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Short-term Finance and Trade Credit

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Abstract

Trade credit plays a main role in the commercial activities of every company and trade credit in the company shows the amount of trust of suppliers and creditors to the company. Companies with the good trade credit receive their required goods and service from suppliers without payment of cash and banks and other creditors proceed to confer the facilities by consideration of trade credit of the company. Therefore, one can consider the trade credit as a short-term investment instrument. This research intends to examine the relationship between short-term finance and trade credits in the companies agreed in stock exchange of Tehran during 2012-2016. Hence, one has been selected a sample of 90 companies by the method of systematic elimination. Result of this research implies significant and reverse relationship between short-term finance and trade credit. This result shows that well-off companies with a high credit can carry their purchases as credit and have lesser requirement to the finance out of company.

Keywords: Short-term Finance, Trade Credit, Stock Exchange Tehran

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Introduction

Companies proceed to finance from the internal and external resources of company, and its required funds in order to extend and develop its activities and/or because of compensation for the lack of existing liquidity. Internal resources consist of cash flows from the operation, funds from asset sale and external resource consist of finance from financial markets and stock publication. In financial theory, it is assumed that aim of management maximizes the value of market of a company and, as a result, the wealth of shareholders. Thus, duty of every financial manager optimizes the structure of assets, debts and rights of shareholders in order to maximize their wealth. Accordingly, financial manager should know what resources are available for finance and what effect do each of them have on operation performance, profitability and value of companies. (Zhang, 2011).

One of the main purposes of financial management is to maximize the wealth of shareholders. Hence, aim of financial managers is to find the ways of finance. In this study, finance patterns of companies are examined to be realized effective factors on the selection of finance methods. One of the main points focused by financial managers of firms is methods and the amount of finance. Non-cost Financial resources are included pre-receipt from the customers, trade creditors, payable dividends and payable costs. Costing financial resources are divided into two groups: internal resources (accumulated profit) and external resources (short-term and long-term facilities and new stock publication). Progression in the industry of every country and development of productions require the short-term, middle-term and long-term investment programs and by which a huge backing is provided in the economy of each country. Resources of these investments are provided by accumulated profit, sale of new stock, banking facilities or by the combination of these resources (Whited, 2006).

Managers should decide how to provide their needs and how to use the available financial resources. They can use these financial resources for payment of profit to the shareholders, execution of profitable investments, settlement of deadline debts, and increase the working capital (cash). Investment markets are divided in terms of capability of finance into two complete and incomplete types. Complete market in referred to markets in which external finance for the company is performed without imposing no extra costs, while they will be faced with the additional costs in the incomplete markets if it is necessary the external finance of companies (Whited, 2006).

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On the other hand, trade credit plays a main role in the commercial activities of every company and trade credit in the company shows the amount of trust of suppliers and creditors to the company and it is considered as a short-term finance instrument. Companies with the good Trade credit will receive the required goods and service from suppliers without the payment of cash and banks and the other creditors proceed to confer the facilities by consideration of Trade credit of company (Wenfeng Wua, 2011).

Advantage of Trade credit is that it isn't needed to pay any money for receipt of good and debit or payable account is created on the customer's balance sheet and customer pays this money at time points in future. In this respect, it can consider payable account as alternative for cash.

Therefore, one can consider the Trade credit as short-term investment instrument. If company discounts and pays the amount at the last due date, one can be provided an opportunity cost. If a company postpones its payment after due date, it will cost a lot. Costs are such as fine of late payment, cost of lost cash discount and…. As a result, companies which use Trade credit, they should have a liquidity for facing with their repayment liability in terms of precautionary motivation. In respect of noted points on the Trade credit and short-term finance, it is examined the relationship between these two components in this article in order to solve this question what kind of relationship the Trade credit as a finance instrument can establish with short-term finance. Therefore, we intend to investigate this question that is Trade credit related to short-term finance? Our expectation is that companies, which have high Trade credit, less need short-term finance and can remove their short-term financial needs from their fund and use of Trade credit.

