

DETERMINANTS OF CASH HOLDINGS: EVIDENCE FROM BALKAN COUNTRIES

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Abstract: *The purpose of this paper is to identify the determinants and indicate their impact on the company's cash holdings in the wholesale industry in ten Balkan countries. Effective cash holdings management is key to any company's healthy and smooth business operation, so comprehending and analyzing the relationship between the company's internal determinants and cash holdings is vital. The sample used for this work included 106 companies, whose operations were studied over a four-year period (2014–2017), using the panel data model with fixed effects. The obtained results showed that three of the five observed variables (size, leverage, non-cash liquid assets, profitability and asset tangibility) have a statistically significant impact on the company's cash holdings. It was determined that larger wholesale companies generally hold less cash, primarily due to more favorable external sources of financing, thus, financially stronger wholesale companies on the Balkans are likely to hold less cash. Only by practicing adequate inventory management and receivables collection policy can wholesale companies ensure effective working capital, leading to the fact that more profitable wholesale companies hold more cash. The realized profit of wholesale companies is used to increase liquidity as well as to stimulate business growth and development. The research results revealed that, in order to achieve an optimal cash holdings level, the observed wholesale companies in Balkan countries tend to constantly balance between profitability and liquidity. This paper contributes to improving the liquidity of wholesale companies in Balkan countries. It also offers wholesale companies assistance in establishing and maintaining an optimal cash holdings policy in order to reduce the potential risk of financial distress enable them to take advantage of all investment alternatives to maximize profit. All stakeholders will benefit from the developed model with significant determinants of the cash holdings policy along with the findings of this paper, especially when making decisions related to the cash holdings policy of wholesale companies and improving the overall business efficiency.*

Keywords: Cash holdings, determinants, wholesale companies.

JEL Classification: G30, G32.

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Introduction

Cash is one of the key items in the balance sheet, since it is necessary for every transaction. Cash holdings provide the company with flexibility and the ability to meet its own needs,

regardless of existing business conditions. It can be significant in terms of the company's internal financing, thus it is crucial to maintain an optimal level of cash, given that external financing also entails certain costs. An optimal

level of cash holdings represents available money to investors and should increase general business efficiency. Achieving an optimal level of cash holdings provides the company with autonomy to explore new opportunities as well as take risks. An insufficient level of cash creates the need for financing from external sources, which is reflected in reduced investments and decreased sale of available assets and securities. However, a large amount of cash enables the company to respond to market trends and take advantage of investment opportunities so as to secure the financial power of the company. In certain circumstances, keeping a large amount of cash can indicate an improper allocation of available company's assets. Research conducted by Anton and Afloarei Nucu (2019) revealed that a company with large cash holdings should reduce it to an optimal level in order to increase its value.

The policy of keeping an optimal level of cash is among the primary goals of corporate financial management. Due to market imperfections, transaction costs, tax and bankruptcy costs, and information asymmetry, there are different motives for holding cash. The motives aiming to reduce transaction costs assume that, by holding liquid assets, the companies will reduce the transaction costs, costs of obtaining external sources of financing and costs of liquidating assets. A company can reduce its transaction costs by using available cash for payments rather than by selling assets. This precautionary motive is based on the assumption that holding a certain level of cash is essential in order to protect companies from either a lack of money in the future, or from external sources of financing which are expensive and difficult to access. The underlying motives include future needs and potential investment opportunities, which are also the most common reasons for the increase in cash reserves. Holding cash is necessary due to the increased volume of borrowing and consequently, entails a greater possibility of financial failure. According to the precautionary motives, keeping large cash reserves is aimed at reducing the volume of borrowing or settling liabilities from borrowed capital. Asymmetric information, most often the result of a conflict between the manager and shareholder, tends to create the need to accumulate cash. Cash reserves are important in the circumstances

when investment opportunities present themselves, thus taking advantage of all attractive investments. Most often, these are financial companies that are directed towards speculative investment motives in the future, rather than investing in uncertain current business conditions. Tax motives are conditioned by tax liabilities and incentives that affect holding cash. Tax legislation encourages multinational companies to accumulate cash and they often choose to accumulate cash, rather than distribute it to shareholders, since it avoids paying dividend taxes.

The present research is aimed at identifying the factors that influence cash holdings, so that the company can utilize all the benefits reflected in, e.g., reducing borrowing costs, creating investment opportunities regardless of financial constraints and reducing the possibility of financial distress. This means determining how cash holdings can be affected, or how an optimal cash holdings policy can be established and maintained is a crucial task. The obtained results can serve the managers of wholesale companies as guidelines to improve their competitive position, direct funds towards profitable investment opportunities and contribute to increased business efficiency. The findings can also be useful for stakeholders when making decisions about the company's cash holdings, investment decisions and decisions about the allocation of funds in the market. Shareholders may further benefit from the obtained results by considering how to manage cash holdings in order to maximize their wealth.

