DETERMINANTS OF FIRM'S CASH HOLDING

EVIDENCE FROM SHKODRA REGION, ALBANIA

Ardita Boriçi ✉

University of Shkodra "Luigj Gurakuqi", Albania

borici11@yahoo.com

Alba Kruja

University of Shkodra "Luigj Gurakuqi", Albania

Specialist at Regional Office of Statistics (INSTAT)

alba_kruja@hotmail.com

Abstract

Cash holding, an important asset on firms' balance sheets, receives much attention from companies, investors, and analysts. The credit crunch that started in late 2007 has had a massive and sustained impact. Why firms hold cash? Is there an optimal level of liquid assets? What factors influence these choices? How cash holdings affect firm value and performance? Indeed, from funding day-to-day operations to financing long-run investment, internal funds represent the simple most important source of financing. This research investigates the determinants of cash holding in non-financial firms of Shkodra region across different firm sizes and industries. Furthermore the data set for the period of 2013-2014 for the firm size (total assets), EBIT, net working capital, total debt has been taken to study the impact of these on level of corporate cash holdings, with a total of 30 firms which represents 60 firm-year observations. The explained variable in our study is the cash holdings (CASH). This value determines the ability of the firm to pay its operating costs and repay debt obligations. The firm's cash holding strategy provides a trade-off between the costs of holding cash and spending the cash. The evidence provides strong support that variables significantly affect the cash holdings decisions of non-financial firms. Indeed, our findings offer stimulating insights on the factors that determine the firm's cash holding. The findings of this study are consistent with the predictions of the trade-off theory, pecking order theory, and agency cost theory.

Keywords: Cash Holding, Firm Size, Pretax Profit, Total Debt, NWC

INTRODUCTION

''If market imperfections did not exist, firms' financial decisions would not affect their value.''
- Stiglitz (1974)

Empirical studies about the determinants of corporate cash holdings have occupied a central place in corporate finance literature. Cash holding is defined as cash in hand or readily available for investment in physical assets and to distribute to investors (Gill and Shah ,2012). Cash and cash equivalent are considered to be one of the most important components of the current assets of the firm and are also called the life line of corporate financial management. The credit crunch that started in late 2007 has had a massive and sustained impact on the way many companies operate throughout the world. Companies with sufficient cash on hand may escape the need to tap into the increasingly costly and restrictive credit markets. Determinants of cash holdings have long been debated in the finance literature. Potential explanations range from the tradeoff between the marginal costs and benefits of holding cash to corporate governance (Subramaniam et.al, 2006). Holding cash is at a cost, which is the opportunity cost of the capital invested in liquid assets. Adetifa (2005) observes that the costs of cash holding are of two categories: cost of excessive cash holding such as opportunity cost of interest foregone, costs of purchasing power among others and cost of inadequate cash holding including cost of corporate image, loss of cash discount on purchases and loss of business opportunities. Financial flexibility and liquidity are important subjects for any firm. Cash holdings compose an important financial issue and consider a relatively new trend of firms mostly in the U.S and Europe. *'According to the Office for National Statistics, UK private non-financial companies have held around £500bn in cash in recent quarters, while US companies hold some $2trillion and Eurozone companies around €2trillion, according to consultancy Treasury Strategies' (*http://www.treasurers.org/mags/10559/files/assets/basic-html/page6.html*).*

LITERATURE REVIEW

Why do corporates hold large amounts of cash? And is there an optimal level of cash holdings? It is argued that management that maximizes shareholder wealth should set the firm's cash holdings at a level such that the marginal benefit of cash holdings equals the marginal cost of those holdings. The cost of holding cash includes the lower rate of return of these assets and possibly higher taxation. In addition, cash holdings may cause severe agency problems, for example, management may hold cash to pursue its own objectives at shareholder expense. There are two main motives (benefits) from holding cash, one is transaction cost motive and the other is precautionary motive. Transaction cost motive means that the firm saves transaction costs to raise funds and does not have to liquidate assets to make payments. Precautionary

motive means that the firm can use the cash holdings to finance its activities and investments if other sources of funding are not available or are excessively costly (Wenyao, 2003).