Theoretical foundations and background of the research

Finance

The best finance instrument is different in respect of the company's internal conditions and finance and it is possible its selection given these criteria and conditions. The criteria for selecting the most appropriate finance method are divided into three groups including criteria and conditions within the company, criteria of financial resource and macro-economic-political factors. The main factors determining the proper financial resource such as risk, return, amount of finance and investment time horizon. Each of investment finance has the amount of its own risk. Accordingly, their expected return (profit or received interest) is also different. Size of finance is also an important factor, since some financial resources limits in the amount of finance which can perform. Investment time horizon is also counted as an important factor, because any financial resource

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won't its own resources forever involve into an investment project, but financial resources are different in the amount of time horizon considered for themselves. Criteria and conditions within company or financed project are including mechanism of division of financial instrument profit, limitation for use of financial instrument fund, capital optimal structure, cost of finance process, credit situation of company and relevant risks to financial instruments. From the aspect of micro-economic-political factors, there are effective factors such as government financial policies, monetary policies of Central Bank, regulative policies of Stock Exchange Organization and legislative limitations which should be focused by managers to select and decide (Fadaee, 2014).
Finance has also resources. Financial managers should characterize cost of finance from the numerous resources and determine impacts which they have on return and operation risk of company so this way he/she can maximize wealth of shareholders by minimizing risk of capital structure and balance cost of capital. Risk and return are two key factors in the kinds of investments. Financial resource (debt and stock) is one of factors which determines risk and return (Karimzadeh et al, 2013).
One of ways of company's finance is financing of debt. Considering that financing of debt prevents domestic cash withdrawals, it can be considered as kind of negative cash reserves. On the other hand, a company which has provided a large amount of its own resources through financing of debt is in difficulty in attracting new resources, because the higher the company's financing of debt the greater its risk and bankruptcy. Increasing risk is associated with increasing the expected return of suppliers of fund and it also increases the cost of financing of debt. Therefore, companies with a higher leverage ratio are faced with more difficulties in accessing to the foreign financial resources and haven't any chance but to rely on domestic resources, it is evident that the amount of cash reserves for such companies will be very importance (Fadaee, 2014).

Short-term finance

Short-term finance is typically used to support the temporary investment in the current assets. Financial manager should usually decide on the finance after programming of investment in the current assets and forecasting the resources needed by the economic unit in the next year. It is usually used short-term loan for temporary investment finance in the current assets (Zakernia, 2016).

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The three main resources of short-term finance are, respectively: Trade credits, financing of debt from trade banks and issuing of commercial documents. Trade credits and issuing of commercial documents are usually a secured form of credit granting. While trade banks also confer unsecured and secured loan. Secured loan is a loan which borrower secures some of his/her assets against the received loan. Profit units usually consider receivable accounts or inventory of matters and goods as a support for short-term credits (Zakernia, 2016).

Trade credit

Trade credit is the most important short-term financial resource (Gertler, 1995). Suppliers as short-term finance providers consider several important aspects including the margin of additional sale as credit, ability of participation of customer for timely payment of their own commercial liability and long-term financial status of customer's participation when they want to confer a Trade credit to their own customers.

When an economic unit buys a good from another economic unit, it is usually not necessary to immediately pay the price of the good. In a period when it has been paid the price of the purchased good to the seller, the buyer has a current debt to seller that it is referred as "payable accounts" in the balance sheet. Expected number is referred as "receivable accounts" in the seller's accounts. Rial amount of purchases for a profit unit usually determines amount of its available Trade credits. Trade credit doesn't directly determine fund with which one can pay other bills, because purchase is only led to the access to the required goods. Among the advantages of this way are ease of access, lack of credibility and lack of diligence of creditors and its disadvantages include swelling of payable accounts, loss of cash discounts and the reduction of credit amount of economic unit (Zakernia, 2016).

Another cases that we should consider to select the financial instrument is the credit status of company in the market, that is, a company in following to its credit in the economic market can choose certain instruments for finance. For example, companies with the high credit in the market can provide their own finance by publishing bonds with a low nominal price or by publishing high-price stock, while a company with low credit between participants in the economic market must choose the instruments with the cost of publication and high-interest profit and it is limited in the financial instruments.

