IMPACT OF FAMILY OWNERSHIP ON INVESTMENT DECISION: COMPARATIVE ANALYSIS OF FAMILY AND NON-FAMILY COMPANIES LISTED AT KARACHI STOCK EXCHANGE (PAKISTAN)

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Summary

The current study attempts to investigate the impact of family ownership structure on investment decisions of firms listed at the Karachi Stock Exchange (KSE) of Pakistan. For distinguishing family owned business (FOB) from non-family (NFOB), two threshold points of ownership structure (25% & 50%) were used. Panel data forms ranging from the period 2002-2013 were collected from different sources such as annual reports of firms, financial statements, business recorder, stock exchanges, telephone calls, emails and balance sheet analyses of joint stocks. Generalized Method of Moments (GMM) was applied to estimate the coefficients of variables of interest. Empirical results revealed that there was stronger positive impact of cashflow on investment in NFOBs in comparison with FOBs. Conversely, family firms have lower investment-cashflow sensitivity even when blockholder's effect was taken in consideration. The estimated coefficients confirmed less investment-cash flow sensitivity in those firms comparatively where professional manager serves as a chief executive officer (CEO). It was also revealed that family firms alleviate financial constraints as well as free cash flow problems. It was concluded that broader investment horizons, corporate governance mechanism and flexibility to manage financial constraints make family firms capable of reducing investment-cash flow sensitivity.

Key words: *Family Business, Panel data, Generalized Method of Moments (GMM), Karachi Stock Exchange (KSE), and Investment Decision.*

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1. INTRODUCTION

Modigliani & Miller (1958) argue that investment decision is totally independent from capital structure of the companies in perfect capital market conditions. However, past research studies show that perfect capital markets are non-existent in the real world. Therefore, financial factors do have an impact on investment decisions of a firm. Existing literature on finance also shows that source of external finance is not a perfect substitute for internal source of finance. Corporations with good investment opportunities can thus take advantage of easier access to external sources to improve capital allocation. Contrary to the assumptions of Modigliani & Miller (1958), the impact of cash flow on investment decisions can be expounded mainly from the understanding of imperfect capital markets. This extent of imperfection of financial markets is not only linked with investment decisions of companies but also with the ability to finance these investment opportunities by internal funds.

The relation between cash flow and optimal investment has been traced in the decade of 1950s (Meyer & Kuh, 1957). Yet, the debatable question of investment-cash-flow sensitivity remains unresolved (Hovakimian, 2009). Morgado, A., and Pindado, J. (2003) document the arguments that only optimal levels of investment create a maximum value of firms. Overinvestment and underinvestment problems are the result of mishandling the capital structure by managers. In the current situation where there is prevalence of under and overinvestment problems in the field of corporate investment, research scholars have provided many theoretical as well as empirical models that explain this phenomena. Cleary, S., Povel, P., and Raith, M. (2007) show a relation between the level of investment spending and a set of different financial variables such as ownership structure - one of the most important of them to be considered as the main reason for overinvestment or underinvestment problems.

Market imperfections and the prevalence of family owned firms in the world can grossly influence investment decisions of a corporation. The main objective of this study is to quantify empirically the effect of family control on investment - cash flow sensitivities. Particularly, the current study analyzes the presence of dominant shareholder in the form of family ownership, asymmetry information and agency problems in connection with investment decisions of a company. First of all, we tend to probe whether the sensitivity of investment–cash flow is either intensified or mitigated in the presence of family ownership and control in Pakistan. Secondly, we investigate whether other aspects in relation with family ownership and control can also affect investment cash flow sensitivity. Thirdly, we examine whether active involvement of family members in the management or decision making process of the company increase or reduce investment-cash flow sensitivity.

Fourthly, we explore the effect of blockholders in family owned business on the investment–cash flow sensitivity. Finally, we empirically investigate whether family ownership or control can affect the financial constraints existing due to agency problems of free cash flow as well as asymmetric information problems.

2. REVIEW OF LITERATURE AND HYPOTHESES FORMULATION

Fazzari, S.M., Hubbard, R.G., and Petersen, B.C. (1988) conclude that there is a strong positive relation between investment-cashflow sensitivity. They also find the role of large institutional investors in the investment decision process inversely proportional to the sensitivity between investment and cash flow in United Kingdom. Kaplan, S., and Zingales, L. (1997) show a higher degree of sensitivity that cannot be interpreted in terms of financial constraints, Contrary to Fazzari et al. (1988). In line with Fazzari et al. (1988), Marhfor et al. (2012) show a significant relation between investment-cash flow sensitivities.

Family owned business (FOB) is linked with some potential benefits that contribute to reducing investment-cash flow sensitivity due to the following reasons. First, in line with arguments of different authors such as Galeotti et al. (1994), the benefits associated with family ownership help to decrease imperfections of financial markets. Second, Schulze, Lubatkin, and Dino (2003) opine that family owned corporations can better evaluate strategic investment projects due to deep knowledge and long-life involvement of family members in the operations of their businesses which enables them to reduce the deviation form optimal level of new investment. This optimal level controls the investment-cash flow sensitivity (Morgado and Pindado, 2003). Third, family owned business helps to reduce agency cost between shareholders and bondholders that leads to lower the wedge between cost of external and internal funds (Jensen and Meckling, 1976). These lower financial constraints lead to choosing an optimal investment which ultimately mitigates investment-cash flow sensitivity. Fourth, existing finance literature of family business indicates that family owners are more concerned with the reputation of business that leads to higher earnings, which contributes to reducing agency conflicts. Lower agency conflict alleviates investment cash flow sensitivity in family owned business.

Keeping in view these arguments, it is expected that family firms show lower investment cash flow sensitivity than non-family ones. The following hypothesis-1 is proposed.

H_1: Investment-internal fund sensitivity is lower in FOBs than NFOBs.

