How Does Family Ownership and Cash Holding Effects the Firm Value? Evidence from Pakistan

Muhammad Idrees* Dr. Attaullah Shah
Institute of Management Sciences, Peshawar, Pakistan

Abstract
This study is conducted with an aim to investigate the impact of family ownership and cash holding on the firm value in Pakistan. For such purpose, the study selected non financial firms that are listed on the Pakistan Stock Exchange from year 2005 to 2014. As the sample data set of the study is panel data so that is why panel data regression model are applied. Study uses OLS regression as well as the random effect model. From these tests, results suggested that family ownership is having negative as well as significant relation with firm value. whereas the cash holding is also having the negative as well as significant relation with the firm value. Whereas for interaction term cash*family, the random effect model showed positive but insignificant relation with the firm value. Control variables of the study are having different results as the Ebit is significant negative relationship with the firm value whereas net assets are having positive as well as significant relation with the firm value. Interest expense is also having positive as well as significant relation with firm value while dividend paid in cash is having negative as well as insignificant relation with the firm value. Industry dummy also showed negative as well as significant relation with firm value.
Keywords: Family ownership, Firm value, Non-financial firms, Pakistan Stock Exchange, Cash holding, Interaction term

1. Introduction

1.1 Study background

Do family ownership creates firm's value? How does cash holding impacts the value of firm? To find the answer of such questions, this study compares the sample of Pakistan's family controlled firms with the non family controlled firms. The major benefit of family ownership is that it guarantee the stability of the firm as well as its long term plans. More flexible as well as quick decisions can be made by the family owners (Mishra et *al, 2001).* According to James (1999), the traits of family like altruism, trust and paternalism can help in encouraging the atmosphere of love and commitment with the business. Whereas Jensen & Fama (1983) argued that long lasting nature of the family association with business is beneficial in disciplining and monitoring the managers. Most of the large firms tend to select such traits of family in order to increase the performance of firm and to engage in more efficient manner (La Porta et *al,* 1996).

Whereas according to Mishra et *al,* (2001), the major drawback of the family ownership is the difficulty in acceptance of professional managers that are capable to retaliate new technologies as well as to increasing competition in the market. Moreover, the family businesses also uses the corporate property for their personal use i.e. they might interfere in the company decision making for the purpose of benefiting their friend or themselves. Whereas Barontini & Caprio (2006) argued that in the public opinion of European, there mixed feeling s for the family ownership. On the one hand, they respects the family ownership because many of the companies were family owned for long time or may be for centuries which shows their level of commitment with their business and led them to success whereas on the other hand, family owners are having different priorities related to the outside shareholders which becomes the cause for the interest conflict that might be barrier in the creation of value as well as for the European firms' growth. Family owners simply aiming to maintain the firm control which they had acquired or found as well as often recur to enhancing control devices like pyramids, dual classes of shares and some others which some researches had showed to be related with low value generation (Lins, 2003, Claessens et *al,* 2002, Metrick, Gompers & Ishii, 2004). Kuan et *al,* (2011) argued that family owned business are significant and commonly found in most of the Asian countries and Pakistan is not a special case. In case of family ownership, the family or their members are having such amount of share which are more than the critical level of control. Moreover, family ownership is the major problem in reducing the shareholders and managers conflict of interests because of detachment of control as well as ownership (Claessens et al, 2000, Anderson et al, 2003, La Porta et al, 1999, Jensen & Fama, 1983 and La Porta et al, 2000). Family owned business are concerned with the legacy of family or transferring the business on the coming generation. But Yeh et al, (2001) justified that family governed shareholders tries to enforce the business to choose those policies which suits their own personal benefits instead of minority shareholders. That is why, the family firms are more complex because of additional dealing with common firm opportunities and requirements, they might have to consider the desires and requirements of the owners of family (Ward, 1987).

On the other hand, cash holding is also getting more attention in literature of finance. The significant interest exists in the way that firms keep specific portion of their cash in balances sheets. Particularly, Marth

Smith & Dittmar (2007) argued that in the year 2003, the sum of marketable securities and all the cash showed more than approximately 13% sum of all the assets for the huge firms of US that are traded publicly. Whereas Stulz, Williamson & Pinkowitz (2006) had estimated the cash marginal value and found that association between firm value and cash holding is very weak in those countries where investors protection is poor than that are having strong protection. Besides this, there are advantages of cash holding like for precautionary reasons, business tend to keep liquidity for the purpose of meeting unseen contingencies and that is why firm is required to keep cash to secure themselves from the shortfalls of cash which leads to minimization of uncertainty of cash flow. On the hand for transactional reasons, firms are required to maintain liquidity for the purposing of facing their present expenditures (Keynes, 1936). Moreover, cash can also prevent from the underinvestment costs. Internal cash helps the business to accept the investment projects that are profitable without the raising funds from outside at huge cost of transaction. The existing advantages makes the cash holding more valuable to the shareholders (Jensen, 1986). As showed by the literature, greater cash holding needs quality governance otherwise additional cash holding may provide benefits to managers for utilizing cash in little than optimum manner. Consequently, if firms are having weak governance then the excess cash will be mismanaged which can become the reason for destroying the value of firm and that is why firms are required to keep an optimum cash level for their-selves (Kim et *al,*1998).

