Impact of Cash Holdings on the Value of Investors: Evidence from Pakistan Stock Exchange

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Abstract

The primary purpose of this study is to find the relation between cash holding and the value of investors. The fixed-effect model is used to achieve the objectives of this research study. The study investigated the relationship between cash holdings and the value of investors by employing three portfolios: all firms, constrained firms, and firms with better investment opportunities. PSX listed firm-level data is taken, and the fix effect model in regression is applied. The study contributed a positive and strong relationship between the cash holding and the value of investors in all firms and constrained firms. But in the firms which have better investment opportunity has no relation between the cash and value. Earnings show a positive and significant relationship with the value in all the portfolios.

Keywords: Cash holding, Value of investors, Pakistan Stock Exchange, Return on Assets

Introduction

There has been an increasing debate across the globe among researchers and scholars on the firm's cash position and cash policies in recent years. Researchers are paying consideration to figure out the value that the companies may hold to the extent where optimal cash is needed. These issues are the basis of corporate finance and have a long history. From day-to-day transactions to long-term investments in companies, the most important funding source is own funds. Azar et al. (2016) recognized the severe aspects of the validity of cash in firms. These serious doubts about so much money compel the researchers to clarify the monitory policies of the firms. Unfortunately, there has been paid

little attention in the existing literature to understand the cash policies and day by day impact of these policies on the firm performance (Myers & Majluf, 1984).

The global financial crisis of 2007-08 destroys the financial markets, and at that time one phrase was famous that "cash is sovereign", and back in vague. All money markets collapse, the internal cash of the companies become declines, and credit markets become frozen. In now a day's lack of money is the biggest problem of many firms. Some companies hold so much cash to attract their investors. Some companies use the investment opportunities and invest the cash in different projects to make money and attract customers. All firms have other policies and different kinds of businesses(Aggrey, 2015). During the financial crisis, many of the companies become bankrupt and show that they become insolvent. So that why the domestic cash hold is imperative for the companies in their crisis days (Denis, 2016). People think in different ways some hold the cash, and some are invested money to avail themselves of various opportunities. There are many reasons investors don't want the company where they invest always holding so much cash and sit on it. The study examines cash holding and the cost which investors place on a particular company in this research.

The significance and factors of corporate cash holdings have fascinated the interest of researchers over the past ten years. There was one key issue that is the relation between the cash holding and the value of cash. There are two main factors: the benefits of liquidity, and the second is managerial preference. Both have their devotees. Myers & Majluf(1984)describe that when companies invest in different projects and make costly external financing, there is a need for cash in the company because they can make investments and positive NPV. But on the other hand. Jensen (1986) explains that the cash should be paid the investors because the company's internal cash will high than managers make investments in different projects, and there is a danger of negative NPVs in the sense of over-investing. There is no apparent truth about these statements. All the companies cannot run on one point. Both the companies and their managers are not constant. Both are not uniform. I talk about the understanding of cash value, just researchers and scientists are not interested, many people are investors, equity analysts and financers all are interested in

this topic. They want to know about the factors which affect the cost of cash holding in the firm and why.

Y. Chen, Dou, Rhee, Truong, & Veeraraghavan (2015) argued that some of the equity analysts prefer the cash on the top position without knowing and attention on that why the money is not evaluated on the face value. Researcher's shows that the different monetary policies in different firms, market and the main thing the companies have liquid assets and a very large amount which become the cause the money is not assessed on its face value. The most important thing is to know the value of the company's cash if talk about the company's market value. Finally, in short, the department of finance in the company should know why cash is not treated on its face value and if they want they could do. This only allows us to understand the inclinations of shareholders and possibly an opportunity to meet them. The problem is to bargain the reason for holding so much cash than desired and what kind of effects it could cause. Secondly, encouraged by the credit crunch of 2007-08, the second thing is whether the cash holding policies could cause the financial crisis.

Research Question

- What is the relationship between the cash holdings and the value of firms?
- Do cash holding policies impact the firm's value?
- What is the relationship between the cash holdings and the value of firms if the debt in external capital markets becomes expensive?

Research objectives:

- To find out the relation between the cash holdings and the value of firms.
- To find that the effect of cash holdings policies on the firm's value, similar to the approach used by Faulkender &Wang (2006)
- To find out when the debt in external capital markets becomes expensive then what will be the relation between the cash holding and the value of cash.

There is minor research on the time change and the effect on the value of cash. There are many reasons why the loan affects the cash holding positions in the companies. (Almeida, Campello, & Weisbach, 2004) show the financially constrained firms maintain a significant proportion of cash flows because of macroeconomic shocks, which could be held at any time. It's mean that the relation between the earning of the company and cash flow is dynamic and can be changed with time-based on a different financial environment. And the second thing is that when the recession comes, all know about the value of cash. Jiang and Lie (2016) highlighted that companies with higher internal cash don't need to worry and run their transactions efficiently when the loan becomes rationed. Companies having

so much cash don't need to relegate their market rating and easily access the capital markets. These companies got higher profits and advantage of the trouble of weaker firms, which have very low liquid assets, through actions and acquirements. When a load of cash or we can say that the availability of cash will be more, it helps the company when the economy changes and recession comes. Finally, when the credit becomes more costly and rationed, it also becomes more expensive. And this is the best thing for the constrained firms.

The study uses a sample of around a hundred firms that are listed in KSE 100 index. Collect the data from 2011 to 2016 to test the hypothesis. The motive is to test the relation between the company cash holdings and the value of investors, and the second to try when the debt becomes rational then what it impacts the company's value. In this study, variables are selected that vary during the entire year and the check their impact on the dependent variable. The global financial crisis of 2007-08 allows checking the value of money over time due to different cash holding policies. Following terms are used in this study. Firstly, cash is expressed in cash holding, cash reserve, and simple in cash in a few ways. Use the value in different ways like the value of additional cash, the value of cash, extra rupee of cash, investors' place on cash, etc. The most recent study is done on this topic in US-based companies to find the value of the dollar. In this study, the Pakistani firms which are listed in KSE 100 index are used as a sample to find the value and cash holding relationship.