Several studies, undertaken on the developed economy market and recently, on emerging markets samples, tried to answer this question: Why do firms hold cash and what determines its volume using the theoretical models of the trade-off model? (Myers 1977), the pecking order model (Myers and Majluf 1984) and Free cash flow theory (Jensen 1986).

First, the trade-off model postulates that firms identify their optimal level of cash holdings by weighting the marginal costs and marginal benefits of holding cash. The benefits related to cash holdings are the following: reduces the likelihood of financial distress, allows the pursuance of investment policy when financial constraints are met, and minimises the costs of raising external funds or liquidating existing assets. The main cost of holding cash is the opportunity cost of the capital invested in liquid assets (Myers 1977).

Extending pecking order theory (Myers and Majluf 1984) to the explanation of the determinants of cash, leads to the conclusion that there is no optimal cash level. It is used as a buffer between retained earnings and investment needs. Under this theory, the cash level would just be the result of the financing and investment decisions. When operational cash flow are high, firms use them to finance new profitable projects, to repay debts, to pay dividends and finally to accumulate cash. When retained earnings are insufficient to finance new investments, firms use their cash holdings, and then issue new debt.

Finally, the free cash flow theory of Jensen (1986) suggests that managers have an incentive to build up cash to increase the amount of assets under their control and to gain discretionary power over the firm investment decision. Cash reduces the pressure to perform well and allows managers to invest in projects that best suit their owninterests, but may not be in the shareholders best interest.

Table 1: Summary of empirical studies based on year and country

Authors	Year	Countries	Findings
Nadiri M.I	1969	USA	Nadiri (1969) pioneered study on cash holdings by collecting data from US manufacturing sector from 1948 to 1964 to estimate a model relating to the desired level of real cash balances. The results showed that the demand for real cash balances is determined by output, the interest rate, the expected rate of change in general price level, and factor prices.
Campbell T. And Brendell L.	1977	USA	Conducted an empirical study by collecting data from US manufacturing firms from 1953-1963 using Ordinary Least Square (OLS) regression analysis to examine the impact of compensating balance requirements on the cash holdings. and found that compensating balance requirements are not binding.

Table 1…

Opler T., Pinkowitz L.,Stulz R., and Williamson R.	1999	USA	Examine the determinants and implications of cash holdings amongst publicly traded US firms in the 1971–94 period. They find that firms with strong growth opportunities, higher business risk, and smaller size hold more cash than other firms. Firms that have the greatest access to capital markets, such as large firms and those with credit ratings, as well as high-levered firms tend to hold less cash.
Ferreira, M.A., and Vilela, A.S	2004	Economic and Monetary Union	Cash Holdings has positive relationship with growth opportunities and cash flow and negatively related to liquidity, leverage, size, bank debt and capital market development.
Nguyen P.	2005	Tokoy	Cash Holding is positively associated with firm level but negatively related to industrial risk. Also, he found that cash holding decreases with firm size and debt ratio and increases with its profitability growth, prospect and dividend payout ratio.
Hofmann C.	2006	New Zealand	Determinants of corporate cash holdings in New Zealand are firm's growth opportunities, the variability of its cash flows, leverage, dividend payments, and the availability of liquid asset substitute. The growth opportunities and cash variability are postitively related to cash holding while others are negatively related to cash holding
Saddour K.	2006	France	Cash holding level increases with riskier activities and growth opportunities but inversely related to leverage. For growing companies, there is a negative relationship between cash and size, level of liquid assets and short term debt while cash level of mature companies increase with their size, investment level and dividend payout to shareholders and decreases with their trade credit and their expenses on research and development.
Afza T. And Adnan S.M	2007	Pakistan	Cash Holding and Market-to-book ratio,net working capital,leverage,dividends are negatively related and positively related to firm size, cash flow, and cash holdings.
Isshaq Z. and Bokpin G.A.,	2009	Ghana	There is no statistically significant influence of cash holding on share price while leverage and income volatility are found to be significant determinants of share price.
Megginson W.L and Wei Z.	2010	China	Size,profitability and growth opportunities and state of ownership have postitive influence on cash holding while debt and net working capital are negatively related to cash holding.
Rizwan M.F. and Javed T.	2011	Pakistan	Cash holding of Pakistan firms increases with increase in cash flow and market to book ratio but net working capital and leverage are negatively related with corporate cash holdings.
Anjum S., and Malik Q	2013	Pakistan	The study concludes that the major determinants of cash holdings in Pakistani listed non financial companies are size of firms(postive effetct), leverage(negative effect), net working capital(positive effect) and cash conversion cycle(negative effect).
Magerakis E.	2015	U.K	Cash Holdings are positively related to investment opportunity, as R&D and market to book ratio. Cash Ratio is also positively related to industry cash flow volatility and negatively affected by cash flow, net working capital, capital expenditures,leverage, tax expenses, age and size.

