INSTITUTIONAL OWNERSHIP AND SIMULTANEITY OF STRATEGIC FINANCIAL DECISIONS: AN EMPIRICAL ANALYSIS IN THE CASE OF PAKISTAN STOCK EXCHANGE

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Introduction

The traditional interpretation of corporate finance is characterized by ownership. Although, their rights are widely distributed among individual stockholders, but can be managed by few managers. Hence, conflict of interest is arisen among managers and shareholders and this results in an agency problem (Fama, 1980; Fama & Jensen, 1983). A number of empirical studies also confirmed the ownership concentration of firms, especially those dominated by few large owners or block-holders (La Porta et al., 1999). The concentrated structure of ownership also contributes towards agency conflict between block-holders and minority shareholders. From another perspective, the block-holders can benefit minority shareholders by their role in monitoring managers and also can be hazardous if they strive to achieve their own private goals (Shleifer & Vishny, 1997).

The three main aspects of ownership, which have been widely discussed in the past three decades, include concentrated ownership by block-holders, families and other groups, managerial ownership, and institutional ownership. The third aspect has gained importance as shareholding by institutional investors has increased in the US from 17% in 1970 to nearly 70% in the previous decade (Bushee & Noe, 2000). Meanwhile, in the case of Pakistan, nearly 25% of the common stock is owned by local and foreign institutional investors (Easterly, 2001). Institutional ownership is defined in the literature as the percentage of firm's shares owned by institutional investors and it can also be defined as one minus percentage of shares held by individual investors (Firth et al.,

2016). Consequently, institutional investors play an effective monitoring role in the invested firms. Initially, early research mainly focused on the analysis of the relationship between concentrated ownership and firm performance (McConnell & Servaes, 1990; Duggal & Millar, 1999). Later on, the relationship between institutional ownership and different domains of corporate governance have opened additional research horizon, i.e. Karpoff et al. (1996), Johnson and Greening (1999), Mak and Li (2001).

Institutional investors have diverse preferences for the firms in which they invest. A number of studies carried out to determine the preferences of institutional investors in terms of firms' corporate governance and other policies. Badrinath, Kale, and Ryan (1996) investigate the idea that institutional investors favor stocks that have higher market liquidity and lower return volatility. Others also confirmed that institutional investors value the stocks of companies with superior disclosure (Bushee & Noe, 2000), those that would pay cash dividends or repurchase shares (Grinstein & Michaely, 2005), and also those demonstrate better managerial performance (Parrino et al., 2003). Nevertheless, Cull and Xu (2005) have stressed the role of institutional investors in investment decisions, Grinstein and Michaely (2005) claimed the effects of dividend policy decisions and others in leverage or capital structure decisions (Bokpin & Arko, 2009; Chung & Wang, 2014). Most importantly, this study aims at determining the simultaneous effects of institutional ownership on firms' strategic financial decisions.

Thus, the interdependence of firms' strategic decisions set a problem of endogeneity, leading

to a causal two-way relationship between them. Leverage or capital structure decisions are affected by dividend decisions and these choices also have an influence on the leverage decisions of a firm (Al-Najjar & Taylor, 2008). However, studies have considered the endogeneity between institutional ownership and payout policy (Chang, Kang, & Li, 2016), ownership and firms' value (Afza & Nazir, 2015) and firms' performance (Maquieira, Espinosa, & Vieito, 2011), this phenomenon seems to be particularly interesting in the case of the Pakistani, where the level of institutional ownership is high and considerable.

The main purpose of this study is to analyze relationships among institutional ownership and the firms' strategic decisions relating to the leverage, the capital structure, dividend decisions and related investment decisions. This paper is organized as follows. Section II highlights previous literature and proposes our hypotheses. Section III details the sample and research design used for analysis. Section IV includes the results of empirical examination and the discussion of its consequences. Section V concludes and highlights the importance of institutional ownership in firms' decision.

1. Literature Review and Hypothesis Development

The agency theory suggests that optimal investors have a strong interest in monitoring firms' management capital structure and ownership structure, which support firms to minimize their agency costs (Jensen, 1986). Agency costs are attributed to the arise conflict of interest. Jensen and Meckling (1976) identified two main types of conflicts, i.e. conflicts of interest between the shareholders and managers, and conflicts between the shareholders and debtholders. Keeping managers' absolute investment in firms' constant, an increase in the ratio of debt financing increases the managers' share of equity and therefore, it reduces the loss from any conflict between managers and shareholders. Moreover, since the debt requires the firm to pay out cash as a cost of debt, this reduces the amount of free-cash available to managers and in turn reduces the conflict of interest. Previous literature on institutional ownership has proposed these solutions in order to gain benefits by enhancing firms' value (Shleifer & Vishny, 1997). Nevertheless, institutional

investors and debt can be substituted one another as an alternative for monitoring firms. This hypothesis is confirmed by a number of empirical studies in the literature (Li, Yue, & Zhao, 2009). Consistently, agreeing with Al-Najjar and Taylor (2008), we will propose that the relationship between institutional ownership and firms' leverage can be expressed:

H1: The degree of stock ownership by outside institutions is negatively related to the leverage of the firms.