Literature Review

Acharya, Davydenko, and Strebulaev(2012) state that the firms with higher cash holdings have a low spread of credit, and these firms are the safer firms. They show a positive correlation between the credit spreads and the cash. Their findings show that riskier firms keep the high amount of cash to their accounts to complete the other credit crisis, and firms with larger cash holdings become less defaulter than the firms with low cash holdings. They also show that there is a positive relationship between liquidity and the possibility of long-term default. Uyar and Kuzey(2014) explained the factors which affect the level of cash in the firms. They take the Turkish non-financial firms, and data is taken from 1997-2011. They find that the firms in Turkey hold 9.1% of their assets like cash or cash equivalents. They observe that the cash holding trend is increasing in previous years. GMM regression model is used to obtain the results. They show that growth opportunities and

cash flows positively correlate with the cash level in these firms. On the other hand, capital expenditure, financial debts, and leverage showed a negative and significant relationship with the level of cash. All the results show that the firms in Turkey were adopting the trend of large cash holdings.

Harford, Klasa and Maxwell (2014), describe that the firms are holding large cash nowadays to mitigate the risk of refinancing and making cash from the cash flows. Long-term debt maturity was shortened and this proved that the firms are adopting the trend of holding large cash to their accounts. Large cash reserves become a valuable thing for the firms. They also express that the problem of underinvestment is also been solved due to a large amount of cash. Large cash position is valuable for firms with refinancing risk. Brown and Petersen (2011) showed that the cash holding level in the company makes R&D expenses smooth. Panel data is used to obtain the results and the companies are selected for the sample is the US manufacturing firms. The sample data period is from 1970 to 2006. After that, the whole sample is divided into three-time span which is from 1970-81, 1982-93 and 1994-2006. R&D is a costly investment and it takes cash to the company with larger cash holdings adjusts the cost of R&D very easily and the larger cash level is beneficial for this. They describe that the investment in insubstantial assets and the smooth flow of R&D expenses become uncomplicated for companies through the large cash funds and it also helps in to understand the management of cash.

Shah (2011), describe that the firms in developing countries like Pakistan doing short-term financing instead of long-term. Because their maturity dates are very small. Then the question was that either the firms in Pakistan can do long-term financing. During short-term financing credit risk can come in a way then firms borrow funds from another but if there is a bulk of cash then there is no need to borrow from another firm. They take the data of 380 companies of Pakistan from 1996-2008 and run descriptive statics and GMM regression model. Descriptive results show that there is the same cash to asset ratio in Pakistan the same as in the US and UK. Regression result shows that cash to asset ratio increase with the size of a firm increase, growth opportunities increase and dividend ratio raise. And also diminish with conversion cycle and maturity of the debts.

Martínez-Sola, García-Teruel and Martínez-Solano (2013)expressed that there is a concave relation exist between the cash holding level and the firms' value. Their research confirms

that there is optimal cash level in the firms and the second thing is that the deviation in the cash level can reduce the value of firms either it becomes low or high it will decrease the value of firms. The sample consists of US industrial firms from 2001 to 2007. They showed that if the level of cash is high then there is a positive and strong relationship between the cash and the value of a firm.

Kuan, Li and Chu (2011) use the Taiwan firms in the sample from 1997-2008 and check the relation of family and non-family firms with cash holding policies of the firms. Results showed that the family firms with independent board deposit the high amount of cash while the non-family firms with independent board deposit fewer amounts of cash. Family firms with high pledge rate deposit less cash but in non-family firms pledge rates do not impact. But the strategy to run the firm's operations changes with the different cash holdings policies with time. Palazzo (2012) explores the relation between the cash flows and source the aggregate risk with the optimal level of cash holdings in the firms. Results show that the firm with high risk uses costly financing to run their business and these firms saving are also higher than other firms. These saving motives become the cause of a positive relationship between the cash holding and the equity returns. This positive relation becomes stronger for those firms which have very low growth options.

Lian, Sepehri and Foley(2011) describe the cash holding policies of Chinese firms in different periods. Data was taken from 1999 to 2009. They showed that in normal routine during the financial crisis the Chinese firms tend to hold the cash. In general, companies with growth opportunities and constraints should hold so much cash to tackle the risk of credit and to do investments in the future. They said that companies with low credit ratings, low capital expenditures, and lower working capital should hold a large amount of cash. It's all proves that the Chinese are so serious about the cash holding.

Álvarez, Sagner and Valdivia(2012) taken Chilean companies and the data was taken from 1996-2009. They find to know about the relation between the cash holdings and the liquidity shocks or could be said that crisis and they express their results in three ways. One thing they show that there is a negative relationship between the cash holdings and liquidity crisis in small firms but not in large and medium-sized firms. They express that the liquidity crisis decreases the ability of a company to hold the cash in hand. At the end,

they explain that medium firms are less able to hold the cash if compare them with small and large firms. The regression is used for the results.

Chiang and Wang (2011) used US firms sample for research and the panel regression model is used. They show the relationship between the internationalization and cash holdings. They showed that the multinational firms hold a large amount of cash than the other domestic firms. There is a U shaped relation between both variables. It means that the cash holding increase when the internationalization is expanded but after a certain point cash holding becomes decreasing due to the increase in the internationalization.

Fernandes, Coelho and Peixinho (2017) explain that the companies hold less cash where the investors and creditors right are strongly confined. They take a sample of Portugal firms. They show that leverage, a growth of the firm and their liquid assets are showing the negative relationship with the cash holdings while the financial distress and the firm's long-term debts have a positive relationship with the cash holdings. The regression model is used to take out the results. Their findings support and highlight the country's environment, institutional and economic environment which illustrate the decisions of cash holdings. Ul Hassan and Valderhaug(2016) find that the difference between the cash policies of family and non-family firms, inside and outside the management and their effects of cash holding last thing the founder and non-founder impacts on cash. They take the firms which are working in Norway and the data is taken from 2004 to 2014. They find that the family firms are holding less cash then nonfamily firms. While the inside CEO holds less cash then the outside and the last finding was that the founder holds a large amount of cash in comparison with the non-founder. Their research can give new sights to others for future research.

Ogundipe, Salawu and Ogundipe(2012) describe the relationship between cash holding and different variable. Research is taken on Nigerian companies. The data was taken from 2000 to 2006. The sample consists of 54 firms. The result shows that there is a negative relationship between the cash holding and firm's net working capital, firm size, ROA and bank and positive relation with the account receivable, leverage, financial distress and growth opportunities. There is no relation between the cash holding and the cash flows. GMM regression model is used to obtain the results from the data. All variables which are used in research are directly or indirectly correlating with the cash holding.

