Determinants of cash holdings for Dutch SME's

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ABSTRACT,

This paper aims at exploring the determinants of cash holdings for Dutch SMEs. The cash holdings or equivalents are the instruments which are kept as liquid assets. The companies have different motives to hold the cash for their immediate nature of expenses or operational needs. The smaller firms might not have enough assets on their back up to meet their financial obligations; therefore, they are in more need to retain some of their earnings as cash holdings to meet pressing cash needs. The research will aim identifying the factors which determine the extent to which the companies will hold cash as not every small firm can hold a same level of cash; this is the major objective of the research to identify these factors. Literature review will unearth major determinants of cash holdings through which this paper will further explore the independent factors. Keeping in mind this objective, the research is exploratory in nature. The difference between smaller and bigger firms will also be explored in terms of their need for cash holdings as to what determines their cash holdings. It is pertinent to mention that cash holdings are taken as a dependent variable.

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1. INTRODUCTION

1.1. Research Background

Liquidity is considered to be an important determinant to evaluate the financial health of the companies as it influences the ability of the firm to meet its immediate financial obligations (Horne, 2009). Cash holdings are the major component of a firm's liquidity as they are ready to be used to pay off accounts payables and to meet other requirements, such as the payments involved in the day to day running of the company, i.e. salaries, housing expenses, etc. (Gitman & Zutter, 2012). The need to hold cash is paramount for the companies as the investor decisions depend significantly on how quick a firm is to meet its financial obligations when they arise. (Dittmar & Mahrt-Smith, 2007)

There are reports which indicate that Standard & Poor corporations had $716 billion of cash and other liquid assets such as marketable securities (Pinkowitz, Stulz, & Williamson, 1999). This huge concentration of liquid assets and cash by large S&P corporations like Ford, IBM and GM Motors highlights the importance of maintaining a strong cash base on the balance sheet so that on one hand the firms can meet their financial issues efficiently and also to win investor confidence who tend to invest more in the firms that guarantee high returns of dividends.

The need to maintain cash and marketable securities is paramount for the small and medium enterprises, SMEs, as they do not have large concentration of equity based assets. These small enterprises mostly rely on cash transactions which make it essential for these small firms to hold a sizeable stock of cash. The SMEs are often owned by less different owners than larger firms, therefore, it is harder to raise money from multiple investors compared to larger and multinational companies. In order to complete its transactions i-e both accounts receivables and payables, the small firms have to rely on the cash. In following pages the aim is to explore the factors which determine the need to maintain cash for the SMEs.

Cash holdings are instrumental in keeping the small and medium level firms going which is evident from the concept of Going Concern (Ehoff & Gray, 2014). First of all, the need for cash is always there to satisfy the routine demands arising from the business operations. Secondly, cash holdings can be required when investment opportunities suddenly come up. From these perspectives it is pertinent to mention that operational activities of the firms are more likely to be dependent on the need for cash holdings. The cash is in essence a need which works as a buffer between two important requirement i-e the need for keeping the earnings intact and to invest in further assets (Myers, 1984). This is a tradeoff that a small firm has to deal with, if it retains more from its earnings as cash holdings then it does not have enough money left for capital investment and vice versa. The need for capital accumulation is paramount for the smaller firms as they do not have enough sources of capital; therefore they have to rely on their retained earnings in order to meet their needs. This trade off becomes essential in cases where the firms do not have capacity to meet their financial obligations through other sources.

The SMEs are generally not large enough to be listed at stock markets; therefore they have less access to sources of capital in form of external equity. However, this weakness is covered by one more important aspect. Equity financing creates need for dividends payment which requires cash outflows, if on one side the smaller firms do not enjoy the freedom of equity financing then they generally have less cash outflows in the form of dividend (Opler & Titman, 1995). This is an important aspect of cash holding for smaller firms which do not have enough money to disburse as dividends. This is also important from the perspective of a single owner compared to multiple owners, where a single or small amount of owners have to invest in business from retained earnings and if they had to pay to other external investors, this would then require larger cash holdings.