Theory of voice and intervention argues that active monitoring of managers by large shareholders having substantial stakes called blockholders, can improve the value of a company. This kind of action from blockholders is termed shareholder's activism, and it prevents managers from doing wasteful activities regarding business operations which can destroy the value of business. This type of shareholder activism can be used as a mechanism of corporate governance that disciplines the controlling shareholders. It is a potential disadvantage for the largest shareholders and helps to moderate the dependence of investment spending on internally generated funds. La Porta, Lopez-de-Silanes, & Shleifer (1999) find that in firms with concentrated ownership, large shareowners may monitor each other and provide potential benefits that have an overall disciplining effect on the corporation.

Considering the above arguments in favor of lower investment cashflow sensitivity in FOBs, it is worthwhile for us to investigate whether family firms in which additional blockholders, in spite of controlling shareholders, show lower investment–cash flow sensitivity. Again, the presence of blockholders creates strong monitoring and prevents managers from attaining personal benefits in the investment decision-making process. Therefore, it can be concluded that FOBs obtain an optimal investment level as opposed to their counterparts. Thus, FOBs are less sensitive to cash flow in the presence of general blockholders.

H_2: Investment-internal fund sensitivity is lower in FOBs than NFOBs after controlling the blockholder effect.

Existing literature on finance reveals that family owned businesses (FOBs) strongly follow the pecking order theory in financing their projects. FOBs prefer internal financing with lower cost of capital and tempt to pass their business to descendants with capital efficiency. Also, family involvement is generally linked with lower agency problems due to overlapping of management with ownership. Chrisman, J. J., Chua, J. H., & Litz, R. (2004) indicate that companies with a founding family CEO could have easy access to external financing because of lower agency problems. Anderson, Mansi, & Reeb (2003a) empirically confirm that firms with a family CEO, are generally less indebted than non-family firms.

The effect of family ownership on investment-cash flow sensitivity does depend on the degree of family involvement in the managerial operation of the company. If a family member or his/her descendant hold position of CEO, then family firms can take more efficient investment decisions due to this controlling managerial position. Also, there is less classic owner-manager conflict in those family firms where a family member serves as chief executive officer (James, H.S. (1999). Founder or his/her descendants have easy access to external debt due to reputation & long-term family relations with financial institutions or bond holders, which comparatively leads to less dependency on internal funds.

Thus, considering the above argument, hypothesis-3 is posed as follows:

H_3: Investment-internal fund sensitivity is lower in FOBs where founder or his descendant serve as chief executive officer (CEO).

The following reasons might explain the phenomena of alleviating financial constraints & asymmetric information in FOBs. First, FOBs enjoy lower cost of debt due to less agency problems between bondholders & shareholders. Aderson, Mansi, and Reeb (2003c) indicate that long-term presence in the management of family owned companies provides strength to the relation based on commitment and trust with external financing sources. Resultantly, in comparison with their counterparts, FOBs bear lower cost of debt for external financing to undertake new investments. Second, long-term family managers in FOBs provide good knowledge and experience with industry that can be used to make efficient investment decisions. Hypothesis- 4 is framed as follows:

H_4: Investment-internal fund sensitivity is lower in FOBs due to financial constraints that exist in capital markets.

3. METHODOLOGY: DATA COLLECTION, DEFINITION OF VARIABLES AND METHOD OF ESTIMATION

This section describes sources used to collect the data sample and the procedure applied to identify different independent variables and method of estimation.

3.1. Source and collection of data

To estimate the proposed hypotheses, three different types of firm level data are required. First of all, for the dependent variables of the models, we need to calculate investment (I_{it}) and industry adjusted investment (IAI_{it}). The firm investment is computed by adding depreciation expenses of the previous year to the increase in net fixed assets. Investment is subtracted by Industry median to calculate industry adjusted investment. As the median is likely to be less affected by outliers and skewed data, we prefer median as a measure of central tendency over mean and mode. For final variables, we divided investment (I_{it}) as well as industry investment (IAI_{it}) by total assets of firm. Secondly, we need the cash flow (CF_{it}) data to compute independent variables. We add back depreciation expense to net income for the calculation cashflow proxy which is being used in entire set of models. Thirdly, the Tobin Q is calculated as a proxy variable for investment opportunities. Finally, we need the financial statements and annual reports of the companies to calculate the set control variables that enter the right side of the models.

As a consequence, the main sources of our information are annual reports, financial statements like balance sheets, income statements, cashflow statements, which are extracted from particular web sites of the companies where available. Basic balance sheet analyses issued by State Bank of Pakistan (SBP) for the period spanning from 2002 to 2013 is also used, and they provide comprehensive data about companies. Market data has been collected from the business recorder and the sites of the Karachi Stock Exchange. Stock Exchanges have also been visited to collect some annual reports and other financial statements, not available through sites of the companies. Firms have been contacted through telephone conversations or emails especially for the purposes of clarification, for calculating voting rights in the case of kinship of board.

The study sample has taken all non-financial companies listed on the Karachi Stock Exchange (KSE). Services companies, bonds, financial companies, banks, insurance companies, mutual funds etc. have been excluded from the sample due to different nature of their business. The types of information required to test hypotheses by the proposed models restrict the time span of the analyses. Consequently, the study covers the period ranging from 2002 to 2013. This period of twelve years is sufficient for a comprehensive analysis of companies from the non-financial sector. In addition, the estima-

tion method, panel data and Generalized Method of Moments (GMM) help to control the unobservable problems termed as heterogeneity and endogeneity.

For testing the absence of second order serial correlation, data for at least four consecutive years for each company are required (Arellano and Bond, 1991). We have to test the second order serial correlation as the estimation method (GMM) is based on this assumption. Therefore, the final sample of balance panel data comprises 280 companies from the non-financial sector listed at the Karachi Stock Exchange (KSE). Panel data for a long period (twelve years) is the best way to eliminate the survivorship bias caused by the fact. Some firms might be delisted during the analysis period. The companies that delist in the said period are consequently, deleted form the data base.

3.2. Definition of dummy variables

Two threshold points 25% and 50% are used to classify FOBs and NFOBs. 25% cut off point is proposed in the official definition of the Group of Owner Managed and Family Enterprises called GEEF by its French name (GEEF, March, 2008). It is also in line with the definition adopted by the Board of Family Business Network in April 7, 2008. 50% cut off point is used because ownership at this level confers unequivocal control rights (Doidge et al., 2005). Also, particularly in Pakistan, most of the owners of family companies hold more than 50% of shares (Attiya and Robina, 2010). In this study, both cut off points are used to differentiate family and non-family enterprises and estimate all proposed models for empirical analyses of each classification to obtain robust and reliable results.

