

# THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT AND PROFITABILITY: EVIDENCE FROM THE CZECH AGRIC AND FOREST INDUSTRY

*Daniel Anarfi,*

Department of Accounting and Taxation,  
Faculty of Economics,  
Mendel University in Brno, Zemědělská,  
Czech Republic

*Kofi Ampadu Boateng,*

Department of Forest and Wood Products  
Economics and Policy, Faculty of Forestry  
and Wood Technology, Mendel University  
in Brno, Zemědělská, Czech Republic

## ABSTRACT

Efficient working capital management plays a significant role in the profitability of companies and this paper analyses the relationship between working capital management and profitability of firms operating in the Czech Agric and Forestry sector for the period of 2005- 2014 using Net Operating Profitability (NOP).

For this study, strongly balanced panel data of 373 firms operating in the Czech Agric and Forestry sector obtained from Amadeus Bureau van Dijk is used. The main traditional working capital management indicators (Average Collection Period-ACP, Inventory Turnover Days-ITD, and Average Payment Period-APP) were used in the regression model. Cash Conversion Cycle-CCC was used as a proxy for measuring efficient working capital management as well as current ratio been used as an indicator for liquidity. Firm SIZE (measured in terms of natural logarithm of sales), ratio of Financial Assets to Total Assets-FATA and Leverage were also used as control variables. The results indicated that the indicators of working capital management rather does not affects profitability in the sector but firm size, ratio of financial assets to total assets, leverage and current ratio significantly affects profitability.

The study also concludes that firms operating in the Agric and Forest industry should focus more on increasing sales and reduce the ratio of debt in their capital structure composition.

**Keywords:** Working Capital; Profitability; Firm Size.

## INTRODUCTION:

The financial lifeline of any company depends on its ability to generate more money that it uses for operation, and labour cost over a relatively long period. Fixed and liquid assets also play an integral role in a company's survival provided there is a healthy balance between the two depending on the trade a company engages in (Paramasivan & Subramanian, 2009). Working capital refers to an organization's liquid assets and monies used to finance its short-term or current goals. It can also be described as a firm's net investment in assets that are necessary to support its daily activities. In general, a firm's working capital is derived from the difference between current liabilities and current assets.. That is, Net working capital is equal to current assets minus current liabilities. This study contributes to the theoretical knowledge by identifying how working capital management affect firm's profitability in the Czech Agric and Forest industry and how these firms can use working capital strategies to increase the firm's market value.

## LITERATURE REVIEW:

Working capital continually takes different forms such as cash, inventories, and receivables depending on an organization's needs. The effective management of working capital is therefore imperative for any organization to maintain smooth operations throughout its operation cycle (Nobanee et al. 2011). Additionally, it helps in mitigating the cost of capital. The cost of capital refers to monetary resources used up while maintaining the working capital. Also, working capital management is crucial in maximizing the return on current investments. On the other hand, organizational performance refers to the metrics applied to find the amount of value the organization has achieved. This value pertains to parameters that include but not limited to strategic objectives, organizational structure, business performance measures, allocation of resources and processes, and reward structures (López-Nicolás & Meroño-Cerdán, 2011). Consequently, organizational performance is a culmination of different variables that have to align for the organization to achieve optimum performance.

Similar to treasuries in the global economies, the Treasury in the Czech Republic deals with cash management issues. This includes management of debts, financing the corporation, control of foreign currency, maintaining healthy inter-bank relationships, and providing necessary support for all these functions (Polák & Kocurek 2007). Cash pooling and other global trends in banking have had a significant impact in the Czech Republic since the inception in the 21<sup>st</sup> century (Ambriško, 2016). As companies, banks, and investors engaged in transaction-driven business models, institutional and cooperate investors were looked upon to provide financing for major corporate clients and industry players (Petrovic & Solingen, 2005). This financial situation coupled with other macro and micro-environmental factors have forced agricultural enterprises and forestry industry players to seek new approaches for increasing their competitiveness (Vavřina & Růžičková, 2012).

Agricultural land in the Czech Republic, including forestland, accounts for more than half of the country's total acreage with an estimated 54% of the country's land under cultivation and forest cover (Ec.europa.eu, 2016). However, there has been a gradual decrease in agricultural land coverage owing to the struggling economy that has been gradually recovering since 1998, and 2008 economic depressions. The share in agriculture and forestry GDP has dropped to less than 4% translating to a drop in employment rates in the sector of the same magnitude (Ec.europa.eu, 2016).