1.2. Research Aim and Objectives

The majority of the past reviews concentrated their investigation on large publicly traded organisations, less consideration being given to small and medium-sized enterprises (SMEs). Only limited past research focussed on SME's and to the causes of their level of cash holdings, i-e Faulkender, M. W. (2002) on the cash holdings among small businesses, García−Teruel, P. J., & Martínez−Solano, P. (2008) on Spanish SME cash holding determinants and Belghitar & Khan (2013) on UK SMEs Cash Holdings. Then, Steijvers & Niskanen (2013) researched US family owned firms for the determinants of cash holdings. The objective of this paper is to add to the literature of corporate finance by giving experimental proof based on recent data on the determinants of cash holdings in small and medium-sized Dutch firms. The aim is to find out the Dutch firms determinants of cash holdings when comparing the basic characteristics and variables of previous research, which determine the amount to be kept in most liquid assets i-e cash.

The research also has a practical dimension, the SMEs and SME managers can benefit from the research insights in order to determine their cash levels, i.e. by taking their data in comparison to the research averages when figuring out possible adjustments to the cash holdings position. It is important to meet the financial obligations whenever they become due, this is very crucial for the continuation of any firm. For SME's, this paper can present a guideline for the determinants to pay attention to when making strategic decisions regarding the cash holdings, especially since they play the most important role in meeting financial obligations.

The motivation behind this paper is to extend knowledge of the determinants of cash holding in the Dutch SME market. This paper will attempt to improve understanding of cash holding determinants in the most recent Dutch setting. The SMEs as discussed earlier have their own peculiar determinants for holding cash assets. The goal and objective of the study aims at identifying the factors which determine the need to hold the cash for SMEs in Dutch scenario during the period 2011-2015. The study aims at exploring the data available for the Dutch SMEs and it will aim to identify the determinants of cash holding.

This leads to the research question: **What factors have a determining role the cash holdings of Dutch SME's?**

2. LITERATURE REVIEW

2.1. Literature

There are various theories that explain the reason for which they prefer to hold cash and liquid securities. The motives of the cash holdings for the SMEs are discussed in the following part. These motives lead to the possible determinants which will hypothesised and explained in the next subsection.

First of all cash holdings can serve as a measure for precaution, the SMEs hold cash so that they may use it for their daily operations. As it is known that most of the business is run on cash basis, therefore they are in need to hold cash as reserves (L & Stuart, 2011). Notwithstanding, liquid assets have customarily been supported for transaction processes, to address the issues that originate from the company's operations, and also for precautionary intentions, to meet unanticipated needs for cash (Miller and Orr, 1966). The smaller firms do not have certain cash flows because of which they do not have that much freedom to manoeuvre which compels them to be on safer side and reserve some cash for operational activities. The banks and other financial institutions also hesitate to lend them due to their precarious financial situation, so this is one of major determinants of holding cash and other liquid assets.

Secondly, transaction purposes also compel the SMEs to hold cash so that they may use it for their transaction purpose, this is very necessary that accounts payable are met through timely cash payments otherwise the risk of default is always there (Suen, 2007). The transaction purpose is one of the major aspects of cash holdings as most of the payments done at SMEs are in form of daily or routine payments. There is another aspect of this issue, which pertains to reputation of the smaller firm; if the firms fail to make their payments timely this leads to deterioration in the reputation of the firm.

Finally both, retaining cash and capital investment are of cardinal importance for the growth and survival of the firms. These are smaller in size and they have to accumulate some part of their earnings in order to keep for future investment. The capital investment is not only done for growth purpose only, but it is also done in order to replace the capital assets which have become obsolete with the passage of time and daily wear and tear. The depreciation of these capital assets s covered from the cash which is saved and held.

There are certain theoretical models which have been developed in order explain the factors which determine the need to hold cash. In following lines we explore these theories briefly as to why the SMEs need to hold cash. The corporate cash holdings patterns are typically clarified in the system of three theories, specifically: the Trade-off Model, Pecking Order Theory and Free Cash Flow Theory.

As stated by the Trade-off Model, firms set their ideal level of cash holdings by weighting the minimal expenses and peripheral advantages of holding cash. With an assumption that administrators maximise the shareholders' wealth, they will set the company's cash holdings in a way that the marginal advantage equals to the marginal cost of holding cash.

Pecking Order Theory explains that the smaller firms tend to save money in order to create a buffer for asymmetric information through retained earnings (Myers, 1984). This theory explains that the firms have to deal with asymmetry of information which makes the need to invest in these assets.

Free Cash Flow Theory (Jensen, 1986) highlights the fact that the firms can increase the assets by holding up cash so that they can use it to finance their other decisions. The management of smaller firms is more prone to take decisions which affect their cash flow decisions so that they may always be able to keep the inflow of cash steady.