3.3. Estimation method

Panel data methodology is applied to estimate the models of the study. Panel data methodology helps to handle two important problems that are termed as heterogeneity and endogeneity arising in the study of investment-cashflow sensitivity. Firstly, this methodology, unlike cross-sectional data analysis, controls the endogeneity. Secondly, potential misspecification of the models is checked by two ways called Hansen J-statistic and m_2 statistic. Hansen J-statistic is used to test the existing correlation between explanatory variables on the one hand and correlation in error terms on the other. Arellano and Bond (1991) developed m_2 statistic which is used to test the second order serial correlation that might exist in residual value of first difference. Finally wald tests (w_1 and w_2) are applied. w_1 provides the joint significance of coefficients and w_2 checks the joint significance of the time dummy variables.

$$I_{it} = \alpha_0 + \beta_0 I_{it-1} + (\beta + \gamma \text{ FOB}) CF_{it} + Q_{it-1} + \mu X_{it-1} + \epsilon_{it} \quad (1)$$

$$I_{it} = \alpha_0 + \beta_0 I_{it-1} + (\beta + \gamma \text{FOB} + \delta \text{ BH}) \text{CFit} + Q_{it-1} + \mu X_{it-1} + \epsilon_{it} \quad (2)$$

$$I_{it} = \alpha_0 + \beta_0 I_{it-1} + (\beta + \Phi_1 \text{ FCEO FOB} + \Phi_2 \text{ NFCEOFOB}) CF_{it} + Q_{it-1} + \mu X_{it-1} + \epsilon_{it} \quad (3)$$

$$I_{it} = \alpha_0 + \beta_0 I_{it-1} + (\beta + \Phi_3 \text{FCFOB} + \Phi_4 \text{NFCFOB}) CF_{it} + Q_{it-1} + \mu X_{it-1} + \epsilon_{it} \quad (4)$$

Where:

I_{it} = Investment

CF_{it} = Cash flow

Q_{it-1} = Tobin Q proxy variable for investment opportunities.

X_{it-1} = Firm's set characteristics (SIZE $_{it-1,}$ DEBT RATIO $_{it-1}$, DIVIDEND $_{it-1}$, SALES $_{it-1}$, and ROA $_{it-1}$)

FOB = Dummy variable equal to 1 for FOB & 0 for NFOB

BH = Dummy variable equal to 1 for FOB with insider blockholder & 0 for otherwise

FCEOFOB = Dummy variable equal to 1 for family member serving as a CEO or 0 otherwise.

NFCEOFOB = Dummy variable equal to 1 for family member not serving as a CEO or 0 otherwise.

FCFOB = Dummy variable equal to 1 for financial constraint FOB and 0 otherwise.

White and Wu (2006) indicated that financial constraint firms are characterized by higher lever from their mean value.

NFCFOB = Dummy variable equal to 1 for non-financial constraint FOB and 0 otherwise.

E_{it}= Error term

4. EMPIRICAL RESULTS

4.1. Summary statistics

Table 1 provides details of maximum, minimum, standard deviations, medians and means of variables used in different types of analysis. Panel B contributes to the correlation between variables used in the study. The sample consist of 280 companies (3360 observations) listed on the Karachi Stock Exchange in Pakistan. The data sample is collected from the period from 2002 to 2013. The I_{it} and IAI_{it} stand for investment and industry adjusted investment. CF_{it} stands for cashflow, Q_{it} denotes Tobin Q, Size is the firm size, Debt is the debt ratio, Sales denotes the total net sales and ROA means return on assets. All variables are defined in Appendix 1.

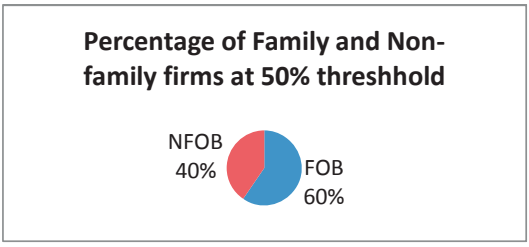
Table 1: Summary Statistics for the Full Sample & Correlation Matrix

Panel (A): Summary Statistics for Full Sample					
Variables	**Mean**	**Median**	**Standard deviation**	**Minimum**	**Maximum**
I_{it}	0.322	0.232	0.172	-0.021	6.760
IAI_{it}	0.004	0.000	0.064	-1.190	0.963
CF_{it}	0.060	0.053	0.191	-1.213	0.445
Q_{it-1}	1.879	1.679	0.435	0.086	7.649
$SIZE_{it-1}$	9.159	7.927	10.120	1.325	12.478
$DEBT_{it-1}$	0.743	0.708	0.361	0.110	0.990
DIV_{it-1}	0.002	0.001	0.003	0.000	0.202
$SALES_{it-1}$	7.998	7.891	1.572	-1.6320	12.897
ROA_{it-1}	0.192	0.181	0.169	-0.661	0.784

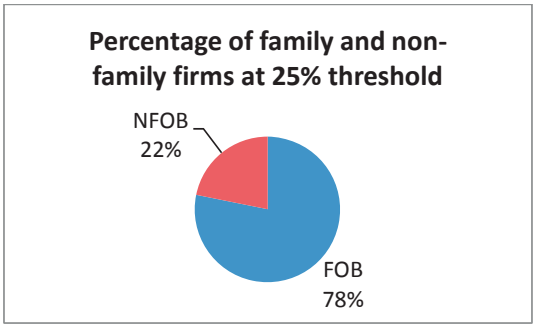
	Panel (B): Correlation Matrix								
Variables	I_{it}	IAI_{it}	**CFit**	**Tobin Q**	$SIZE_{it}$	$DEBT_{it}$	DIV_{it}	$SALES_{it}$	ROA_{it}
I_{it}	1.000								
IAI_{it}	0.892	1.000							
CFit	-0.029	-0.011	1.000						
Tobin Q	0.236	0.091	0.432	1.000					
$SIZE_{it}$	-0.055	-0.008	1.12	0.541	1.000				
$DEBT_{it}$	-0.286	-0.061	-0.101	-0.109	0.037	1.000			
DIV_{it}	0.002	0.001	0.347	0.286	0.291	-0.182	1.000		
$SALES_{it}$	0.743	0.468	0.718	0.678	0.953	0.134		1.000	
ROA_{it}	0.671	0.389	0.715	0.501	0.578	-0.021		0.812	1.000