The agricultural and forestry industry in the Czech Republic is largely privatized and is dominated by very large-scale collective and state farms (Jarský & Pulkrab, 2013). This has given rise to three major forms of agriculture namely, transformed coops, stock and limited liability companies, and individual farms (Liska, 1992). However, they enjoy similar financial resources in terms of government support and access to credit, the working capital management and organizational performance within these distinct entities has served to distinguish them from each other (Davidova et al. 2003).

The newly formed cooperatives enjoy a bigger market share, as far as agricultural and forestry land is concerned, with an estimate 43% control of the industry (Ženka et al. 2015). However, this figure is a fall from the initial figure during the pre-transition period. This has been attributed to their management strategy, which relies on constant reshuffling based on voting rights by stakeholders. Stakeholders usually assure their working capital due to the pooling of resources. As such, they end up achieving less organizational performance (Csáki et al. 1999).

On the other hand, stock and limited liability companies have been created from former state farms and property foregone by the cooperatives (Slaboch et al. 2016). These entities are more critical of capital management and organizational performance owing to their limited funds stemming from bank credits and loans (Hlavsa & Aulová, 2013 ). Their management is based on outsourcing as qualified individuals who do not own any of the lands are

sought to manage them. Their working capitals stem from profits and as such are forced to have impeccable organizational performance. Examples include Pistachio, and Vestus alliance (Swain, 1999).

Individual producers account for less than 20% of the market in the agricultural and forestry sector. They produce for own consumption and local markets. However, more than 80% rely on other sources of income and only supplement this income with agriculture and forestry activities (Mathiis et al. 1999). Consequently, their capital management skills are under par as they have access to numerous avenues for financial assistance. However, they achieve very high organizational performance due to the intimate interaction with the different functions involved in the business (Csáki et al. 1999).

**METHODOLOGY:**

**Data Description:**

This section indicates the data used to achieve the objective of the study. The areas of discussion under this chapter include among others sources of data, population, sample and sampling method variable identification and the model specification. The primary aim of this paper is to investigate and analyze the relationship between Working Capital Management (WCM) on profitability of firms in the Agric and Forestry Industry in the Czech Republic. This study used secondary data which were mostly quantitative ratios from the financial statements of the firms. This data was extracted from European micro database AMADEUS provided by Bureau van Dijk covering a period of ten (10) years from 2005-2014. In total, 373 firms were sampled from the population for the period of study. To achieve a balanced data, all firms which has operated in the Agric and Forest Industry for this period and had asset valuing 5000 and above were considered. Therefore the sample consisted of 3231 observations.

**Variables:**

The use of traditional variables have long been used by several authors in assessing the impact of WCM on profitability or performance of a firm and these include Average Collection Period (ACP), Inventory Turnover in Days (ITD), Average Payment Period (APP) and Cash Conversion Cycle (CCC) (Lazaridis & Tryfonidis, 2006; Padachi, 2006; Mathuva, 2009). These traditional WCM variables are maintained in this study as part of the independent variables. Also, liquidity is one of the most important goals of working capital management and central task of cash management and therefore used liquidity ratios also included in the independent variables. The Liquidity variable used in this study is the current ratio. Moreover, size (natural log sales), the ratio of Financial Asset to Total Asset (FATA) and financial leverage (debt ratio) were included as they have the potential of influencing the choice of working capital. Lastly, profitability of the firms are measured using Net Operating Profit (NOP) which is used as the dependent variable. The variables are defined as follows:

**Net Operating Profit (NOP):** It is defined as Operating Income plus depreciation, and divided by total assets minus financial assets.

**Average Collection Period (ACP):** It is calculated by dividing account receivable by sales and multiplying the result by 365 (number of days in a year).

**Inventory turnover in days (ITID):** It is calculated by dividing inventory by cost of goods sold and multiplying by 365 days.

**Average Payment Period (APP):** It is calculated by dividing accounts payable by purchases and multiplying the result by 365.

**The Cash Conversion Cycle (CCC):** Measured by adding Average Collection Period with Inventory Turnover in Days and deducting Average Payment Period.

**Current Ratio (CR):** which is a traditional measure of liquidity is calculated by dividing current assets by current liabilities.

