

# Cash Holdings and Firm Value: A Study of Listed Firms in Romania

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## Abstract

*High level of cash holding can be appealing for investors as firms have enough cash to finance investments and also to pay dividends. On the other hand, keeping large amount of cash, firms are signaling that they are not able to invest and to develop their businesses. As a consequence, firm value will decrease. The aim of the paper is to test whether cash holdings increase firm value on a sample of Romanian listed firms over the period 2001-2011. Employing a fixed effects model, we found that cash holdings influence negatively firm value after controlling for other firm-specific variables. Our results are useful for managers and also for existing and potential investors in decision making process.*

**Key words:** cash holdings, firm value, Romania, listed firms

**J.E.L. classification:** G30, G31.

## 1. Introduction

Most of the extant literature on corporate finance focuses on long-term financial decisions and their effects on firm value. However, short term financial decisions are receiving increasing attention in the light of the recent financial crisis due to recent growth of cash holdings by US firms (Bates *et al.*, 2009; Sánchez and Yurdagul, 2013). Cash holdings decision is interesting to study as it represents a double-edged sword.

We focused on the case of Romanian listed firms because they reported significant amount of cash in their balance sheets. According to our panel data over the period 2001-2011, on average, cash and marketable securities represented around 8.7% of the sum of all assets for listed Romania firms. At the same time, for the Romanian firms, access to external financing has been often considered a serious problem. The high cost of debt over the period analyzed and the underdevelopment of local capital market one of the most determinants of financial constraints in Romania. It can be expected that the level of cash holdings will have a significant effect on the firm value. The aim of the paper is to study the effects of cash policies on firm value in this highly restrictive financial market.

The rest of the paper is organized as follows. Section 2 briefly describes the most important empirical studies on the effect of cash holdings on firm value. Section 3 presents data and methodology used in the analysis. Section 4 discusses the empirical results, while the last section concludes.

## 2. Empirical studies on the effect of cash holdings on firm value

Keynes (1936) highlights that there are three important motives for cash holdings: (1) the transactional motive (a firm needs cash to cover current transactions); (2) the precautionary motive (cash holdings provide security for unforeseen future events); (3) the speculative motive (a firm needs cash to fructify unforeseen investment opportunities) (Mun and Jang, 2015). According to static trade-off theory, firms with higher cash holdings have lower transaction cost (when raising money), are able to fulfill their financial obligation without liquidating assets and also can finance

investments even when other financial sources are not available. On the other hand, the main disadvantages of cash holdings are the opportunity cost and agency problems between managers and shareholders (Martínez-Sola et al., 2013).

A growing literature tests empirically the relation between cash holdings and firm value. Several papers studied the effects of cash holdings on firm value using samples of firm from developed countries (Ozkan and Ozkan, 2004; Luo and Hachiya, 2005; Faulkender and Wang, 2006; Bigelli and Sanchez-Vidal, 2012; Naoki, 2012; Martínez-Sola et al, 2013) or large sample of firms located in developing or in developed economies (Dittmar et al, 2003; Pinkowitz et al., 2006). Only a few papers assessed the impact of cash holdings on firm value using sample of firms located in developing countries (Isshaq et al., 2009; Saaed et al, 2014).

Most of the previous studies found a positive relation between cash holdings and firm value. To the best of the author's knowledge, there is no paper to study the effect of cash holdings on firm value in the case of Romanian firms. We contribute to the extant literature by proving new insights on the effects of cash holdings on firm value on a sample of firms located in emerging countries over a period that covers the latest financial crisis.

### 3. Data and methodology

The present study employs a panel data set of 63 Romanian firms publicly traded at Bucharest Stock Exchange (BSE). We use two data sources in our analysis. Firstly, stock prices needed to compute Tobin Q has been retrieved from the BSE website. Secondly, financial data for each firm has been hand collected from the year-end annual accounts of firms. Our sample covers the period 2001-2011 in which listed firms used the Romanian Accounting Standards. Consistent with other studies, we exclude from the sample financial firms and also observations with missing values for the key variables. As a result of these two selection criteria, we end up with an unbalanced panel of 507 observations on 63 listed non-financial firms over the period 2001-2011.

As dependent variable (Firm\_V) we use Tobin Q defined as the ratio between market value and replacement value of its assets (Lewellen and Badrinath, 1997). Tobin's Q is used in the model as a logarithm in order to minimize the influence of outliers.