Horioka and Terada-Hagiwara(2014) describe the relationship between the stock of cash and the cash flows of the firms. They select the eleven Asian economies for their sample and data is taken from 2002 to 2011. The study found that the companies' borrowing constrained and save more when the cash flows become increase. Results also tell the positive relation between the cash flows and changes in cash stock but in small firms not in other firms. In rising economies, they find also a positive relationship between cash flows and the changes in the stock of cash but fluctuate with the firm size. They take the Tobin Q variable and it shows the positive relationship with the change in cash stock. The regression model is used to find the outcome.

Hall, Mateus and Mateus (2014)find that how the national level institutions and firm characteristics affect the cash balances in publically traded and privately traded firms. The study uses a very big sample of companies, which was consisting of 9453 private firms and 7319 public firms. Firms were from Eastern Europe and middle Europe. They find that private firms hold so much cash than the other firms. They describe that the firms which are very oriented and approachable in the market have held a large number of reserves. At last, they said that there is the same determinant of cash for both types of firms. Data is collected from 2001 to 2010 and a panel regression model is used to get the results.

Yılmaz(2017) describe that net working capital and cash holdings have a positive relationship between them. When the leverage decreases the level of firm cash holding become increase. The firm size has a significant negative relation with the cash holdings. They also explain that profitability has a positive relationship with cash holdings. It's mean that the firms with better profitability have a larger cash reserve. The research was taken in Turkey with a sample size of 387 public firms of Turkey. Data is taken from 2000 to 2016 which is if sixteen years and the regression are run on the panel data.

(Boubakri, El Ghoul and Saffar (2013) explain about the two kinds of firms one is political and second is nonpolitical firms. 50119 firms are used in the sample from the 31 countries. They find that the political firms have very small cash reserve then nonpolitical firms and there are very little cases shown of agency problems in the political firms. They describe that the politician uses the political firms for their advances and agency problems are not faced in this type of companies. Very few non-political companies are used by politicians.

Because in nonpolitical firms many problems are faced by them either agency problem is also faced in this type of firms.

Song and Lee (2012) had taken seven Asian countries as a sample in the study. The study explains the effect of the financial crisis in the country on the cash holding position. They explain that after the crisis the firms in Asian countries start to hold the large cash than investing in future projects. The study describes that the financial crisis affects the firm's cash holding policies very strongly. The study shows that before and after the crisis the position of cash holding policies become change. Before crisis managers don't think too much to hold more cash but after crisis firms are holding cash to overcome the financial problems which are faced to the firms any time.

Ghaly, Dang, and Stathopoulos (2015)find the relationship between cash holdings and employee welfare. 3000 firms which are listed in US stock exchange are used as a sample. The companies which protect the employee's right tend to hold more cash than other firms. The effect of cash holdings is stronger in those firms which are competitive, high labour mobility and human rights. Study proves that human capital and the relation between employees strongly affect the cash holding policies in the companies. Figure 1 shows the conceptual framework of the study which results in the constitution of the following research hypothesis.

H1: The value of a firm is decreasing when the cash holding in the company increase in all firms.

The reason is that when a company holds so much cash in their hands there would be a danger of agency cost(Harford et al., 2008). Managers in the company get benefit in the shape of increments and rewards when they show them so much cash. The second thing is when the cash in hand increases then the investors show the interest for their dividends(Lee & Powell, 2011) and a dividend is a cost of the company which is paid by the company to his shareholders(Cleary, Dubuque, & Hartnett, 2011). Instead of investing in future projects when the firm holds cash then it can cause a decrease in the returns. That's why; this is the reason for the first hypothesis.

H2: If the leverage in firms increases then the value of firms will decrease there will a negative relationship between them in all firms.

(Lins et al., 2010), Firms when finance debt from capital markets and keep this in their cash holding account then there is no benefit for the investors. (Wu, Rui, & Wu, 2012), firm increasing the cash hold account with the money which is financed from the capital market and this money is simply the debt of the company. Managers can do it to just attract the shareholders because when they saw high cash they will, of course, invest that company. But the story is different. As well as the cash holding increase debt money will also increase. This cash is debt money, not company personnel cash or cash from equity.

H3: Increase in cash holding is worthy and valuable form the investors or shareholders in the constrained firms.

(Campello, Graham, & Harvey, 2010), constrained firms are those firms which have low credit rating, low payout ratio and do not pay dividends to their investors. These companies can be restricted or limited to take funds from the capital markets. (Gertler & Karadi, 2011), financing is very expensive for these kinds of companies. These firms can call smaller firms. Because of this, they use their own funds which are cash in hand and this is valuable for this kind of firms. If the cash holding will increase this would be benefited for company future investments and for different projects.

H4: Increase in cash holdings is more valuable for firms with better investment opportunities.

(Belghitar & Khan, 2013), firms with good investment opportunity should maintain a large amount of cash in their cash holding account to avail these investment opportunities. Researchers can separate the firms with better investment opportunities with the help of ME/BE (market and book value of equity). There are many other ways also to find these kinds of firms. (Y. Chen et al., 2015), Instead of taking a loan from outside its good that company should hold cash which is beneficial for the company when any investment needed and also money will be saved because the cash is not debt cash its company own funds. So the one rupee of cash holding is very worthy for those firms.