**Leverage Debt Ratio (DR):** used as proxy for Leverage and is calculated by dividing Total Debt by Total Assets.

The Panel data multiple regression analysis was employed in the study to explore the combined effect of the variables of working capital management on performance. Following the work of Rehman (2006), our general form of model is specified below:

$$NOP_{it} = \beta_0 + \sum_{all}^n \beta_i X_{it} + \varepsilon \dots\dots\dots (1)$$

$NOP_{it}$  = Net Operating Profitability of firm  $i$  at time  $t$ ;  $i = 1, 2, \dots, 373$  firms.

$\beta_0$  = The intercept of equation

$\beta_i$  = Coefficients of X it variables

$X_{it}$  = The different independent variables for working capital Management of firm  $i$  at time  $t$

$t$  = Time = 1, 2,....., 10 years.

$\varepsilon$  = The error Term.

The panel level of the data sample allows the application of fixed-effects (FE), random effect (RE) and between effect (BE) methods on the variables (Dischinger, 2010). The Hausman specification test was performed to determine the appropriate model for the study.

**RESULTS:**

**Descriptive statistics:**

We begin our analysis by presenting the descriptive statistics of the data obtained. Table 1 indicates the mean values and the standard deviation for each variable in the study. Not only that but the table also includes the minimum and maximum values for each variable in order to trace out the extreme values achieved by all variables during the years of study. The table depicts the descriptive statistics of 373 firms operating in the Agric and Forest Industry in the Czech Republic for a 10-year period from 2005-2014.

**Table 1: Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
NOP	3,706	0.093815	0.080631	-2.31	0.63
CCC	3,599	7.619655	46.06732	-297.45	764.03
LEV	3,353	0.121035	0.130416	0	0.76
CR	3,704	4.517783	5.315416	0.03	89.15
ACP	3,704	39.60097	40.16979	0	877
APP	3,698	38.20173	51.09415	0	988
ITD	3,620	5.548199	16.01227	0.01	754
FATA	3,724	3.54467	35.18462	0	952.63
SIZE	3,721	8.396316	0.97189	-2.58	11.6

*Source: Anarfi & Boateng (2016)*

From Table 1 above, the dependent variable-Net Operating Profit (NOP) has a mean value of 9% of all firms in the Agric and Forest Industry in Czech Republic for the 10 year period with a standard deviation of 8% as well as the minimum NOP for the firms is -2% in a year while the maximum is 63%. This means that the value of the profitability can deviate to either way by 8%. With the traditional independent variables, the firms Average Collection Period (ACP) for the received payment of sales made of 40 days with a standard deviation of also 40 days. The minimum and maximum days taken by the firms to collect their cash are 0 and 877 days respectively. When the firms also order or buy goods or inventory from their suppliers, it takes them an average of 38 days to make payment with a higher deviation of 51 days. But the maximum days the firms can take to pay their suppliers is 988 days. It is however taken the firms use an average of 6 days to turn their inventory around either through using them in their operations or reselling them. Also the maximum number of days the firms are using to turn their inventory is 754 days. The Cash Conversion Cycle (CCC) which is the test of efficiency in the management of working capital of the firms is on average 7 days with a standard deviation of 46 days. The Current Ratio (CR) which is used as a proxy for the firms liquidity recorded an average mean of 4.52 indicating with a standard deviation of 5.3 indicates that, on average, the firm’s current assets can settle their current liabilities at least four (4) times. The corresponding minimum and maximum values were 0.03 times and 89 times respectively.

To measure the effect of firm size (SIZE) over its profitability, Natural Logarithm of sales was calculated as an indicator of the size of the firm. The mean value recorded in respect of size was 8.39 and a standard deviation 0.97 with corresponding minimum and maximum values being -2.58 and 11.6 respectively. Moreover, Financial Leverage (FL) is used as a control variable to examine the impact of debt financing used by a firm over its profitability. The Financial Leverage (FL) obtained in our descriptive statistics is 12% as the average with 13% being the standard deviation with a corresponding minimum debt of 0% and a maximum debt 76%. Finally, our check of the ratio of Fixed Financial Assets to the total Assets of the Czech Agric and Forestry firms resulted in

an average ratio of 3.54% with a standard deviation of 35.18%. The maximum portion of assets in the form of financial assets for a particular company is 952% and the minimum is 0.00.

**QUANTITATIVE ANALYSIS:**

This section describes the quantitative analyses for our study. It includes two distinct methods of statistical examination. The first portion holds the Correlation analysis to measure the degree of association between any two variables of study. The second portion contains the Regression analysis for the performance (efficiency) indicator used in the study separately.