Since, Miller and Modigliani (1961) argued that dividend policy does not affect the value of the firm, different empirical studies have been conducted to investigate the dividend puzzle. Truong and Heaney (2007) also reported that the firms pay dividends and are inclined to pay more dividends when they have high levels of profitability and low levels of investment opportunities. The classical agency theory perspective holds the view that firms are likely to share more of their profits with investors when they face lower monitoring costs (Jensen, 1986). It also holds that the largest shareholder may reduce agency costs by reducing the amount of free cash flow to managerial discretion by increasing firms' payouts. Meanwhile, the literature provides some evidence on the relationship between institutional ownership and the dividend decisions of firms. Firth et al. (2016) and Short et al. (2002) confirmed a positive correlation between institutional shareholding and the dividend payouts of firms. Grinstein and Michaely (2005) found a positive relationship between share repurchases and institutional holdings. According to their findings, firms that repurchase more shares attract more institutional investments. Their results also suggest that institutional investors prefer firms that repurchase shares regularly. Based on this discussion, our second proposition regarding the relation between institutional ownership and dividend is the following:

H2: The percentage of stock ownership by institutional investors is positively related to the dividend payment of the firms.

Bushee (1998) demonstrates that the short-term focus of many institutional investors induces some firms to reduce R&D when earnings are expected to decline. On the basis of the investment horizon and preferences, institutional investors are classified as 'transient institutions', highlighted managers' myopic behavior. The other two types of these

institutions are 'dedicated 1 and 'quasi-indexer' institutions. These institutional investors have stable ownership in firms and are less focused on short-term earnings. The relation between the investment decisions of firms and institutional ownership as proposed in the literature is not so straightforward. However, investment is one of the most important aspects through which institutional owners can affect a firm. A positive relation between investment and ownership was confirmed by Pindado and Torre (2006), whereas Richardson (2006) reports that managers of firms with large institutional ownership are less likely to overinvest surplus cash, due to the monitoring governance activities of institutions. Considering Bushee's (1998) myopic investor hypothesis to be more relevant in the context of Pakistani institutional investors (in terms of the short-term horizon and lack of information), the relationship is proposed as,

H3: The percentage of stock ownership by institutional investors is negatively related to the investment of the firms.

Debt and dividend can substitute or complement one another in reducing agency costs. These kinds of strategies auxiliary well if convergence of interest is strong (Rozeff, 1982). If the entrenchment hypothesis of Farinha (2002) is effective these decisions are complement. Believing on this, our study proposes a negative relation between leverage and dividends.

H4: The leverage of the firm is negatively related to the dividend.

Some early studies examined how firms' optimum debt preference affects investment decisions. Smith and Warner (1979) argued that debt can bound a firm's ability to employ an asset substitution, while Berkovitch and Kim (1990) discuss that project finance and secured debt support to resolve investment incentive problems. Hackbarth, Hennessy and Leland (2007) indicated that placing bank debt at the top of the firm's priorities fully exploits tax shield benefits of interests. Studying interactions between investments and financing decisions, they examined the idea that a dynamic trade-off between priority, capital structure and investment incentives yields important additional insights and further empirical predictions. Based on the literature we assumed that:

H5: Leverage is negatively related to firms' investment decisions.

However, the investment of firms also affects their dividend policy decisions. The relationships among the dividend and investment decision policies are evidenced from the theoretical background of Miller and Modigliani (1961). This theory argues that in a perfect capital market, optimal investment decisions by a firm are independent of how such decisions are financed. This core theory has also an important outcome as investment decisions should not be determined by dividends, and dividend decisions need not be affected by investment decisions. In this perspective, Fama (1974) provided empirical evidence of violence to this theorem. Since then, there is no evidence for an existed relation between dividend and investment decisions that require treating them via simultaneous equations models (SEM). For those firms which have great investment opportunities, payment of dividends must be balanced with the long-term goals of firms (Myers & Majluf, 1984). Crutchley et al. (1999) found a negative two-way relationship between dividend and investment decisions. An increased dividend can lead to reduced funds available for investment and hence results in a decreased dividend probability for the future (Cyert et al., 1996). Hence, we can also assume that:

*H6: The dividend is negatively related to the investment decisions of firms.*

Our corresponding hypothesis regarding the relation among institutional ownership and leverage, dividend and investment decisions are summarized in Fig. 1.