This study was mainly motivated by the insufficient scope of research on the cash holdings policy of wholesale companies in Balkan countries. In addition, previously conducted research about cash holdings policy have their limitations of application in the Balkan countries. Companies in the wholesale sector are characterized by difficulty in liquidity conditions and the high financial risk of the operations; consequently, they struggle to achieve an acceptable level of indebtedness. The wholesale sector, though, is one of the most profitable sectors. The purpose of this paper was to develop a model highlighting the indicators of utilizing suitable cash holdings policy of the wholesale companies in the Balkans. The paper seeks to answer the following research questions:

What are the company's internal determinants that have an impact on the cash holdings of the wholesale companies in the Balkan countries?

What is the relationship between the internal determinants and cash holdings of the wholesale companies in the Balkan countries?

The paper analyzed the impact of five independent variables (size of the company, leverage, non-cash liquid assets, profitability, asset tangibility) on the company's cash holdings, measured by the cash holdings ratio in the wholesale industry the following ten Balkan countries: Greece, Albania, Bulgaria, Slovenia, Romania, Macedonia, Croatia, Bosnia and Herzegovina, Serbia and Montenegro. In order to evaluate the impact of the evaluated determinants on cash holdings, the panel data model with fixed effect was used. The paper's structure is as follows: the first section outlines the Theoretical Background. The work continues with the Data and Methodology part, followed by the Results and Discussion. The last part of the paper, the Conclusion, concedes the limitations and offers directions for future research.

1. Theoretical Background

In order to study the impact of the company's internal characteristics on cash holdings policy, three theories were developed: the trade-off theory, the pecking order theory and the free cash flow theory. The trade-off theory assumes that companies habitually seek to determine the optimal level of cash holdings, taking into account all the costs and benefits. Bearing in mind that the managers' goal in the company is to maximize shareholder wealth, they will strive to keep the cash holdings at a level where the marginal benefits and marginal costs of holding cash are balanced.

Holding cash reduces the likelihood of financial failure, provides protection against unexpected losses and minimizes the cost of collecting external sources of financing. The economy of scale prompts larger companies to hold less cash. Smaller companies generally rely on their funding sources, so they have lower liquidity and do not often issue shares. Such companies face limited borrowing conditions and high external financing costs as well as greater asymmetry in information. Companies that are aware of the growing likelihood of financial failure usually protect themselves by accumulating

cash according to the precautionary motives of the trade-off theory.

The pecking order theory sets out from the information asymmetry between managers and shareholders, that causes expensive external financing. In order to minimize the costs of information asymmetry and financing, companies must finance investments, first of all, with retained earnings, then with borrowed capital and finally, with their own capital. According to this theory, cash holdings should be at a level that will achieve a balance between retained earnings and investment needs. Ferreira and Vilela (2004) stated that the use of borrowed resources would increase when it became necessary to invest more than the amount of the company's retained earnings. A company with greater investment opportunities creates the need for more cash, indicating a positive relationship between holding cash and investment opportunities.

The starting point of the free cash flow theory is that keeping a large amount of cash provides greater management power and reduces the pressure on management to achieve the desired performance. It enables the management to invest according to their interests, regardless of the interests of shareholders. This may lead to a conflict of interest in the manager-shareholder relationship, since the available cash is viewed as free cash flow that satisfies the interests of management. Good corporate governance should be in the interest of the principal-agent relationship so that agents would not favor their interests. If there are large shareholders in the company, they will seek to reduce the agency costs that exist between managers and shareholders. Proponents of the free cash flow theory find that companies that do not have much growth potential and development tend to accumulate larger amounts of cash.

Given these theoretical assumptions, this paper examines the five factors determined as internal characteristics of the company and their impact on cash holdings policy. The choice of factors is based on the analysis of previous research, the variables used and the data available in the financial statements. A detailed explanation of these factors will be presented below.

1.1 Size of the Company

In order to analyze the relationship between the size of the company and the amount of

its cash holdings, the authors set out from the trade-off theory and the pecking order theory. Small companies suffer from information asymmetry problems and financial constraints when acquiring external sources of financing (Ogunpide et al., 2012). They also have higher transaction costs and often run a greater risk of financial failure due to the less diversification. Small companies are more susceptible to the impact of imperfections on capital markets. Given the above circumstances, it is obvious that small companies should possess a larger amount of cash, which is in line with the trade-off theory requirements.