There are few studies performed in the Asian countries and most important in Pakistan on such topic. So this study is done with the purpose of filling such gaps that are considered in literature of this study. The role of family ownership is not explored in the field of finance and there are very few studies empirically done so far to find relation between the firm value and family ownership and between firm value and cash holding which produced inconsistent outcomes like in the study of McConaughy et *al,* (1998), Vaninsky & Lauterbach (1999), Jensen & Fama (1983) and De Angelo & De Angelo (1985), Stulz, Williamson & Pinkowitz (2006), Claessens et *al,* (2000), Anderson et *al,* (2003), La Porta et *al,* (1999), and La Porta et *al,* (2000). There is no such study performed to find their impact together on the firm value where as this study has also included the interaction terms. So the major portion of this study is based on the interaction term cash*family ownership. This study has taken the sample size of 436 non financial firms that are listed on the Pakistan Stock Exchange and the duration for this study is from year 2005 to 2014. The size of observations were initially 1746 but due to removing the outliers, the number of observation remained 812. Therefore, the purpose of this study is find the impact of cash holding and family ownership on the firm value.

2. Literature review

As we are having two major objectives of the research. First, we are trying to understand the association between family ownership and value of firm. Second, we are also trying to understand the cash holding on the firm value. So in this section, we are going to discuss the two major thrusts of this research.

2.1 Impact of family ownership on firm value

The role of family ownership is not explored in the field of finance and there are very few studies empirically done so far to find relation between the firm value and family ownership and between firm value and cash holding which produced inconsistent outcomes. For instance, McConaughy et *al*, (1998) investigated positive impact of family ownership in US while Vaninsky & Lauterbach (1999) has investigated that in Israel, family firms underperform than the non family firms. Whereas Mishra et *al,* (2001) had found positive relation between the family ownership and the value of firm in their study conducted in Norway. They further argued that firm value and family control is strong between the firms which are having no multiple classes of shares. Moreover, Jensen & Fama (1983) and De Angelo & De Angelo (1985) have suggested that involvement of family ownership decreases the agency problems as well as allowing the firms' manager monitoring in better way.

Mishra & McConaughy (1999) argued that firms that are family controlled executes differently than that of the concentrated management ownership. McConaughy et *al,* (1998) investigated that in US, firms that are controlled by the founding families are considered more valuable that those firms which are not controlled by the founding family. Moreover, they had also studied the operating efficiency as well as the relative value of the selected sample of founding family controlled US firms in which CEOs themselves are the founders or they are related to firms' founder. They found that both the descendents as well as founder executes the company in much better way than those CEOs which are not of founding family. Same results were found by Kang (1998) and argued that the owners of founding family enjoys the maximum performance of the firm in comparison to their competitors in the industry during their study in US textile industry. Textile industry is the industry which is identified through clear conditions of economy and strong societal relations between managers and the owners.

Theory of family business is developed by Chami (1997) in which he describe the family as well as the market forces dynamics. He exhibit that family businesses are significantly change from the other businesses. Family traits can be the source of encouraging the atmosphere of attachment with the business and also the commitment sense. Favoritism as well as the nepotism are closely analyzed by the requirement for family business to succeed and compete in capital as well as product market. Significance of family owned firms all over the world has encouraged huge empirical and theoretical literatures which are pointed out in the work of Miller, Lester, Cannella & Le Breton-Miller (2007), Vahamaa, Martikainen & Nikkinen (2008). Related to this, Lopez de Silanes, La Porta & Shleifer (1999) has recorded that only the family ownership is the most famous structure of organization except in those which are having minority shareholders strongly protected.

According to Lee (2006), the owners of the family businesses shows more interest in the survival of the firms and that is why they always to focus on the long horizon instead of other segments of largest shareholders and the reason is that they are concerned about the their companies continuation and considering it as the asset which should be forwarded to their coming generation. Such broaden family business's horizons may persuade them to utilize such criteria which will maximize their firm's value which provides benefit to the shareholders that are in minority (Draho & McVey, 2005, James, 1999). Related to this argument, Reeb & Anderson (2003) argued that the long term sustainability of the owner of family business as well as their horizons of long term investment related to corporations widely held managers should decrease the managerial myopia which directly leads the firm towards better firm value and performance. Moreover, Reeb, Mansi & Anderson (2003) indicated that the concerns related to survival as well as the absence of diverseness in the owners of family firm leads to mitigate agency cost between the shareholder and the bondholders of the firm that are indicated by Meckling & Jensen (1976). Similarly, longer existence of firms' family members can be the source of maximizing quality of earnings (Wang, 2006) as well as might be the source of encouraging the better knowledge related to technology of the firm which will improve the productivity of firm (Vahamaa, Martikainen & Nikkinen, 2008). Whereas Pindado et *al,* (2008) had done their study in Western Europe and concluded that family ownership is positively influencing the value of firm. While Villalonga (2004) has concluded that premium family owned business are having is due to the CEO's of founding family. Study done by Pukthuanthong et *al,* (2013) in Canada concluded that family ownership settles the agency problems between the management and ownership which directly helps in enhancing the value of firm. Hamberg, Fagerland & Nilsen (2013) have performed their study on Swedish publicly listed companies by taking the sample from year 2001 to 2010 and concluded that family ownership and firm value is having significant relationship while the non family businesses are having lower firm performance as well as value in long term.