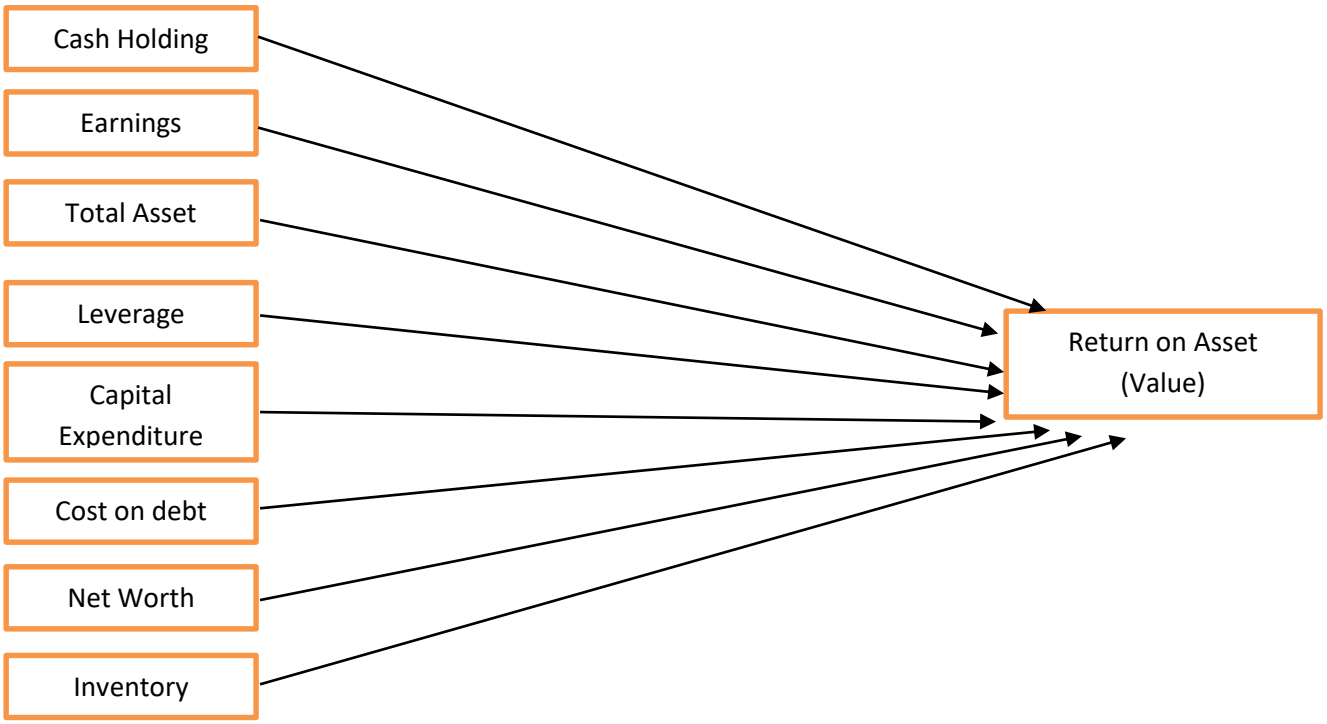
H5: Increase in capital expenditure is not valuable for firms. There would be a negative relationship between capital expenditures and the value of the firms.

Capital expenditures are those expenses of the company which are used to purchase the property, plant, and equipment for the company operations(J. Kim, Kim, & Woods, 2011). Firms should invest in good projects rather than to spend a large amount of cash on capital expenditure.

H6: Firms' cash holdings decrease when the cost of external capital increases.
Valta (2012) emphasized that when debt becomes expensive in markets then the company use their own funds. That's why the cash level in cash holding account becomes decrease. To avoid expenses, firms should hold cash for a difficult period or recession period when the market becomes down.

Figure 1: Conceptual Framework

Conceptual Framework:



RESEARCH METHODOLOGY

The data of 100 firms which are listed in KSE 100 index is taken for this study. The data is taken for 6 years from the period 2010 to 2016. There are three portfolios. In the 1st portfolio, all the firms are taken from KSE 100 index. In 2nd portfolio constrained firms are separated from all firms. The method which is used to segregate the constrained firms from all firms is dividend payout ratios. The company with a low ratio is said to be a constrained firm. These firms have some limitations to access the capital markets and also called the smallest firms. The 3rd portfolio is companies with good investment opportunities. In this study, ME/BE ratio is used to find these firms from the entire sample. ME is the market

value of equity and the BE is the book value of equity. The companies having higher market value then its book value is considered as the company with a better investment opportunity.

Our baseline regression model is under as:

$$ROA=\gamma 0+\gamma 1CashHoldings+\gamma 2Earning+\gamma 3TotalAssets+\gamma 4CapitalExpenditure+\gamma 5Ievearge+\gamma 6inventory+\gamma 7Interest+\gamma 8Net\ worth+e_{it},$$

Where,

ROA= Return on asset of specific company i for the specific time period t
$CH_{i,t}$ = Cash holdings
$E_{i,t}$ = Earning of the company
$TA_{i,t}$ = Total assets of the company
$CE_{i,t}$ = Capital expenditure of the company which company spent on property and equipment
$I_{i,t}$ = Interest expenses of the company which is used to finance the funds from capital markets
Inventory = Stock in trade of the company
$L_{i,t}$ = Leverage of the company
$NW_{i,t}$ = Net worth of the company.

Table 1: Description of variables

Name	Proxy	Description	Source
Return of Asset	ROA	Obtain after total income/total asset Measure the performance of the company	Annual report of the company
Cash Holding	CH	It includes the cash and the bank balances of the company	Annual report of the company
Earning	EBIT	Earning which is come out before interest and tax deduction	Annual report of the company
Total Asset	TA	All the assets use by the company	Annual report of the company
Leverage	LEV	Obtain after small term debts plus long term debt divided by total equity. It shows how much company borrowed from others for their operations	Annual report of the company
Capital Expenditure	CE	The expense which company bears on their property and equipment's.	Cash flow from investing activities in company annual report
Cost on debt	COD	The cost company bear on its debts is called cost of debts, for example interest.	Annual report of the company
Net worth	NW	Calculate the total assets and minus the total liabilities from them. It shows company net worth	From balance sheet of the company in annual report.
Inventory	INV	The stock which is remain at the end of the financial year	Annual report of the company

Pakistani firms which are listed in KSE 100 index are taken for the sample. The time period is from 2011 to 2016 which is 6 years. Return on asset is used as a value which is the dependent variable in this research. Table 1 shows the variables explanations and measurement. The dependent variable is the return on asset of the particular company. For calculation of this variable, firstly find the profit of all the companies and secondly find the amount of the total assets of the firms from the annual reports. After that total income or profit is divided by the total asset and this ratio helps to get the return on asset of all the companies. ROA is presenting the value of the company. Cash holding is an independent variable which takes in this study annually. It consists of cash and bank balances. The earnings of companies are the profit of the company. The expense which the company bears in their property and types of equipment is called the capital expenditures. It also takes from the annual reports of the particular company. In this study, all the discussion is on cash holding but there are also some variables which are related to debts like cost on debt. COD is a variable which correlates with cash holding.

In every firm either it's a constrained firm or big firm or a firm with high sales and high profits but these all companies take loans from banks and capital markets to run their operation despite having large cash holdings in their accounts. There could be different reasons to do these kinds of things. There could be agency problems, managerial issue, salary or increments issue and also these issues could be from the investors who buy the shares of the company. In this study, all discussion will be on it. The study will help to find these kinds of problems and decide which company makes for its running operations. In 2007-8 credit crunch came and many companies become bankrupts. That's why in this study data is taken after 2010 to know about the cash holding policies of firms after the credit crunch and which kind of improvements firms gained with the new policies. Value is in data were not uniform some amounts are large and some are small. Because of this, all the variables are logged to uniform the data.