Which firm characteristics influence on cash holding of Shkodra non-financial firms?

Firm Size (SZ)

There are three theories that give explanation for relationship between cash holding and firm size. Firm size is measured by total assets. Trade off theory predicts inverse relationship, because large firms tend to invest in different growth opportunities instead of stockpiling it (Harris and Raviv, 1990). Also, smaller firms face higher borrowing constraints and are more likely to suffer from financial distress due to higher information asymmetries (Whited, 1992; Fazzari and Petersen, 1993; Rajan and Zingales, 1995; Kim *et al.*, 1998; Berger *et al.*, 2001). This implies that smaller firms will hold more cash to be able to finance their activities. On the other hand, larger firms are assumed to have been more successful, and thus they should be able to accumulate more cash, after controlling for investment expenditures. Whereas Pecking Order and Agency Thoery predicts positive relationship. Similar to the fewest studies which find a positive relationship between cash and size (e.g. Ozkan (2002), Kalcheva and Lins (2003), Dittmar et al., (2002), Ferreira and Vilela (2004), and Guney et al., (2003), Kalcheva and Lins (2003) and Saddour (2006)), we find that mature firms increase their cash holdings with size.

The cash flow of each firm

Cash flow can be thought off as an additional source of liquidity and accordingly as a substitute for cash (Kim *et al.,* 1998). The cash flow (EBIT-PreTax Profit) also decreases significantly in the post-crisis period, which means that the increase in cash holdings is not driven by the increase in internal cash flows. The precautionary motive of cash holdings suggests that firms with higher growth opportunities have higher cash holdings since it is costlier for these firms to obtain external financing. To measure the cash flow of each firm, we use the value of EBIT. This study uses EBIT instead of operating cash flow due to data limitation on depreciation and amortization expenses. Trade Off Theory predicts negative relationship whereas Pecking Order Theory predicts positive relationship.

Debt

Total Debt is measured as the sum of long and short-term debt. Highly leveraged firms have an easier access to capital markets and hold less cash. Debt increases the probability of financial distress and bankruptcy. To reduce this probability, firms with higher leverage are expected to hold more cash. The predicted relationship between cash holdings and leverage is not clearly determined under the trade-off model. According to Pecking Order and Agency Theory, when investment needs are high and exceed retained earnings, firms issue new debt. Thus, leverage increases whereas cash holdings fall. However, when investment needs are less than retained

earnings, firms repay their debt and accumulate cash. According to Opler et al. (1999) firm having high debt ratios have low cash reserves because they have to pay out their constraining outstanding debts. In this way leverage can be reduced. Bates et al. (2009) and Ferreira & Vilela (2003) also predicted the inverse association between the variables. So an inverse relationship can be predicted and the following hypothesis may be developed.

Liquid asset substitutes (NWC)

Liquid assets other than cash (and nets of current liabilities) can be converted easily into cash and represent consequently substitutes for cash holdings. Net working capital is defined as the difference between current assets (minus total cash and equivalent) and current liabilities. The presence of liquid assets besides cash and marketable securities can also affect firms' optimal cash holdings, since they can be considered substitutes of cash. We would therefore expect firms with more liquid assets other than cash holdings to reduce their cash levels. However, there is no relationship between NWC and Cash Holding according to the pecking order theory (Opler, 1999) or the free cash flow theory.

