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Relationship between Product Market Competition and Payout Policy of Pakistani Firms

Shahid Ali and Maryam Jabeen
Institute of Management Sciences, Peshawar

Zia Obaid
University of Peshawar

Saima Zaib
Qurtaba University Peshawar

Product market competition is believed to have a strong influence on achieving production efficiency. In this context, this study tests the effects of product market competition on payouts of Pakistani firms. The paper relies on a panel dataset of nineteen listed manufacturing industries over a period of fifteen years i.e. from 2001 to 2015. The study uses inverse of Herfindahl-Hirschman Index as proxy for measuring the intensity of product market competition in different industries. Four different approaches are used to measure dividend payouts along with several other independent and control variables. From our analysis, it seems that firms that have achieved better controls on production costs are paying more dividends. Firms found low on product market competition are found to have lower payouts. Product market competition is evidenced as having a negative relationship with firm payouts. Corporate managers make dividend payments not only to establish good reputation but also to mitigate the agency costs that can help the firms to minimize the cost of raising new finances. Family ownership in view of product market competition is also evidenced as negatively related to payouts. In our country, firms with family ownerships avoid paying dividends. Family owned firms are found to have large amount of expenses as the managers who are also owners are compensated with high salaries. This seems to result in either very low or negative income to payout any dividends .

Keywords: product market competition (PMC), emerging markets, dividends, agency conflicts, family ownership

The payout of companies is a hot debate for many academics around the world. The countless dimensions of dividends are studied both in the developed and developing markets (Gugler & Yurtoglu, 2003; Nizar Al-Malkawi, 2007; Ahmed & Javid, 2008; Denis & Osobov, 2008) There is

Correspondence concerning this article should be addressed to Dr. Shahid Ali, Associate Professor, (Finance) Institute of Management Sciences,1-A, E-5, Phase 7, Hayatabad, Peshawar, Email: shahid.ali@imsciences.edu.pk

Contribution of Authors:

1. The first author conceived the research idea, set the methodology and finished the quantitative analysis
2. The second author helped in compiling and editing data and helped in data analysis.
3. The third author helped in the literature review and write up of the paper.
4. The fourth author proof-read, composed, and helped incorporating reviews.

abundant information on the determining factors of dividends and the implying factors that shape the dividend policy of firms. This work is specifically aiming to explore and investigate the relationship of PMC and payout policy of firms. Similarly, Product market competition (PMC) is believed as a monitoring mechanism for achieving better discipline towards reducing production costs.

The economics literature emphasizes that PMC provides incentives of achieving economic efficiency to corporate managers. This notion has multiple implications like assuring sustainability and growth, and also achieving a niche in competition. One of the focal rationales for this argument is that the disciplinary mechanisms of competition swiftly take away incompetent managers from the market. Competition in costs among organizations is considered as an effective corporate governance mechanism than either the institutional monitoring and/or market for corporate control. There are numerous possible reasons why PMC and dividend policy might be related. Perhaps the most imperative is the association that exists between PMC and agency conflicts. Agency conflicts play a significant role in corporate payout policy (DeAngelo, DeAngelo & Stulz, 2006). PMC through its effect on agency conflicts may be an additional external disciplinary factor that affects the decision to payout excess cash to shareholders (Baker, 2009). PMC forces managers to improve a firm's financial performance and to play a more integral role in decision-making because failure to do so would probably result in job loss and/or bankruptcy (Chou, Ng, Sibilkov & Wang, 2011).

Emerging economies have industry structures where leading corporate organizations are family-owned. The ownership is concentrated in corporate market of Pakistan with major share-ownership is family dominated instead of individual and institutional investment ownership. Owners that have substantial shares are the managers in most family owned businesses. They also dominate corporate boards by having executive and non-executive members that belong to the same controlling families and thus have the benefit of unconditional decision making power and absolute control over resources and their distribution.

The agency problems such as conflict of interests among the owners and poor monitoring exist in family owned corporations for the reason that the managers that run the family businesses are hired not for their outstanding competence but primarily because of family ties (Hafeez, 2015). The main agency problem is not the conflict between manager and shareholders but rather the risk of expropriation by the controlling shareholder at the expense of minority shareholders (Javid & Iqbal, 2008). Agency conflicts between controlling and minority shareholders exacerbates in markets where corporate ownership is highly concentrated. In these markets, minority shareholders have little protection for their investments and tend to be victims of agency problems (Faccio, Lang & Young, 2001).

Reluctance to relinquish control and the degree of information asymmetry in emerging markets like Pakistan have interesting implications on the payout policies of firm which need to be studied. Agency cost hypothesis predicts contractual costs would be less when managers become owners. What effects can we monitor on the payout policy in such scenarios should be interesting? This work builds a case for investigating the relationship~~s~~ of PMC with dividend payouts and also works towards determining some important factors for firms that pay dividends. It is evident from extant literature that macroeconomic factors determine firms' dividend policies in addition to firm-level mechanisms (Liu, 2002). However, in our country, there is limited number of empirical research

on PMC, an external corporate governance mechanism, as one of the determinants of corporate payout policy.

The primary objective of this study is to find out whether PMC can stimulate firms to make payouts in Pakistan, under the assumptions of a weak corporate governance mechanism and poor legal protection. The study investigates whether PMC can play a role in reducing the agency conflicts between majority and minority owners by compelling firms to pay dividends in Pakistan. The impact of concentration levels on corporate payouts is examined by using Herfindahl-Hirschman Index (HHI) as a measure of PMC. This study also attempts to fill the empirical gap in the literature by using fifteen years of large firm level panel data set to investigate the influence of PMC on dividend policy across nineteen listed manufacturing industries of Pakistan. Pakistan's manufacturing sector dominates the industrial sector as it accounts for 64.4% of the sectoral share and 13.45% in GDP (Pakistan Economic Survey, 2016-2017).