As indicated by the theories expressed, and most used in previous research (Belghitar & Khan, 2013; Garcia-Teruel & Martinez-Solano, 2008), the fundamental SMEs characteristics that are of importance in relation to their cash holding choices are described in this section.

2.2. Hypotheses development

Size

This is also an important factor which determines how much cash a firm or an SME would be able to hold. This has more to do with ability of a firm to accumulate cash than its willingness (Bates, Kahle, & RM, 2009). The firms which are large, have more capacity to hold cash and cashable securities while the ones that are smaller in size they hardly fulfil their operational needs. On the other hand, the size of the firm and its ability to hold cash are negatively correlated as bigger firms can manage cash holdings more efficiently and with less information asymmetry, which leads to a lesser need for cash holdings (Berger et al., 2001). Previous research in this aspect of cash holdings, suggest that the size of a firm is one of the most important variables that determine the cash holdings. From this the following can be hypothesised.

Hypothesis 1: There is a negative relationship between size and cash holdings.

Leverage

There are certain points of view when it comes to analyse the leverage a business has and its relation to the cash holdings. Generally speaking the more leverage a certain business has, the less it will tend to be inclined towards holding cash and liquid securities (Duchin, 2010). The businesses that have their own sources of cash and are in a position to raise cash whenever their financial obligations become due, these do not tend to have larger cash holdings. They prefer to stay on low on cash to eliminate the risk of running low on value of money. This is an established fact that the cash erodes its value of the time, so it is not advisable for such businesses to keep large amounts of cash with them as it will not be as valuable after some time as it was when accumulated.

There is another aspect related to financial leverage which has strong connection with the relationships with banks as well. These two variables are somewhat related to each other and they also contain something else in common. It has been seen that the SMEs that have strong relations with the banks, they are also the ones that have other major sources to raise cash. These firms then are able to keep their assets as collaterals with the banks who then lend them. Therefore, it is pertinent to mention that even banks like to lend to these SMEs which have strong asset base. From this we deduct the following hypothesis.

Hypothesis 2: There is a negative relationship between leverage and cash holdings.

Cash flow

The position of cash flows is also a matter of great importance in terms of determinant of cash holdings. The companies which have very low flows of cash, they will prefer to hold more cash because in times of need they will not be able to find liquid assets (Kalcheva & Lins, 2007). The companies which are very large in nature would also not bother about cash reserves, rather they would be able to make a provision to find the cashable assets easily.

The cash flow volatility is an important consideration which compels the companies to take precautionary measures in order to safeguard for the rainy days when cash may not be available for dealing with accounts payable. The volatility is inversely related to cash holdings, if the cash flows are volatile then the smaller firms would aim at having more of cash.

Hypothesis 3: There is a negative relationship between cash flow and cash holdings.

Non-Cash Liquid Substitutes

Based on the trade-off theory, the costs related to converting non-cash liquid substitutes/assets are lower relatively to other assets, which leads to an easy to jump to option in situations where cash holdings are low. (Ozkan and Ozkan, 2004) This helps companies avoid falling back to capital markets, therefore it is expected that companies with more non-cash liquid assets, hold less cash.

The firms also use their liquid assets as a substitute to the cash holdings. The firms that have a low amount of liquid assets will aim at having more of cash in its kitty so that it may meet its obligations as soon as they become due (Kim, 1998). When the other assets are not available, the firms tend to have more of cash. This all leads to the hypothesis below.

Hypothesis 4: There is a negative relationship between non-cash liquid assets and cash holdings.

Growth opportunities

The SMEs are small business that do not have the resources and ease to raise their capital through equity financing and going to stock market. These small entities have to hold up some of their earnings in order to invest in further growth (Weidemann*, 2016). The growth prospects of these smaller firms tend to rely on their own savings that they accumulate after spending on operational expenses.

It is pertinent to mention here that cash holdings tend to decline as the firm grows, this is because with the next level of growth the firm tends to invest more in long term securities and assets. The growth opportunities that are present with the firm are only taped if the firm has required liquid assets to invest in infrastructure. The case in point is that of a Pakistani firm that was an SME engaged in sports manufacturing business, however, it received an order from Adidas to manufacture footballs for it, the firm upgraded its facilities in little time because it had liquid assets to invest in its expansion and get the order which opened the road to success (Iqbal & Khan, 2009). This is also the case for other smaller firms because opportunity can present itself anytime so the firms those are always prepared for that, they reap greater benefits from that. The firms that are unable to hold up enough cash to fulfil their needs, these will be unable to get the most out of it. This leads to the following hypothesis.