Opler et al. (1999) researched the determinants of the cash holdings policy of 1,084 US companies whose shares are publicly traded in the period from 1971 to 1994. The obtained results showed that keeping a larger volume of cash is characteristic of smaller companies that usually have greater opportunities for growth, development, investment, a larger volume of riskier activities as well as a higher level of business risk. On the other hand, holding a small amount of cash is characteristic of large companies, which are usually companies with a high credit rating and volume of borrowing. Ferreira and Vilela (2004) confirmed the negative relationship between the size of the company and cash holdings policy analyzing the key factors of cash holdings policy in EMU countries.

However, the initial assumption of the pecking order theory is that large companies are more successful and hold cash on a larger scale due to higher profitability. Larger companies often hold their retained earnings as cash, indicating the need to hold more cash. Also, they have a high level of operating cash flow and often accumulate larger sums of cash to protect themselves from being taken over. Accordingly, the free cash flow theory also predicts a greater need for larger companies to have cash holdings due to larger shareholder dispersion, more discretionary power of managers over the company investment and financial policies and greater agency problems in the future.

Isshaq and Bokpin (2009) have analyzed liquidity determinants of Ghanaian companies listed on the stock market in the period from 1991 to 2007. Their research has shown that firm size is one of the key indicators of liquidity maintenance, providing a statistically

positive relationship between firm size and liquidity. Siddiqua et al. (2019) started from the fact that the optimal size of the company in a certain industry leads to low production costs, supporting the positive relationship between company size and cash holdings. He pointed out that the companies with higher profits take advantage of economies of scale and higher market shares and thus hold higher cash reserves than companies operating at lower profits.

The study of Shabbir et al. (2016) confirmed the positive relationship between the size of the company and cash holdings, emphasizing that companies in highly competitive industries would hold more cash than in other industries and those with better access to the capital market borrowed funds from external investors. Saddour (2006) found that there was a positive correlation between size and cash holdings for French mature companies. In contrast, there is a negative correlation between size and the level of cash holdings for growing companies. Al-Amarneh (2015) researched the impact of company size on cash holdings before and during a crisis period. Before the crisis, the company's size had a positive impact on cash holdings due to better business of large companies. Yet, during the crisis, the company's size had a negative impact on cash holdings and large companies took advantage of economies of scale in order to reduce transaction costs.

Bearing in mind all previously-mentioned research in this field, the following research question has arisen:

What is the impact of the size of the company on the cash holdings?

1.2 Leverage

According to the pecking order theory, when the company does not have enough cash, it borrows from external sources, so there is a negative relationship between cash holdings and financial leverage. Leverage increases and cash holdings decrease when the level of investments is greater than the retained earnings, whereas leverage decreases and cash holdings increase when the level of investments is less than the retained earnings. As suggested by the pecking order theory, there is no optimal level of borrowing or holding cash of the company. Due to lower leverage, companies are less vulnerable to market

monitoring (Opler et al., 1999). This actually means, managers of less leveraged companies have more discretionary power (Ferreira & Vilela, 2004), given that they have a smaller volume of requirements by creditors. Therefore, according to the requirements of the free cash flow theory, the debt level determines the manager's actions, while the expected relation between leverage and cash holdings is also negative. This is supported by the fact that the company can maintain financial flexibility with a lower level of borrowing and a larger amount of cash reserves. The company with higher leverage can have lower cash holdings because of the higher opportunity cost. According to Kim et al. (1998), a company with a high level of leverage usually keeps lower cash holdings due to easier access to capital markets and higher interest rates. Assuming that high leverage is an indicator of a company's ability to borrow, Ozkan and Ozkan (2004) pointed out that companies often borrow in exchange for holding larger cash amounts and securities. In addition, the negative value of the leverage ratio may signify that the cost of keeping a high level of cash increases with the growth of borrowing. Analyzing the motives for holding cash of Japanese companies, the results obtained by Nguyen (2005) showed that the companies most often use their cash flows to settle debt, which confirms the inverse relationship between leverage and holding cash. Companies hold surplus cash even in circumstances when they have previously exhausted own cash flows.

The trade-off theory sets out from the assumption that indebted companies find it difficult to obtain cash, hence, they will usually hold more cash. Holding more cash is a certain form of insurance that reduces the likelihood of financial distress in the future, probably already intensified due to high leverage. Consequently, there is a positive relationship between cash holdings and leverage, as was highlighted in research conducted by Drobetz and Grüniger (2007) and Arora (2019). According to the trade-off theory, the relationship can also be negative. As a measure of financial risk, the leverage ratio is seen as a kind of a proxy for the company's ability to issue debt, so the company with higher ability has lower cash holdings. Likewise, external funds can be used to finance the company's investments and thus viewed as a substitute for cash, which, in fact, confirms the negative relationship between these two

variables. However, higher borrowing does not have to be accompanied by more efficient investment of available funds and a higher level of return on funds.