Textiles and ready-to-wear clothing industry remains the backbone of country's economy in terms of their foreign exchange earnings (Malik, 2010). In addition to wool and cotton textile industry, ready-to-wear clothing industry, cement, health products, leather products, chemical material production and also processed materials such as beverages and sugar cane are among the most essential products of the country. The product market is composed of homogenous and heterogeneous products. This study considers a sample of heterogeneous products from different industries to quantitatively examine different relationships. The study examines the behavior of corporate dividends across different manufacturing industries. In our country, there are very few, if any, empirical study that provides a comparison on industrial differences in dividend policies. The advantage of conducting an empirical analysis based on comprehensive panel-dataset that include 713 non-financial firms for an extended time period i.e. from 2001 to 2015 not only strengthens the estimation power of tests but also allows us to analyze the association between cost competition and payout policy across diversified industries.

Section 2 discusses the relevant literature and lists the hypothesis, Section 3 outlines the methodology, Section 4 presents the data analysis and discussion, and finally Section 5 showcases the conclusion.

Literature Review and Hypothesis Development

Dividends provide protection to outside investors mainly minority owners (Gomes, 2000). Dividend payments by a firm depend on the jurisdiction of where a company operates, primarily the effectiveness of governance mechanisms and enforcement of protection for minority investors. In view of agency conflict, La Porta et al., (2000) addressed two models of dividends: the substitute model and the outcome model. According to the substitute model, organizations make dividend payments to set up a decent repute, with the intention that they can raise finances from the market. However, it is not obligatory for companies that are based in countries with strong governance mechanisms to make high dividend payments to build a good reputation. Therefore, the substitute agency model implies that the total dividend payments made by a firm decreases with an increase in the strength of corporate governance.

On the other hand, outcome agency model argues that efficient minority investors can compel management to make dividend payments, implying an increase in dividend payments with corporate governance. The outcome model emphasizes that PMC creates market pressure as it forces

management to pay out cash to the shareholders. A number of empirical studies document that cost competition provide incentives to management to be more efficient and have greater alignment with corporate owners (Grullon & Michaely, 2007).

The consequences of perquisite consumption and management of financial activities are more severe for managers in high competitive industries as actions like these are more likely to lead a corporation to become bankrupt. Organizations that operate in high competitive industries are under extreme scrutiny by rating agencies and analysts to verify how cash is being utilized by the firm management. For that reason, firms in high competition industries cannot give managers surplus salaries, or make investment in non-profitable projects, or engage in financial mismanagement or an outright theft. Relating PMC to payout policy is ~~a~~ relatively a new dimension.

The degree of PMC derives the market share in terms of business profitability. Private control benefits at managerial level that gauge the magnitude of conflict among managers and shareholders, declines with the concentration of PMC (Guadalupe & Pérez-González, 2006). Payouts depend on the current business performance but they also depend on how markets or competition shapes-up in future. Firms may be compelled to halt payouts and prepare for competing the next round due to threats posed by competing firms who change their products swiftly. This happens in industries which are exposed to the shocks of technological advancement. We can take the example of Eastman Kodak company which was once a giant corporation serving the photographic interests of its global customers. Failing to realize the changing dynamics of product markets it fell miserably and had to file for bankruptcy.

The dividend irrelevance theorem by Miller and Modigliani (1961) set the pace for a plethora of discussion and information on the relative importance of payouts. Generating a discussion on signaling hypothesis, this theorem asserts that managers may use dividends to show better economic performance compared to their competition currently and can also send signals of better anticipated future performance. This argument leads to implications of information asymmetry on competitive players in an industry. Corporate management can at times imitate the actions of others and overlook their private information for the purpose of avoiding negative reputation (Scharfstein & Stein, 1990).

Managers send signals in the labor market about their own quality by imitating their peer firms' decisions. Increase in dividends signals management belief that future earnings are going to increase. Signaling theory argues that due to information asymmetry, dividend payments are made intentionally by management as an explicit signal about firms' future profitability (John and Williams, 1985). Empirical evidence suggests that dividend announcements convey information to shareholders (Benartzi, Michaely & Thaler, 1997). Firms in competitive industries would have greater incentives to imitate their peer firms' dividend policies.

Fewer studies recommend that competition among organizations is more effective than other firm-level governance mechanisms. Competition among firms lessens managerial slack; as it decreases the ability of managers' to have the benefit of quiet life or to misuse resources while compelling them to improve efficiency. The disutility from losing their job and threat of corporate continued existence strengthen the incentives of management in firms in competitive industries.

Increase in competition improves corporate performance as a result of an increase in managerial and firm efficiency (Raith, 2003; Giroud & Mueller, 2010). Hoberg, Phillips and Prabhala (2014) are of the view that cash holdings or payout policy are influenced by product market threats. They have developed a new measure of the competitive threats in product market which are faced by firms from their competition. This fluidity is simply defined to be the difference in rival firms' products relative to the firm. Their findings include that firms with higher product market fluidity are less likely to pay dividends. When product market fluidity is high and access to capital markets is low, such firms are more likely to keep cash rather than pay dividends. This work shows that the financial policies of firms depend on managing their product market threats.