Our independent variable of interest (Cash holdings – CASH\_HOL) is computed as the value of cash and marketable securities over total assets. Following the extant literature (Martínez-Sola et al., 2013; Loncan and Cadeira, 2014), we employ as control variables that could have an impact on firm value the following variables: firm size (total assets or turnover), leverage (LEV\_TD\_TA), investment/growth opportunities (INVE\_OPPORT), and the dividend policy (DIV\_PAY). Table 1 presents an overview of the dependent and independent variables employed in the models.

*Table no. 1. Variables description*

<b>Variable</b>	<b>Abbreviation</b>	<b>Description</b>
Firm value	FIRM_VAL	Natural logarithm of market value of firm over replacement value of its assets
Cash holdings	CASH_HOL	Cash and marketable securities over total assets
Firm size (1)	TOT_ASSETS	Natural logarithm of total assets
Firm size (2)	SALES	Natural logarithm of total assets
Leverage	LEV_TD_TA	Total liabilities/Total assets
Investment/growth opportunities	INVE_OPPORT	Capital expenditures over total sales
Dividend payments	DIV_PAY	1 if the firm paid a dividend in year $t$ and 0 otherwise.

*Source: Research results*

To test the relation between cash holdings and firm value, we consider the following model:

$$\text{FIRM\_VAL}_{i,t} = \beta_0 + \beta_1 * \text{CASH\_HOL}_{i,t} + \beta_2 * \text{FIRM SIZE}_{i,t} + \beta_3 * \text{LEV\_TD\_TA}_{i,t} + \beta_4 * \text{INVE\_OPPORT}_{i,t} + \beta_5 * \text{DIV\_PAY}_{i,t} + u_i + \varepsilon_{i,t}$$

where:  $\text{FIRM\_VAL}_{i,t}$  denotes the firm value for firm  $i$  in year  $t$  ( $i=1,\dots,N$ ;  $t=1,\dots, T$ );  $\text{CASH\_HOL}_{i,t}$ , our independent variables of interest, measures the ratio of cash and marketable securities to total assets for firm  $i$  in year  $t$ ;  $\text{FIRM SIZE}_{i,t}$  (computed using total assets or sale),  $\text{LEV\_TD\_TA}_{i,t}$ ,  $\text{INVE\_OPPORT}_{i,t}$ , and  $\text{DIV\_PAY}_{i,t}$  represent control variables for firm  $i$  at time  $t$ ;  $\beta_0, \beta_1, \dots, \beta_5$  are parameters to be estimated;  $u_i$  are firm-specific fixed effects;  $\varepsilon_{i,t}$  is an idiosyncratic disturbance term.

#### 4. Empirical results

The main descriptive statistics for all variables employed in the study are presented in table 2. For our sample of firms, the mean value of cash holding to total assets is 0,087 (or 8.7%), with significant differences between companies as highlighted by minimum and maximum values. The mean value is relatively low if we compare it with the values reported in other studies - Opler *et al.* (1999) reported a mean value of 17% for their sample of US listed firms; Bigelli and Sanchez-Vidal (2012) found an average cash holdings to total assets ratio of 10% for Italian publicly traded firms; Ozkan and Ozkan (2004) reported a mean value of 9.9% for UK listed firms. However, other studies found lower values for this ratio compared to our value (e.g., Dittmar *et al.* (2003) reported a value of 5.3% for Pakistani firms or Martínez-Sola *et al.* (2013) found a mean cash to total assets of 7.9% for a panel of US industrial firms).

Table no. 2. Descriptive statistics

	Mean	S. D.	Minimum	Maximum	Obs.
LOG (FIRM_VAL)	-0.3537	0.849836	-4.824893	2.230198	507
CASH_HOL	0.087455	0.105432	0	0.517679	507
LOG(TOT_ASSETS)	11.83303	1.499221	9.157123	17.33655	507
LOG(SALES)	11.48199	1.541421	7.068249	16.63395	507
LEV_TD_TA	0.356771	0.279529	0	1.774894	507
INVE_OPPORT	0.032217	0.054071	-0.044077	0.479556	507
DIV_PAY	0.337278	0.473248	0	1	507

Source: Research results

Table 3 presents the Pearson correlations between variables. Contrary to our expectations and to results obtained in other studies we found a negative correlation coefficient between cash holdings and firm value. We also found a negative correlation between firm size and cash holdings, which imply that larger firms are likely to hold smaller cash reserves. This relation is in line with the finding of D-Mello *et al.* (2008) and Bigelli and Sanchez-Vidal (2012) and can be explain by the fact that large firms have greater access to financial markets and often in better conditions as smaller firms. As expected, our results show a high correlation between the alternative proxies for firm size, namely sales and total assets. The Pearson correlations between explanatory variables are fairly small, suggesting that the likelihood of a multicollinearity problem in the econometric analysis is low.