Related to family reputation, Reeb, Mansi & Anderson (2003) argued that it allows the firms to maintain minimum debt financing cost as well as to decrease the interests conflicts between the bondholders and shareholders. Moreover, concerns related to the family businesses reputation can be the possible description for important relation between higher quality earnings and the founding family ownership which was investigated in U.S. firm by Wang (2006). Besides this, agency problems that arise due to the control and management separation (Meckling & Jensen, 1976; Jensen & Fama, (1983) can be solved by family businesses that are executed by the owner family members (Draho & McVey, 2005; Miller & Le Breton Miller, 2006, Holderness & Shaheen, 1988). Moreover, after the confirmation that firms having owners in majority do not perform less than the expectation and from such results Denis & Denis (1994) concluded that the management of family firms looks important for the ownership concentration. In short, it can be said that there is possibility to conclude that owner managers are persistent in the family businesses and they can be advantageous in comparison to the external managers because of their better knowledge of firm as well as their significant interest in the maximization of firm value.

Besides the controlling and monitoring benefits that are enjoyed by the family businesses, families try to have long time horizon of investment in comparison to non family businesses which results in efficient as well as better investment (James, 1999). Moreover, in the one of initial research on such topic, Means & Berle (1932) had noticed that ownership concentration adds the value to firm by resolving the problems between manager and owners. While, Demsetz (1983) argued that ownership concentration is having insignificant impact on the value of firm which it can be endogenously chosen by the firms' owners for the purpose of maximizing profit and this subsequent perspective is also assisted by Lehn & Demsetz (1985), Villalonga & Demsetz (2001) and Himmelberg et *al,* (1999). According to Martikainen et *al,* (2009), family firms can be more productive than that of non family firms because family firms are having more output from production in comparison to non family firm which leads them to higher profitability as well as to higher value of firm. But Faccio et *al,* (2001) criticized that the shareholders of family instead of increasing firm value, they starts to focus on maximizing their own benefits which leads to expropriating the shareholder that are in minority. Whereas according to Lease et *al,* (1984), family businesses like to use such mechanism that enhances the control which augment the minority shareholders expropriation to increase personal benefits of the majority shareholders. Moreover, Holderness & Barclay (1989) concluded that as a result of family consolidation, the chances of bidding by the external investor might be decreased which leads to firms' lower market value. Similar results were found by Klein, Shapiro & Young, (2005) and concluded from the study which they had perform on Canadian firms that family owned firms are having negative effect on the firms' value.

2.2 Impact of cash holding on firm value

Stiglitz (1974) has argued that when there is absence of the market imperfections, decisions related to finance of company will not influence their value. In such theoretical condition, exterior finance can be easily available at a feasible price. When there is no premium for taxes or liquidity then there is no fiscal advantage or opportunity cost for keeping cash. That is why maintaining financial assets in liquid form will be insignificant and all the decisions related to make investment in the liquid asset will not influence the wealth of shareholders (Pinkowitz, Opler, Williamson & Stulz, 2001). Although practically the insignificance of cash do not exist. The presence of imperfection of market indicates an attainable optimum level of cash which equals the benefits as well as the cost and also increase the firms' value.

It shows that firms have to trade off their benefits and costs of holding cash for achieving the optimum level of cash. Related to benefits, it is required by the firms to maintain cash for fulfilling the requirements of cash for normal business activities for the purpose of taking benefit from the profitable upcoming opportunities of investment as well as to overcome the contingency (precautionary and transactional motives). If the access to capital market is easy then despite of liquidity of firm, companies will always support and finance the projects with positive net present value. Although there is existence of information asymmetry between debtors and creditors, getting funds from outside is very expensive and difficult due problems of adverse selection which can be the source of underinvestment issues. Due to this, there will be chances that firm will opt for not issuing the undervalued securities which will lead them to miss the investment opportunity with positive net present value (Myers, 1977).

As the difficulty in reaching to capital becomes more, the chances for forgoing projects having positive net present value will occur more possibly (Wang & Faulkender, 2006). That is why, holding more cash maximizes the chances of pursing value strengthening projects which will be otherwise missed. Moreover, cash holding can also decrease the dependency of firms on the expensive outside financing. While Keynes (1936) is the first one to advocate, the important benefit of keeping liquid asset in the firms balances sheet is that they can acquire the valuable and significant projects as they emerge. Moreover, liquidity of corporate can also decreases the costs related to financial distress as the operations of firm do not create enough cash flow that can overcome the mandatory payments of debt (Wang & Faulkender, 2006). Precautionary motive suggests that companies tries to keep cash for the purposing of protecting themselves from the adverse shocks of cash flows and that is why they try to avoid the constraints cost related to liquidity. However, it is subject to the characteristic of the firm that the cash deficiency cost or generating funds cost would be change. Such firms for whom these sort of cost are maximum, they might keep huge reserves of cash. While Anderson & Hamadi (2016) performed their study on Belgian listed firms and found positive impact of cash holding on the firms' value.