Gaspar and Massa (2006) give and find support for their hypothesis that the uncertainty of average profits increase for firms with increasing competition. They used the Lerner Index (Lerner, 1995) that is price-cost margin adjusted for industry to measure the market power of firms within industry. The market power between industries is measured by Herfindahl-Hirschman Index which is reported in Herfindahl (1950) and (Hirschman, 1980). The uncertainty in average profits of firms may have implications on payouts. Grullon and Michaely (2007) assert the notion that PMC may be a reason for firms to pay higher or lower dividends. Contemporary literature in economics seems to have addressed this debate further as there are numerous authors who believe that competition in markets is a more important governance mechanism than corporate control or institutional monitoring.

This discussion has led to hypotheses including a 'threat of liquidation hypothesis' and a 'yardstick competition hypothesis'. The 'threat of liquidation hypothesis asserts that managers avoid negative NPV projects for their firms as they can potentially drive them out of the markets (Aghion, Dewatripont & Rey, 1999). The 'yardstick competition hypothesis' argues that the monitoring and information asymmetry costs go down as PMC offers outsiders opportunities to compare the performance of a firm with its competitors (Shleifer, 1985). Under both above stated hypotheses competition should serve as a governing mechanism reducing information asymmetry and business risk for firms. This discussion demands further investigation especially in emerging markets where the nature of competition, the number of market players, market regulation, rule of law, and market forces are going to be unique.

Chhaochharia, Grullon, Grinstein and Michaely (2009) also report in their work that PMC is a better governance mechanism for firms in competitive industries and is a substitute for corporate governance. He (2012) asserts that companies working under weak legal regimes are less likely to pay dividends and so is the case when companies suffer from the consequences of weak corporate governance. His research argues that under such conditions market mechanism serves as a governing arrangement that can compel companies to pay dividends to minority shareholders. Pakistani business is dominated by families and there is a visible presence of family groups and isolated businesses which are owned by them. Family owned publicly listed businesses may treat minority shareholders differently. This is evidenced by Ghani and Ashraf (2005) in their study about performance of firms operating in business groups and non-groups. They report that though the business performance of business groups is better than firms not operating in groups but investors view the group-mechanism as an expropriation mechanism to take advantage of minority shareholders. This finding implies that firms in groups may be able to pay dividends but may not choose to do so as the regulating or governing mechanism is easy to be exploited.

PMC is viewed as an external disciplinary mechanism. Competition exerts pressure on management to dispense cash to their owners as it raises the cost and risk of overinvestment, therefore, it is often viewed either as a substitute for competition or as an outcome of PMC (Grullon & Michaely, 2007; Alexander, Ferris, & Sabherwal, 2017). There is scant empirical evidence on the relationship between PMC and payout policies in economies with poor investor protection. Pyramidal organizational structure and cross-shareholdings leads to severe expropriation of minority investors as it increases the divergence between majority shareholder control rights and cash flow rights. Past empirical research in Pakistan has identified a number of firm-specific characteristics as significant determinants of dividend policy (Ahmed & Javid, 2008; Mirza & Azfa, 2010; Asif, Rasool & Kamal, 2011; Rehman & Takumi, 2012; Ullah, Fida & Khan, 2012; Bushra & Mirza, 2015; Khan & Shamim, 2017). We fill this gap by investigating the effect of an external disciplinary device i.e. PMC on dividend behavior of listed firms across diversified manufacturing industries of Pakistan. It would be of great interest to test how market forces can compel corporate insiders to disgorge cash to investors in countries like Pakistan where the interests of minority investors are less protected due to concentrated ownership structure and weak judicial system. The above arguments lead to the formulation of following hypothesis:

H_1: Higher PMC compel business firms to pay higher dividends

Method

Sample Selection and Description

This section unfolds the methodological approach for the questions at hand. Pakistan's financial databases are limited when it comes to finding information about variables of interest. Governmental sources have erroneous entries that may distort findings. For this research all available data from listed Pakistani manufacturing businesses is gathered from different sources. Secondary information is collected from Pakistan Stock Exchange, State Bank of Pakistan, and official statistics exhibited by Ministry of Finance, Government of Pakistan. Some information is gathered from annual reports of companies in the sampled period. Business Recorder is another reliable publisher of data on stock prices, which is used for some data. Initially an attempt was made to have a complete enumeration of companies for the variables of interest, however, information was found missing on several dimensions for the population of firms.

Financial data for Pakistani listed business is scattered as it is provided by multiple suppliers. The data hubs that publish financial information have their own problems. The data used in this research is gathered, and painfully organized from multiple sources including sources mentioned above. Some figures published by these sources may not be trusted therefore some effort is done in smoothing data by removing outliers. The application of conventional random sampling techniques was found limited, therefore, only available information for firms from listed nineteen industries was capitalized in the form of a panel that covers firm-year observations from 713 non-financial firms over a period of fifteen years i.e. from 2001 to 2015. The resultant panel was random enough and perhaps caters enough for a scientific sample size.

Dividends cannot be negative therefore the dataset includes zeros or greater than zero values, which suggests putting a Tobit model using maximum likelihood for estimating coefficients as

the standard ordinary least squares method provides biased regression coefficients. Censoring the lower value for dividends, using a Type-I Tobit model will serve the purpose as the dependent variable will assume only positive numbers above zero. This warrants using dividend yield instead of using dividend payout ratio. The explanatory factors include the variables that need to be tested for the listed hypotheses and including controls in the model.

The correlational design demands an exploration of the relationship between dividend payouts and PMC. The model also warrants controls for other intrinsic and extrinsic factors that may affect dividend yield. The main controls used are for profitability, leverage, income growth, earnings risk, investment, and target dividend payout ratio. According to the Buy-Back of Shares Regulation (2016), the Securities and Exchange Commission of Pakistan (SECP) has notified the listed companies that they are allowed either to retain their buy-back shares as treasury shares or they can even cancel the shares repurchased. Stock repurchases by listed companies is used as a tool to stabilize the prices of those shares that are being undervalued in the market. However, it is imperative to mention here that in this study the number of buy-back shares by listed companies has not been included in model specification. The empirical analysis in this study relies exclusively on secondary data sources and the information on this variable in not available from the published sources.