Panel (A) of Table 1 gives the summary statistics of all variables of the full sample used in this section of the study. Mean values of investment (0.322) and industry adjusted investment (0.004) range from -0.021 to 6.760 & -1.190 to 0.963 respectively. The average value of Tobin Q is 1.879, which indicates a handsome gap between market and book values of firms. The mean values of Sales and Return on Assets (7.998 and 0.192) indicate a good sign regarding business operations. Details of cashflow, size and debt can be seen in Table-1. Similarly, Panel (B) of Table 1 provides summary statistics of correlation matrix of all the variables used in the analyses. For more details see graphs 1-4.

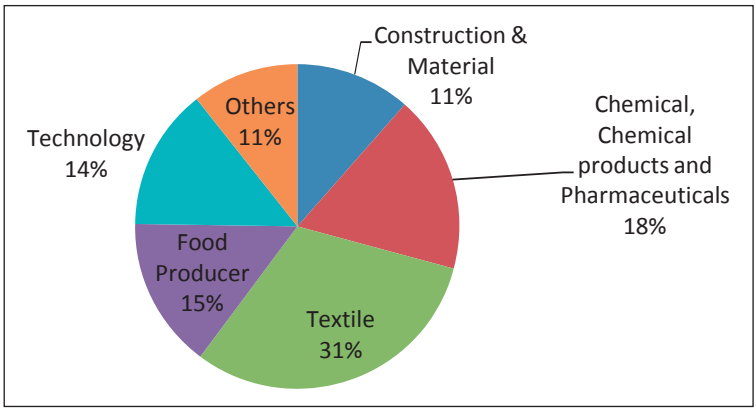
Graph 1: Distribution of family firms (1)



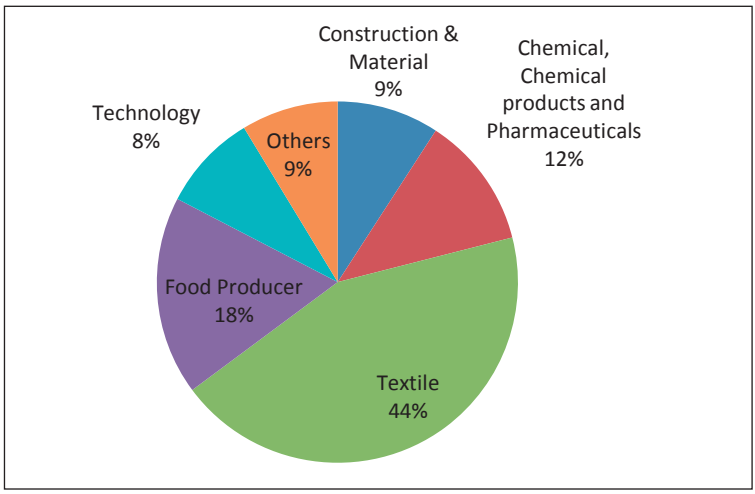
Graph 2: Distribution of family firms (2)



Graph 3: Percentage of sectors in family owned firms at 50% threshold



Graph 4: Percentage of sectors in family owned firms at 25% threshold



4.2. Descriptive analysis

As indicated in Table 2, family owned businesses (FOBs) have a significantly different behavior in terms of investment. However, this difference is more prominent when Industry adjusted investment (IAI_{it}) is used as a measure of investment behavior. Furthermore, these findings support the arguments that the industry effect would be included in the estimation procedure of empirical models.

Table 2 presents a basic analysis of means tests between FOBs and NFOB with respect to their investment behaviors. The sample contains 3360 observations of 280 companies belonging to the non-financial sector listed at the Karachi Stock Exchange (KSE) in Pakistan. The I_{it} and IAI_{it} stand for investment and industry adjusted investment of firms respectively. These variables are defined in Appendix-1. The FOBs and NFOBs are classified according to the definition as explained in Appendix-1. The t-statistic tests are applied to measure the means difference under the null hypothesis. H_0: Mean of Investment cashflow sensitivity of FOBs –Mean of Investment cashflow sensitivity of NFOB = 0. The stars ***, **, and * indicate the significance at the level of 10%, 5% and 1% respectively.

Table 2: Descriptive analysis of Dependent variables (I_{it} & IAI_{it})

		All Companies	FOB	NFOB	t-stastics
Difference of means tests using the 25% cutoff point	No of Observations	3360	2628	732	
	I_{it}	0.56	0.45	0.95	0.05
	IAI_{it}	0.26	0.24	0.33	2.98**
Difference of means tests using the 50% cutoff point	No of Observations	3360	2004	1356	
	I_{it}	0.52	0.51	0.55	2.12**
	IAI_{it}	0.19	0.18	0.23	3.77*

Table 3 consists of subsamples of financial variables for FOBs. The samples contain 2628 observations of 219 companies of the non-financial sector listed at the Karachi Stock Exchange (KSE) of Pakistan for which we use data available for consecutive twelve years from 2002 to 2013 when 25% threshold. Two threshold criteria (25% and 50%) for differentiation of FOB and NFOB are used in the classification procedure. FOBs reduce the sample size up to observation 2004 of 167 companies when strict criterion (50%) is used. Furthermore, FOBs have been divided into two subsamples. First, FOBs with family member as CEO and no family member CEO. Second, financial constraint FOBs and non-financial constraint FOBs, The dummy variables that are applied to classify the subsample of FOBs as defined in Appendix 1. I_{it} and IAI_{it} indicate the firm's investment and industry adjusted investment respectively. The stars ***, **, and * indicate the significance at the level of 10%, 5% and 1% respectively.