If considering the negative perspectives of cash holding, two major costs are identified by the financial literatures. From one perspective, keeping asset in liquid form involves opportunity cost because of less return from these assets related to other opportunities of investments having same level of risk, more importantly if the company gives up investments that are more profitable to keep such cash level. Servaes, Dittmar & Mahrt Smith (2003) related it to carrying cost which is the differentiation between interest and the return on cash which will emerge to finance the extra dollar of cash. While on another perspective, in the absence of maximization of wealth, the advantage of corporate liquidity related to exploiting the project opportunity without generating external fund can turn into the cost due to deficiency in monitoring done by capital markets. Huge reserves of cash can maximize the agency problems between shareholders and managers because managers will begin to waste the funds on amateurish investments that will provide non pecuniary advantages but it will also destroy the value of shareholders (Meckling & Jensen, 1976). Following the Jensen (1986) theory of free cash flow, there is existence of overinvestment cost in such conditions where the cash helps in facilitating investments in the projects having negative net present value. Discretional behaviors are also generated in managers by the huge free cash flow existences which are detrimental to the interests of shareholders (Jensen, 1986). Moreover, such intensified managerial discretion can be the source for leading managers to misuse the liquidity resources of corporate. There is model developed by Triantis & Gamba (2008) which endogenizes the dynamic investment, cash holding and financing to investigate the impact of financial flexibility on the value of firm. Furthermore, they also indicated that cash holding values maximizes with exterior cost of financing. Such theories got vigorous support empirically in U.S. (Wang & Faulkender, 2006; Sibilkov & Denis, 2010).

Hence, the literature related to agency cost involves two opposing positions related to cash balances. Myers & Majluf (1984) indicated that ideally firms keep huge amount of cash balance for the purpose of avoiding the need for external capital, as cash balance provides advantage of financial flexibility but requires zero agency costs. Meantime, Jensen (1986) also indicated that normally firms keep little cash balances as surplus cash balances causes agency costs and does not provide any flexibility advantage. Due to such argument, DeAngelo & DeAngelo (2000) ponder that cash balances is the cause for agency cost as well as provide flexibility advantage and that is why accumulation of cash is no longer advantageous uniformly (like Myer & Majluf, 1984) and that is the reason investors tries to pressurize the firms for limiting cash balance to alleviate agency costs.

Whereas they also motivate the manager for keeping cash cushion which is enough to finance everyday unexpected requirements of cash which emerges.

As the trade off describes the optimal cash holding for firm between the benefits and costs of keeping liquid assets to obtain optimum level of cash. Yet, the direct association between the firm value and cash holding has not remained the core subject of researches to date. So for the purpose of filling such gap in the above literature, this paper puts light on how the cash holding of firm influences its value.

2.3 Hypothesis of the study

The major hypothesis that are derived from above literature are as follows;

H1: Expecting to find significant relation between family ownership on firm value

H2: Expecting to find significant relation between cash holding on firm value

H3: Expecting to find significant relation between firm value and the cash*family interaction

3. Research methodology

This section of the paper explains the methodology that is used in the study. As the aim of this research is to investigate the influence of family ownership as well as of cash holding on the firm value so that is the reason the methodology structure is based on previous researches into such relationship. This portion of the study explains the methods of data collection, sample size, variables definition and the statistical model that is used in the study.

3.1 Sample and data source

The present study sample involves Pakistan's non financial firms that are listed on Pakistan Stock Exchange (PSX) for the time period of 2005 to 2014. Accordant to literatures of Kuan et *al,* (2009), Kusnadi, (2011) and Shah, (2011), this study has also precluded the financial firms that are listed on the PSX due to the reason they are having different profits and capital structures.

The major source of data collection for the present study are listed firms' annual reports. Annual reports are the collection of data related to financial as well as non financial firms balance sheet, income statement, shareholding pattern and the major information related to chairperson/chairman, chief executive and the directors of firm. Initially, the study included all the 436 non financial companies but due to unavailability of data related to present study variables, they are excluded. Similarly the initial sample set involve "1746" observations but due to outlier removing, "812" are left in the final sample set for 272 companies for the time period of ten years.

3.2 Definitions of variables

After analyzing the literature above (Mishra et *al,* (2001) McConaughy et *al,* (1998), Vaninsky & Lauterbach (1999), Jensen & Fama (1983) and De Angelo & De Angelo (1985), Stulz, Williamshon & Pinkowitz (2006), Claessens et *al,* (2000), Anderson et *al,* (2003), La Porta et *al,* (1999), and La Porta et *al,* (2000) Vaninsky & Lauterbach (1999) Miller, Lester, Cannella & Le Breton-Miller (2007), Vahamaa, Martikainen & Nikkinen (2008) , this study defined its variables are follows;

3.2.1. Dependent variable

Consistent with the previous studies of Pukthuanthong, Walker & Thiengtham, (2013), Tahir, & Sabir, (2015), Barontini, & Caprio, (2006), Lewellen & Badrinath, (1997), and Kyröläinen, & Karjalainen, (2013), this study also taken firm value (V) as the dependent variable. Which is measured through taking the sum of market capitalization of year end and the debt's book value (Tobin's Q). Tobin's Q is the commonly used measure for the valuation of firm in the studies of corporate finance (Lin & Su, 2008; McConnell & Servaes 1990; McConnell, Servaes & Lins, 2008; Morck, Shleifer, & Vishny, 1988; Tong, (2008).

3.2.2. Explanatory variables

Family ownership

No clear definition exists to define the family companies. Generally, family firms are identified as being managed as well as controlled by the family founded (Lansberg, 1999; Shanker & Astrachan, 1996) and which passes like legacy through generations (Reeb & Anderson, 2003). So following the method of Anderson, Mansi, & Reeb, (2003), this study also collected the family ownership data manually from proxy statements. Moreover, the data is collected on ownership's fractional equity of the family owned firm. For some of the companies, the process was easy because the proxy statements were denoting founders, immediate members of founders family and more importantly their holdings. Although, many generations have been involved in some companies after the founders like their in laws and relatives having last names different from the founders which created descendent issue which is resolved through analyzing the history of examining companies manually. Their history was found in annual reports, websites of the company and from different internet searches which showed each board seats, entity they are representing and their relationship of family (Chen, Gray & Nowland, (2011). Family ownership (family) is used as dummy variable and as the interaction term in the study which is also done by Tahir & Sabir (2015) and Anderson & Hamadi (2016) respectively. If the business is family owned then the value for dummy variable will be 1 while for non family business, the value for dummy will be 0.