According to Guney et al. (2007), the specifics of the country where the companies operate, such as shareholder protection, ownership concentration and credit protection too, can determine the relationship between cash holdings and leverage. For instance, the company's ownership structure significantly influences its corporate cash holdings policy. If, in certain countries, shareholder protection is poor, companies tend to have significantly greater amounts of cash than in the countries that have better shareholder protection.

Based on the requirements of the pecking order theory and most of the previously listed research, the research should answer the following question:

What is the impact of the leverage on the cash holdings?

1.3 Non-cash Liquid Assets

Due to the volatility of the financial markets, companies often hold liquid assets to protect themselves from a potential shortage of funds or to solve a liquidity problem.

Establishing an optimal level of liquidity is one of the key goals of the company, bearing in mind that too high liquidity indicates a surplus of cash that does not serve the investment and does not bring economic benefits in the future. Non-cash liquid assets are cash substitutes that can be easily converted into cash due to the low cost of converting. It is a convenient way to avoid the high costs of external financing in the capital market. In circumstances when there are higher transaction costs of converting non-cash assets into cash, the company will hold a greater amount of cash holdings. According to Ozkan and Ozkan (2004), a large volume of non-cash liquid assets held by the company means that the company strives to reduce the level of cash holdings due to precautionary motives. Guided by transaction motives, in the case of higher non-cash liquid assets, companies will have lower cash holdings because of their substitutability.

Opler et al. (1999) pointed out that the companies with better access to the capital market and high credit ratings have lower level of non-cash liquid assets. Analyzing the factors that have an impact on the level of cash balances, Arora (2019) researched

cash holdings determinants of 266 Indian companies from 2005 to 2015 and confirmed that the companies with more non-cash liquid assets hold smaller amounts of cash balances. Based on the pecking order theory and free cash flow theory, there is no significant relationship between liquid assets substitutes and cash holdings. Conversely, by analyzing the determinants of cash holdings policy of 44 small and medium listed companies in the Karachi stock exchange for the period of 2006 to 2011, Nafes et al. (2017) revealed a positive relationship between liquid assets substitutes and cash holdings. They also emphasized that the liquidity problem is one of the key problems that has caused small and medium companies to have low cash holdings and non-cash liquid assets. Analyzing the cash holdings in Italian private companies, Bigelli and Sánchez-Vidal (2012) inferred that smaller, younger and more financially constrained companies tended to have more cash holdings and fewer cash substitutes than larger companies in Italy.

Keeping in mind the requirements of the trade-off theory and the previously outlined research, the authors formulated the following question:

What is the impact of the non-cash liquid assets on the cash holdings?

1.4 Profitability

The cash holdings policy is based on maintaining the liquidity and profitability of the company. Cash can be defined as the least profitable asset, which does not provide a return. The volume of cash holdings is usually the result of the company's profitability and financial needs. Assuming that each profitable company makes higher cash flows from operating activities, thereby decreasing the need for stockpiling cash, Kim et al. (1998) emphasized that profitability can be viewed as a cash holdings substitute. The company can use its profit to pay off the liabilities, so that the company with a higher level of cash usually has less profitability. The negative relationship between profitability and cash holdings was confirmed in research conducted by Ogunpide et al. (2012), and Thu and Khuong (2018). In line with the trade-off theory, the company usually relies on future cash flows in order to increase the volume of cash holdings.

The positive relationship between profitability and corporate cash holdings

was explained by the pecking order theory. The company relies on the achieved profits to increase the level of their cash holdings, even though maintaining the optimal level of cash should be independent of cash flows generated internally. The level of the company's profitability is a vital aspect when making financial decisions. Analyzing the cash holdings determinants of French companies for the time period of 1998 to 2002, Saddour (2006) found that cash holdings can be enhanced due to increased profitability, bearing in mind that cash flow is an indicator of a company's profitability. More profitable companies are capable of paying dividends to shareholders, settle debts and holding more cash in order to avoid any circumstances that might threaten their liquidity (Al-Najjar & Belghitar, 2011). The company, which distributes a dividend, can reduce its cash holdings given that, in the circumstances of a cash shortfall, the company can cut the dividend.

Al-Amarneh (2015) analyzed the impact of profitability on cash holdings of Jordanian companies listed at the Amman Stock Exchange for the time period of 2001 to 2011. He found that before the financial crisis, there was a negative effect, as dictated by the requirements of the trade-off theory. On the other hand, during the financial crisis, the effect of profitability on cash holdings changed to positive, as suggested by the pecking order theory, since internal sources were the main source of financing.

Taking into consideration all previous research and specifically the research conducted by Shabbir et al. (2016), the research seeks to provide an answer to the following question:

What is the impact of the profitability on the cash holdings?