Table 3: Firm-level characteristics by ownership structure

		Family Firms	Family member CEO	No-Family member CEO	Financial Constraint Family firms	Non-Financial Constraint Family firms
25% cutoff point	No. of Obs.	2628	2220	408	1560	1068
	I_{it}	0.560	0.566	0.527	0.589	0.518
	IAI_{it}	0.260	0.262	0.249	0.264	0.254
50% cutoff point	No. of Obs.	2004	1704	300	814	1190
	I_{it}	0.520	0.528	0.475	0.550	0.499
	IAI_{it}	0.190	0.202	0.122	.292	0.120

Table 3 offers descriptive analyses of subsamples of FOBs. FOBs are classified into two subsamples. First, FOBs with family members fully involved in decision-making and one of them serving as chief executive officer (CEO); FOBs with family members not involved in decision-making and a professional serving as chief executive officer (CEO). Second, financial constraint FOBs are separated from the FOBs having no financial constraint. Whited, T.M., and Wu, G. (2006) indicate that financial constraint firms are characterized by a higher lever from their mean value. Results seem to be inconsistent with our hypothesis-4 but this is not important as in this analysis other important factors are not accounted for.

4.3. Regression results

Results drawn by estimating the model (1-4) as shown in Table-4 provides an insight into the influence of family ownership on investment behavior of corporations. The current study tends to analyze whether ownership of corporations in terms of family owned businesses (FOBs) and non-family owned businesses (NFOBs) increase or decrease investment cash flow sensitivity. Results reveal that positive impact of cashflow on investment is stronger for NFOBs ($\beta = 0.120$) than FOBs (0.120- 0.080= 0.040). The result is statistically significant as t_1 is equal to 2.434. Therefore, it can be concluded that cash flow has a positive impact on investment but this relationship is weaker in FOBs than NFOBs. These findings support the proposed hypothesis-1 and are in line with previous studies such as (Koo and Maeng, 2006; Pindado and de la Torre, 2009). Results in Table-4 indicate that there is no effect of blockholders on investment cashflow sensitivity as t_3 is statistically non-significant. Therefore, it can be concluded that the presence of blockholders seems to be meaningless for investment cash flow relations in family forms.

Generalized method of moments (GMM) is used to test the hypotheses-1-4.

Model equations are:

$$I_{it} = \alpha_0 + \beta_0 I_{it-1} + (\beta + \gamma FOB)\, CF_{it} + £ Q_{it-1} + \mu X_{it-1} + €_{it},$$

$$I_{it} = \alpha 0 + \beta 0\, I_{it-1} + (\beta + \gamma FOB + \delta BH)\, CF_{it} + £Qit\text{-}1 + \mu X_{it-1} + €_I,$$

$$I_{it} = \alpha 0 + \beta_0 I_{it-1} + (\beta + \Phi_1 FCEOFOB + \Phi_2 NFCEOFOB)\, CF_{it} + £Q_{it-1} + \mu X_{it-1} + €_{it}$$

$$I_{it} = \alpha 0 + \beta_0 I_{it-1} + (\beta + \Phi_3 FCFOB + \Phi_4 NCFFOB)\, CF_{it} + £ Q_{it-1} + \mu X_{it-1} + €_{it}$$

in which FOB equals 1 for FOBs and zero otherwise. I_{it} is the investment of the company and Q_{it} is Tobin Q of the company .CF_{it} denotes cashflow; SIZEit, DEBTit are the size and debt ratio of company. $DIVIDEND_{it-1}$, $SALES_{it-1}$ and ROA_{it-1} are the dividend, sales and return on assets. BH is the blockholder effect. FCEOFOB, NFCEOFOB are the firms having a family member as CEO or non-family member as CEO. FCFOB and NFCFOB represent financial constraints and non-financial constraints for family firms respectively. All the above mentioned variables are defined in Appendix-1. Results are based on the 25% cut off point for FOBs. The procedure followed to classify FOBs from NFOBs is explained in section 3.2. The sample consists of 3360 observations, 280 non-financial companies listed on the Karachi Stock Exchange (KSE) of Pakistan for the period from 2002 to 2013. The stars ***, ** and * denote the significance at the level of 10%, 5% and 1% respectively. t_1 indicates the t-statistic for the linear restriction under the null hypothesis $H_{0:}\ \beta + \gamma = 0$. t_2 indicates the t-statistic for the linear restriction under the null hypothesis $H_{0:}\ \beta + \gamma = 0$. t_3 indicates the t-statistic for the linear restriction under the null hypothesis $H_{0:}\ \beta + \gamma + \delta = 0$. t_4 indicates the t-statistic for the linear restriction under the null hypothesis $H_{0:}\ \beta + \Phi_1 = 0$. t_5 indicates the t-statistic for the linear restriction under the null hypothesis $H_{0:}\ \beta + \Phi_2 = 0$. t_6 indicates the t-statistic for the linear restriction under the null hypothesis $H_{0:}\ \beta + \Phi_3 = 0$. t_7 indicates the t-statistic for the linear restriction under the null hypothesis $H_{0:}\ \beta + \Phi_4 = 0$. w_1 shows the Wald Test-1 for the joint significance of the estimated coefficients under null hypothesis H_0 (asymptotically distributed) and the value under parenthesis denotes the degree of freedom. w_2 is the Wald Test-2 for the joint significance of the times dummies under null hypothesis H_0 (asymptotically distributed) and the value under parenthesis shows the degree of freedom. c_1 is the serial correlation Test-1 of order 1 using residual in first difference under assumption of null hypothesis (no serial correlation) asymptotically distributed. c_2 is the serial correlation Test-2 of order II using residual in second difference under assumption of null hypothesis (no serial correlation) asymptotically distributed. h indicates the Hansen test of over identifying restriction under assumption of null hypothesis as no correlation between instruments and error term and the value in parenthesis is the degree of freedom.