Cash holding

The other explanatory variable of this study is cash holding (CASH) which is measured by Kuan et *al,* (2011), Masood & Shah (2014), Ammann et *al,* (2010), Dittmar et *al,* (2003), Chen (2008), Kusnadi (2006), Pinkowitz et *al,* (2006) and Kyröläinen & Karjalainen (2013) by taking the "ratio of cash and the cash equivalents to the net assets" while net assets are measured as the total asset minus cash and the cash equivalents. According to Martínez-Sola, García-Teruel & Martínez-Solano, (2013), there is positive relation exists between the cash holding and the firm value. Cash holding is also taken as the interaction term with family ownership as done by Anderson & Hamadi (2006) to find the impact of family owned firms holding cash on firm value and the non family firms holding the cash impact on firm value.

3.2.3. Control variables

The control variables which are included in the present study that are explaining the variation in firm value are consistent with Kyröläinen & Karjalainen (2013). These control variables includes Earnings before interest and taxes (E) which is calculated by taking the earnings before interest and taxes. The other control variable which is taken by this study is the Interest expense (I) which is taken from income statement of the firms. The third control variable is the net asset (NA) which is measured by subtracting liquid or non cash assets from the total assets of the firm. Fourth control variable is (D) dividend payout that how much cash dividend company is paying. To overcome the problem of heteroskedasticity, these control variables are deflated by the total assets as done by Kyröläinen & Karjalainen (2013). Furthermore, following the Kyröläinen & Karjalainen (2013) and Fresard & Salva (2010), one additional proxy is added in the study for opportunities of investment in the regression equations i.e. industry dummy. So according to Kyröläinen & Karjalainen (2013), industry dummy is measured by taking the median of all firms market to book ratio which are showing the similar standard code for industrial classification.

3.2.4. Statistical model

As the sample of the data is containing over time as well as the across firms data that is why this study is using the panel data methodology. To overcome to problem of multicollinearity and heterogeneity, this study is using the random and fixed effect test on the model. Present study is expanding the Fama & French (1998) specification of regression by using the interaction term between the cash holding and the family ownership ($Cash_{i,t}$ x $family_{t}$). These interaction terms are used to measure the influence of family ownership on the value of cash holding on the value of firm would be strong when businesses are family owned. Therefore, it the major coefficient of interest of the study as well. Study also involved the family ownership in regression model itself as the explanatory variable for the purpose of finding the direct influence of family ownership on the value of firm. The hypothesis of present study is assuming the positive β_{14} in the below specification of regression;

$$V_{i,t} = \propto + \beta_1 E_{i.t} + \beta_2 dE_{i.t} + \beta_3 dE_{i.t+1} + \beta_4 dNA_{i,t} + \beta_5 dNA_{i,t+1} + \beta_6 I_{i,t} + \beta_7 dI_{i,t} + \beta_8 dI_{i,t+1} + \beta_9 D_{i,t} + \beta_{10} dD_{i,t} + \beta_{11} dD_{i,t+1} + \beta_{12} dV_{i.t+1} + \beta_{13} CASH_{i.t} + \beta_{14} CASH_{i,t} \times family_t + \beta_{15} family_t + \varepsilon_{i,t}$$

Where,

X_t = variable X level in *t* year divided by assets level in the *t* year

dX_t = level of change in X from the *t-1* year to the *t* year which is divided by the assets level in the *t* year

dX_{t+1} = level of change in X from the *t+1* year to the *t* year which is divided by the assets level in the *t* year

Such variable of next period are added to take in the expected changes. Whereas E is the earnings before interest and taxes. NA is the net asset and I is the interest expense. While D is the dividend paid in cash. V is the firm value. CASH is the cash holding and family is family ownership. To overcome the problem of heteroskedasticity, these firm level variables are deflated by the total assets. In the above regression, one additional proxy is added in the study for opportunities of investment in the regression equations i.e. industry dummy.

4. Results and discussion

In this portion of the study, there is discussion on the different results that are derived from regression and descriptive statistics which are as follows;

4.1 Descriptive statistics

Analysis of the study begins with the descriptive statistics which is shown in the table 1. It shows the variables name which are used in the study in first column, after that is showing the mean and then standard deviation and minimum as well as the maximum values in the respective columns. It helps in providing the reader a feel of data and outline the presence of outliers. Initially, when descriptive statistics are derived, values that are above the 99 percentile as well as below the 1 percentile were omitted. Moreover, for some of the variables unreasonable high values are also omitted like firms which are having cash more than 98% are omitted and the reason for such removal is that cash which firms hold is not only the asset to be kept. Therefore, this type of values are omitted from the data for the purpose of making results generalization possible.

