Payout Ratio	0.000	Yes
Institutional Ownership	0.000	Yes
Managerial Ownership	0.000	Yes
Big5 ownership	0.000	Yes
Family/Non-Family	0.000	Yes
LFCF	0.867	No
Leverage	0.000	Yes
Firm Age	0.000	Yes

Table 6 Preferred Estimator for the Impact of Ownership Structure on Dividend Payouts (Payout Ratio)

	With CD	Without CD
Estimator	Coefficient	Coefficient
Pooled OLS	.3581653	0.298
Fixed Effects	.0920573	0.092
Difference GMM (One Step)	-.1035921	0.149
Difference GMM (Two-Step)	-.072883	0.226
Preferred estimator	System GMM	Difference GMM

Table 7 The Impact of Ownership Structure on Dividend Payouts (Payout Ratio)

	With CD		Without CD	
Variables	Coefficient	P-Value	Coefficient	P-Value
Institutional Ownership	.006	.037	-.047	.036
Big5 ownership	-.049	.001	.441	.003
Managerial Ownership	.017	.008	.036	.249
Family/Non-Family	-.173	0.00	N/A	N/A
F- Statistics		0.000		0.000
AR2		0.103		0.08
Hansen Statistics		0.317		0.468
C Statistics		0.098		0.421