Results

Table 2: Correlation Matrix

	log CH	log Lev	log EBIT	log COD	log TA	log CE	log INV	log NW	_cons
log CH	1.0000								
log leverage	-0.5880	1.0000							
log EBIT	0.2586	-0.1758	1.0000						
log COD	0.1885	-0.2931	-0.0778	1.0000					
log TA	0.0380	-0.0600	-0.0448	-0.4539	1.0000				
log CE	0.0834	-0.0573	-0.3282	-0.2090	-0.0094	1.0000			
log inventory	-0.0761	-0.0516	-0.1422	-0.0015	-0.1619	-0.2053	1.0000		
log NW	0.2052	-0.2609	-0.0653	-0.2720	-0.8781	-0.0260	-0.0111	1.0000	
_cons	0.1780	-0.3054	-0.0342	-0.1994	-0.3250	-0.0137	-0.1984	-0.0501	1.0000

Table 2 provides a correlation matrix of all independent variables taken for the study. The table presents the correlation matrix of the key variables. Multicollinearity is checked at a significant level of 5%. And also find that there is no high correlation exists between the variables. And also check the multicollinearity between the variables and find that all the variables are normal there are no multicollinearity exists between the variables. Some variables are the control variables which correlate with the cash holdings directly or indirectly. Except for these control variables, all other variables are related to the hypothesis of the study.

Table 3: Descriptive Statistics

	Mean	**Median**	**Maximum**	**Minimum**	**StdDev.**
ROA	0.03	0.02	0.66	-0.4	0.12
Leverage	435253	12018	103548162	-365706	4709618
Capital expenditure	1618305	213162	42255196	-437040	4572042
Net worth	10148345	2461289	240487069	-8493533	26766402
Cost on Debts	528748	45783	7845637	4376	559823
Earnings	2330179	371240	74546759	-8696685	68499838
Total Assets	20076384	6262798	360315566	138730	44978220
Cash holding	510111	663498	4008076	24609	278596
Inventory	3183559	715525	93234034	302	9245495

Table 3 presents the descriptive statistics of the variable used in this study which expresses the different information about the variables which are used in the model. It helps to find the different value in data like maximum value, minimum value and tells about the standard

deviation. In this table, all the value is described of all the variables. Any value of any variable could be found easily from this table. This table helps to find that which is the highest value of the particular variable in this study or which is a median value of the particular variable. It shows the data information on all the variables and their all kind of values.

Table 4: Regression Analysis (All Firms)

Fixed-effects (within) regression Number of obs = 533

Group variable: year Number of groups = 6

R-sq: within = 0.3199 Obs per group: min = 88

between = 0.2209 avg = 88.8

overall = 0.3180 max = 89

Prob > F = 0.0000

roa	**Coef.**	**Std.Err.**	**t**	**P>|t|**	**[95% Conf.**	**Interval]**
Log CH	.0230486	.0091065	2.53	0.012	.0051585	.0409387
Log leverage	-.0024233	.0056556	-0.43	0.668	-.013534	.0086875
Log EBIT	.0354475	.0030259	11.71	0.000	.029503	.0413921
Log COD	-.0301727	.009543	-3.16	0.002	-.0489204	-.011425
Log TA	.0182606	.0178573	1.02	0.307	-.016821	.0533421
log CE	-.0087851	.0064886	-1.35	0.176	-.0215322	.003962
log inventory	.000654	.0096805	0.07	0.946	-.0183639	.0196718
Log NW	-.0022713	.0056804	-0.40	0.689	-.0134307	.0088881
Constant	-.0435663	.0650377	-0.67	0.503	-.1713359	.0842033

Table 4 shows the regression results of the first portfolio which consist of all firms which are listed in KSE 100 index. Before running the test, all the variables consist on large and small values which create abnormality and multicollinearity in the data. After that, all the values are logged except the dependent variable and then run the regression. The number of observation is 533. The cash holdings show a significant and positive relationship with the value or dependent variable. The result shows that increase the one rupee in cash holdings increase the value of .0230486 per cent. P-value is 0.012 which is less than 0.05 and showing the significant relation. Regression results accept the first hypothesis. There is a negative and non-significant relation between leverage and value. Increase the one rupee in leverage decrease the value -.0024233 per cent but the relation is non-significant between both of them. The second hypothesis is rejected by the regression results. EBIT positively affecting the value and the relation between both the variable is significant. If earning increased by firms 1 rupee then there is .0354475 per cent increase in value, both effecting significantly.

Earning is the control variable in the model which control the effect of the independent variable on the dependent. It's not related with my any of hypothesis. Like EBIT the variable cost on debt has a negative relationship with the value and also showing significant relation. Results describe that if the interest of debts become high in capital markets its will impact on investors value in Pakistan. Increase in 1 rupee in interest rate decreases the -.0301727 per cent value and the relation between both of them is significant. Total asset shows a positive and insignificant relationship with the value. Increase in 1 rupee, increases the value .0182606 per cent which is higher. Their relation is insignificant because the p-value is larger than 0.05. In Pakistan, if firms increase their assets it will decrease the value. Results showed that assets increase the value but insignificantly so study rejected the hypothesis.

The results show the negative and insignificant relationship between capital expenditure and value. Increase in one rupee of capital expenditure decreases the value by -.0087851 per cent. If the company spent more on capital expenditure then the value of the company will decrease but the relation is insignificant between both the value and capital expenditure. . Results are rejecting the hypothesis. To spent in capital expenditures in firms decrease the different investment opportunities. Firms net worth showing a negative and insignificant relationship with the firm's value. Increase in net worth 1 rupee results decrease the value of -0.0022713 per cent. Results are opposite to the hypothesis in Pakistan. At last, the variable which is the inventory is affecting positively with the value and showing insignificant relation. Inventory is the control variable. Firm's inventories either increase or decrease will not impact on the firm's value in the market. The main motive was to check the impact of cash holding policies on the firm's value. All other variables are directly or indirectly, positively and negatively correlating with the cash holding and these are the control variables.