So the below table 1 is showing the descriptive statistics of the study after the removal of outliers and winsorization. Value of firm (V) is showing the negative mean of 1.2 while cash holding (CASH) is showing positive mean value of 0.187 which means that on average in Pakistan, firms keep 18.7% of cash with themselves. Family ownership (family) in Pakistan is about 67% which is very huge number which is closely related to the study conducted at Taiwan by Chen, Gray, & Nowland (2011). Earnings before interest and taxes (E) on average in Pakistani firm is 8.66%. Whereas on average in Pakistan, firms are having 57% of net assets which is very huge amount than the U.S. firm which hold 13% of assets (Marth Smith & Dittmar, 2007). Interest expense (I) on average paid by Pakistani firms is 3.8% which is very minor and also indicates that due to family ownership, they do not opt for the debt. Dividend paid in cash form is on average 1.27% in Pakistan whereas the mean of industry is 12.10.

Table 1. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
V	812	-1.234919	3.545752	-13.71064	7.580789
CASH	812	.1874003	.6250682	.0004572	4.866506
family	812	.6724138	.4696223	0	1
E	812	.0866548	.082833	-.2876785	.5416685
NA	812	.5717819	.1993295	-.6072065	.9989592
I	812	.0389538	.0264709	0	.1223251
D	812	.012736	.0235308	0	.2629657
industry	812	12.10961	6.258237	1	24

4.2 Regression results and discussion

Panel data is used by this study and that is why panel data regression models are applied. First this study has applied the OLS regression and then applied the fixed and random model in which the random model is suggested by the Hausman test.

4.2.1 OLS regression results

So in table 2. The OLS regression results are shown for the firm value V. The number of observation included in this model is 318 where as the F-value is showing the significance of model which is 0.0000 in this study. It means the model of the study is overall significant. Whereas as the value of R^2 0.482 is showing that there is 48% of variation in dependent variable is due to independent variables. Besides this, earnings before interest and taxes (E) is showing negative coefficient value of 10.1144 and their P-value is 0.000 which means the E is having significant negative relation with the firm value. While the interaction term dE is also showing negative coefficient value of 3.647 but they are insignificant relation with firm value due higher P-value than 0.05. whereas the interaction term dE1 is also having negative coefficient of 6.964 but their relation with firm value is significant due P-value less than 0.05. Net assets (NA) is having positive coefficient value of 3.512 and having P-value less than 0.05 which is showing their positive significant relation with the firm value. Whereas the interaction terms dNA is showing positive coefficient value of 1.822 and P-value higher than 0.05 which mean dNA is having positive and insignificant relation with firm value. While the dNA1 is also showing positive coefficient value of 3.699 but their P-value is 0.008 which is less than the 0.05 which means they are having significant positive relation with the value of firm. The interest expense (I) is showing positive high coefficient value of 31.242 while their P-value is less than the 0.05 which means the interest expense is having positive relation with the firm value. While the interaction term of interest expense dI is showing positive coefficient value of 25.817 while its P-value is less than 0.05 which means they are also having significant positive relation with the firm value. Whereas the interaction term dI1 is showing also positive coefficient of 13.134 but their P-value is greater than 0.05 which mean they are having insignificant positive relation with the firm value. Dividend paid in cash (D) is showing negative coefficient value of 5.43766 while their P-value is very large than 0.05 i.e. it is 0.613 which means that dividend paid in cash is having negative and highly insignificant relation with firm value. There interaction term of dividend paid in cash dD is also showing negative coefficient value of 26.018 while the P-value is less than 0.05 which is showing that dD is having negative as well as significant relation with the firm value. Whereas the interaction term dD1 is showing also the negative coefficient value of 6.700 and having P-value greater than the 0.05 which means they are having negative as well as significant relation with value of firm. Family ownership (family) is showing negative coefficient value of 4.319 with P-value less than 0.05 i.e. its value is 0.000 which means that family ownership is having negative as well as significant relation with the value of firm. Whereas the cash holding (CASH) is showing negative coefficient value of 0.602 and it is having P-value of 0.001 which is less than the 0.05 which means that cash holding is having negative as well as significant relationship with firm value. The interaction dummy family ownership and cash holding is omitted due to collinearity while for non family business, it is showing the positive coefficient of 2.453 with P-value greater than the 0.05 which means that non family businesses are having positive and insignificant relation with the firm value. Industry dummy is showing the negative coefficient of 0.131 and having P-value less than 0.05 which means it is having negative and significant relation with the value of firm.

After analyzing the OLS regression, it is concluded the null hypothesis is rejected and the alternative hypothesis is accept that there is significant relation between the family ownership, cash holding and the interaction term cash*family. Although these results are in contradiction with the study of Martikainen et *al,* (2009) and with other researchers, because they had found positive as well as significant relation between the family ownership and firm value, cash holding and firm value and between the interaction term cash*family and firm value but these results are in line with the findings of Demsetz (1983), Lehn & Demsetz (1985), Villalonga & Demsetz (2001) and Himmelberg et *al,* (1999), Faccio et *al,* (2001), Lease et *al,* (1984), Holderness & Barclay (1989), Klein, Shapiro & Young, (2005) who had also found negative as well as significant relation among these variables.