Table no. 3. Correlation matrix of variables

	LOG(FIRM_VAL)	CASH_HOL	LOG(TOT_ASSETS)	LOG(SALES)	LEV_TD_TA	INVE_OPPORT	DIV_PAY
LOG(FIRM_VAL)	1						
CASH_HOL	-0.138	1					
LOG(TOT_ASSETS)	0.205	-0.148	1				

LOG(SALES)	0.268	-0.087	0.888	1			
LEV_TD_TA	0.406	-0.336	0.128	0.220	1		
INVE_OPPORT	0.023	-0.102	0.225	0.025	-0.040	1	
DIV_PAY	0.048	0.253	0.039	0.116	-0.223	-0.005	1

Source: Research results

In order to choose the appropriate econometric model, we ran several tests: Lagrange Multiplier Test (Breusch-Pagan) for unbalanced panels and Hausman Test (null hypothesis of a random effect model). The results obtained for these tests reveal that the fixed effect models should be used (see table no. 4).

Table no. 4. Results for Hausman test

<b>Correlated Random Effects - Hausman Test</b>			
<b>Equation: EQ01 (FIRM_VAL dependent variable, Total assets proxy for firm size)</b>			
<b>Test cross-section random effects</b>			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	37.994231	5	0.0000
Equation: EQ02 (FIRM_VAL dependent variable, Sales proxy for firm size)			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	50.993482	5	0.0000

Source: Research results

Table 5 presents the results of the fixed effects models. Contrary to our expectations, we found a negative relationship between cash holdings and firm value. The results remain unchanged when sales is used as proxy for firm size (second model). As a supplementary robustness tests, we run our models over the period 2001-2007 to exclude the effects of financial crisis on firm value. Our results for the pre-crisis period confirm the previous findings – cash holdings have negative effects on firm value. External investors in the Romanian firms value negatively the cash holdings.

Table no. 5. Impact of cash holdings on firm value (2001-2011)

Variables	Model 1	Model 2
C	-4.249019 (0.721836)	-5.347204 (0.643938)
CASH_HOL	-1.537469*** (0.371673)	-1.354875*** (0.362120)
LOG (TOT_ASSETS)	0.304620*** (0.060733)	-
LOG (SALES)	-	0.412153*** (0.056093)
LEV_TD_TA	1.251469*** (0.153430)	1.115798*** (0.150917)
INVE_OPPORT	-1.854006*** (0.673252)	-1.056895* (0.631690)
DIV_PAY	0.114015 (0.085392)	0.046333 (0.081748)
R-squared	0.552748	0.578905
Adjusted R-squared	0.484489	0.514638
Total panel (unbalanced) observations	507	507
Standard error in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Source: Research results

We also test for the existence of a non-linear relation between cash holdings and firm value by adding in the models cash square (CASH\_HOL2). We found a positive sign for CASH\_HOL2, but the result is not statistically significant in both models.

The controlling variables for firm size (TOT\_ASSETS and SALES), leverage (LEV\_TD\_TA) and investment opportunities (INVE\_OPPORT) were statistically significant in the fixed effects models. The control for dividend policy (DIV\_PAY) was not statistically significant in both models.

Contrary to our expectations, our results show a positive relation between firm size and firm value. Similar to other studies (Masulis (1983); Martínez-Sola *et al.* (2013)), we found a positive effect of leverage on firm value. We also found that growth opportunities have significant negative effect on firm value.

## 5. Conclusions

An increasing number of listed firms located in emerging economies reported in the last two decades significant amounts of cash in their balance sheets. Cash level management is becoming increasingly important for Romanian firms coping with weak financial conditions and increased economic uncertainty. However, we know little about the effects of cash holdings on the firm value.

This paper uses a Romanian firm-level panel data-set over the period 2001–2011 to investigate the relation between cash holdings and firm value. Our models tests for the transactional and precautionary motives for holding cash. Employing a fixed-effects model, we found that external investors valued negatively cash holdings over the period 2001-2011. This result suggests that managers can create value for their shareholders by reducing cash holdings to an optimal level.

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