**Correlation Analysis:**

This section explains the Correlation of the profitability variable (NOP) with that of the indicators of working capital management. Table 2 holds the Correlation Matrix between regress and regressors used for the study. The preamble of our analysis is that we expect a negative relationship between the indicators of WCM and the profitability variable if efficient WCM increases profitability and vice versa.

**Table 2: Correlation Matrix**

	NOP	ACP	ITD	APP	CCC	CR	SIZE	FATA	LEV
NOP	1.0000								
ACP	-0.0718*	1.0000							
	0.0000								
ITD	-0.0506*	0.0043	1.0000						
	0.0024	0.7963							
APP	-0.2047*	0.3035*	0.006	1.0000					
	0.0000	0.0000	0.7167						
CCC	0.2045*	0.4405*	0.3836*	-0.5973*	1.0000				
	0.0000	0.0000	0.0000	0.0000					
CR	0.0459*	0.2261*	0.005	-0.2104*	0.3745*	1.0000			
	0.0053	0.0000	0.7655	0.0000	0.0000				
SIZE	0.1890*	-0.1583*	0.0272	-0.2066*	0.0471*	-0.2179*	1.0000		
	0.0000	0.0000	0.102	0.0000	0.0047	0.0000			
FATA	-0.3328*	-0.0453*	-0.0019	-0.0259	-0.0281	0.1444*	-0.1891*	1.0000	
	0.0000	0.0059	0.9086	0.116	0.0923	0.0000	0.0000		
LEV	0.0576*	-0.0856*	-0.0829*	0.0628*	-0.1849*	-0.1163*	-0.0556*	-0.0360*	1.0000
	0.0009	0.0000	0.0000	0.0003	0.0000	0.0000	0.0013	0.0373	

Source: Anarfi & Boateng (2016)

We begin our correlation analysis by first looking at the traditional WCM indicators. To start with, we look at the correlation results between the average collection period and net operating profitability. The correlation results shows a negative coefficient, with a very significant p-value. This indicates that average collection period is highly significant impacting negatively on the firm’s profitability and anytime it increases it will decrease the firm’s profit. Correlation results between inventory turnover in days and the net operating Profitability also indicate a negative correlation. This also tells that the result is highly significant impacting negatively on the firm’s profitability and if the firms delays or takes more time in turning around their inventory it will decrease their profitability. Also correlation results between the number of days it takes the firms to pay their suppliers and profitability indicate highly negatively significant. Although the more days it takes the firms to pay their suppliers, the more cash the hold in the company to take care of other needs but it also depends on the inventory that they are been supplied. This results is consistent with the results of Raheman et al. (2010) and Raheman & Nasr, (2007) which suggests that the less profitable firms wait longer to pay their bills. Moreover the cash conversion cycle which is a proxy for measuring efficient working capital management had a positive

coefficient. This means that the higher the cash conversion cycle the higher the profitability of the firm. Although this deviate from the view of time lag and profitability (Mohamad & Saad, 2010; Raheman & Nasr, 2007) but consistent with the study and findings of Gill et al. (2010).

Our Current ratio which is a proxy measure liquidity of the firms had significant positive relationship with profitability. The results is contradictory to the traditional belief but line with the results of Raheman et al. (2010). Our results has shown that the size of the firm has a significant effect of profitability in terms of WCM. The results indicated a significant positive relationship between the size of the firm and net operating profitability. Natural log of sales which was a proxy for measuring the size of the firm indicated that as the firm are able to sell more they become more liquid of cash. Finally the results indicated negative coefficient of the ratio of financial assets to total assets but a positive significant coefficient of our debt ratio.

**Empirical Results from Panel Data Analysis:**

Table 3 shows three different but related models of our empirical results to establish the impact of WCM on profitability in the Agric and Forest industry of the Czech Republic. First we run a Fixed Effect model where we assume that unobserved effects are correlated with the indicators of WCM. Secondly we then specify a Random Effects model where the initial assumptions of correlation are reversed on the same covariates. Now in other to select the best model among these two, the Hausman specification test was ran to select one model that best suits the scenario in the Czech Republic. However the final model also tries to look at the averages of the dependent variable for all the Agric and Forestry firms as one. Table 3 moreover shows the parameters of estimation and standard errors obtained from the fixed effects model, random effects model and the between effects model with the NOP as the dependent variable.