Table 4: Investment-cash flow sensitivity (I_{it} Dependent variable at 25% cut off point)

Variables	Co	Model (1)		Model (2)		Model (3)		Model (4)	
Variables		**CV**	**SE**	**CV**	**SE**	**CV**	**SE**	**CV**	**SE**
constant	α_0	0.036*	0.007	0.037*	0.005	0.043*	0.006	0.041*	0.007
I_{it-1}	β_0	0.509*	0.026	0.529*	0.025	0.537*	0.026	0.542*	0.023
CF_{it}	β	0.120*	0.210	1.126*	0.211	0.128*	0.112	0.097*	0.022
$FOBCF_{it}$	γ	-0.080*	0.028	-0.082*	0.029				
$BHCF_{it}$	δ			0.002	0.003				
$FCEOFOBCF_{it}$	Φ_1					-0.057*	0.028		
$NFCEOFOBCF_{it}$	Φ_2					-0.087*	0.029		
$FFOBCF_{it}$	Φ_3							-0.077*	0.022
$NFFOBCF_{it}$	Φ_4							-0.021*	0.019
Q_{it-1}	$£$	0.004*	0.002	0.002*	0.001	0.005*	0.001	0.006*	0.001
$SIZE_{it-1}$	μ_1	0.05	0.03	0.051	0.003	0.054	0.001	0.024	0.001
$DEBT_{it-1}$	μ_2	-0.066*	0.007	-0.061*	0.006	-0.047*	0.007	-0.052*	0.007
DIV_{it-1}	μ_3	1.410*	0.13	1.371*	0.023	0.171*	0.025	0.141*	0.025
$SALES_{it-1}$	μ_4	0.006*	0.002	0.005**	0.002	0.003	0.003	0.009*	0.003
ROA_{it-1}	μ_5	0.002*	0.001	0.001*	0.001	0.002	0.001	0.004	0.003
T-statistics	t_1	2.434							
T-statistics	t_2			3.534					
T-statistics	t_3			1.334					
T-statistics	t_4					3.123			
T-statistics	t_5					3.401			
T-statistics	t_6							1.323	
T-statistics	t_7							8.459	
Wald Test-1	w_1	84.57 (8)		86.87 (9)		109.97 (9)		122.97 (9)	
Wald Test-2	w_2	17.01 (8)		27.11 (9)		27.28 (9)		23.18 (9)	
Correlation Test-1	c_1	-0.590		-6.495		-6.465		-6.425	
Correlation Test-2	c_2	-0.231		-0.201		-0.191		-0.241	
Hansen	h	278.78 (132)		312.42 (142)		315.44 (142)		335.42 (150)	

Generalized method of moments (GMM) is used to test the hypotheses-1-4.

(All specifications are the same as in table-4 expect 50% cut off point is used as a base for distinguishing family and non-family firms)

Table 5: Investment-cash flow sensitivity (I_{it} Dependent variable at 50% cut off point)

Variables	Co	Model (1)		Model (2)		Model (3)		Model (4)	
Variables		CV	SE	CV	SE	CV	SE	CV	SE
constant	α_0	0.037*	0.007	0.037*	0.007	0.041*	0.006	0.041*	0.007
I_{it-1}	β_0	0.508*	0.026	0.508*	0.026	0.527*	0.026	0.541*	0.022
CF_{it}	β	0.121*	0.211	0.121*	0.211	0.131*	0.112	0.092*	0.022
$FOBCF_{it}$	γ	-0.081*	0.028	-0.081*	0.028				
$BHCF_{it}$	δ			0.003	0.002				
$FCEOFOBCF_{it}$	Φ_1					-0.058*	0.028		
$NFCEOFOBCF_{it}$	Φ_2					-0.086*	0.029		
$FFOBCF_{it}$	Φ_3							-0.076*	0.023
$NFFOBCF_{it}$	Φ_4							-0.020*	0.019
Q_{it-1}	£	0.003*	0.001	0.003*	0.001	0.005*	0.001	-0.008*	0.028
$SIZE_{it-1}$	μ_1	0.051	0.03	0.051	0.03	0.055	0.001	-0.026*	0.029
$DEBT_{it-1}$	μ_2	-0.076*	0.007	-0.076*	0.007	-0.046*	0.006	-0.058*	0.028
DIV_{it-1}	μ_3	1.411*	0.13	1.411*	0.13	0.170*	0.027	-0.184*	0.029
$SALES_{it-1}$	μ_4	0.007*	0.002	0.007*	0.002	0.003	0.004	-0.008*	0.028
ROA_{it-1}	μ_5	0.012*	0.001	0.012*	0.001	0.002	0.001	-0.086*	0.029
T-statistics	t_1	2.435							
T-statistics	t_2			3.524					
T-statistics	t_3			1.333					
T-statistics	t_4					3.122			
T-statistics	t_5					3.408			
T-statistics	t_6							1.328	
T-statistics	t_7							8.458	
Wald Test-1	w_1	84.59 (8)		86.88 (9)		109.77 (9)		122.77 (9)	
Wald Test-2	w_2	17.51 (8)		27.10 (9)		27.88 (9)		23.88 (9)	
Correlation Test-1	c_1	-6.581		-6.496		-6.461		-6.426	
Correlation Test-2	c_2	-0.229		-0.221		-0.192		-0.242	
Hansen	h	271.71 (132)		312.43 (142)		315.54 (142)		335.41 (150)	

In order to understand the impact of family involvement in management, we have designed model 3. A family member as a chief executive officer (CEO) is proxied as active involvement of family in the managerial decision-making process. The estimated coefficients of model 3 in Table 4 find a weaker relation in investment and cashflow in those family firms where a family member works as chief executive officer. For FOBs where a family member works as CEO ($\beta + \Phi_1 = 0.128\text{-}0.057 = 0.071$) and FOBs with no family member working as CEO (0.128-0.087 = 0.041) these coefficients are estimated

as statistically significant with $t_4 = 3.123$ and $t_5 = 3.401$. Therefore, it is concluded that results from model 3 support hypothesis 3.

After empirically presenting that FOBs effectively control the sensitivities of investment–cash flow, this study aims to dig out the sources of these findings. The study estimates whether the lesser dependence of FOBs on cash flow when undertaking investment decisions is due to the owners of family firms who alleviate financial constraints arising from information asymmetry problems. Table-4 gives the coefficients which explore the conclusion of our last hypothesis of this chapter. Since the estimated coefficients are negative and statistically significant, our hypothesis-4 is confirmed. The estimated coefficients for financial constraint firms (0.098-0.077 = 0.021) and for non-financial constraint firms (0.098-0.027 = 0.071) respectively support our hypothesis 4.