Econometric Models and Variables:

This paper utilizes available observations by first showing results using ordinary least square estimates. Next, in agreement with Han, Lee and Suk (1999) the following econometric model with some modifications is used in this research. The variables included in the model are explained in Table 1;

$$\text{Dividend Payout} = \alpha + \beta_1(\text{IHHI})_{ij} + \beta_2(\text{FO})_{ij} + \beta_3(\text{PBR})_{ij} + \beta_4(\text{GS})_{ij} + \beta_5(\text{RETE})_{ij} + \beta_6(\text{TQ})_{ij} + \beta_7(\text{Lev})_{ij} + \beta_8(\text{BR})_{ij} + \beta_9(\text{PDPO})_{ij} + \beta_{10}(\text{ITA})_{ij} + \epsilon$$

Table: 1

Variables of the study and their measurement

VARIABLES DEFINITIONS		
Variables	**Symbol**	**Measurement**
DEPENDENT VARIABLES		
Dividend Payout	DY	(cash dividend per share/earnings per share)* 100
Dividend Payout	DPO1	Dividend payout scaled by net income
Dividend Payout	DPO2	Dividend payout scaled by sales
Dividend Payout	DPO3	Dividend payout scaled by assets
INDEPENDENT AND CONTROL VARIABLES		
Product Market Competition	IHHI	Inverse of Herfindahl-Hirschman index for an industry in a given year
Family Ownership	FO	One if the company has family ownership, and zero otherwise
Market Worth	PBR	Price to book ratio

Growth	GS	Past three years average sales growth for a company
Earning Potential	RETE	retained earnings as ratio of shareholders' equity
Profitability	TQ	Sum of the book value of long term debt and market value of the equity divided by the book value of the total asset
Leverage	Lev	Total debt to total assets ratio
Business Risk	BR	standard deviation in return on assets of firm j in the past three-year period
Payout Targets	PDPO	average of past three-year dividend payouts
Profitability Potential	ITA	ratio of operating income to total assets

Keeping in view the earlier discussion that there may be important determining factors for firms that pay dividends the following logistic regression is going to be used

θ_{jt} =1 if $\alpha + \beta_j X_j + \varepsilon_j > 0$

θ_{jt} = 0, otherwise

denotes the standard logistic distribution error, one may want to use standard normal distribution instead which leads to estimating probit regression, however, this paper restricts itself to using logit regression.

The Herfindahl-Hirschman Index (HHI) using which PMC can be measured for more or less concentrated industries in a year is computed as:

$$HHI_{jt} = \sum_{i=1}^{N_j} S_{ijt}^2$$

This simply means that HHI = $S_1^2 + S_2^2 + S_3^2 + \ldots + S_K^2$

Where S_1, S_2, S_3,……..S_k represent market share of companies in a particular year for a particular industry. Number of firms for calculating the index is usually 50 or less, the same standard is followed here.

This paper investigates the nature and strength of relationship that may exist between the level of PMC and the dividend payouts which may generate evidence towards our posed hypothesis. The literature has established that cash dividends have agency implications for both the controlling and minority shareholders.

Controlling shareholders will be forced to pay dividends in light of PMC if we find positive association between dividend payout measures and HHI. Gul (1999); Denis and Osabov (2008) report that more profitable and larger firms in Japan are more likely to pay dividends as the newly listed firms fail to do so due to their compelling business reasons. In Pakistan, a very small fraction of firms in an industry pay stock dividends, therefore, this paper excludes paying stock dividends in the dividend payout ratios. The existing literature reports several factors that affects dividend payouts like severe competition leads to lower profitability which may result in lower payouts. The regression models used by researchers consider using firm size measured by market value of equity, book to market ratio, return on assets, industry competition measure by HHI, five-year growth rate in total sales. Grullon and Michaely (2007) in their research used volatility in stock returns (standard

deviation of monthly stock returns in the previous year) which is a reasonable proxy for risk. Relating to literature on the topic we expect that dividend payouts should have a negative relationship with stock price volatility and sales growth, and should have a positive relationship with market value of equity and return on assets. This work is not considering this aspect here but other research attempts could unfold findings using such aspects.

Results and Discussion

Industry Analysis: Summary of Listed Industrial Market Structure and Payouts

Table 4.1 and Table 4.2 show new listings of firms annually along with other useful information. It is interesting to look at the historic data of dividend payments by large scale manufacturing firms in Pakistan. The total number of firms have reduced over years, however the number of firms that pay dividends have increased and also the percentage of payments have increased too.