The second portfolio is consists of constrained firms. There are 71 constrained firms in the sample. These firms are segregated from the whole sample with the help of dividend payout ratios. Firms with zero dividend payout ratios are considered as a constrained firm. The regression equation is the same for all samples. The dependent variable is the return on asset which shows the value of the firms and the independent variable is cash holding which is a measure to add the cash in the bank and the cash in hand. And all other variables which are leverage, total assets, net worth, inventory, and interest are the control variable in the regression equation.

Table 5: Regression Analysis (Constrained Firms)

Fixed-effects (within) regression	Number of obs	=	431
Group variable: year	Number of groups	=	6
R-sq: within = 0.3245	Obs per group: min =		71
between = 0.5251	avg =	71.8	
overall = 0.3257	max =	Prob > F =	0.0000

Roa	**Coef.**	**Std.Err.**	**t**	**P>|t|**	**[95% Conf.**	**Interval]**
Log CH	.0299709	.0102003	2.94	0.003	.0099205	.0500213
Log leverage	-.0053949	.0058475	-0.92	0.357	-.0168892	.0060994
Log EBT	.0341642	.0030118	11.34	0.000	.0282439	.0400845
Log COD	-.0133866	.0116511	-1.15	0.251	-.0362887	.0095156
Log TA	-.0275048	.0226414	-1.21	0.225	-.0720103	.0170006
log CE	-.0063981	.0066458	-0.96	0.336	-.0194616	.0066654
log inventory	.0095099	.0100478	0.95	0.344	-.0102408	.0292606
Log NW	-.0001109	.0055792	-0.02	0.984	-.0110778	.0108561
Constant	.0848531	.0743646	1.14	0.255	-.0613231	.2310293

Table 5 consists of regression results of the second portfolio which consist on constrained firms which are listed in KSE 100 index. There was a little multicollinearity between the variables. Firstly data was abnormal but after taking the log of all the variables, all the variables become normal and there is no multicollinearity in the data. The dependent variable in the equation is without the log value. The number of observations is 431 and the model significant value or probability value is 0.000 which is significant. The cash holdings show the significant relation with the value or dependent variable. The result shows that increase the one rupee in cash holdings increase the value.0299709 percent. Regression results accept the third hypothesis.

There is a negative and non-significant relation between the leverage and value. Increase the one rupee in leverage decrease the value -.0053949 percent but the relation is non-significant between both of them. EBIT positively affecting the value, the relation between both the variable is significant. If earning increased by 1 rupee then there is .0341642 percent increase in value and both effecting significantly. Earning is control variable in the model which control the effect of independent variable on the dependent. It's not related with my any of hypothesis. Like EBIT the variable COD has a negative relation with the value and also an insignificant relation. Results describe that if the interest of debts become high in capital markets its will not impact on investors value in Pakistan. Increase in 1 rupee in interest rate decrease the -.0133866 percent value but insignificantly. Total asset shows the negative and insignificant relationship with the value. Increase in 1 rupee decrease the value -.0275048. Their relation is insignificant because the p-value is not smaller than 0.05. In Pakistan if firms increase their assets it will not help to increase the production and business will not be expanded. The results show the negative and insignificant relation between the capital expenditure and the value. Increase in one rupee of capital expenditure decreases the value by -.0063981. If the company spent more on capital expenditure then the value of the company will decrease and this is the result of the constrained sample but relation is insignificant. To spend in capital expenditures firms will not gain different investment prospects. Firms net worth showing the negative and insignificant relation with the firms value. Increase in net worth 1 rupee results decrease the value by -.0001109. In the end, variable which is the inventory is affecting positively with the value and showing insignificant relation. Inventory is the control variable. Firm's inventories wither increase or decrease will not impact on the firm's value in the market. Increase 1 rupee in inventory variable increase the value .0095099. The main motive was to check the impact of cash holding policies on the firm's value. All other variables are directly

or indirectly, positively and negatively correlating with the cash holding and these are the control variables.

4.7 Firms with Better Investment Opportunities

The third portfolio is the firms with better investment opportunities. These firms are separated from the whole sample with the help of ME/BE. ME is the market value of equity and the BE is the book value of equity. The firms which show the higher ratio is considered as the better investment opportunity firms and these are 51 firms.

Table 6: Regression Analysis (Firms with Better Investment Opportunities)

Fixed-effects (within) regression Number of obs = 305
Group variable: year Number of groups = 6
R-sq: within = 0.2336 Obs per group: min = 50
between = 0.5907 avg = 50.8
overall = 0.2349 max = 51
Prob > F = 0.0000

Roa	**Coef.**	**Std.Err.**	**t**	**P>|t|**	**[95% Conf.**	**Interval]**
Log CH	.0014016	.0168708	0.08	0.934	-.0318031	.0346063
Log leverage	.0030479	.0095513	0.32	0.750	-.0157507	.0218466
Log EBT	.0405895	.0054896	7.39	0.000	.029785	.051394
Log COD	-.0409409	.012214	-3.35	0.001	-.0649802	-.01690
Log TA	.0256866	.0232568	1.10	0.270	-.0200869	.0714602
log CE	-.0204725	.0124518	-1.64	0.101	-.0449798	.0040348
log inventory	-.0058812	.0158086	-0.37	0.710	-.0369953	.025233
Log NW	.0016416	.0097502	0.17	0.866	-.0175485	.0208316
Constant	.1081391	.0873165	1.24	0.217	-.0637154	.2799935

Table 6 presents the regression results of the third portfolio which consist of firms which have better investment opportunities and listed in KSE 100 index. The number of observation is 305 and the model significant value or probability value is 0.000 which is significant. The cash holdings show the insignificant relation with the value or dependent variable. The result shows that increase the one rupee in cash holdings increase the value.0014016 percent but the significant value is higher the 0.05 which is 0.934, showing there is no relation between both of them. There is a positive and non-significant relation between the leverage and value. Increase the one rupee in leverage increases value .0030479 percent but the relation is non-significant between both of them.