2. Sample and Research Design

The data used for this study is comprised of a sample taken from non-financial firms listed on the Pakistan Stock Exchange (PSE). Total statistics of this study include all listed firms in 33 different sectors. A sample of 170 firms belonging to eight different sectors were considered for analysis between 1994 and 2014. The selection of the sample depends upon the availability of all the required data. Financial firms, firms with negative equity and firms whose relevant data is incomplete or not available are excluded from this sample. Moreover, our analyses are based on annual frequency of data, in order to align financial statements results and institutional ownership variables. In this study, a sectoral approach is also used, following King and Santor (2008).
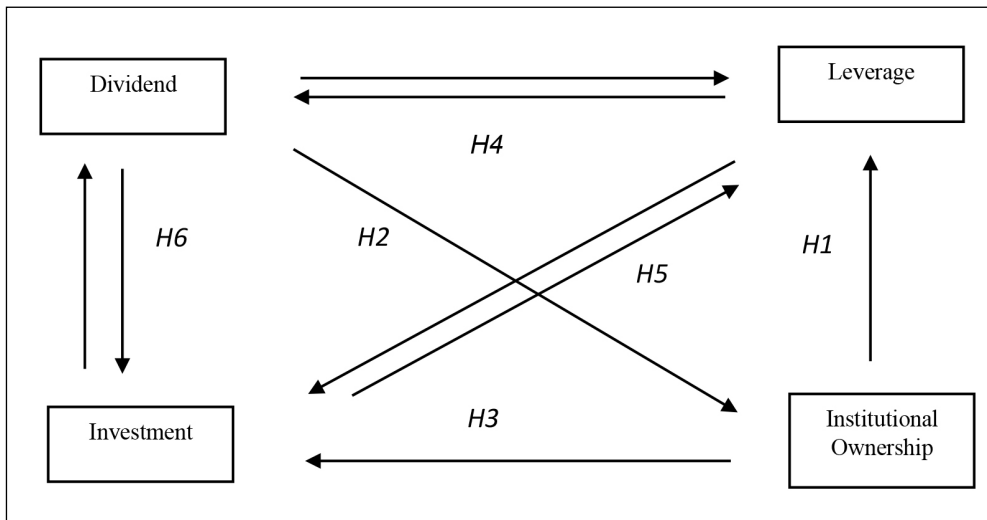
The variables extracted from the Balance Sheet Analysis (BSA) publication of the State Bank of Pakistan (SBP) (2018) include capital structure decisions captured by the following factors:

- leverage (LEV), which measured by debt to equity ratio (Hassan & Butt, 2009),
- dividend payouts (DPO), as the ratio of dividend per share to earnings per share (Afza & Nazir, 2015),
- investment decisions (INV) measured by the ratio of Change in Fixed Assets to Total Assets in place of R&D expenditures (Jensen et al., 1992),
- Return on Equity (ROE), as the ratio of net income to shareholders' equity (Hillman & Dalziel, 2003),
- size of firm (Size) equals with the natural logarithm of the book value of total assets is used (Lin & Chang, 2011),
- tangibility (TANG) of assets is measured as the ratio of fixed assets to the total assets of firm (Liu et al., 2011),
- Sales growth (Sales_GR) is calculated as the annual percentage change in sales of a company (Lin & Chang, 2011),
- age of firm (Age) is defined as the log of number of years elapsed since a firm was listed (Roy, 2015),

- institutional ownership (INST), as the percentage of shares owned by institutional investors of the total number of shares outstanding (Michaely & Vincent, 2013). INST is taken from annual reports of individual companies, reported under the Code of Corporate Governance of Pakistan (CCGP),
- and the dividend decisions of firms are captured by dividend yield (DY), as the ratio of the dividend per share to market price per share (Bradford et al., 2013).

In the method identified for this study, there is a potential causality or endogenous relationship among leverage decisions, dividend decisions and investment decisions. A simple ordinary least square (OLS) estimation to capture the relationship among these variables will create biased and inconsistent estimates, as given by (Demsetz & Villalonga, 2001). Hence, there is a need to explore a more sophisticated econometrics technique for analysis. There are different ways to address the issue of biased and inconsistent estimates. One of them is 2SLS, the others are 3SLS and GMM. 3SLS has advantages over 2SLS, as with the former to capture cross equation impacts of error terms and the system of equation is supposed to be correlated in 3SLS (Zellner & Theil, 1962).

This study is based on the 3SLS methodology in order to analyze the simultaneous determination of financial decisions and their possible two-way causality. 3SLS is always preferred in term of the inherent efficiency of its estimates over 2SLS (Kapteyn & Fiebig, 1981). 3SLS is the most appropriate technique for this data set if a system estimator is considered rather than one equation. This method is designed to capture a relation where equations in a model have endogenous variables as exogenous. Since some of the explanatory variables are endogenous variables, the error terms of the equations are correlated, which simply violates the assumptions of Ordinary Least Square (Baltagi, 2008).

In order to analyze the impact of institutional ownership on various strategic decisions of firms, the following regression models are specified as:

$$LEV_t = B_o + B_1 DY_t + B_2 INV_t + B_3 INST_t + \\ + B_3 INST_t + B_4 ROE_t + B_5 Size_t + B_6 TANG_t + \\ + B_7 Sales\_GR_t + B_8 Age_t + \varepsilon_t \quad (1)$$

$$DY_t = B_o + B_1 LEV_t + B_2 INV_t + B_3 INST_t + \\ + B_4 ROE_t + B_5 Size_t + B_6 TANG_t + \\ + B_7 Sales\_GR_t + B_8 Age_t + \varepsilon_t \quad (2)$$

$$INV_t = B_o + B_1 INV_t + B_2 DY_t + B_3 INST_t + \\ + B_4 ROE_t + B_5 Size_t + B_6 TANG_t + \\ + B_7 Sales\_GR_t + B_8 Age_t + \varepsilon_t \quad (3)$$

where leverage (LEV), dividend yield (DY) and investment (INV) are dependent variables in these equations, showing a possible causality (two-way) relationship among them, since they also appear on the right side of the equation as exogenous variables. (e) represents the error terms for the equations 1, 2 and 3, and they are also assumed to be correlated. ROE, Size, TANG, Sales_GR, Size and Age are additional control variables in these equations, as offered Bokpin and Arko (2009); Chang et al., (2016).