Dittmar (2013) focuses on a research called "Review of relationship between working experience of managers and way of their facing with the effective financial difficulties on the relevant

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decisions to preserve the fund of companies". Results of this research show that companies which their director's board of director have already experienced the financial difficulties hold more level of fund than the other companies.

Kling (2014) focuses on a research called "Review of relationship between holding fund and Trade credits and short-term finance". This article focuses on holding fund and the closest alternatives such as banking short-term finance and Trade credits. In this study, regression test and a period from 1988 to 2008 were secretly used. Their study shows that external liquidity finance improves short-term financial status. Similarly, they result in their own research that access to banking short-term finance as an alternative for holding fund and Trade credit politically improves the conditions. Also, holding fund and Trade credits increase representative costs because of rising in cash conversion cycle. Company reflects in facing with the unexpected shortage from external financial resources by increasing in fund.

Tsung Te Lin (2014) found results in a study titled "Review of trade credits and banking loans". These findings include a positive significant relationship between trade credits (ie., debts) and banking loans and negative relationship between demand of trade credit (ie., payable accounts) and banking loans that it shows there are complementary and alternative effect between trade credit and banking loans. Secondly, the result shows a considerable decline in demand.

Foroghi (2014) examines the impact of cash flow volatility on the level of holding companies' cash fund in a research titled "The impact of cash flow volatility on the level of holding cash fund considering the limitation of accepted companies' finance in Stock Exchange of Tehran". The results show that there is, on the one hand, a reverse and significant relationship between type of cash flow and level of holding the cash fund of companies and, on the other hand, companies with finance limitations, regardless of the type of cash flow, further tend to hold the cash fund and higher level of cash balance.

Chod (2016) focuses on how competition between suppliers about their willingness to provide financial-constructive credit in a study called "Trade credit and supplier's competition". Results forecast a negative relationship between financial-constructive prevalence of trade and two aspects of competition in upstream industry.

Methodology of research

Investigated statistical population of this research has been formed by accepted companies in the stock exchange of Tehran. Years investigated by the research subject are 2012-2016 and relevant

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hypotheses to this statistical population will be tested and studied. 90 companies are analyzed due to systematic exclusion of qualified company based on the review of research subject on them. This research is an applied in terms of the research purpose and is a type of correlation researches in terms of the method and nature of research. In a general conclusion, one can be said: since results of this research may be practically applied, it is an applied research. Due to this research uses the past information to test hypotheses, it is a type of post-event research. It is theoretically a type of provocative and it is an inductive argument. On the other hand, it is a type of quasi-experimental in the field of accounting-financial research.

The library method is used to collect the information needed for research. Use of library resources includes books, journals, thesis, articles and internet. This method is used to conduct a preliminary study, compilation of the chapter of the research literature and theoretical framework. Then, we will refer to accepted companies category in stock exchange in order to collect data related to research hypothesis and we focus on the test and analysis and interpretation of results for deciding the research hypothesis after extracting the required information through Tadbir Pardaz and Rahavard Novin softwares and data banks of Stock Exchange Organization and aggregating data in Excel columns transferring them to Eviews 8 software. Therefore, research hypothesis and statistical model, respectively, are as follows:

There is a significant relationship between trade credit and short-term finance of accepted companies in the stock exchange of Tehran.

$$\mathbf{STF_{it} = \beta_0 + \beta_1 TC_{it} + \beta_2 CCC_{it} + \beta_3 GROWTH_{it} + \beta_4 ROA_{it} + \beta_5 IR_{it} + \beta_6 CFV_{it} + \beta_7 SIZE_{it} + \beta_8 LEV_{it} + \varepsilon_{it}}$$

Which in this model; (Gerhard Kling, 2014)

Short-term finance (STF)

Conceptual definition: short-term finance is typically used to support temporary investment in the current assets. Generally, financial manager should decide on finance after programming of investment in the current assets and forecasting the required resources of firm in the next year. It is usually used the short-term loan to finance the temporary investment in the current assets (Ahamadpoor and al., 2007). perational definition: represents the ratio of banking short-term finance to total assets.