5. CONCLUSIONS AND DISCUSSIONS

Our main finding in connection to the investment decision is that, overall, FOBs exhibit lower sensitivities between investment and cashflow. Considering that such sensitivities are due to incentives problems or asymmetric information, we call this conclusion a supportive aspect of FOBs. In particular, the empirical results indicate that FOBs are motivated to reduce overinvestment and underinvestment problems, thus allowing FOBs to attain an optimal level of investment. This interpretation corroborates the arguments that FOBs are in a better position to create value through their investment decisions, which are documented in the second chapter of this study. Generally, it is worthwhile to highlight that there is a positive but weaker association between investment and cash inflow that sheds some light on a peculiar characteristic of FOBs - i.e. less frequent expropriation of minority shareholders which creates more value. Another feature of ownership structures in FOBs that we explain in this paper is the presence of blockholders in management structures when investigating how family control influences the sensitivity of investment spending-cash flow. Our result suggests that the presence of a blockholder in the decision making process is meaningless, since the result is non-significant.

The results are not in line with the idea that active participation of a family member (family CEO) in the management improves the corporate performance and alleviates the sensitivities between investment spending and cashflow. The results confirm that a professional CEO creates more value than a family CEO. As the last step in the investigation of the moderating role of family ownership is the sensitivity between investment spending and an internally generated fund. We use an innovative measure as proxy for financial constraints on the base of asymmetric information. It is worthwhile to note that there are two major explanations for a significant positive association between investment and cash flow in existing financial literature. Overall, our results propose that family ownership is an internal mechanism of corporate governance that helps alleviate both the agency cost and problems of financial constraints linked with investment decision-making processes.

Recommendations:

1. As family owned businesses (FOBs) exhibit lower investment-cash flow sensitivities, asymmetric information and agency problems, it is recommended to regulators to take steps to enhance the family business in the country.

2. Family-owned businesses (FOBs) are advised to hire professional chief executive officers (CEO) as they create more value and bring professionalism to the business. Professional organizational behaviors increase the life horizon of business.

3. Family-owned businesses (FOBs) take the pressure off financial constraints of capital markets, and therefore high leverage ratio is not recommended to them. Managers of family firms are instructed to adjust their capital accordingly.

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APPENDIX:

1. Investment (I_{it}):

   $I_{it} = (NF_{it} - NF_{it-1} + DE_{it}) / \text{Total Assets}_{it}$

   NF_{it} donates the net fixed assets of firm correspondence year t. DE_{it} is the depreciation expense for the year t.

2. Industry Adjusted Investment (IAI_{it}):

   $IAI_{it} = (I_{it} - \text{Industry Median}_{it}) / \text{Total Assets}_{it}$

   IAI_{it} is calculated by subtracting the median of a particular industry from the firm value.

3. Cash Flow (CF_{it}) :

   $CF_{it} = (NI_{it} + DE_{it}) / \text{Total Assets}_{it}$

4. Tobin Q

   Tobin Q_{it} = Market value of firm / Total Assets value of firm

5. Family Owned Business (FOB) Dummy:

   The FOB is equal to 1 if family directors have ownership or voting rights of 25% and 50% in the firm. (We use two different family owned/ controlled definitions depending on the threshold 25% and 50% used to define family business).

6. Blockholder Effect (BH) Dummy :

   The BH is equal to 1 if a stockholder has 10% or more than 10% voting rights, other than the first three shareholders already considered in the definition of ownership concentration. Otherwise the variable takes the value of zero.

7. Family CEOFOB Dummy :

   The FCEOFOB is a dummy variable equal to 1 where one of the family members in FOBs serves as chief executive officer (CEO) of the company and zero otherwise.

8. No family CEOFOB Dummy :

   The NFCEOFOB is a dummy variable equal to 1 where one of the family members in FOBs does not serve as chief executive officer (CEO) of the company and zero otherwise.

9. Financial Constraint Family firms (FFOB) :

   Dummy variable is equal to 1 for financial constraint FOB and 0 otherwise. White and Wu (2006) indicated that financial constraint firms are characterized by higher lever from their mean value.

10. No Financial Constraint Family firms (NFFOB) :

    Dummy variable is equal to 1 for non-financial constraint FOB and 0 otherwise.

Table 6: Investment-cashflow sensitivity (IAI_{it} dependent variable at 25% cut off point)

All specifications are the same as in table-4 expect industry adjusted investment (IAI_{it}) in the place of investment (I_{it})

Variables	Co	Model (1)		Model (2)		Model (3)		Model (4)	
Variables		**CV**	**SE**	**CV**	**SE**	**CV**	**SE**	**CV**	**SE**
constant	α_0	0.034*	0.005	0.036*	0.007	0.041*	0.006	0.049*	0.008
I_{it-1}	β_0	0.533*	0.035	0.538*	0.026	0.527*	0.026	0.532*	0.023
CF_{it}	β	1.119*	0.212	0.132*	0.211	0.131*	0.112	0.086*	0.022
$FOBCF_{it}$	γ	-0.081*	0.028	-0.081*	0.028				
$BHCF_{it}$	δ			0.001	0.002				
$FCEOFOBCF_{it}$	Φ_1					-0.058*	0.028		
$NFCEOFOBCF_{it}$	Φ_2					-0.086*	0.029		
$FFOBCF_{it}$	Φ_3							-0.076*	0.020
$NFFOBCF_{it}$	Φ_4							-0.022*	0.019
Q_{it-1}	$£$	0.002*	0.002	0.003*	0.001	0.005*	0.001	-0.053*	0.027
$SIZE_{it-1}$	μ_1	0.053	0.003	0.051	0.03	0.055	0.001	-0.084*	0.028
$DEBT_{it-1}$	μ_2	-0.076*	0.007	-0.076*	0.007	-0.046*	0.007	-0.058*	0.022
DIV_{it-1}	μ_3	1.411*	0.13	1.411*	0.13	0.170*	0.025	-0.087*	0.022
$SALES_{it-1}$	μ_4	0.007*	0.002	0.007*	0.002	0.003	0.003	-0.061*	0.024
ROA_{it-1}	μ_5	0.012*	0.001	0.012*	0.001	0.002	0.001	-0.076*	0.029
T-statistics	t_1	2.332							
T-statistics	t_2			3.451					
T-statistics	t_3			1.449					
T-statistics	t_4					3.121			
T-statistics	t_5					3.514			
T-statistics	t_6							1.480	
T-statistics	t_7							10.370	
Wald Test-1	w_1	84.59 (7)		86.88 (8)		109.77 (8)		122.78 (8)	
Wald Test-2	w_2	17.51 (7)		27.10 (8)		27.88 (8)		23.99(8)	
Correlation Test-1	c_1	-6.601		-6.656		-6.562		-6.558	
Correlation Test-2	c_2	-0.224		-0.223		-0.195		-0.241	
Hansen	h	304.11 (132)		322.21 (142)		305.54 (142)		315.44 (150)	