Moreover, the results of control variables also varies and they are showing different results. As the E is showing significant negative relation with firm value which is in lined with the study of Martínez-Sola, García-Teruel & Martínez-Solano, (2013).Whereas the results of NA is showing positive as well as the significant relation with value of firm which is in lined with the study of Anderson & Reeb, (2003), Pindado, Requejo, & Torre, (2008), Nilsson & Cronqvist, (2003), Amit & Villalonga, (2006) and Maury, (2006) and the reason for such relation is cash is not only the source for holding cash sometimes firms tries to keep their reserves in form of assets to increase their firm value. The variable I is showing also positive as well as significant relation with the firm value which is lined with the study of Anderson & Carverhill, (2002) and the reason is that whenever the earnings of company falls, the starts to following pecking order rule of using debt finance. While the D is showing negative as well as insignificant relation with firm value with is line with the study of Anderson & Carverhill, (2012) and the reason is firms has to follow dynamic dividend policy when they to increase their firm value because if the cash holding fall, they have to keep retained earnings. The results of industry dummy is showing negative as well as the significant relation with firm value with in lined with the study of Klein et *al,* (2005).

note: 1.family omitted because of collinearity						
note: CASH omitted because of collinearity						
note: D omitted because of collinearity						
note: E omitted because of collinearity						
Table 2. OLS regression						
Source	SS	df	MS		Number of obs. =	318
					F(16, 301) =	19.49
Model	990.465907	16	61.9041192		Prob > F =	0.0000
Residual	956.145463	301	3.176563		R-squared =	0.5088
					Adj R-squared =	0.4827
Total	1946.61137	317	6.14072988		Root MSE =	1.7823
V	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
E	-10.11443	2.544292	-3.98	0.000	-15.12128	-5.10758
dE	-3.647608	2.427812	-1.50	0.134	-8.425243	1.130027
dE1	-6.964333	2.11954	-3.29	0.001	-11.13533	-2.79334
NA	3.512378	1.562527	2.25	0.025	.437518	6.587238
dNA	1.822731	1.190405	1.53	0.127	-.5198382	4.1653
dNA1	3.699511	1.385919	2.67	0.008	.9721937	6.426828
I	31.24281	8.920292	3.50	0.001	13.68878	48.79684
dI	25.81743	7.423216	3.48	0.001	11.20946	40.4254
dI1	13.13497	7.870558	1.67	0.096	-2.35332	28.62325
D	-5.43766	10.74827	-0.51	0.613	-26.58894	15.71362
dD	-26.01856	9.109616	-2.86	0.005	-43.94516	-8.091962
dD1	-6.700654	7.270551	-0.92	0.357	-21.0082	7.606892
Family	-4.319911	.4308049	-10.03	0.000	-5.167682	-3.47214
CASH	-.6022095	.1733549	-3.47	0.001	-.9433505	-.2610684
1.family	0 (omitted)					
CASH	0 (omitted)					
family#c.CASH						
1	2.453133	5.607618	0.44	0.662	-8.581968	13.48823
Industry	-.1317768	.0187862	-7.01	0.000	-.1687457	-.0948079
D	0 (omitted)					
E	0 (omitted)					
_cons	-1.974325	.4914436	-4.02	0.000	-2.941426	-1.007225

4.2.2 Random effects GLS regression

This study has used both the random and fixed effect models for the purpose of testing the data. To select between the most appropriate mode between the two, Hausman test is performed which was introduced by Hausman in the year 1978 and its purpose is to estimate the systematic difference among the models (Cameron, 2005 and Greene, 2006). So after performing Hausman test, the results of Prob>chi2 suggested that null hypothesis is accepted and the random effect model is the best model for the study.

So below table 3. Is showing the results for random effect GLS regression. Which is having number of observation 318 and the number of groups are 105. The model significance can be seen by the prob.>chi2 which is 0.0000 which means that the model is highly significant in the study. Whereas the family ownership is showing the negative coefficient of 4.104 and having the P-value of 0.000 which means that family ownership is having significant and negative relationship with firm value. Whereas the cash holding is also showing the negative coefficient of 0.573 and its P-value is less than 0.05 which means that cash holding is having negative and significant relationship with the firm value. Earnings before interest and taxes (E) is showing negative coefficient value of 8.938 and its P-value is also less than 0.05 which means earnings before interest and taxes is having negative and significant relation with the firm value. The interaction term for dE is also showing negative coefficient of 2.631 and its P-value is higher than 0.05 which means they are having insignificant negative relation with the firm value. While the interaction term dE1 is showing also negative coefficient value of 5.357 and its P-value is less than the 0.05 which means they are having significant negative relation with firm value. Net asset (NA) is showing the positive coefficient value of 3.541 while its P-value is less than 0.05 which means net assets are having positive significant relationship with the firm value. Whereas the interaction term dNA is showing positive coefficient value of 0.507 and its P-value is 0.643 which means they are having insignificant positive relation with the firm value. Interaction term dNA1 is showing the positive coefficient of 3.562 and its

P-value is 0.005 which means they are having significant positive relation with the firm value. The interest expense (I) is showing positive coefficient value of 30.320 and it P-value is showing 0.000 value which is less than 0.05 which mean interest expense is having positive as well as significant relation with firm value. the interaction term dI is showing positive coefficient of 20.003 and its P-value is also less than 0.05 which means they are significant positive relation with firm value. Whereas the interaction term dI1 is showing also positive coefficient value of 10.010 and P-value 0.169 which is greater than 0.05, it means that they are having insignificant positive relation with firm value. Dividend paid in cash (D) is showing negative coefficient value of 12.454 and it P-value more than 0.05 which means they are having insignificant negative relation with firm value. The interaction term dD is showing also negative value of coefficient i.e. 27.757 and its P-value is less than 0.05 which means they are having significant as well as negative relation with firm value. Term dD1 is showing negative coefficient value of 5.863 and its P-value is 0.365 which is greater than 0.05 which means they are having negative as well as insignificant relation with the firm value. The interaction term cash*family is showing positive coefficient value of 6.743 but its P-value is higher than 0.05 which mean that family firms which are holding cash are having positive but insignificant relation with firm value. This 6.74 also suggest that if the family firms holds $1 cash, the firm value increase by $6.74. Whereas, industry dummy is showing negative coefficient value of 0.134 and its P-value is 0.000 which means industry dummy is having significant but negative relation with the value of firm.