In order to confirm the robustness of our results, the above equations are specified with some dummy variables for capturing the cross industry-effects (Truong & Heaney, 2007). Industry specific dummies are combined with the formal Code of Corporate Governance of Pakistan in 2002, and all listed companies in Pakistan should follow a full representation to the CCGP. Considering the time effects, various year dummies are also added to account for the impact of institutional ownership and strategic decisions over time.

3. Empirical Analysis and Results

Tab. A.1 reports in Appendix the descriptive statistics of all variables. This table reports the mean or average value, the standard error of the mean, the median, the standard deviation, skewness and kurtosis for 1,502 observations. The mean or average value of LEV is 1.69 with a standard deviation of 1.48. Leverage value is higher and it shows a greater reliance of firms listed in the PSE on external sources of financing, as reported earlier by Afza and Nazir (2015). Thus, the average value of INV is .006%, with a standard deviation of .00046. The average institutional ownership in Pakistani firms is reported as 32.14% of total shares outstanding with a standard error of 0.63. Nevertheless, in order to check the heteroscedasticity, various White tests are applied. The results of these tests are reported in Tab. A.2 (Panel A) and the chi-square values confirm the presence of heteroscedasticity in our model. Panel B also the probability of test statistics confirms the presence of serial correlation. The correlation between the variables (Tab. A.3) for the sample selected is analyzed using the Pearson correlation. The result shows a positive correlation between institutional ownership and dividend yield. Thus, institutional ownership shows a slight negative correlation with leverage, whereas it seemed no correlation with investment.

The following Tab. 1 reports the corresponding results after 3SLS analysis of each models. The outcomes lead to the following implications. In model 1, the coefficient of dividend payouts (DPO) ratio (-0.711) is also negative and significant at one percent. This confirms the simultaneous determination of dividend and leverage. Consequently, we also claimed that firms use leverage and dividend as alternative monitoring devices. In other words, firms paying higher dividends find debt a less attractive source of financing (Ogden & Wu, 2013). Moreover, firms with higher financial costs are not ready to pay dividends. A higher firm leverage will lower the potential dividend payout to shareholders (Truong & Heaney, 2007).

The leverage of firms (LEV) is negatively related to institutional ownership and the result

Tab. 1: **Results of 3SLS Regressions Based on Equation 1, 2 and 3**

Variables	LEV (Model 1)		DY (Model 2)		INV (Model 3)	
Constant	1.3430***		-0.00467		-0.0001	
SE	*-0.3358*		*-0.0093*		*-0.0001*	
INV	-0.0009		-0.0000			
SE	*-0.0010*		*0.0000*			
LEV			-0.00010		0.0000	
SE			*-0.0002*		*0.0000*	
DY					0.0000	
SE					*-0.0005*	
DPO	-0.711***	-0.711***	0.0744***	0.0744***		
SE	*-0.1402*	*-0.1402*	*-0.0039*	*-0.0039*		
INST	-0.0041***	-0.0041***	0.0008*	0.0008*	-0.0003	
SE	*-0.0014*	*-0.0014*	*0.0000*	*0.0000*	*-0.0001*	
ROE	-0.0154***	-0.0154***	0.0004***	0.0004***	-0.0000	
SE	*-0.0016*	*-0.0016*	*0.0000*	*0.0000*	*0.0000*	
Size	0.1827***	0.1827***	-.00006		-.0000	
SE	*-0.0261*	*-0.0261*	*-0.0007*		*0.0000*	
SALES_GR	0.0017**	0.0017**	0.0000		0.0000***	0.0000***
SE	*-0.0009*	*-0.0009*	*-0.0001*		*0.0000*	*0.0000*
TANG	-0.4372***	-0.4372***	0.0022		0.0001**	0.0001**
SE	*-0.1808*	*-0.1808*	*-0.0050*		*-0.0001*	*-0.0001*
Age	-0.2489		0.0142***	0.0142***	0.0001***	0.0001***
SE	*-0.1857*		*-0.0051*	*-0.0051*	*0.0000*	*0.0000*
Adj. R-squared	0.1030		0.3213		0.0580	
Chi-Sq.	172.29***		710.87***		92.70***	
Hausman Test Statistics: Chi-Sq.= 1.41, Prob.>Chi-Sq.= 0.9941						

Source: own based on (State Bank of Pakistan, 2018) and author's own calculations

Note: *** denotes 1%, ** 5% and * 10% level of significance. SE is robust standard error. Model 1, 2 and 3 corresponds to equations 1, 2 and 3 respectively.

is highly significant. This result shows that institutional owners, regardless of their type, are hesitant to invest substantial stakes in firms that are highly leveraged. This negative and significant relationship also supports the argument that institutional owners may act as a substitute for the monitoring role of debt in the capital structure of firms (Moh'd et al., 1998; Chung & Wang, 2014). In this perspective, the reluctance of institutional owners to invest in highly leveraged firms may be due to their intention to avoid risk (Crutchley et al., 1999).