Hypothesis 5: There is a positive relationship between growth opportunities and cash holdings.

These hypotheses have been formulated in order to operationalise the research and enable us to proceed with answering the research question formulated before. The hypothesised determinants are chosen based on use in and results from previous research and the availability of data needed to fill in the different variables.

The data to be used for analysing the hypothesis shall pertain to period of 2011-2015. The cash holdings of the Dutch companies shall be explored so that the factors which determine the cash holdings and the extent to which they are kept can be determined.

3. METHODOLOGY & DATA

3.1. Model

To investigate the hypotheses by following references, the regression model that will be estimated in this research is as follows:

$$CASH_{i\,t} = \beta_1 SIZE_{i\,t} + \beta_2 LEV_{i\,t} + \beta_3 CFLOW_{i\,t} + \beta_4 NCLIQ_{i\,t} + \beta_5 GROWO_{i\,t} + \varepsilon_{i\,t}$$

In this equation, CASH stands for the cash holdings of firm i in period t. GROWO stands for the growth opportunity of the firm, expressed in asset growth (Steijvers & Niskanen, 2013). SIZE stands for the size of the firm and is expressed in natural logarithm. LEV stands for the leverage of the firm. CFLOW stands for the capacity of cash flow generation. NCLIQ stands for the non-cash liquidity of the firm.

The standard error is ε_i. A similar equation has been used by Garcia-Teruel & Martinez-Solano (2008) and Steijvers & Niskanen (2013) in their research in determinants of SME cash holdings.

3.2. Variables

This study examines the factors that determine the cash holdings of Dutch SME's. This means that the dependent variable in this study is the cash holdings of the firms. For the dependent variable, cash holdings, data will be collected on the amount of cash that firms hold. This will be scaled by dividing the cash and cash equivalents by total assets (Belghitar & Khan, 2013).

The first independent variable is the size of the firm. For this variable the natural logarithm of total assets have been used (Garcia-Teruel & Martinez-Solano, 2008; Belghitar & Khan, 2013). The second independent variable, leverage is measured as the ratio of total debt to total assets (Belghitar & Khan, 2013; Al-Najjar, 2012). Cash flow as a third variable is measured as income before taxes plus depreciation divided by the total assets. Non cash liquidity is presented as the working capital minus the liquid assets and securities put to scale again by the total assets. And last, the growth opportunities are presented as a percentage of asset growth per year.

The independent variables, as found from literature and previous research, expected to impact the dependent variable, and that have data for Dutch SME's available, together lead to the earlier mentioned model. However the shape of this model might lead to some multicollinearity between the independent variables. (O'brien, 2007) Specifically in regard to the leverage of the firms. In order to keep a close eye on this, variance inflation factor and tolerance will be tested for in the coefficients of the independent variables.

Variable	Name	Definition
CASH	Cash holdings	Liquid assets + Securities / Total assets
SIZE	Size	ln(Total assets)
LEV	Leverage	Total debts / Shareholder funds
CFLOW	Cash flow	Income before taxes + Depreciation / Total assets
NCLIQ	Non-cash liquidity	Working capital - Liquid assets - Securities / Total assets
GROWO	Growth opportunities	Assets(t) – Assets(t-1)) / Assets(t-1)

3.3. Sample data

For this study, Using the REACH database will be used to compile data on a representative sample of Dutch non-financial SME's, excluding micro-companies. The following search criteria where set as parameters in the database search, last available accounting year 2015, registered company, Dutch headquarters, Dutch ownership and finally it may not be a financial institution/vehicle or financial services as core business.

The most recent available data will be from 2015. The goal is to get a broad view of the different companies over a period of a number of after credit crisis years and making sure there is sufficient data available. Therefor data from 2011, 2012, 2013, 2014 and 2015 is used.

The data was taken from representative sample of Dutch SME's, which according to meeting the EU definition at least one of the years during the period of analysis (2011-2015) and comply with the SME conditions. These conditions are established by the European Commission recommendation 2003/361/EC of 6 May 2003, on the definition of small and medium-sized firms, excluding micro-firms. Specifically, the sample firms must meet the following conditions:

- having between 10 and 250 employees;
- Either: turned over between €2 and €50 million;
- Or: possesses between €2 and €43 million worth of total assets.