Trade credit (TC)

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Conceptual definition: Trade credit occurs when a company receives the good and service from the suppliers without to pay its money at the time of transaction. In other words, trade credit is an agreement between buyer and seller whereby seller allows the buyer to pay the cash fee of purchased good with delay (Gertler, 1995).

Operational definition: Trade credit is a short-term finance instrument and will be measured by the ratio of accounts and commercial payable document to total assets.

CCC: It expresses cash conversion cycle which is obtained by following equation:

$$\textbf{Cash conversion cycle} = \frac{\textbf{Nominal inventory}}{\textbf{Final price of sold good}} + \frac{\textbf{Receivable accounts}}{\textbf{Revenue}} + \frac{\textbf{Payable accounts}}{\textbf{Final price of sold good}}$$

GROWTH: It shows sale annual growth and is obtained by the difference in sale of this year and last year.

ROA: It shows return on assets which is obtained as follows:

$$\textbf{Return of assets} = \frac{\textbf{Profit before deduction of interest and tax}}{\textbf{Total assets}}$$

IR: This variable shows interest rate.

CFV: It shows coefficient of cash flow volatility of company at the end of every year t.

SIZE: It shows size of company and is counted by natural logarithm of total assets for company at the end of year t.

LEV: it shows financial leverage which is defined as book value of total divided debts by total assets at the end of year.

Descriptive statistics of research variables

Description of variables	Average	Mean	Standard	Minimized	Maximized	Skewness	Elongation

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				deviation				
Trade credit	**TC**	**0.34**	**0.31**	**0.19**	**0.01**	**1.40**	**1.19**	**6.08**
Short term finance	**STF**	**0.54**	**0.52**	**0.25**	**0.03**	**2.37**	**1.45**	**8.96**
Cash conversion cycle	**CCC**	**1.50**	**1.32**	**0.89**	**-0.50**	**6.55**	**3.24**	**15.82**
Cash flow volatility	**CFV**	**-0.04**	**-0.04**	**1.07**	**-2.50**	**2.39**	**-0.07**	**3.84**
Return on assets	**ROA**	**0.13**	**0.11**	**0.14**	**-0.32**	**0.78**	**0.75**	**5.13**
Sales growth	**GROWTH**	**0.14**	**0.12**	**0.31**	**-0.39**	**0.84**	**0.42**	**2.85**
Size of the company	**SIZE**	**5.99**	**5.86**	**0.74**	**4.39**	**8.30**	**0.84**	**8.99**
Interest rate	**IR**	**0.79**	**0.57**	**1.44**	**-4.51**	**7.17**	**1.38**	**8.99**
Financial leverage	**LEV**	**3.25**	**0.96**	**1.01**	**0.36**	**0.25**	**0.59**	**0.62**

Descriptive statistics of this table show whenever there is high difference between data and average, its variance increases and generally standard deviation, which is variance square and shows the amount of data dispersion, also increases. As seen in table, variable mean of company's size equals to 5.99 which indicates half of data is less than this amount and the other half is more than this. Short-term finance coefficient equals to -12.7, that is, this variable has a skewness to the left and it is deviated as much as from the center of symmetry. The amount of elongation of frequency curve relative to standard normal curve is said eminence and elongation. If elongation is approximately 0, frequency curve will be normal and balanced in terms of elongation. If this amount is positive, curve will be eminent and if it is negative, curve will be wide. Elongation of all variables for this model is positive. Given that the average of sale growth percent more is than the mean of sale growth percent, distribution of sale growth percent among the statistical sample

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of skewness is to the right and, so, one can extract the descriptive statistics of other variables from the table.

Levin, Lynn and Chu Test (LLC)

Variable		Statistic	p-value
Trade credit	**TC**	**-10.98**	**0.0000**
Interest rate	**IR**	**-13.94**	**0.0000**
Financial Leverage	**LEV**	**-9.04**	**0.0000**
Cash conversion cycle	**CCC**	**-18.19**	**0.0000**
Cash flow volatility	**CFV**	**-15.67**	**0.0000**
Return on assets	**ROA**	**-8.59**	**0.0000**
Sales growth	**GROWTH**	**-15.15**	**0.0000**
size of the company	**SIZE**	**-4.03**	**0.0000**
Short term finance	**STF**	**-10.18**	**0.0000**