So from the above analysis, it can be concluded that family firms are having significantly negative relationship with value of firm which is in lined with the study of Demsetz (1983), Lehn & Demsetz (1985), Villalonga & Demsetz (2001) and Himmelberg et *al,* (1999), Faccio et *al,* (2001), Lease et *al,* (1984), Holderness & Barclay (1989), Klein, Shapiro & Young, (2005). Whereas cash holding is having negative but significant relation with firm value which is also in lined with the study of Demsetz (1983), Lehn & Demsetz (1985), Villalonga & Demsetz (2001) and Himmelberg et *al,* (1999), Faccio et *al,* (2001), Lease et *al,* (1984), Holderness & Barclay (1989), Klein, Shapiro & Young, (2005). While the major interaction term cash*family is showing the positive but insignificant relationship with firm value which is in contradiction to the study of Anderson, & Hamadi, (2016). Therefore according to random effect model, the hypothesis H1 and H2 is accepted but the H3 is rejected because the interaction term is showing insignificant relation with firm value.

Table 3. Random-effects GLS regression				Number of obs. = 318		
Group variable: id				Number of groups = 105		
R-sq: within = 0.1981				Obs. per group: min = 1		
between = 0.5269				avg. = 3.0		
overall = 0.4964				max = 8		
				Wald chi2(16) = 159.80		
Corr.(u_i, X) = 0 (assumed)				Prob. > chi2 = 0.0000		
V	**Coef.**	**Std. Err.**	**z**	**P>|z|**	**[95% Conf. Interval]**	
Family	-4.104623	.5956721	-6.89	0.000	-5.272119	-2.937127
CASH	-.5739146	.2406932	-2.38	0.017	-1.045665	-.1021646
E	-8.938814	2.268529	-3.94	0.000	-13.38505	-4.492579
dE	-2.631075	2.203727	-1.19	0.233	-6.950301	1.688152
dE1	-5.357766	2.017071	-2.66	0.008	-9.311151	-1.40438
NA	3.541605	1.363673	2.60	0.009	.8688562	6.214354
dNA	.5071252	1.093717	0.46	0.643	-1.636521	2.650771
dNA1	3.562552	1.280349	2.78	0.005	1.053113	6.071991
I	30.32076	7.939843	3.82	0.000	14.75895	45.88256
dI	20.00319	6.893924	2.90	0.004	6.491348	33.51503
dI1	10.01058	7.279058	1.38	0.169	-4.256108	24.27728
D	-12.45411	9.593906	-1.30	0.194	-31.25782	6.349598
dD	-27.75755	8.244206	-3.37	0.001	-43.91589	-11.5992
dD1	-5.863584	6.470428	-0.91	0.365	-18.54539	6.818223
Cash*family	6.74359	6.237076	1.08	0.280	-5.480855	18.96804
Industry	-.1345869	.0285323	-4.72	0.000	-.1905091	-.0786647
_cons	-1.218103	.6728276	-1.81	0.070	-2.536821	.1006152
sigma_u | 1.5057565						
sigma_e | 1.4357349						
rho | .52379133 (fraction of variance due to u_i)						

5. Conclusion

As most of the businesses throughout the world are family owned so to find out their impact on the firm value and holding cash has becomes the most debatable topic nowadays. So this study is an attempt to contribute to literature by analyzing the impact of cash holding and family ownership on the Pakistani family controlled firms. For such purpose, three important hypothesis were developed to check the significance of cash holding and family ownership on the firm value. Such hypothesis were analyzed on the non financial firm of Pakistan that are listed on the Pakistan Stock Exchange (PSX) and the duration for study is from 2005 to 2014. The empirical findings of the study accepts the hypothesis H1 and H2 but the H3 was rejected because H1 and H2 has showed significant relation whereas the H3 has shown the insignificant relation which is in line with the study of Demsetz (1983), Lehn & Demsetz (1985), Villalonga & Demsetz (2001) and Himmelberg et *al,* (1999), Faccio et *al,* (2001), Lease et *al,* (1984), Holderness & Barclay (1989), Klein, Shapiro & Young, (2005). The reason for such results in Pakistan is that the cash holding is playing major role in the growth of operation as well as in the financial structure. However, high level of cash holding creates agency problems but according to above literature, the reason is that ownership concentration can be endogenously chosen by the firms' owners for the purpose of maximizing profit and the shareholders of family instead of increasing firm value, they starts to focus on maximizing their own benefits which leads to expropriating the shareholder that are in minority. Moreover, family businesses like to use such mechanism that enhances the control which augment the minority shareholders expropriation to increase personal benefits of the majority shareholders. Furthermore, in the result of family consolidation, the chances of bidding by the external investor might be decreased which leads to firms' lower market value.

Recommendation

Present study has focused only on the relationship between the cash holding as well as the family ownership impact on the firm value with one regression model and taking only interaction term. But for further studies, the other interaction terms to investigate other aspects of such association in Pakistan. This work can be extended cross country in Asia to know more about the family ownership impact on firm value.

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