The enterprises with these characteristics were selected to form a sample which means that the sample was representative of the entire population. The random sampling technique was used in order to select a representative sample from the data so that the population is aptly represented.

The number of firms of which the data was collected, consisted of a total of 4360 Dutch SME firms. In order to tackle outliers in the dataset, the data was winsorized, 2,5% on both sides, prior to performing any statistic tests. This avoids extreme cases from the data over influencing the results in the statistic tests.

4. RESULTS

In this section we aim at stating the findings of the quantitative analysis using several measures. The findings of the analysis are based on the data that was obtained REACH database which has data on Dutch SMEs. The findings will be based on following types of analysis that were performed on the available data. The equation above depicts that cash holding is a function of all these variables that we have proposed. In following lines we aim at exploring the extent to which they are relevant.

4.1. Descriptive statistics

More simplistically the descriptive analysis enables us to describe the data that has been analysed. Descriptive stats depict the summarised form of data in order to reflect the patterns that emerge from data (Sekaran, 2011). In the data that we have analysed here, we discuss five basic ways of describing the data that has been analysed with respect to the variables.

First variable was Cash Holdings and its number of firms which was found to be 3812 means it was that number of instances that were analysed it was that number of observations that were in the sample. This is a fairly large number of observations, compared to the total companies recorded, and it depicts that the variable has adequate representation. When it comes to measure of central tendency, we see that cash holdings have 0.1555 of mean value which means that the average of that number of firms out of 3812 determine the cash holdings on the basis of their cash holdings. The mean is basically situated between the minimum and maximum value 0.00 and 0.66 which shows no unexpected discrepancies in the range. The standard deviation is recorded from the data as 0.17042.

The second variable on descriptive stats is the size of the firm. This is the variable which has shown the most significant results on all parameters of descriptive statistics. The N or number of observations is 4355 for size which is the highest in all variables. Range for this variable is 3.41 which is the difference between the highest and the lowest value while its mean value is 9.17, it shows that this is the most significant of all the variables. The spread which is shown by the Standard Deviation from the mean value is 0.86248 which is relatively low in comparison to the mean, which shows that this variable has a relatively high significance, especially in relation to the dependent variable. The size of the firm turns out to be the most proximate and most reliable variables for the analysis.

Leverage is the next variable in line for our analysis. The findings show that the N of observations recorded for this variables are 4334 with mean value of 0.64. This shows the second major independent variable after size of the firm. The standard deviation for size is 0.30099. With the mean in the middle and this standard deviation, this depicts that its spread seems relatively evenly distributed.

The descriptive statistics table shows that cash flow has the least observations with 746 N, which means that it is more difficult to get a conclusion from this variable for our analysis. It also shows minimum value of -0.13 and maximum is 0.36 with mean value of 0.1068. The standard deviation has been observed to be 0.10105 which shows little spread of the values relative to the mean.

TABLE 1: DESCRIPTIVE STATISTICS

	N	Minimum	Maximum	Mean	Std. Deviation
Cash Holdings	3812	0.00	.66	0.156	0.170
Size	4355	7.33	10.74	9.174	0.862
Leverage	4334	0.15	1.64	0.640	0.301
Cash Flow	746	-0.13	0.36	0.107	0.101
Non-Cash Liquidity	3781	-0.64	0.57	0.054	0.263
Growth Opportunities	4356	-0.27	1.93	0.103	0.364

TABLE 2: CORRELATIONS OF VARIABLES

	Cash Holdings	Size	Leverage	Cash Flow	Non-Cash Liquidity	Growth Opportunities
Cash Holdings	1					
Size	-0.142**	1				
Leverage	-0.193**	-0.179**	1			
Cash Flow	0.173**	-0.022	-0.356**	1		
Non-Cash Liquidity	-0.270**	0.112**	-0.594**	0.177*	1	
Growth Opportunities	0.025	-0.083**	0.046**	0.040	-0.066**	1

Notes: 1.Correlation coefficient of variables is presented in Pearson correlation. 2. ** indicates significant correlation at the 0.01 level (2-tailed) and * indicates significant correlation at the 0.05 level (2-tailed).

Non cash liquidity has 3781 of observations which comes to third number in line after the two other variables. This reflects that the non cash liquidity also is a reliable variable for our analysis. -0.64 is the minimum while 0.57 is the maximum value recorded, the comes to a range of -0.07 and mean value of 0.0543. The spread for this variable is found to be 0.26259 which is not away from the mean tendency.