Table 4.1 Summary of Listed Industrial Market Structure

Year	Number Of Listed Companies	New Companies Listed	Fund Mobilized (Rs Billion)	Listed Capital (Rs Billion)	Turn Over Of Shares (In Billion)	Average Daily Turn Over Of Shares (In Million)	Aggregate Market Capitalization (Rs Billion)
2001	747	4	3.6	239.9	29.2	100	339.25
2002	712	4	15.2	260.6	29.1	121	407.64
2003	702	2	23.8	313	53.1	214	746.43
2004	668	16	70.7	374.1	97	386.7	1357.5
2005	659	15	54	439	88.3	351.9	2013.2
2006	658	14	41.4	496	104.7	319.6	2801
2007	655	12	49.7	631.1	68.8	211	4019.4
2008	652	7	62.9	706.4	63.3	238.2	3777.7
2009	651	8	44.9	781.8	28.2	115.6	2143.2
2010	652	8	135.1	909.9	43	173.2	2732.4
2011	639	1	31.04	943.7	28	111.63	3288.7
2012	591	3	115.1	1069.8	38.1	150	3518.1
2013	569	4	29. 5	1116	54.3	221	5154.7
2014	557	5	47. 6	1100.3	56.6	229.1	6655.3
2015	560	6	29.1	1177.8	38.4	185.7	6760.8

Source: Pakistan Stock Exchange

Table 4.1 provides summary statistics on key industry market indicators. It gives information on the number of firms listed on Pakistan Stock Exchange from 2001 to 2015. The data also shows a decline in newly listed companies over a period of fifteen years. However, there is an increase in aggregate market capitalization and stood at Rs.6760.8 billion by the end of 2015.

Table 4.2 shows the dividend payout ratios for major listed industrial sectors from 2001 to 2015 and reports that the biggest economic sector of textiles is paying less dividends over time. Textiles include firms in spinning, weaving, composite, woolen sectors. There are high expectations from this sector as it is a major economic sector of Pakistan. Some sectors are paying more over time like food, cement, miscellaneous etc. The presence or absence of dividends may be attributed to a number of important factors that are shaping the manufacturing industries of Pakistan. Ownership concentration, expanding economy, new entrants, older firms gaining maturity, agency and tax-based assumptions, PMC and numerous other factors may be attributed to increasing or decreasing dividends in the Pakistani context. In order to observe evidence based effects we are going to see how correlational design helps in identifying key factors that affect the dividend payouts.

Table 4.2:Sector Wise Summary of Payouts

		Years														
Industrial Sectors		*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*
Textile Spinning	Total firms	122	115	108	97	138	111	71	73	70	48	55	61	60	61	65
	Paid dividends	54	43	33	23	14	18	16	10	7	24	25	23	28	22	63
	Average DPO	52	1	43	43	69	56	58	54	163	22	16	31	27	38	10
Textile Weaving	Total firms	15	13	10	9	13	20	7	7	7	8	9	9	9	8	8
	Paid dividends	6	4	4	4	1	2	1	1	2	2	3	3	3	3	7
	Average DPO	98	1	30	92	66	59	64	-33	47	104	90	68	43	49	6
Textile Composite	Total firms	51	49	47	46	34	59	38	40	48	50	48	51	51	50	39
	Paid dividends	23	21	23	18	13	17	17	13	11	32	24	21	20	18	39
	Average DPO	43	0	38	33	8	33	88	26	47	20	24	40	16	22	13
Woolen	Total firms	4	4	4	3	3	5	1	2	2	2	2	2	2	1	1
	Paid dividends	2	2	3	0	0	0	0	0	1	1	1	1	0	0	1
	Average DPO	80	82	58	0	0	0	0	0	4	17	26	17	0	0	7
Synthetic & Rayon	Total firms	20	18	19	16	15	19	11	11	10	8	9	9	8	8	8
	Paid dividends	8	9	10	6	4	6	4	5	6	4	4	3	3	2	8
	Average DPO	80	84	86	55	4	60	40	31	62	58	37	80	27	129	8
Jute	Total firms	6	6	6	5	6	6	1	1	1	1	2	3	2	2	2

	Paid dividends	81	2	2	2	1	2	1	0	1	0	0	0	0	0	2
	Average DPO	81	98	38	36	23	34	22	0	13	0	0	0	0	0	1
Sugar & Allied	Total firms	37	37	37	34	38	37	31	31	31	30	29	31	31	31	31
	Paid dividends	13	14	10	10	12	15	6	11	15	17	13	10	9	9	29
	Average DPO	34	30	65	37	25	43	66	37	37	31	37	34	32	46	10
Cement	Total firms	21	22	22	21	21	21	18	19	19	19	21	23	22	22	19
	Paid dividends	5	6	8	9	5	11	4	1	2	2	2	7	11	10	19
	Average DPO	86	87	69	65	61	34	32	25	26	42	5	29	36	39	9
Tobacco	Total firms	6	5	5	5	5	5	2	2	2	2	3	3	3	3	3
	Paid dividends	2	2	2	3	3	3	2	2	2	2	1	2	2	2	3
	Average DPO	39	49	66	68	15	82	75	66	64	60	70	49	55	44	44
Fuel & Energy	Total firms	25	25	24	25	29	28	27	26	26	25	26	27	27	29	31
	Paid dividends	17	16	18	18	12	14	15	16	12	13	16	16	19	19	25
	Average DPO	62	61	64	56	59	67	64	47	61	50	55	54	67	61	15
Engineering	Total firms	12	10	10	10	24	13	10	9	9	10	11	12	11	12	13
	Paid dividends	7	5	4	7	4	7	9	4	4	6	5	6	5	5	11
	Average DPO	47	55	48	50	79	65	39	30	42	33	121	127	34	56	5
Auto & Allied	Total firms	23	23	22	22	21	25	17	19	19	19	20	19	18	17	18
	Paid dividends	10	13	14	12	13	14	10	10	11	11	11	12	13	14	18
	Average DPO	54	71	51	40	37	77	46	45	50	46	47	56	62	67	34
Cables & Electrical	Total firms	9	8	7	6	6	9	6	6	6	5	5	6	6	6	7
	Paid dividends	4	4	3	4	3	2	2	2	2	2	2	1	2	2	5
	Average DPO	80	65	65	51	86	42	29	22	65	73	94	66	41	37	19
Chemical & Pharma	Total firms	35	36	32	30	33	31	25	29	29	22	23	26	26	26	34
	Paid dividen	23	24	20	18	18	17	19	20	19	10	11	1	3	12	12