In this section, it is examined the stability or reliability of research variables. In order to examine the reliability, it is used Levin, Lynn and Chu Test (LLC). Results of this test has been illustrated in the table. Due to results of Levin, Lynn and Chu Test (LLC), since value of P for all variables is lesser than 0/05, as a result, these research variables have been reliable during the research period. Results of Levin, Lynn and Chu Test (LLC) show that average and variance of variables over time and covariance of variables between the different years were constant. Then, use of these variables in the model does not led to the false regression.

collinearity Test between variables

Name of variable		Tolerance	Variance inflation factor VIF
Trade credit	TC	**0.00**	**1.33**
Interest rate	IR	**0.00**	**1.39**
Financial Leverage	LEV	**0.00**	**1.79**

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Cash conversion cycle	CCC	**0.00**	**1.13**
Return on assets	ROA	**0.00**	**1.48**
size of the company	SIZE	**0.00**	**1.07**
Sales growth	GROWTH	**0.00**	**1.21**
Cash flow volatility	CFV	**0.00**	**1.20**

According to the variance inflation factor table, all variables are very close to 1 (less than 5), then, it is confirmed the hypothesis of Collinearity between independent variables in all models of the research.

Fitness of the regression equation of the research hypothesis

Name of variable		Variable coefficient	Value of coefficient	Statistics t	Significance level
Constant number		β_0	**0.16**	**2.98**	**0.00**
Trade credit	**TC**	β_1	**-0.43**	**-20.47**	**0.00**
leverage	**LEV**	β_3	**0.79**	**61.52**	**0.00**
liquidity	**CCC**	β_4	**0.00**	**1.98**	**0.00**
Return on assets	**ROA**	β_5	**0.04**	**1.93**	**0.04**
Size of company	**SIZE**	β_6	**-0.01**	**-2.06**	**0.00**
Determination coefficient	**0.87**	**Statistics F**		**295.50**	
Adjusted determination coefficient	**0.86**	**Significance (P-Value)**		**0.000**	
Watson camera statistics				**1.87**	

The value of F (295.50) indicates that the whole regression model is significant. As specified in the bottom of the table, determination and adjusted determination coefficients of above model, respectively, are 87% and 86%. Therefore, it can be concluded that only 86% of short-term finance changes of examined companies are explained by the independent and control variables in the

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regression equation. In this table, positive (negative) numbers in the column of coefficient value indicate that amount of direct (reverse) effect of each of variables on the finance is short-term. According to the table, significance level (P-value) of trade credit variable (0.00) is lesser than significance level considered by the present research (5%); similarly, absolute value of relevant statistics t to this variable (20.47) is as independence as larger than statistics t obtained by the table. Therefore, hypothesis H0 is rejected as 95% reliability level and hypothesis H1 is confirmed based on "there is a significant relationship between short-term finance and trade credit of company" and this effect is negative and reverse.

Conclusion

To confirm or reject this hypothesis, according to the table of results from fitness of regression equation of the hypothesis, value of F indicates the general significance of regression model. Also, absolute value of statistics t related to this variable is as dependence as larger than critical points. Therefore, by rejecting hypothesis H0 at 95% variability level and confirming hypothesis H1, we can say that hypothesis is confirmed: "there is a significant relationship between short-term finance and trade credits of company". It reflects the fact that well-off companies with high trade credit which can make their own purchases in credit, it isn't necessary to their own finance out of company. We expected such a significant and reverse relationship and it had been confirmed in earlier literature. Considering the analysis of the research hypothesis and result obtained, it can state general limitations and suggestions. It is suggested that one is further focused trade credits of companies in the analyses when one analyzes the short-term financial operation of companies. Because higher trade credit companies have lesser need for short-term finance and thus decrease their short-term leverage and risk.

Similarly, among limitations of the present research, one can be mentioned the following cases: it isn't possible to collect data due to the size of statistical population by researcher. Because the number of loss-making companies were high in the given years. Also, it should be used real data of all years in the EXCEL and Eviews software in this research. Some selected companies were inevitably omitted because of lack of given data in some years. Other limitation is that regression in the level of company (time series regression) is due to be short time series of each company which it can be removed by the research over a longer period.