METHODOLOGY

The econometric analysis depends on the availability and the quality of data. Keeping in view the results of earlier findings based on different models and techniques, the present study will add to the existing literature by examining the determinants of corporate cash holdings of non financial companies in Shkodra Region. A sample of 30 companies was purposively selected. The secondary data for this study was taken from the financial statement analysis of non financial companies. The financial sector firms were excluded from the sample because the cash requirements for firms in financial sector are fairly different from the non financial firms. There balance sheet is entirely different from non-financial firms. We also exclude missing firm-year observations for any variable in the model. Table 2 represent the sectors included in this study.

Table 2: Sectors of firms included

Industry	Number of Firms
Production	10
Construction	5
Trade	9
Service	3
Design	1
Import-Export	1
Processing	1

We examine the sign of the relationship between cash and the following firm characteristics: size, pre-tax profit, leverage and net working capital. According to this model, cash holdings is a function of growth opportunities, access to the capital markets, and the cost of raising funds through asset sales and dividend cuts. For this research, the variables such as capital expenditures, R&D expenditures and Regulatory Dummy have been excluded because of non availability of data in Albania.

Consistent with the majority of previous studies (e.g. Opler et al., (1999), Dittmar et al., (2002), Kalcheva and Lins (2003), Ferreira and Vilela (2004)), our model are defined as follows:

$$Cash_{(i,t)} = \alpha + \beta_1 Total\ Assets_{(i,t)} + \beta_2 PreTax\ Profit_{(i,t)} + \beta_3 Debt_{(i,t)} + \beta_4 NWC_{(i,t)} + \varepsilon_t$$

where:

α is the intercept

β_1-β_4 are the independent variable coefficients

ε_t is the error term

Hypothesis Statement

Null Hypothesis (Ho) = There is no significant impact of total assets (size), EBIT, leverage, and net working capital (NWC) on the level of firm cash holdings.

Alternate Hypothesis (H1) = There is a significant impact total assets (size), EBIT, leverage, and net working capital (NWC) on the level of firm cash holdings.

ANALYSIS AND DISCUSSION OF RESULTS

Descriptive Statistics

The descriptive statistics of the variables used in analysis are reported in Table 3. Descriptive statistics show the mean, median, minimum, maximum and standard deviation of the variables and provide a general overview of the characteristics of the data. Moreover, the relatively low standard deviations for most of the series indicate that the deviations of actual data from their mean values are very small.

Table 3: Summary Statistics, using the observations 1 – 60

Variable	Mean	Median	Minimum	Maximum
Cash	2.41568e+007	7.06218e+006	29790.0	2.52015e+008
Total Assets	1.35568e+008	5.96379e+007	3.29585e+006	1.03185e+009
Pretax Profit(EBIT)	1.04897e+007	5.03638e+006	-6.68597e+006	6.60872e+007
Total Debt	8.19363e+007	2.58150e+007	-8.65500e+007	9.61907e+008
NWC	3.14566e+007	1.94263e+007	-1.81655e+008	2.44622e+008

Table 3…

Variable	Std. Dev.	C.V.	Skewness	Ex. kurtosis
Cash	4.36027e+007	1.80499	3.45232	13.5484
Total Assets	2.08911e+008	1.54100	2.56354	6.56422
Pretax Profit(EBIT)	1.54711e+007	1.47488	2.12493	4.22246
Total Debt	1.67214e+008	2.04078	3.60240	14.5452
NWC	6.41600e+007	2.03964	0.294260	3.69155

Based on this table, over the period 2013-2014, firms in Shkodra Region hold on average a cash level of 2'415'680 All, whether Cash / Total Assets will receive an average of 23.62 % of holding liquidity , which is considerably large for nonfinancial firms. These statistics are close to the US firms' mean cash ratio of 17% as reported by Opler et al (1999) and the European firms' mean cash ratio of 14.8% as reported by Ferreira and Vilela (2004) and also Kalcheva and Lins (2003) find that companies hold on average 16% of their total assets in cash or cash equivalents. The overall mean is 14.8%, but some countries have mean cash ratio above 20%. Italy and Ireland have cash to net assets of 21.9% and 21.6%, respectively. Countries with low cash ratio are Portugal and Spain with mean ratio below 10%, respectively, 5.1% and 8.9%.