1.5 Tangibility of Assets

The ratio of fixed assets to total assets shows the volume of the company's assets that are used as collateral. The high value of this ratio indicates an active investment policy. It represents the level of capital investment in technical and productive infrastructure. In case of a cash shortage, the company can sell those assets, so one expects a negative relationship between asset tangibility and cash holdings, which falls under the pecking order theory. Companies with a higher volume of collateral also tend to have less trouble when

issuing debts, which does not create the need for accumulating a larger volume of cash. Likewise, tangible assets provide a certain level of security, given that the assets can be sold in the event of financial distress. The company that has a large volume of easily liquidated assets used as collateral will hold less cash in order to have lower opportunity liquidity costs. Bayyurt and Nizaeva (2016) analyzed the key factors of corporate cash holdings of 164 manufacturing Turkish companies over the period of 2003 to 2013. Obtained results showed that companies with a high value of tangible assets do not hold high amounts of cash, as they can easily sell these assets when they need money. However, the trade-off theory predicted a positive relationship between asset tangibility and cash holdings, which was confirmed in research works by Nafes et al. (2017), and Thu and Khuong (2018).

Jebran et al. (2019) analyzed the factors determining the corporate cash holdings policy of 280 companies listed on the Pakistan Stock Exchange for the period of 2005 to 2014. The results emphasized that asset tangibility had a significant and negative effect on cash holdings in the pre-crisis, crisis, as well as the post-crisis periods, but the level of significance was higher in the pre-crisis than in the post-crisis period. It can thus be stated that the financial crisis did actually influence the significance level of tangibility on cash holdings.

Based on all research described above, in particular the research works of Drobetz and Gruninger (2007), and Uyar and Kuzey (2014), the following question was posed:

What is the impact of the tangibility of assets on the cash holdings?

2. Research Methodology

In order to analyze the major indicators of cash holdings management of companies in the wholesale industry, the authors used the panel regression analysis. The sample was structured by activity code and consisted of all active large and very large companies (106 companies) and a series of four years (2014–2017) in the following ten Balkan countries: Greece, Albania, Bulgaria, Slovenia, Romania, Macedonia, Croatia, Bosnia and Herzegovina, Serbia and Montenegro. The research covered 57 large and 49 very large wholesale companies according to the category of the company based on data from the TP Catalyst database (Bureau van Dijk, A Moody’s Analytics Company, 2018). The observed variables could be calculated only in the period from 2014 to 2017 based on the available financial data in the balance sheet and income statement, which can be found in the TP Catalyst database. These database limitations influenced sample selection and analyzed indicators.

The cash holdings ratio was taken as the dependent variable, while company size, leverage, non-cash liquid assets, profitability and tangibility were considered as independent variables. All implemented indicators were presented in Tab. 1, relying on the method of calculation used in the research conducted by Saddour (2006), Drobetz and Grüninger (2007), García-Teruel and Martínez-Solano (2008), Uyar (2014), Al-Amarneh (2015), Bayyurt and Nizaeva (2016), Nafes et al. (2017), Thu and Khuong (2018), Jebran et al. (2019).

Tab. 1: Cash holdings indicators

Indicators	Method of calculation	Expected effects on cash holdings
Cash holdings	Cash and cash equivalents/ Total assets	
Company size	Log of total assets	Negative (-)
Leverage	Total liabilities/Total assets	Negative (-)
Non-cash liquid assets	(Net working capital-cash and cash equivalents)/Total assets	Negative (-)
Profitability (ROA)	Net income/Total assets	Positive (+)
Tangibility of assets	Net fixed assets/Total assets	Negative (-)

Source: own

According to the descriptive statistics displayed in Tab. 2; the average value of the cash holdings ratio was 0.13 with a value dispersion from -0.10 to 0.95. Accordingly, cash and cash equivalents accounted for only 13% of the company's total assets. The average value of the company size was 8.37. The discrepancy in company size varied from a minimum value of -1.81 to a maximum value of 11.28. Leverage had an average value of 0.32 which was below the reference value of 0.5. It showed a significant value dispersion from -13.33 to 71.43. There were companies funded on a larger scale by their own sources and also companies that were able to take greater financial risks. The average value of non-cash liquid assets indicator was 0.08 with small variations in value from -2.37 to 1.08. The average value of the return on assets as a profitability indicator was 8.63%, which was close to the reference value ($\geq 10\%$). ROA demonstrated significant value dispersion from -93.75 to 85.41. On the one hand, there were non-profit companies in the sample, while on the other, there were companies with very high returns on engaged assets in the given time period. The average value of assets tangibility was 0.20, with a small dispersion of value from 0 to 1. Thus, the sample included companies that had already invested in areas which failed to bring in revenue as well as companies with a large volume of fixed assets and low-level management efficiency consequently. For the descriptive statistics of dependent and independent variables of the developed models, see Tab. 2 below.