The profitability of a firm is also negatively related to the firm's leverage, and the coefficient is significant at 95%. This result is in line with the pecking order theory (Myers & Majluf, 1984), suggesting a negative relation due to the reliance of firms' internally generated funds. Essentially, firms' size has a positive role in determining the level of leverage. Consequently, bigger firms are more leveraged than smaller ones. The sales growth has positive and significant results, as claimed Al-Najjar and Taylor (2008). These findings contradict agency theory, supporting the negative relation between

ownership and growth due to fact that growing firms tend not to transfer their wealth to creditors. Thus, tangibility has a negative and significant relationship with leverage. The negative relation can be attributed to the presence of institutional or block-holder ownership which results in closer ties with lenders, thus reducing the need for more collateral (Deesomsak et al., 2004).

The results of second models highlight that the coefficient of investment (INV) and debt (LEV) with dividend is although negative, but insignificant in our models. Thus, the coefficients of institutional ownership (INST) are positively and significantly correlated with dividend yield (DY). The reason for increased dividend levels can be the role of institutional shareholder voting rights for higher dividends to enhance managerial monitoring (Farinha, 2002). Thus, one unit increase in profitability ratios increased the level of dividends. This supports that more profitable firms with ceteris paribus higher levels of institutional ownership tend to pay more dividends than the less ones (Truong & Heaney, 2007). Examining the significant control variables, only Age shows a positive and substantial coefficient at 1%. These findings consistent with the findings of Thanatawee (2012) regarding the firms' tendency of paying increased dividends.

Nevertheless, the relationship of institutional ownership (INST) and the firm's investment (INV), as suggested by the third model, is negative. Although the result is statistically insignificant, the negative coefficient is in accordance with the findings of Richardson (2006). The short term focus of institutional investors may constrain the manager to reduce investment (Bushee, 1998) to avoid mispricing caused by disappointed institutional investors' selling.

The positive and significant relation between age and investment variables also provides support for the same proposition. The coefficient of tangibility is significant and positive, indicating that capital-intensive firms are still in the process of expansion. The same phenomenon is confirmed by the significant and positive relationship between sales growth and investment. The results indicate high sales growth requires the firm to place more money in expansion or project/production facilities. This consequence corresponds to the findings of Jensen et al. (1992). However, there is no evidence for simultaneity in dividend and investment decisions of firms, but results are seemed to consistent with the findings of Fama (1974).

Tab. 2 demonstrates the results of simultaneous equations where industry specific dummies are incorporated into the model. The omitted control dummy variable represents Engineering, which becomes a reference for all other industries. All the reported results remain the same in terms of their sign and significance, with some exceptions. The coefficient of age in the first leverage (LEV) model becomes significant after the addition of dummies. In other words, one unit increase in age of firms seemed to decrease debt to equity ratio. Therefore, ageing firms are less levered in Pakistan. Thus, the negative impact of institutional ownership on firms' leverage becomes more pronounced after including industry specific dummies. Overall results are consistent with both analyses, suggesting that the specifications of our models are robust. The explanatory influence of the models has also increased after including industry specific variables.

Tab. 2: **Results of 3SLS Regressions with sectoral dummies (Part 1)**

Variables	LEV (Model 1)		DY (Model 2)		INV (Model 3)	
Constant	1.104***		-0.0180*		-0.00006	
SE	-0.3623		-0.0101		-0.0001	
LEV			-0.00007		-0.0000	
SE			-0.0002		0.0000	
INV	-0.0006		0.0000			
SE	0.0010		0.0000			
DY					-0.0005	
SE					-0.0006	