	ds															
	Average DPO	71	93	57	53	65	48	87	72	54	42	53	58	44	61	11
Paper & Board	Total firms	13	12	11	11	9	11	7	8	8	8	8	8	8	8	7
	Paid dividends	7	7	7	7	7	5	3	3	3	3	3	2	4	4	7
	Average DPO	66	66	55	54	43	44	36	31	31	35	46	51	47	40	12
Vanaspati & Allied	Total firms	13	12	9	10	11	13	12	1	1	1	1	5	1	2	1
	Paid dividends	0	3	0	2	0	1	1	0	0	1	1	0	1	1	1
	Average DPO	0	89	0	17	0	10	29	0	0	11	12	0	21	23	35
Leather & Taneries	Total firms	7	7	5	5	5	5	4	4	4	4	4	4	3	3	3
	Paid dividends	4	4	3	4	2	3	2	2	2	2	3	2	2	2	2
	Average DPO	55	54	46	30	57	45	25	20	26	26	44	55	48	41	96
Food & Allied	Total firms	18	16	17	17	22	21	16	16	1	7	17	18	20	19	18
	Paid dividends	12	12	13	12	12	13	14	13	10	15	14	14	14	12	17
	Average DPO	3	59	54	71	28	48	49	53	52	53	49	38	47	61	53
Glass & Ceramics	Total firms	7	7	7	7	10	10	6	7	8	8	8	8	8	8	9
	Paid dividends	5	5	4	4	2	3	3	2	2	3	4	1	2	2	9
	Average DPO	64	82	120	46	41	37	66	60	65	36	93	46	95	49	3
Fertilizer	Total firms	4	4	4	4	2	4	4	4	5	6	6	6	7	7	7
	Paid dividends	2	3	3	4	1	4	4	4	4	4	6	5	5	7	7
	Average DPO	37	65	71	78	68	73	60	59	71	80	86	114	88	76	15
Miscellaneous	Total firms	23	23	21	20	27	27	18	19	18	13	15	14	13	14	18
	Paid dividends	10	7	5	11	3	11	8	8	4	5	6	5	4	3	18
	Average DPO	71	59	47	24	25	82	79	97	192	88	130	54	81	65	5

PMC (HHI) Summary Statistics for Manufacturing Industries of Pakistan:

Table 4.3 shows the PMC for the major Pakistani industries. It can be seen that industrial sectors are prone to the changes that happen locally and globally. Pakistani consumerism is changing for the good as evidenced by the growth of services sector in the indigenous economy. The HHI index is computed for all major sectors for a period of 15 years (i.e. 2001 to 2015) and the industries were divided on the basis of a continuum of 0 to 10000. Where a score of 100 or below is defined to be a highly competitive sector, industries scoring 101 to 1000 are rated as un-concentrated, industries which get a score of 1001 to 1800 are defined to be moderately concentrated, and if a sector gets more than 1800 HHI score, it is defined to be highly concentrated.

Table 4.3:

Herfindahl-Hirschman Index (HHI) for Listed Manufacturing Industries of Pakistan:

HHI for Manufacturing Industries of Pakistan

Industry	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Auto	1115	1180	1400	1395	1751	1509	1642	1555	1256	1894	1467	1659	1456	1395	1909
Cables	3003	3080	3352	3533	3942	4048	3897	4207	7581	4084	3460	4372	4556	3392	4317
Cement	744	709	726	726	722	782	1113	1077	1075	996	889	960	965	979	1015
Chemicals	916	993	1335	1463	1289	1426	1465	1269	1182	1308	1625	1479	1551	1483	1704
Engineering	2440	2904	2941	2462	1725	2479	3508	3116	2871	2187	2460	2262	2167	2316	1998
Fertilizers	10000	10000	3661	3234	10000	3288	3206	2900	2833	5002	4030	3449	2504	2571	3335
Foods & Personal Care	3177	3038	2926	2655	1929	2425	2560	2398	2505	2525	2046	2064	2545	2575	1689
Fuel & Energy	1547	1663	1803	1347	1243	1203	1359	1553	1440	1923	1689	1741	1660	1529	1573
Glass & Ceramics	1613	1662	1603	1695	1776	2048	2569	2179	2351	2255	2195	2297	2440	2475	2700
Jute	2724	3633	6115	7213	7405	7925	8815	8421	8074	8450	10000	9958	9971	9963	9995
Leather	2531	3000	4457	4371	4332	4394	4398	4556	4770	4910	4957	9856	5015	4986	10000
Oil & Ghee	2188	2312	2295	2362	2733	3294	5000	10000	10000	5289	7088	10000	10000	6297	9928
Paper & Board	2707	2686	2859	2936	3090	3942	5847	6088	3911	2292	2111	2131	3264	3119	3799
Rayon	2241	2157	2156	2378	2194	2225	2116	2225	2284	3600	3623	3246	2995	3550	5056
Sugar	382	369	343	369	448	566	501	506	485	649	678	646	675	703	867
Textile	159	326	395	186	237	175	205	203	222	239	244	245	267	298	301
Tobacco	5005	5054	5143	5166	5064	5327	5421	5314	5278	5249	5299	5302	5501	5824	10000
Woolen	3395	3417	3340	5004	10000	5014	10000	6292	6658	10000	10000	10000	10000	10000	10000
Miscellaneous	2548	2456	2436	2345	3005	1738	1692	1613	1481	8708	8637	8377	3531	3949	1809

HHI=0: Perfect Competition, HHI=10,000: Monopoly, HHI<1000: Competitive Markets, 1000 < HHI < 1800: Moderately Concentrated, HHI>1800: Highly Concentrated

HHI is computed for all the nineteen manufacturing industries over a period of 15 years. The findings show that most of the listed manufacturing companies range from un-concentrated (score of 101 to 1000) to highly concentrated (score that is more than 1800).