In order to give the answers on the research questions a panel data analysis will be

conducted. Based on the research conducted by Ali and Yousaf (2013), Bayyurt and Nizaeva (2016), Jebran et al. (2019), the following formula was formulated:

$$CHR_{it} = \beta_0 + \beta_1 CS_{it} + \beta_2 LEV_{it} + \beta_3 NCLA_{it} + \beta_4 ROA_{it} + \beta_5 TA_{it} + E_{it} \quad (1)$$

where:

CHR_{it} – dependent variable;

β_0 – model constant;

β_i – independent variable coefficients;

CS , LEV , $NCLA$, ROA , TA – independent or explanatory variables;

CS_{it} , LEV_{it} , $NCLA_{it}$, ROA_{it} , TA_{it} – $1 \times k$ vector of observations on the explanatory variables;

E – error with a normal distribution;

i – indicates each company ($i = 1, \dots, N$);

t – indicates the time period ($t = 1, \dots, t$).

In order to test whether is appropriate OLS or regression model, F-test will be conducted. Furthermore, in order to choose an adequate model between fixed-effects model and random-effects model, Hausman test will be realized.

3. Research Results

Tab. 3 contains the correlation analysis of the used variables. As portrayed in Tab. 3, none of the correlations approximate the threshold value of 0.8, thus leading to the conclusion that there is no problem with multicollinearity.

In order to analyze multicollinearity, the variance impact factors (VIF) were calculated for all independent variables. The results, summed up in Tab. 4, highlighted that there was no problem with multicollinearity due to the

Tab. 2: Descriptive statistics

Variable	Mean	Std. dev.	Min	Max
Cash holdings ratio	0.1299686	0.1804468	-0.1035765	0.9463549
Size	8.375496	1.639388	-1.809372	11.28174
Leverage	0.3173571	3.791134	-13.33333	71.42857
Non-cash liquid assets	0.0814776	0.4579704	-2.365621	1.082933
ROA	8.633663	16.86324	-93.75	85.41374
Assets tangibility	0.2000721	0.2598416	0	0.9968474

Source: own

Tab. 3: Correlation matrix

	Cash holdings ratio	Size	Leverage	Non cash liquid assets	ROA	Assets tangibility
Cash holdings ratio	1.0000					
Size	-0.3885	1.0000				
Leverage	-0.0124	-0.0066	1.0000			
Non-cash liquid assets	-0.1229	0.1990	-0.0352	1.0000		
ROA	0.1492	-0.0097	-0.0346	0.4040	1.0000	
Assets tangibility	0.1043	0.0623	-0.0448	0.0370	-0.0022	1.0000

Source: own

Tab. 4: Variance impact factors of variables (VIF)

Variable	VIF	1/VIF
Non-cash liquid assets	1.26	0.794609
ROA	1.21	0.827730
Size	1.05	0.947880
Assets tangibility	1.01	0.993384
Leverage	1.00	0.996330
Mean VIF	1.11	

Source: own

Tab. 5: Dependent variable: cash holdings ratio

Cash holdings ratio	Coeff.	Std. err.	t	p > t	[95% conf. interval]	
Size	-0.0297922	0.0055813	-5.34	0.000	-0.0407739	-0.0188105
Leverage	0.0006552	0.0015097	0.43	0.665	-0.0023152	0.0036256
Non-cash liquid assets	-0.1231933	0.0213631	-5.77	0.000	-0.1652266	-0.0811599
ROA	0.0018968	0.0004854	3.91	0.000	0.0009417	0.0028518
Assets tangibility	0.0021304	0.0294243	0.07	0.942	-0.055764	0.0600249
cons	0.3725203	0.0471741	7.90	0.000	0.2797019	0.4653387

R-sq: within = 0.2180
 between = 0.1229
 overall = 0.1505
 F(5,313) = 17.45
 Prob > F = 0.0000

Hausman test
 $\chi^2(5) = (b-B)[(V_b - V_B)^{-1}](b-B) = 14.88$
 Prob > $\chi^2 = 0.0109$

Source: own

fact that VIF values for all variables were less than 5. According to the results of correlation analysis and VIF, all selected variables can be included in the model.

The final model included 424 observations. The results were summarized in Tab. 5, consisting of the coefficients' values, mean values and p-values. The results of the F-test and Hausman specification test were also included. The result of F-test ($p < 0.05$) indicated that the fixed effects model was more suitable for further analysis than the pooled OLS regression model. The result of the Hausman specification test ($p < 0.05$) demonstrated that the fixed-effects model was more suitable for further analysis than random-effects model. Hence, the authors opted for a fixed-effects regression model.