	LEV (Model 1)		DY (Model 2)		INV (Model 3)	
Variables						
DPO	-0.5715***	-0.5715***	0.0820***	0.0820***		
SE	-0.1447	-0.1447	-0.0040	-0.0040		
INST	-0.0044***	-0.0044***	0.0001**	0.0001**	-0.0000	
SE	*-0.0015*	*-0.0015*	*0.0000*	*0.0000*	0.0000	
ROE	-0.0147***	-0.0147***	0.0005***	0.0005***	-0.0000	
SE	*-0.0016*	*-0.0016*	*0.0000*	*0.0000*	0.0000	
Size	0.2043***	0.2043***	-0.0000		-0.000005	
SE	*-0.0286*	*-0.0286*	*-0.0008*		0.0000	
SALES_GR	0.0016*	0.0016*	0.0000		0.0000***	0.0000***
SE	*-0.0009*	*-0.0009*	0.0000		*0.0000*	*0.0000*
TANG	-0.4607**	-.4607**	0.0002		0.0001***	0.0001***
SE	*-0.1902*	*-0.1902*	*-0.0053*		*-0.0001*	*-0.0001*
Age	-0.3422*	-0.3422*	0.0135**	0.0135**	0.0053*	0.0053*
SE	*-0.1919*	*-0.1919*	*-0.0054*	*-0.0054*	*-0.0001*	*-0.0001*
CHEM	-0.1604		-.00431		0.0000	
SE	-0.1609		-0.0045		-0.0001	
CONS	-0.2422		-0.0018		-0.0001*	-0.0001*
SE	-0.2012		-0.0056		-0.0001	-0.0001
PAPER	0.1432		0.0036		-0.000015	
SE	-0.2423		-0.0068		-0.0001	
ENERGY	0.3315		0.0036		-0.0000	
SE	-0.2067		-0.0058		-0.0001	
FOOD	0.5973***	0.5973***	0.0112**	0.01120**	-0.0001**	-0.0001**
SE	*-0.1606*	*-0.1606*	*-0.0045*	*-0.0045*	*-0.0001*	*-0.0001*
PERSONAL	0.3197**	0.3197**	0.0170***	0.0170***	-0.0000	
SE	*-0.1469*	*-0.1469*	*-0.0041*	*-0.0041*	0.0000	
MISC	-0.6593***	-0.6593***	0.0063		-0.0000	
SE	*-0.2168*	*-0.2168*	*-0.0061*		-0.0001	
Adj. R-squared	*0.1479*		0.3486		0.0711	
Chi-Sq.	*260.66****		803.53***		112.85***	
Hausman Test Statistics: Chi-Sq.= 1.31, Probability > Chi-Sq.=1.00						

Tab. 2: **Results of 3SLS Regressions with sectoral dummies (Part 2)**

Source: based on (State Bank of Pakistan, 2018) and author's calculations

Notes: *** denotes 1%, ** 5% and * 10% level of significance. SE is robust standard error. Models correspond to the equations (1, 2 and 3) after incorporating industry dummies respectively. CHEM is chemical industry; CONS is construction and material industry; PAPER is paper & board industry; ENERG is fuel and energy sector; FOOD is food producer industry; PERSONAL is personal goods industry and MISC is miscellaneous industries.

Essentially, additional time dummies are added to capture the effects of particular years affects the dividend equation. As a result, the size of firms (Size), the sales growth (SALES_GR) and tangibility (TANG), which were previously insignificant, are substantial with the dividend model now, as reported in Tab. 3. Namely, if the sales growth is increased more dividends seemed to pay for stockholders. However, if there is one unit increase in size and tangibility of firms less disbursement are purchased to the owners. These results are similar with (Lin & Chang, 2011) findings.

Generally, our results in the case of LEV and INV have less changed and remained insignificant in the second and third tables, suggesting the robustness of the results. Adjusted R-squared values for DY and INV have increased, as well. At the bottom of each reported tables are the appropriated adjusted R-squared and Chi-square values. Moreover, additional Hausman tests are also reported at each table regarding 3SLS analysis. These statistics are performed to analyze the expected difference between the coefficients using 2SLS and 3SLS methods. The reported values of them are 1.37, 1.39 and 0.69 respectively. These coefficients are insignificant in all models, and indicating no significant difference between the two models for particular sets of system (Baltagi, 2008). Previous studies (Chang et al., 2016) also confirmed that the presence of outliers affects the overall explanatory power of the examined model. This 3SLS method applied on the 'winsorized' dataset to eliminate the effect of extreme values results in inconsistency (Wilson, 1993). After removing these outliers, the results recently show improved explanatory power. However, general conclusions are given only if further determinants will be taken in to consideration to determine their effects on firms' strategic decision-making. Therefore, the validity of our results is limited by the bias caused by the exclusion of the omitted variables of our models.

Tab. 3: **Results of 3SLS Regressions with time dummies (Part 1)**

Variables	LEV (Model 1)		DY (Model 2)		INV (Model 3)	
Constant	0.7010*		0.0442***		-0.0006***	
SE	-0.3699		-0.0096		-0.0001	
LEV			0.0001		-0.0000	
SE			-0.0002		0.0000	
INV	-0.0011		0.0000			
SE	-0.0010		0.0000			
DY					0.0004	
SE					-0.0006	
DPO	-0.8026***	-0.8026***	0.0759***	0.0759***		
SE	-0.1401	-0.1401	-0.0036	-0.0036		
INST	-0.0049***	-0.0049***	0.0001***	0.0001***	-0.0000	
SE	-0.0015	-0.0015	0.0000	0.0000	0.0000	
ROE	-0.0152***	-0.0152***	0.0005***	0.0005***	-0.0000	
SE	-0.0017	-0.0017	0.0000	0.0000	0.0000	
Size	0.2131***	0.2131***	-0.0026***	-0.0026***	-0.0000	
SE	-0.0267	-0.0267	-0.0007	-0.0007	0.0000	
SALES_GR	0.0008		0.0000**	0.0000**	0.00000***	0.00000***
SE	-0.0010		0.0000	0.0000	0.0000	0.0000
TANG	-0.610		-0.0097**	-0.0097**	0.0001**	0.0001**
SE	-0.1819		-0.0047	-0.0047	-0.0001	-0.0001