Graph 1: Shkodra non financial firm's Cash Holding
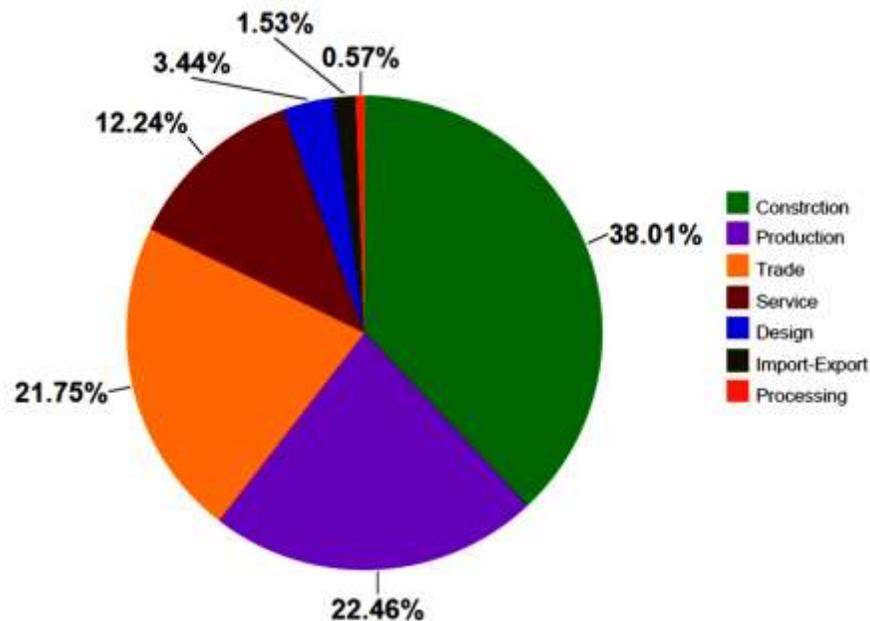
The sector's included in this study are: Construction, Production, Trade, Service, Design, Import-Export, Processing. In this study we choose more construction and production firms because it was seen that this sector in Shkodra Region hold more cash than others.

Multiple Regression Analysis

The empirical analysis examines and analyzes the data panel. Multiple regression analysis helps us to understand how much on the variance in the dependent variable is explained by a set of predictors. Therefore, the regression analysis was conducted to determine the contribution of the independent variables to the variance in the dependent variable. A pooled OLS (Ordinary Least Squares) regression analysis is used, where cash represents the dependent variable while the rest factors are the independent variables (Table 4).

Table 4: OLS (Ordinary Least Squares) regression output

Model 1: OLS, using observations 1-60					
Dependent variable: Total Cash					
	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	1.69635e+06	4.85448e+06	0.3494	0.72809	
Total Assets(Size)	0.187027	0.0515275	3.6297	0.00062	***
EBIT	0.997858	0.429924	2.3210	0.02402	**
Total Debt	-0.303993	0.0631993	-4.8101	0.00001	***
NWC	0.367054	0.0789058	4.6518	0.00002	***

Mean dependent var	24156796	**S.D. dependent var**	43602676
Sum squared resid	4.48e+16	**S.E. of regression**	28549285
R-squared	0.600355	**Adjusted R-squared**	0.571289
F(4, 55)	20.65550	**P-value(F)**	1.95e-10
Log-likelihood	-1112.555	**Akaike criterion**	2235.109
Schwarz criterion	2245.581	**Hannan-Quinn**	2239.205

The R square value indicated that 60% of the variance in cash was explained by the contributions of independent variables). The value of F test explains the overall significance of a model. It explains the significance of the relationship between dependent variables and all the other independent variables. The F-statistic is also significant at F= 20.65 p<0.000), which is the sum of squares of the model and residues as well as the degrees of freedom (4,55), and the p-value of the model. In particular, the p-value indicates the reliability and accuracy of the independent variables to predict the dependent variable, cash.

The value of β explains the change in the dependent variable with the per unit change in independent variable. It also explains the nature and strength of the relationship between dependent variable and independent variable. Therefore there is a significant positive impact of Total Assets (Size of Firm) and PreTax Profit,EBIT (Cash Flow) and Net Working Capital and negative impact Total Debt. The analysis of variance (ANOVA) tests are also significant at 5%.