The relation between earnings and value is significant, earnings showing a positive relationship with the firm's value. Increase in one rupee of earning increase the value .0405895 percent. More earnings positively impact the value of investors and the company. The variable COD has a negative relationship with the value and also insignificant relation. Results describe that if the interest of debts become high in capital markets its will strongly impact on investors value in Pakistan. Increase in 1 rupee in interest rate decrease the value by .0405895 percent value

significantly. Total asset shows the positive and insignificant relationship with the value. Increase in 1 rupee of assets increases the value .0256866 percent. Their relation is insignificant because the p-value is larger than 0.05. In Pakistan, if firms increase their assets it will not help to increase the profits. The results show the negative and insignificant relation between the capital expenditure and the value. Increase in one rupee of capital expenditure decreases the value by -.0204725. If the company spent more on capital expenditure then the value of the company will decrease and this is the result of better investment opportunities firms.
Firms net worth showing the positive and non-significant relation with the firm's value. Increase in net worth 1 rupee results increases the value by .0016416. In this portfolio the relation is non-significant. In the end, variable which is the inventory showing a non-significant relation with the firm's value. Inventory is the control variable. Firm's inventories wither increase or decrease will not impact on the firm's value in the market.

CONCLUSION AND IMPLICATIONS

According to the results, Cash holding has a strong relation to the investor's value. Companies increased cash holdings will increase the value in all firms listed in KSE 100. And the same conclusion is found for the constrained firms. In this study, the value is measured with the help of return on assets. And the cash holdings are measure by adding the cash in hand and the money at bank. The main motive was to find the relation between the cash holding and the value. All other variables in this study except cash holdings, leverage, capital expenditure, and cost on debts are the control variables directly or indirectly correlated with the cash holdings. With cash holdings, other control variables are also showing the relationship with the investor's value. In all three portfolios earning showing the relation with the value which is control variable. Results show that the firms should increase their sales and then firms earn more and this will increase the investor's value that invests in that type of firms where the investment opportunities are available and the same thing is for all firms sample and constrained firm sample. The main objective was to find the impact of cash holding with a value that shows a strong impact of cash holdings on the value. With the cash holdings, the other control variables used as control variables also show a relation with the value.

The study recommends that there is a vital role of ample cash holding to increase the company's value. Firm's cash holding does affect the firm value in this study except in the investment opportunities firms. Three portfolios were taken to check the relation between cash holding and the value of the company and investors. But in three portfolios, results suggest that there is a strong relationship. The study recommends to firms that they should hold a large amount of cash in their accounts. Cash holdings help to firms to avail all the investment projects which give large benefits and profits. The study recommends firms should hold the cash for difficult future situations and any kind of crisis. Firms can increase their value to increase their earnings. Increase in earnings and the net sales can be the cause of good return. The study suggests that firms should not increase their capital expenditure because capital expenditures decrease the value of the firm. There should be very little money invested in capital expenditure for a better return.

In this study, three portfolios are used to check the results. Constrained firms are low-rated firms, and their payout ratios are very low and these firms can do limited financing from the capital markets. The study suggests to these firms that they should hold the cash because a huge bulk of

cash increases the return. Also, the study recommends that these companies should increase their earnings to expand their business. Increase in assets will not increase the value of the company. Capital expenditure in this sample also decreases the value. The company should invest less money in these kinds of expenses and they should invest in different projects. Constrained firms shouldn't see their net worth because this can't increase their value. These types of firms should invest in different projects and avail the investment opportunities for profits.

The study suggests that the firms with better investment opportunities should increase their sales and make huge earnings. Huge earnings and sales increase the value of those firms which have better investment opportunities. In all the portfolios capital expenditures are decreasing the value of firms. The study suggests these kinds of firms minimize capital expense because these expenses decrease the company's value. In opportunities firms, there is no role of net worth to increase the return. These companies face better opportunities so they should avail all the opportunities and make profits. The main motive was to find the relation between the cash holding and the return of the company but the results accept the hypothesis and there is the relation between the cash holding and the value, some other control variables are also showing the relations with ROA. A huge bulk of cash holds to increase the firm's value except for firms with better investment opportunities.

In this study cash holding policies and their impact on a return is discussed. Cash is used for cash holding and some other variables are used which are correlating with the cash directly or indirectly. In further research, value or performance can be found by using the return, return on equity, and share capital as a dependent variable. There variable are also expressing the performance and the value of the companies. In this study, a ROA is used to check the value. In independent variables, many other variables can be used which are correlated with cash. We can check the effect of the change in cash holding policies by time on different variables. As an independent variable, researchers can take tax and check the effect of tax cost on company performance and check the role of agency problems on performance caused by the huge bulk of cash in the company.

There are a lot of variables which can be used in further research. In this study, data is after the crisis 2007-8 but in future research; data could be from the back years and check the differences of cash holding policies before the crisis and after the crisis. This study is one that companies listed in KSE 100 index, but after these other companies that are not added in this study could be taken for future research. A country could be changed and it helps to find different countries cash holding policies and their effect on ROA and any other dependents variables which are used. There is a lot of empty areas is available where future research could be done. In future researchers can make the groups of family firms, non-family firms, political firms, firms with low ratings, and firms that give dividend every year. These firms provide dividend after two or three years and segregate the firms on the size base.

References:

Acharya, V., Davydenko, S. A., & Strebulaev, I. A. (2012). Cash holdings and credit risk. *The Review of Financial Studies, 25*(12), 3572-3609.

Aggrey, E. K. (2015). *The relationship between the determinants of working capital management and financial distress levels of the listed manufacturing companies in Ghana.* The University of Cape Coast.