We can see from the tables that growth opportunities is recorded to have 4356 observations which means that the variable has been observed to have recorded 4356 number of times in the data. The range is 2.2 for the variable with -0.27 as the minimum and 1.93 as the maximum value for the data.

We can compare the results of descriptive statistics with other literature found in the same domain. Ozkan & Ozkan have evaluated the determinants of cash holdings for UK companies. For cash flow the mean has turned out to be 0.088 for the UK study, while for the Dutch companies they have turned out to be 0.1068 which means that in our case the mean is relatively higher than the UK. For liquidity too the mean value is o.o548 for dutch companies while UK it has turned out to be 0.0543. The leverage has also value greater than the UK companies as for dutch companies it has value of 0.6403 while for the UK mean value is 0.162. the only variable where UK companies have exceeded the mean value is the size where the UK companies have mean value of 10.873 while Dutch companies have value of 9.1744. This comparison shows that in terms of mean value, the Dutch companies are ahead of UK in all variables except size. (Ozkan & Ozkan, 2004)

TABLE 3: REGRESSION ANALYSIS

		(1)	(2)	(3)	(4)	(5)
1	Constant	.416**	.555**	.684**	.685**	.777**
		(14.039)	(17.976)	(25.049)	(25.032)	(11.571)
	Size	-.028**	-.035**	-.033**	-.033**	-.042**
		(-8.833)	(-10.905)	(-11.705)	(-11.725)	(-6.301)
	Leverage		-.128**	-.330**	-.330**	-.385**
			(-13.914)	(-33.083)	(-33.082)	(-16.86)
	Non-Cash Liquidity			-.381**	-.382**	-.373**
				(-34.546)	(-34.536)	(-16.722)
	Growth Opportunities				-.005	.041*
					(-.718)	(1.681)
	Cash Flow					.050
						(1.053)
	Observations	3811	3796	3780	3780	688
	Adj. R^2	0.020	0.066	0.289	0.289	0.368

a. Dependent Variable: Cash Holdings, ** indicates significance at the 0.01 level (2-tailed) and * indicates significance at the 0.05 level (2-tailed). First is the coefficient, between parentheses are the t-statistics.

4.2. Correlation Analysis

4.3. Regression Analysis

Regression coefficients for the variable, size has a -0.042 value, with a less than 0.001 2-sided, so also less than 0.001 one sided significance. Which shows that there is a significant negative relationship between size of the firm and cash holdings which means it shows that if a firm is smaller in size, it shall save up more cash holdings and vice versa. This shows that hypothesis the null-hypothesis is rejected in favour of H1.

Leverage has negative value which depicts that it has negative relationship with the dependent variable i-e cash holdings. The more leverage a firm has, the less cash holdings it shall have. A coefficient of -0.385 depicts this negative relationship. With a one sided significance of less than 0.001, the H2 stands significant in regard to the rejected null-hypothesis.

The regression analysis shows, with a 0.050 that the cash flows have negative relation with the cash holdings, it implies that if there are consistent cash flows then cash holdings would not be preferred and vice versa. This negative relationship however with a 0.293, and 0.1465 one sided, significance is not able to reject the null hypothesis and take on H3 instead.

There is negative relation between the non-cash liquid assets and cash holdings, this was the H4 which as a result of regression analysis also stands significant as negative value for non-cash liquid assets of -0.373 with a one sided significance of less than 0.001.

The only hypothesis which had positive relationship between the two variables, growth opportunities and cash holdings stands to be considered significant, the positive coefficient 0.041 shows that there is a slight positive relationship between this dependent and the independent variable as if there are growth opportunity then firm will tend to hold more of cash. A one sided significance of 0.0465, just shows the significance of H5. However when regression analysis is performed on the independent variables excluding cashflow, which limits the number of observations severely, it shows clearly the uncertainty in the relation of growth opportunities with a very small coefficient and a 0.473 significance level.