Tab. 3: Results of 3SLS Regressions with time dummies (Part 2)

Variables	LEV (Model 1)		DY (Model 2)		INV (Model 3)	
Age	0.1129		-0.0092*	-0.0092*	0.0001**	0.0001**
SE	*-0.1973*		*-0.0051*	*-0.0051*	*-0.0001*	*-0.0001*
Y04	0.0810		-0.0109**	-0.0109**	0.0006***	0.0006***
SE	*-0.1914*		*-0.0050*	*-0.0050*	*-0.0006*	*-0.0006*
Y05	0.0741		-0.0112**	-0.012**	0.0006***	0.0006***
SE	*-0.1919*		*-0.0050*	*-0.0050*	*-0.0001*	*-0.0001*
Y06	0.1136		-0.0143***	-0.0143***	0.0005***	0.0005***
SE	*-0.1961*		*-0.0051*	*-0.0051*	*-0.0001*	*-0.0001*
Y07	-0.0017		-0.0160***	-0.0160***	0.0004***	0.0004***
SE	*-0.1884*		*-0.0049*	*-0.0049*	*-0.0001*	*-0.0001*
Y08	-0.0189		-0.0138***	-0.0138***	0.0005***	0.0005***
SE	*-0.1923*		*-0.0050*	*-0.0050*	*-0.0001*	*-0.0001*
Y09	-0.0534		0.0088*	0.0088*	0.0004***	0.0004***
SE	*-0.1961*		*-0.0051*	*-0.0051*	*-0.0001*	*-0.0001*
Y10	-0.2063		0.0242***	0.0242***	0.0004***	0.0004***
SE	*-0.2000*		*-0.0052*	*-0.0052*	*-0.0001*	*-0.0001*
Y11	-0.1574		0.0212***	0.0212***	0.0004***	0.0004***
SE	*-0.1988*		*-0.0052*	*-0.0052*	*-0.0001*	*-0.0001*
Y12	-0.5385**	-0.5385***	0.0273***	0.0273***	0.0004***	0.0004***
SE	*-0.1956*	*-0.1956*	*-0.0051*	*-0.0051*	*-0.0001*	*-0.0001*
Y13	-0.644***	-0.644***	0.0134***	0.0134***	0.0004***	0.0004***
SE	*-0.1959*	*-0.1959*	*-0.0051*	*-0.0051*	*-0.0001*	*-0.0001*
Adj. R-squared	0.1250		0.4243		0.1288	
Chi-Sq.	214.43***		1,106.98***		226.05***	
Hausman Test Statistics Chi-Sq.= 0.69, Probability > Chi-Sq.=1.00						

Source: based on (State Bank of Pakistan, 2018) and author's own calculations

Notes: *** denotes 1%, ** denote 5% and * denotes 10% level of significance. SE is robust standard error. Models correspond to the equations (1, 2 and 3) respectively. 3SLS is applied using dummies to check robustness at the examined years.

Conclusions

This research paper addresses an emerging dimension of firms' ownership; regarding institutional ownership and its interaction with major strategic financial decisions, including leverage, dividend and investment decisions. Institutional ownership includes equity ownership by institutional investors, such as banks, insurance companies, mutual and pension funds, and investment trusts. Previous literature supports the strong incentive of institutional investors to influence the firms'

financial decisions. The main result of this study supports the expected negative relation of institutional ownership and a firm's leverage decisions and a positive relation with a firm's dividend decisions.

Furthermore, the relationships among various strategic decisions differ in terms of the magnitude of effect and sensitivity. Dividend is a determinant of leverage decisions (provided by the negative and significant coefficient), but leverage is not a simultaneous determinant of dividend or investment decisions. Consequently,

high leverage firms pay lower dividends. These results can be aligned with the findings of Jensen et al. (1992).

The negative and significant correlation between institutional ownership and leverage also confirms that institutional investors prefer low leveraged firms. Firms that aim to attract institutional investors for effective monitoring should consider this factor when choosing debt financing. The significant positive relationship between institutional ownership and firm dividend decisions suggests a preference among institutional investors for dividend-paying firms, as compared to firms do not pay stable dividends. Since, this study has not able to find significant two-way relations between institutional ownership and investment decisions, institutional investors rather focus on corporate governance and internal control of firms. Indeed, institutional investors should develop their governance role in order to improve the efficiency of firms' management and governance. These investors play the same role as a 'watch dog' for companies, so firms should prefer institutional owners of their stocks. Besides, the presence of institutional investor monitoring the firms' better business performance (Rajnoha, Lesníková, & Krajčík, 2017). These findings have important implications for the future theoretical research in the field of strategic management in general and corporate governance in particular.