References

Received 23/02/2018
Approved 10/06/2018

Revista Publicando, 5 No 15. (2). 2018, 1674-1687. ISSN 1390-9304
1- Coulibaly, B., Sapriza, H., & Zlate, A. (2013). Financial frictions, trade credit, and the 2008–09 global financial crisis. International Review of Economics and Finance,26(April), 25–38.

2- Dittmar, A. Duchin, R (2013). Looking in the Rear View Mirror: The Effect of Managers' Professional Experience on Corporate Cash Holdings. ". Journal of Finance, 50, 1-51.

3- Fadaee Vahed, Meisam; Mayeli, Mohammadreza (2014), "Prioritizing the effective factors on the finance in Iran using the method of hierarchy analysis", quarterly journal of economic-financial policies, …

4- Fakhari, Hossein; Rasooli, Shadi (2013), "Review effect of conservatism and quality of accruals on the investment performance" experimental- accounting researches, No. 8, Pages 81-100.

5- Foroghi, Dariush; Farazi, Saeed (2014). "Review the effect of cash flow volatility on the level of holing cash fee considering limitation of financefor accepted companies in Stock Exchange of Tehran", scientific-research Quarterly journal of asset management and finance, 2nd year, 4th edition, No. (4), spring 2014, pages 21-36.

6- Giannetti, M., Burkart, M., & Ellingsen, T. (2011). What you sell is what you lend? Explaining trade credit contracts. The Review of Financial Studies, 24(4), 1261–1298.

7- Gerhard Kling, Salima Y .Paul, Eleimon Gonis (2014). "Cash holding, trade credit and access to short-term bank finance. www.ScienceDirect.com.

8- Gertler. m and b. bernanke. (1995). Inside the Black Box: the Credit Channel of Monetary Policy Transmission. journal of Economic perspectives,9,27-48.

9- Jiri .Chod, Evgeny .Lyandres S. Alex Yang (2016), "Trade Credit and Supplier Competition". https://econ.ubbcluj.ro

10- Karimzade, Mostafa; Norouzi, Mohammad; Nadem, Masoud (2013), "Review effect of financial resources and amount of focus of shareholders on the reaction of stock exchange of Tehran to reported profits of companies" monetary-financial economy quarterly (former Knowledge and Development), new series, 20th year, No. 5, Spring and Summer 2013. Pages 116-135.

11- Meijun Qianab, Bernard Y. Yeung (2015). "Bank financing and corporate governance, http://www.sciencedirect.com,Volume 32, June 2015, Pages 258-270.

Received 23/02/2018
Approved 10/06/2018

Revista Publicando, 5 No 15. (2). 2018, 1674-1687. ISSN 1390-9304
12- Nobanee, H., Abdullatif, M., & AlHajjar, M. (2011). "Cash conversion cycle and firm’s performance of Japanese firms". Asian Review of Accounting, 19, 147-156.

13- Tsung Te Lin , Jian Hsin Chou (2015).“Trade credit and bank loan: Evidence from Chinese firms” International Review of Economics & Finance, Volume 36, March 2015, Pages 17-29

14- Wenfeng Wua, Oliver M. Rui b, Chongfeng Wu (2011). The relationship between capital structure and product markets: evidence from New Zealand. Available at: http://ssrn.com.

15- Whited,T.M,Wu,G,2006.“Financial constraint risk”. Rev. Financ.Stud. 19, 531–559.

16- Zajernia, Ehsan; Khojehzadeh Dezfooli Mehdi; Fadaee Vahed, Meisam (2015), “Prioritizing effective factors on the selection of finance method in Iran using TOPSIS method in fuzzy environment based on the verbal variables”, Journal of Financial Engineering and Management of Securities, No. 27, Summer 2015.

17- Zhang, J. (2011). The Relationship BetweenWorking Capital Management And The Corporate Cash Holdings, University of Eastern Finland, Faculty of Social Sciencesand Business Studies, Master’s thesis: 67 p.Available at: http://epublications.uef.fi.

Received 23/02/2018
Approved 10/06/2018