Due to the shape of this model, the variables where tested on variance inflation factor and tolerance. VIF did not show any reason for concern regarding multicollinearity, since all variables showed VIF below 2, this is well below 5, which is indicated as a threshold. (O'brien, 2007)

TABLE 4: MULTICOLLINEARITY TEST

		Collinearity Statistics	
		Tolerance	VIF
1	Constant		
	Size	.944	1.059
	Leverage	.509	1.964
	Cash Flow	.863	1.159
	Non-Cash Liquidity	.579	1.726
	Growth Opportunities	.992	1.008

a. Dependent Variable: Cash Holdings

If we draw a comparison of Dutch companies with UK companies (Ozkan & Ozkan, 2004) in terms of regression analysis, the following can be concluded: The cash flows have negative relation with the cash holdings as the value has resulted in a negative which is a verification of our hypothesis. The second variable is leverage that has again the negative predictor which says that if a firm has greater leverage the less cash holdings it shall have which corroborates the hypothesis. The size also is predicting to have a negative relation as it is evident that larger firms might not be having large cash holdings.

When researching determinants of cash holdings for US firms, a negative relation between size and cash holdings was found. As well as firms with stronger growth opportunities holding more cash. (T. Opler et al., 1999) This is in line with findings in this research paper.

Research into US firms shows significant influence of cash flow on cash holdings. Comparable, cash flow has shown significant impact on cash holdings in this paper as well. (Bates, Kahle & Stulz, 2009)

5. DISCUSSION

The paper has discussed the variables that affect the cash holdings in a firm. The independent variables which the paper has explored, party have been found to be to some extent correlated to the dependent variable which is cash holdings. It is pertinent to mention that the firm's cash holdings are a back up for operational and other needs which are of urgent in nature (Mikkelson & Partch, 1986). The Dutch SMEs have shown the results which are not different from other countries researched before, because of uniformity in the situation.

This is important to find out that the variables which have shown greater correlation are basically long term considerations in nature, the basic motive behind the cash holdings is to ensure that the firm has enough liquid assets just in case the need arises; but here in this case we see that size of the firm as well as growth opportunities have also shown to be potent considerations for the cash holdings.

Now we see if the relationships in the hypotheses have been found to be significant:

Hypothesis 1: There is a negative relationship between size and cash holdings.
For H1 there is no significant evidence to reject the null hypothesis, and therefor H1 is rejected

Hypothesis 2: There is a negative relationship between leverage and cash holdings.
The regression for H2 shows a significant negative relationship and therefor the null hypothesis is rejected in favour of H2.

Hypothesis 3: There is a negative relationship between cash flow and cash holdings.
For H3 there is no significant evidence to reject the null hypothesis, and therefor H3 is rejected

Hypothesis 4: There is a negative relationship between non-cash liquid assets and cash holdings.
The regression for H4 shows a significant negative relationship and therefor the null hypothesis is rejected in favour of H4.

Hypothesis 5: There is a positive relationship between growth opportunities and cash holdings.
For H5 the null hypothesis is not rejected and thus H5 is not taken on as the alternative hypothesis.

For some of the independent variables it has been possible to shown the significance to the cash holdings and these hypotheses have been taken on in favour of the null hypotheses.

6. CONCLUSION

The paper aimed at exploring determinants of cash holdings for the Dutch SMEs in order to find out the elements or factors which account for the cash holdings by the smaller firms. There were five independent variables identified as a result of literature review, these variables have found to be all but one, correlated to the dependent variable which is cash holdings. The smaller firms have to be more concerned about their cash holdings as they do not have back up just in case they need to meet an urgent situation.

There have been instances when the smaller firms have been struggling to meet the financial obligations when they become due. This is the main motive for the smaller firms to keep cash holdings so that they can meet the unforeseen circumstances. However, the unforeseen circumstances are not always something negative, sometime they can also be positive such as growth opportunities which is an independent variable in our analysis and it has been strongly correlated with the cash holdings.

Implications of this research reach towards the Dutch SME owners, managers and general market in the form of confirmation of their books against the outcomes of this research. Academic implications can be found in the confirmation of existing theories and literature on the recent data from the Dutch market. This provides additional literature in the Dutch setting which can open opportunities for future research into cash holdings of SME's.

Limitations of this paper can be found in the form of data availability from Dutch SME's. Reasons for limited data of Dutch SME's include absence of submitting accounts for certain Dutch company forms. Following, the absence of the need to specify certain specific data in the submitted accounts among all companies can be found as a limitation. These points together, limit the options to research determinants expected to influence cash holdings. This could be addressed in future research by including different possible determinants based on possible new literature and company data.

The time span over which this paper researches the determinants, can too be seen as a limiting factor of the research. Future research can address this by extending the period of time to research and possibly include the changes in cash holdings over time, to see if a trend exists. This could also include data from pre-crisis and post-crisis years to give insight in company cash management towards and after crisis years.

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