The presented results in Tab. 5 showed that the variables company size (-0.0297922) and non-cash liquid assets (-0.1231933) had a statistically significant negative impact on the cash holdings of the wholesale companies. Large companies take advantage of economies of scale and have more favorable borrowing conditions due to better credit rating, which implies less cash holdings. Holding less cash can also be the result of a large volume of investment in different projects. Larger wholesale companies also had lower transaction costs and greater diversification thanks to which they were able to keep a smaller amount of cash. On the other hand, small wholesale companies faced more expensive sources of financing, fewer investment opportunities and restrictions on borrowing, which created the need for more cash holdings.

Wholesale companies with a large volume of non-cash liquid assets usually hold less cash holdings. Then again, cash holdings of wholesale companies would be greater as a result of a mismatch between current assets net of cash and current liabilities. Inventory as a non-cash liquid assets are necessary for the continuity and security of the wholesale companies operations. Companies in the wholesale sector have the highest turnover of inventory, so that adequate inventory management will influence efficient working capital management. In this way, when procuring and holding the inventories, it is necessary to carefully assess the required volume of inventory, bearing in mind the costs of holding inventories and market conditions

in the wholesale sector. The policy of holding a large volume of inventories is not sustainable in the long term. It may adversely affect the liquidity of wholesale companies due to the high cost of holding stocks.

Profitability measured by the return on assets had a statistically significant positive impact (0.0018968) on the cash holdings of the wholesale company. This means that profitable wholesale companies used their profits to provide liquidity growth and as a result, strove for more cash holdings, which was in accordance with the pecking order theory. Accordingly, profitable wholesale companies use their strong yield position to increase cash reserves.

Leverage also had a positive impact on the cash holdings of the wholesale company (0.0006552), but it was not statistically significant. The positive relationship meets the requirements of the trade-off theory. As the indebtedness of wholesale companies increases, the need for more cash holdings also increases. The wholesale companies should perform cautious borrowing policies, so that wholesale companies do not become over-indebted. The last indicator, assets tangibility also had a positive (0.0021304), but not statistically significant impact on cash holdings ($p > 0.05$). Therefore, the share of assets that the company permanently has at its disposal for regular activities did not significantly affect the cash holdings policy of wholesale companies.

4. Discussion

This section will go through empirical evidence in literature keeping in mind the same or contrasting results obtained in this research. The negative impact of company size on cash holdings could be explained by the fact that larger wholesale companies were relatively in a more favorable position to finance in the external market which means that managers of wholesale companies were generally more flexible in terms of financial policies and investments. Larger wholesale companies have a greater ability to adapt to changes in market conditions and therefore can hold smaller cash reserves. Likewise, larger wholesale companies also have greater bargaining power with suppliers to reduce costs, which provides the ability to hold smaller cash reserves. The negative relationship was consistent with the requirements of the trade-off theory and

research carried out by Kim et al. (1998), Opler et al. (1999), Nguyen (2005), Guney et al. (2007), Drobetz and Grüninger (2007), Al-Najjar and Belghitar (2011), Ali and Yousaf (2013), and Nafes et al. (2017).

Non-cash liquid assets are necessary to maintain the existing level and expand business activities. Companies that hold a large amount of non-cash liquid assets pay a liquidity premium in the form of a lower return rate on those assets (Ali & Yousaf, 2013). Maintaining a sufficient level of liquid assets is important in the context of resolving liquidity problems that are manifested in wholesale companies in the form of extended receivables collection deadlines, difficulties in collecting receivables and increasing the volume of doubtful and disputed receivables. Bearing in mind that most of the non-cash liquid assets of wholesale companies are usually receivables, holding a large volume of receivables, easily collected in the future, or simply not seen as suspicious, does, in fact, provide an opportunity for wholesale companies to hold less cash. This assumption is consistent with the requirements of trade-off theory and the previous findings by Ferreira and Vilela (2004), Saddour (2006), Guney et al. (2007), García-Teruel and Martínez-Solano (2008), Ogunpide et al. (2012), Uyar and Kuzey (2014), Al-Amarnah (2015), Bayyurt and Nizaeva (2016), Shabbir et al. (2016), and Arora (2019).

Return on assets as an expression of profitability proved to be a significant driver of cash holdings policy. In other words, observed wholesale companies relied on previously generated profits to create cash reserves and increase liquidity. The cash holding policy is a result of the profitability and financial needs of the wholesale companies. Wholesale companies can finance their next profitable investment projects with sufficient cash reserves. The level of cash holdings increases as the company increases its profitability and does not create a need for external sources of funding, as verified in research conducted by Nguyen (2006), Saddour (2006), Drobetz and Grüninger (2007), Isshaq and Bokpin (2009), Bigelli and Sánchez-Vidal (2012), Al-Amarnah (2015), and Shabbir et al. (2016).