Table 4.3 exhibits that most of the listed Pakistani manufacturing industries range from un-concentrated to highly concentrated form. Family ownership may be a reason for high degree of concentration in some of these industries as business families in Pakistan have a high degree of ownership concentration and have business groups. Understanding the payout behavior of those few leading companies that hold major market share would be very interesting.

Relationship between PMC and Dividends in Pakistan:

Table 4.4 shows an insignificant relationship between PMC and dividend payout. The negative relationship between PMC and dividend payout is consistent with the findings of Alexander, Ferris and Sabherwal (2017); however, it is in contrast to the empirical findings of He (2012). The negative relationship between competition in product market and payout ratio relies on the assumption that firms in industries that are less competitive face greater agency costs of free cash flows. These firms have the potential to generate massive rents that allow management to have

access to greater free cash flows. There is a lack of disciplinary force of competition in industries that are less competitive; therefore, corporate managers in these industries are more likely to overinvest due to lower cost and risk.

Table 4.4 Pooled OLS Models

	Model 1	Model 2	Model 3	Model 4
VARIABLES	DY	DPO1	DPO2	DPO3
IHHI	-962.45784	-874.45850	-34.81424	-217.80479
	(995.67062)	(2,421.59712)	(130.36156)	(162.83704)
FO	0.91178	-5.26504*	-0.11923	-0.20985
	(1.25171)	(3.04432)	(0.16388)	(0.20471)
PBR	-2.46495**	9.15006***	-0.13448	-0.07504
	(1.17589)	(2.85991)	(0.15396)	(0.19231)
GS	-0.00005	-0.00014	-0.00000	-0.00000
	(0.00006)	(0.00015)	(0.00001)	(0.00001)
RETE	1.49091	-26.48821***	0.35023	-1.43221***
	(2.80796)	(6.82932)	(0.36764)	(0.45923)
TQ	2.16133	5.57483	1.33482***	1.23286**
	(3.31576)	(8.06436)	(0.43413)	(0.54228)
Lev	15.86772***	10.83672	-2.29053***	0.50498
	(3.70005)	(8.99900)	(0.48444)	(0.60513)
BR	2.69884	9.64807	0.42405	0.05770
	(3.76105)	(9.14735)	(0.49243)	(0.61510)
PDPO	0.03980**	0.07546	0.00403	0.00375
	(0.01987)	(0.04832)	(0.00260)	(0.00325)
ITA	64.76699***	10.83780	1.72964	17.14830***
	(11.87100)	(28.87179)	(1.55425)	(1.94144)
Constant	-8.08927*	6.61179	1.52327**	-0.13058
	(4.58277)	(11.14587)	(0.60001)	(0.74949)
Observations	6022	6022	6022	6022
R-squared	0.38025	0.36776	0.38140	0.50962
Standard errors in parentheses			*** p<0.01, ** p<0.05, * p<0.10	

DY, DPO1, DPO2, DPO3 represents four different measures of dividend payouts. IHHI stands for PMC. FO and PBR represents family ownership and market worth respectively. Growth is measured by taking the past three years average sales growth for a company. RETE represents earning potential. Profitability and leverage is represented by TQ and Lev respectively. BR stands for business risk. PDPO represents payout targets and ITA is profitability potential that is calculated as a ratio of operating income to total assets.

However, in Table 4.5, findings from Tobit analysis reveal that in Pakistan, dividends act as a substitute for PMC. Therefore, in absence of disciplinary force of PMC, firms in less competitive industries want to establish good reputation so that they can reduce the agency costs and the costs of raising new finances. Table 4.5 shows a significant negative impact of PMC (IHHI) dividend payout ratios for all the four models.

Table 4.5 Tobit Models

	Model 1		Model 2		Model 3		Model 4	
Tobit Models	DY	Sigma	DPO1	Sigma	DPO2	Sigma	DPO3	Sigma
IHHI	-1,029.02213**		-776.28198***		-45.82417***		-225.93084**	
	(962.34879)		(2,338.08256)		(126.02584)		(156.91727)	
FO	1.01747		-5.34988*		-0.10175		-0.18261	
	(1.21115)		(2.93826)		(0.15869)		(0.19820)	
PBR	-2.46314**		9.22261***		-0.13418		-0.07523	
	(1.13444)		(2.76013)		(0.14844)		(0.18518)	
GS	-0.00005		-0.00014		-0.00000		-0.00000	
	(0.00006)		(0.00014)		(0.00001)		(0.00001)	
RETE	1.55636*		-26.67967***		0.36106		-1.40529***	
	(2.70959)		(6.59143)		(0.35458)		(0.44266)	
TQ	2.25930		5.38361		1.35103***		1.25042**	
	(3.20003)		(7.78271)		(0.41879)		(0.52233)	
Lev	-15.82232***		-10.69702***		-2.29803***		-0.48028*	
	(3.56984)		(8.68354)		(0.46712)		(0.58298)	
BR	2.82607		9.53327		0.44510		0.08222	
	(3.63019)		(8.82639)		(0.47511)		(0.59257)	
PDPO	0.03672*		0.07607		0.00352		0.00403	
	(0.01936)		(0.04663)		(0.00254)		(0.00314)	