Almeida, H., Campello, M., &Weisbach, M. S. (2004). The cash flow sensitivity of cash. *The Journal of Finance, 59*(4), 1777-1804.
Almeida, H., Kim, C. S., & Kim, H. B. (2015). Internal capital markets in business groups: Evidence from the Asian financial crisis. *The Journal of Finance, 70*(6), 2539-2586.
Álvarez, R., Sagner, A., & Valdivia, C. (2012). Liquidity crises and corporate cash holdings in Chile. *The Developing Economies, 50*(4), 378-392.
Azar, J. A., Kagy, J.-F., & Schmalz, M. C. (2016). Can changes in the cost of carrying explain the dynamics of corporate "cash" holdings? *The Review of Financial Studies, 29*(8), 2194-2240.
Bao, D., Chan, K. C., & Zhang, W. (2012). Asymmetric cash flow sensitivity of cash holdings. *Journal of Corporate Finance, 18*(4), 690-700.
Belghitar, Y., & Khan, J. (2013). Governance mechanisms, investment opportunity set and SMEs cash holdings. *Small Business Economics, 40*(1), 59-72.
Bigelli, M., & Sánchez-Vidal, J. (2012). Cash holdings in private firms. *Journal of Banking & Finance, 36*(1), 26-35.
Boubakri, N., El Ghoul, S., & Saffar, W. (2013). Cash holdings of politically connected firms. *Journal of Multinational Financial Management, 23*(4), 338-355.
Brown, J. R., & Petersen, B. C. (2011). Cash holdings and R&D smoothing. *Journal of Corporate Finance, 17*(3), 694-709.
Campello, M., Graham, J. R., & Harvey, C. R. (2010). The real effects of financial constraints: Evidence from a financial crisis.*Journal of financial economics, 97*(3), 470-487.
Chen, Y., Dou, P. Y., Rhee, S. G., Truong, C., & Veeraraghavan, M. (2015). National culture and corporate cash holdings around the world. *Journal of Banking & Finance, 50*, 1-18.
Chiang, Y.-C., & Wang, C.-D. (2011). Corporate international activities and cash holdings. *African Journal of Business Management, 5*(7), 2992-3000.
Cleary, M., Dubuque, K., & Hartnett, K. (2011). Put your capital to work. *American Bankers Association. ABA Banking Journal, 103*(3), 24.
D'Mello, R., & Miranda, M. (2010). Long-term debt and overinvestment agency problem. *Journal of Banking & Finance, 34*(2), 324-335.
Denis, D. (2016). Corporate governance and the goal of the firm: in defense of shareholder wealth maximization. *Financial Review, 51*(4), 467-480.
Dyreng, S. D., Hanlon, M., & Maydew, E. L. (2010). The effects of executives on corporate tax avoidance. *The Accounting Review, 85*(4), 1163-1189.
Fernandes, F., Coelho, L., & Peixinho, R. M. (2017). Determinants of corporate cash holdings: Evidence from Portuguese publicly traded firms. *Dos Algarves: A Multidisciplinary e-Journal, 29*(unknown), 102-118.
Gertler, M., & Karadi, P. (2011). A model of unconventional monetary policy. *Journal of Monetary Economics, 58*(1), 17-34.
Ghaly, M., Dang, V. A., & Stathopoulos, K. (2015). Cash holdings and employee welfare. *Journal of Corporate Finance, 33*, 53-70.
Hall, T., Mateus, C., & Mateus, I. B. (2014). What determines cash holdings at privately held and publicly traded firms? Evidence from 20 emerging markets. *International Review of Financial Analysis, 33*, 104-116.
Han, S., & Qiu, J. (2007). Corporate precautionary cash holdings. *Journal of Corporate Finance, 13*(1), 43-57.
Harford, J., Klasa, S., & Maxwell, W. F. (2014). Refinancing risk and cash holdings. *The Journal of Finance, 69*(3), 975-1012.

Harford, J., Mansi, S. A., & Maxwell, W. F. (2008). Corporate governance and firm cash holdings in the US. *Journal of financial economics, 87*(3), 535-555.
Horioka, C. Y., & Terada-Hagiwara, A. (2014). Corporate Cash Holding in Asia. *Asian Economic Journal, 28*(4), 323-345.
Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review, 76*(2), 323-329.
Jiang, Z., & Lie, E. (2016). Cash holding adjustments and managerial entrenchment. *Journal of Corporate Finance, 36*, 190-205.
Keynes, J. M. (1936). The general theory of money, interest, and employment. *Reprinted in The Collected Writings of John Maynard Keynes, 7*.
Kim, C., & Bettis, R. A. (2014). Cash is surprisingly valuable as a strategic asset. *Strategic Management Journal, 35*(13), 2053-2063.
Kim, J., Kim, H., & Woods, D. (2011). Determinants of corporate cash-holding levels: An empirical examination of the restaurant industry. *International Journal of Hospitality Management, 30*(3), 568-574.
Klassen, K. J., & Laplante, S. K. (2012). Are US multinational corporations becoming more aggressive income shifters? *Journal of Accounting Research, 50*(5), 1245-1285.
Kuan, T.-H., Li, C.-S., & Chu, S.-H. (2011). Cash holdings and corporate governance in family-controlled firms. *Journal of Business Research, 64*(7), 757-764.
Kusnadi, Y. (2011). Do corporate governance mechanisms matter for cash holdings and firm value? *Pacific-Basin Finance Journal, 19*(5), 554-570.
Lee, E., & Powell, R. (2011). Excess cash holdings and shareholder value. *Accounting & Finance, 51*(2), 549-574.
Lian, Y., Sepehri, M., & Foley, M. (2011). Corporate cash holdings and financial crisis: an empirical study of Chinese companies. *Eurasian Business Review, 1*(2), 112-124.
Lins, K. V., Servaes, H., & Tufano, P. (2010). What drives corporate liquidity? An international survey of cash holdings and lines of credit. *Journal of financial economics, 98*(1), 160-176.
Martínez-Sola, C., García-Teruel, P. J., & Martínez-Solano, P. (2013). Corporate cash holding and firm value. *Applied Economics, 45*(2), 161-170.
Miller, M. H., & Orr, D. (1966). A Model of the Demand for Money by Firms. *The Quarterly Journal of Economics, 80*(3), 413-435.
Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics, 13*(2), 187-221.
Ogundipe, S. E., Salawu, R. O., & Ogundipe, L. O. (2012). The determinants of corporate cash holdings in Nigeria: Evidence from a general method of moments (GMM). *World Academy of Science, Engineering and Technology, 61*, 978-984.
Palazzo, B. (2012). Cash holdings, risk, and expected returns. *Journal of Financial Economics, 104*(1), 162-185.
Shah, A. (2011). The corporate cash holdings: Determinants and implications.
Song, K. R., & Lee, Y. (2012). Long-term effects of a financial crisis: Evidence from cash holdings of East Asian firms. *Journal of Financial and Quantitative Analysis, 47*(3), 617-641.
Ul Hassan, S., & Valderhaug, M. A. (2016). *Family Ownership and Cash Holdings: Empirical Evidence from Norway*. BI Norwegian Business School.
Uyar, A., & Kuzey, C. (2014). Determinants of corporate cash holdings: evidence from the emerging market of Turkey. *Applied Economics, 46*(9), 1035-1048.

Valta, P. (2012). Competition and the cost of debt. *Journal of financial economics*, *105*(3), 661-682.
Wu, W., Rui, O. M., & Wu, C. (2012). Trade credit, cash holdings, and financial deepening: evidence from a transitional economy. *Journal of Banking & Finance*, *36*(11), 2868-2883.
Yılmaz, Y. K. (2017). *The determinants of corporate cash holdings in Turkey*. İstanbul Bilgi Üniversitesi.