The limitation of this study is that it focuses on the effects of institutional ownership on strategic decisions of firms listed in one Pakistani case. However, this study has future research potential to consider other emerging markets. Thus, the source of data has some limitations that should be kept all into mind while making such analysis (Sutopo, Kot, Adiati, & Lina Nur Ardila, 2018).

Moreover, we concentrated on one type of business ownership i.e., institutional ownership. Our research can be further extended by considering insider ownership, family ownership and block-holder ownership, i.e. (Ahmad, Oláh, Popp, & Máté, 2018). Hence, it is worth to redesign it by incorporating country specific factors, such as political and economic environment and global factors, i.e. economic crashes, natural disasters, along with firm specific factors, for improved results.

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Appendix

Tab. A.1: Descriptive statistics of the variables

Variable	Mean	Std. Dev.	Min.	Max.
LEV	1.697	1.482	-2.940	7.28
DY	0.0362	0.0474	0	0.333
INV	0.00006	0.00045	-0.0036	0.0038
INST	32.1481	24.73	0	95.51
ROE	17.592	24.406	-98.44	132.47
Size	7.8312	1.4473	2.2727	12.74
TANG	0.5108	0.215	0.0045	1.434
SALES_GR	13.010	38.595	-98.793	313.76
Age	1.346	0.1999	0.6989	1.806
DPO	0.1933	0.2785	-0.4416	1.5244
LAG_INV	-1.5810	35.62	-493.38	598.31
LAG_LEV	0.2627	4.199	-5.2656	156.95

Source: own based on (State Bank of Pakistan, 2018) and author's own estimations

Tab. A.2: Tests of heteroscedasticity and autocorrelations

	Dependent Variables	LEV		DY		INV	
PANEL A: White's Test for Heteroscedasticity	Test Statistics		Prob.		Prob.		Prob.
	F-statistic	6.692	0.00	3.223	0.00	10.620	0.00
	R-Squared	164.01	0.00	107.31	0.00	303.80	0.00
PANEL B: Breusch-Godfrey Test for Contemporaneous Correlation							
	F-statistic	565.86	0.00	206.93	0.00	3.782	0.023
	R-Squared	647.63	0.00	326.16	0.00	7.578	0.0226
Durbin-Watson		0.6990		1.0780		1.84993	

Source: own based on (State Bank of Pakistan, 2018) and author's own calculations

Tab. A.3: **Correlation matrix of the examined variables**

	DY	LEV	INV	INST	ROE	Size	TANG	S_GR	Age	DPO
DY	1									
LEV	-0.21***	1								
INV	-0.05*	0.055**	1							
INST	0.062**	-0.048*	-0.013	1						
ROE	0.380***	-0.23***	-0.019	-0.006	1					
Size	0.108***	0.094***	0.094	0.15***	0.20***	1				
TANG	-0.171***	0.047*	0.045*	0.009	-0.23***	0.03	1			
S_GR	0.063**	0.011	0.22***	0.009	0.165***	0.11	-0.022	1		
Age	0.092***	-0.04	0.042	-0.014	0.094***	0.036	-0.17***	0.01	1	
DPO	0.511***	-0.174	-0.029	.061**	0.310***	0.15***	-0.23***	-0.003	0.02	1

Source: own based on (State Bank of Pakistan, 2018) and author's own estimations

Note: Correlation is significant * at 0.10 level, ** at 0.05 level, *** at 0.01 level

Abstract

INSTITUTIONAL OWNERSHIP AND SIMULTANEITY OF STRATEGIC FINANCIAL DECISIONS: AN EMPIRICAL ANALYSIS IN THE CASE OF PAKISTAN STOCK EXCHANGE

Rabeea Sadaf, Judit Oláh, József Popp, Domicián Máté

The traditional interpretation of corporate finance is characterized by ownership rights are widely distributed among individual stockholders, but can be managed by few managers and resulted in an agency problem. The primary objective of this research study is to investigate the relationship between institutional ownership and firms' strategic decisions. These strategic decisions include i.e. leverage, dividend and investment decisions. The examined data is used from 170 non-financial Pakistani listed firms, characterized by a large percentage of institutional investors, with a multiple equity stake in different firms across a wide field of industries. This study is also able to show two important novelties. Firstly, the fact that previous researchers have already concentrated on the impact of institutional ownership on individual strategic decisions, as dividend or leverage policies and several unanswered questions remain. Consequently, the impact of institutional ownership has explored collectively on various strategic decisions. Secondly, this study also recognizes the determination of strategic decisions by considering the endogeneity problem with a Three-Stage Least Square (3SLS) method. Essentially, the effects of institutional ownership on firms' leverage becomes more pronounced after including industry specific and time dummies in regression models. Based on the results, the case of increased institutional ownership of firms has a significant negative effect on leverage, and a positive effect on dividend decisions. Hence, institutional investors are seemed to prefer low leveraged and high dividend-paying firms. Moreover, this study has not able to find significant two-way relations between institutional ownership and investment decisions, so institutional investors rather focus on corporate governance and internal control of firms. Indeed, institutional investors should develop the efficiency of firms' management to support more adequate corporate governance policies, and not only for emerging markets.