ITA	64.73085***		11.62057		1.72366		17.16754***	
	(11.45257)		(27.86546)		(1.49856)		(1.86948)	
Constant	-7.89669*	5.5418***	6.44098	13.4799***	1.55513***	0.7251***	-0.13886	0.90461***
	(4.42445)	(0.30549)	(10.75513)	(0.74314)	(0.57912)	(0.03995)	(0.72171)	(0.04980)
Observations	6022	6022	6022	6022	6022	6022	6022	6022

DY, DPO1, DPO2, DPO3 represents four different measures of dividend payouts. IHHI stands for PMC. FO and PBR represents family ownership and market worth respectively. Growth is measured by taking the past three years average sales growth for a company. RETE represents earning potential. Profitability and leverage is represented by TQ and Lev respectively. BR stands for business risk. PDPO represents payout targets and ITA is profitability potential that is calculated as a ratio of operating income to total assets.

Managers make dividend payments not only to establish good reputation but also to mitigate the agency costs that can help the firms to reduce the cost of raising new finances. It is crucial for a firm to establish a positive reputation in order to access finances on favorable terms from the investors. According to Alexander, Ferris and Sabherwal (2017), firms that operate in countries that provide weak protection to minority shareholders have a greater need to use dividend payouts as a means to establish a good reputation. The need to set up a good reputation is greater for firms that operate in less competitive industries due to lack of pressure by competitors to supervise managers. For that reason, firms in less competitive industries allocate more cash to their investors. the findings for family ownership (Table 4.4 & Table 4.5) show a significant and inverse relationship with dividend payout.

It implies that in Pakistan firms with family owners avoid paying dividends. This can be related to the fact that family owned firms have large amount of expenses as the managers who are also owners are compensated with high salaries. This may result in either very low or negative income to pay out any dividends. The negative relationship between family ownership and dividend payout ratios is consistent with the outcome of Wei, Wu, Li, and Chen (2011); Bushra and Mirza (2015) Attig, Boubakri, El Ghoul and Guedhami (2016). Family ownership that leads to low dividend payments noticeably identify that there may be a principal-principal problem (Yoshikawa & Rasheed, 2010). Family owners are a particular type of shareholders that prefer not to pay high cash dividends. The interests of shareholders and management converge with an increase in managerial ownership thereby it weakens the effect that dividend payouts have on reducing the agency costs.

Faccio, Lang and Young (2001) document that in Asia; firms have a lower dividend payout ratio than in Europe as insiders prefer to make investments in projects with negative or no returns that provides them the opportunity to expropriate minority shareholders. The findings for Tobin's Q report a positive relation with dividends payout. The market reacts to increase in dividend with raise in stock prices, thus increasing the overall stockholder wealth (Yoshikawa & Rasheed, 2010). In Pakistan, the payment of dividends sends out positive signals to the market about the company's future earnings and performance while dividend cut is viewed negatively by the stakeholders as it reflects uncertainty about the future prospects of the company. High profits imply stability in firms' earnings over time and distribution of large amount of FCFs as dividend payments (Ahmed & Javid, 2008; Nazir, Nawaz, Anwar & Ahmed, 2010). Leverage has a negative relationship with dividend payout as well as with dividend yield. Highly leveraged firms retain large amount of their earnings as they tend to avoid the cost of raising external financing. In order to maintain their cash flow and liquidity position, firms with high amount of debt pay low dividends to their shareholders.

Conclusion

This work examined whether PMC is related with dividend payouts in the context of firms' operating in Pakistan. Pakistan's industrial sectors have big family owned enterprises and disclosure mechanisms are exploitable. This poses serious threats of information asymmetry as owner-managers or bigger shareholders may dis-appropriate earnings and may get into risky business

projects by retaining earnings. The study relied on a panel data of 713 firms from nineteen listed manufacturing industries of Pakistan from 2001 to 2015. The study hypothesized that intense PMC forces listed manufacturing firms to pay higher dividends. However, our findings do not support the proposed hypothesis (H_1). PMC is found to have a negative relationship to dividend payout ratios. This finding makes good sense as firms with lower economic efficiency in production are not in a position to pay dividends to shareholders whereas firms having a better cost control will be in a much better position to payout shareholders.

In Pakistan, where there is poor protection of minority shareholder rights, the negative relationship between PMC and dividends payments support the substitute agency model of dividends. Corporate managers make dividend payments in less competitive industries not only to establish good reputation but also to mitigate the agency costs that can help the firms to reduce the cost of raising new finances. The findings for family ownership also showed a negative impact on firms' dividend payouts. In our country, firms with family owners avoid paying dividends. The net earnings in family owned businesses are generally low or even negative to make dividend payments as they receive huge compensation in form of high salaries which lift up their overall expenses. Moreover, corporate managers are often reluctant to distribute cash as dividends among shareholders for the reason that they prefer to hold free cash flow to meet their own interests, for instance, making investments in unprofitable projects in order to get hold of fringe benefits.

The study relied on HHI to calculate competition in product market. The use of HHI as measure of PMC is evident from large number of empirical studies. Family owners, who own majority stakes in listed manufacturing sector of Pakistan, tend to avoid paying dividends. Besides documenting a negative impact of PMC and family ownership on dividend policy, the findings further show that the payment of dividends sends out a positive signal to the market about the firms' future performance and earnings. Future researchers might consider other proxy variables such as Lerner Index, market share or measures of rents to estimate the strength of each firm in a particular industry. The findings of the study can have several implications for regulators like they can use PMC indictors to identify and help firms going towards bankruptcy. They can understand PMC better by measuring overall production efficiency achieved.

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