Table 7: Investment-cashflow sensitivity (IAI_{it} dependent variable at 50% cut off point)

Variables	Co	Model (1)		Model (2)		Model (3)		Model (4)	
Variables		**CV**	**SE**	**CV**	**SE**	**CV**	**SE**	**CV**	**SE**
constant	α_0	0.031*	0.005	0.039*	0.007	0.047*	0.007	0.042*	0.008
IAI_{it-1}	β_0	0.638*	0.045	0.558*	0.026	0.516*	0.026	0.552*	0.023
CF_{it}	β	1.029*	0.212	0.123*	0.211	0.111*	0.112	0.087*	0.024
$FOBCF_{it}$	γ	-0.081*	0.028	-0.081*	0.028				
$BHCF_{it}$	δ			0.001	0.002				
$FCEOFOBCF_{it}$	Φ_1					-0.048*	0.027		
$NFCEOFOBCF_{it}$	Φ_2					-0.076*	0.028		
$FFOBCF_{it}$	Φ_3							-0.078*	0.023
$NFFOBCF_{it}$	Φ_4							-0.022*	0.019
Q_{it-1}	£	0.005*	0.002	0.003*	0.001	0.005*	0.001	-0.058*	0.029
$SIZE_{it-1}$	μ_1	0.052	0.003	0.051	0.03	0.055	0.001	-0.085*	0.026
$DEBT_{it-1}$	μ_2	-0.077*	0.007	-0.076*	0.007	-0.046*	0.007	-0.048*	0.028
DIV_{it-1}	μ_3	1.412*	0.13	1.411*	0.13	0.170*	0.025	-0.087*	0.026
$SALES_{it-1}$	μ_4	0.007*	0.002	0.007*	0.002	0.003	0.003	-0.088*	0.028
ROA_{it-1}	μ_5	0.013*	0.001	0.012*	0.001	0.002	0.001	-0.089*	0.027
T-statistics	t_1	2.555							
T-statistics	t_2			3.504					
T-statistics	t_3			1.221					
T-statistics	t_4					3.122			
T-statistics	t_5					3.488			
T-statistics	t_6							1.428	
T-statistics	t_7							9.498	
Wald Test-1	w_1	84.59 (8)		86.88 (9)		109.77 (9)		127.77 (9)	
Wald Test-2	w_2	17.51 (8)		27.11 (9)		27.87 (9)		22.88 (9)	
Correlation Test-1	c_1	-6.60		-6.699		-6.661		-6.466	
Correlation Test-2	c_2	-0.229		-0.221		-0.192		-0.242	
Hansen	h	301.74 (132)		312.43 (142)		315.54 (142)		335.41 (150)	

Note: All specifications are the same as in table-4 expect 50% cut off point used as a base for distinguishing family and non-family firms and industry adjusted investment (IAIit) in the place of investment (Iit)

UTJECAJ OBITELJSKOG VLASNIŠTVA NA INVESTICIJSKE ODLUKE: KOMPARATIVNA ANALIZA OBITELJSKIH I NEOBITELJSKIH TVRTKI KOJE KOTIRAJU NA BURZI U KARACHIJU (PAKISTAN)

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Sažetak

Cilj ovog rada je istražiti utjecaj obiteljske vlasničke strukture na investicijske odluke poduzeća koja kotiraju na burzi u Karachiju (Pakistan). Kako bi se razlikovala obiteljska od neobiteljske vlasničke strukture, u radu su korištena dva praga u vlasničkoj strukturi (25% i 50%). Panel podaci iz razdoblja 2002.-2013. prikupljeni su iz različitih izvora poput godišnjih izvješća poduzeća, financijskih izvješća, business recordera, s burzi, putem telefonskih razgovora, elektroničkom poštom te analiziranjem bilanci dioničkih društava. Uopćena metoda momenata (Generalized Method of Moments - GMM) primijenjena je na procjenu koeficijenata varijabli od interesa. Empirijski rezultati otkrili su kako postoji jači pozitivan utjecaj novčanog tijeka na ulaganje u neobiteljskim tvrtkama od obiteljskih. Suprotno tome, obiteljske tvrtke imaju slabiju osjetljivost u odnosu između ulaganja i novčanog tijeka, čak i kad se uzme u obzir utjecaj velikih ulagača. Procijenjeni koeficijenti su potvrdili slabiju osjetljivost u odnosu između ulaganja i novčanog tijeka u tim poduzećima s obzirom na ona u kojima profesionalni menadžer djeluje kao glavni izvršni direktor (CEO). Također se pokazalo da obiteljske tvrtke ublažavaju financijska ograničenja i probleme slobodnog novčanog tijeka. Zaključak je da širi ulagački vidici, mehanizmi korporativnog upravljanja i fleksibilnost u upravljanju financijskim ograničenjima mogu omogućiti obiteljskim tvrtkama da umanje osjetljivost u odnosu između ulaganja i novčanog tijeka.

Ključne riječi: *obiteljski posao, panel podaci, uopćena metoda momenata (Generalized Method of Moments - GMM), Burza u Karachiju (Karachi Stock Exchange - KSE), investicijska odluka.*

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