The growing risk caused by the use of a larger volume of other sources of financing and consequently, the high-interest rates and costs will ultimately create the need for more cash

holdings. Highly indebted companies are subject to capital market control. Thus, they were not given the opportunity for superior management control. Guided by the precautionary motive, the managers of wholesale companies tend to hold more cash. In this way, the indebted wholesale companies protected themselves from the risk of financial distress in the future as proven in research by García-Teruel and Martínez-Solano (2008), Ogunpide et al. (2012), Siddiqua et al. (2019). Issaq and Bokpin (2009) also found a positive but not statistically significant relationship between those variables.

The higher ratio of fixed assets to total assets leads to higher cash reserves of wholesale companies, but this effect is not statistically significant. This relationship also confirmed research conducted by Issaq and Bokpin (2009). Wholesale companies with a larger volume of tangible assets on a smaller scale are more prone to research and development activities and innovations, and on that basis they can keep larger amounts of cash. Larger cash reserves of some wholesale companies may be the result of a larger volume of borrowing as they can use fixed assets as collateral. However, Arora (2019) found that tangibility of assets had statistically significant negative impact on cash holdings bearing in mind that a high volume of tangible assets can be sold in case the company encounters a cash shortage or serves as collateral in case of additional borrowing.

Conclusions

Cash is a crucial element enabling the business to not only survive, but to also thrive and grow. An adequate cash holdings policy ensures liquidity, thereby ensuring that companies can settle their obligations promptly. Well-performing companies seek to accumulate as much cash as possible, despite the fact that excess cash can adversely affect the value and performance of the company. The lack of cash, contrarily, makes companies unable to finance profitable investment projects or borrow at high financing costs. The inability of a company to meet its obligations or the lack of sufficient amounts of cash to do signifies financial troubles and illiquidity and will endanger the basic principle of unlimited business operations. The threatened going concern assumption will, in the long run, cause the unstable position of companies in the market.

The primary aim of this research was to determine the key indicators of the company's cash holdings in the wholesale industry and quantify their relative importance. The study covered 106 companies in ten Balkan countries over a four years period (2014–2017). The impact of the five independent determinants (company size, leverage, non-cash liquid assets, profitability and the tangibility of assets) was measured on cash holdings which was the dependent determinant. The panel data model with fixed effects was used in order to evaluate the impact of the mentioned determinants. The results indicated that size and non-cash liquid assets had a statistically significant negative impact, which was compatible with the trade-off theory. It was further confirmed that larger, more diversified wholesale companies who find it easier to obtain external funds and are less likely to go bankrupt, they will also hold less cash reserves. The authors' findings revealed that wholesale companies with a larger volume of non-cash liquid assets measured by net working capital as an expression of financial strength, tend to hold less cash reserves. Therefore, financially stronger wholesale companies in the given Balkan countries had less cash holdings. By providing information about the financial position, this indicator is significant from the investors' perspective, especially when considering investing in the wholesale company. Although it must be also pointed out that profitability had a statistically significant positive impact on the cash holdings policy of the studied wholesale companies, which was compatible with the pecking order theory. Profit maximization is imposed as an imperative in wholesale business, this is achieved by taking maximum advantage of the current market position. This could lead to the general conclusion that more profitable wholesale companies in the Balkans are likely to hold more cash in order to increase the growth and development of their business. Other independent determinants (leverage and assets tangibility) had no statistically significant impact on the company's cash holdings in the wholesale industry. The authors believe that the developed model featuring the significant determinants of cash holdings will contribute to improving the liquidity of wholesale companies. This research certainly contributes to the literature by identifying the significant indicators of cash holdings policy.

Limitations

This work has several limitations, which should also be taken as recommendations for future research. Firstly, it must be conceded that the research is limited to the wholesale industry in Balkan countries. Further research would be directed towards analysis of the cash holdings policy determinants of wholesale companies in other countries and geographical regions. Moreover, examining the determinants of the cash holdings policy in different industries in the Balkans would also lend valuable insights. For this purpose, different determinants may be added. For this particular analysis the authors relied on the data in the financial statements, assuming that data to be true and objective. Future research would also extend to data based on market value. That would enable the researchers to include non-financial data regarding the internal company's characteristics such as the number of employees and more operational and organizational determinants. The economic, legal and institutional environment should also be taken into account when analyzing the cash holdings policy of the wholesale companies. The authors believe that additional research about the cash holdings policies of wholesale companies in these Balkan countries would prove beneficial and would serve to confirm or contradict the present findings.

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