The above table 4 tells that except Const. all the other variables are significant predictors. The predicted relationships are observed to be true for Size of firm (defined as Total

Assets), Cash Flow (defined as EBIT), and Total Debt, whereas opposite relationships are observed in NWC. Our regression models show that cash holdings increases significantly with size (SIZE), level of liquid assets substitutes of cash (NWC) and Cash Flow (PreTax Profit, EBIT), and decreases with Total Debt. The observed relationships can be mathematically expressed as:

Cash = 1.69 + 0.19 * Size + 0.99 * EBIT – 0.30 * Tot. Debt + 0.37*NWC

The above analysis identify that size of firm (Total Assets) has a highly significant relationship with cash holdings and an increase in size of firms leads to higher cash balances therefore larger firms tend to have higher cash balances as against smaller firms. Firm size is positive and strongly significant at 1% level and in conformity with the Pecking Order and Agency Theory.

There is positive and significant relationship between CASH and Cash Flow (r=.99) at 5% significant level. The result supports that there is a strong relationship between cash flow and cash. The higher the cash flow from operation, the higher the cash holding of the firms, in conformity with the Pecking Order, which suggests that firms finance investments first with the retained earnings and then go for debt. This result is, however, in contradiction to trade off model as reported by the earlier researches for firms in developed countries, i.e. Opler et al. (1999) Ozkan and Ozkan (2002) and Ferreira and Vilela (2004). The reason for this incongruity may be high cost of external debt in Albania.

An inverse association between Total Debt and cash holdings is predicted by the trade-off and the pecking order theory. Leverage has a highly significant relationship with cash holdings and an increase debt financing leads to lower cash balances therefore higher debt financed firms tend to have lower cash balances as against lesser debt financed companies with higher cash balances. The coefficient estimate on Total Debt is significantly negative at 1% level, which consistent with Ozkan, support that firms can use borrowing as a substitute for holding cash, because leverage can act as a proxy for the ability of firms to issue debt.

Moreover net working capital also has a highly significant relationship with cash holdings (r=0.37) at 1% significant level. An increase in net working capital leads to higher cash balances therefore highly liquid firms tend to have higher cash balances as against lesser liquid firms, which is not consistent with Trade Off and Pecking Order Theory.

CONCLUSION

For the past half century, the topic on cash holding has attracted intense debate in the financial management arena. A plethora of researchers examined the motivations that drive businesses to cash holding. There is a number of reasons for hoarding cash. The transaction,

precautionary, tax and agency motives are presented as the most imperative reasons that motivate firms to hold a specific level of cash. While, most of the literature seeks the nature of relations between the cash holding and the firm's specific characteristics in both Developed Economies and Developing Countries, Shkodra economy is the focus of this paper, using panel data for 30 firm's for the period 2013-2014, which represents 60 firm-year observations. Similarly to previous findings, firm size is positive and strongly significant at 1% level and in conformity with the Pecking Order and Agency Theory , the higher the cash flow from operation, the higher the cash holding of the firms, in conformity with the Pecking Order. The coefficient estimate on Total Debt is significantly negative at 1% level, which consistent with Ozkan, support that firms can use borrowing as a substitute for holding cash, because leverage can act as a proxy for the ability of firms to issue debt. An increase in net working capital leads to higher cash balances therefore highly liquid firms tend to have higher cash balances as against lesser liquid firms, which is not consistent with Trade Off and Pecking Order Theory. From the OLS model, it is determined that almost 60% of variation in cash holdings is due to the variables having significant relationship with it. The remaining 40% variation is due to unknown factors not accounted for in this study.

LIMITATIONS AND WAY FORWARD

Undoubtedly, this thesis comes with some limitations. It fails to expand research on external factors. For instance, economic conditions such as the financial crisis, unemployment, inflation, wages etc.

Data collected for this paper suggested a quantitative method for the investigation of firm characteristics and cash holding. However a qualitative method is appropriate for the investigation of the cash holding. A qualitative research method through case studies can be used to examine the individual and organizational behavior. So we suggest a more challenging application linking social sciences to financial policies.

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