**Table 3: Regression Models**

	(1)	(2)	(3)
	FE MODEL	RE MODEL	BE MODEL
VARIABLES	NOP	NOP	NOP
ACP	0.0015 (0.00227)	0.000826 (0.00226)	-0.0124 (0.0134)
ITD	0.00131 (0.00227)	0.000518 (0.00226)	-0.0132 (0.0135)
APP	-0.00192 (0.00227)	-0.00126 (0.00226)	0.012 (0.0134)
CCC	-0.00134 (0.00227)	-0.00069 (0.00226)	0.0125 (0.0134)
CR	-0.000739* (0.00032)	-0.00048 (0.00029)	0.00145* (0.00066)
SIZE	0.0239*** (0.00276)	0.0107*** (0.00203)	0.00458 (0.0032)
FATA	0.000809*** (0.00015)	0.000812*** (0.00014)	0.00103** (0.00032)
LEV	-0.0253** (0.00924)	0.00368 (0.00856)	0.126*** (0.0247)
CONSTANT	-0.0863*** (0.0242)	0.0232 (0.0181)	0.0516 (0.0303)
Observations	3,231	3,231	3,231
R-Squared	0.109		0.289
Number of Id	373	373	373

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Source: Anarfi & Boateng (2016)

We begin with the FE model which we observed that with the traditional WCM indicators, none of them (ACP, ITD, APP, CCC) is significant and impacting to NOP. The proxy measuring liquidity of the firms (CR) significant and positively related to NOP. This positive relationship shows that the current ratio (CR) have significant positive impact on NOP. Also, firm size, debt ratio (Leverage) and ratio of financial assets to total assets are found to be significantly affecting the net operating profitability (NOP) in the Agric & Forest Industry in the Czech Republic.

For the RE model the research observes same results as the FE model in terms of the traditional WCM indicators. The results showed no relationship and impact on the NOP. Also there was no impact of our liquidity measure on NOP with the RE model. The only indicators which showed a positive significant impact on NOP were firm size and ratio of financial assets to fixed assets. The Hausman specification test was performed on the Fixed and Random effect model which calculated a chi2 of 238.91 ( $p > \chi^2 = 0.000$ ). With this result we confidently confirm the result of the Fixed effect model as the appropriate result for this study.

For the BE model the results again showed no significance relationship between the traditional WCM indicators, firm size and NOP. However, there were a significant positive relationship between CR, FATA, leverage and NOP.

## CONCLUSION:

The Agric and Forestry industry in the Czech Republic is one of the major contributors to the development of the Czech economy and there is the need therefore for firms operating in this sector to efficiently manage their working capital. In this perspective, the relationship between working capital management of the firms operating in this sector and profitability is studied in this study.

The results showed that for our sampled firms, shortening the days of collection of account receivables and inventory turnover days are correlated with high profitability and this is in line with previous research. With regards to the number of days, the firms' needs to settle their suppliers, we found a negative correlation with profitability however no significant relationship was found between these variables in our regression models. The cash conversion cycle which is the proxy for measuring efficient working capital management showed a positive relationship with profitability although previous theoretical and empirical findings predict a negative relationship however we found no impact on profitability. The results also indicated a positive impact of the liquidity ratio on profitability and is positively correlated with profitability.

The positive relationship of Cash Conversion Cycle and the negative association of the Average Payment Period with Net Operating Profitability has been validated using our regression models which shows no impact on profit. This indicates that the traditional indicators of working capital management does not impact on profitability of the Agric and Forestry sector in the Czech Republic.

The results produced also tell managers in this sector to rather concentrate more on their firm size (measured in terms of natural logarithm of sales), the ratio of financial assets to total assets and leverage since they impacts significantly on profitability. Managers should rather make it a policy to increase the level of sales as it significantly increase profitability as well as reducing the debt in the composition of the firm's capital structure.

## REFERENCES:

- [1] Ambriško, R. (2016). Growth-Friendly Fiscal Strategies for the Czech Economy. *CERGE-EI Working Paper Series*, (563).
- [2] Cleverism. (2015). *Working Capital Management: Everything You Need to Know*. [online] Available at <https://www.cleverism.com/working-capital-management-everything-needknow/> [Accessed 13 Jun. 2016].
- [3] Csaki, C., Debatisse, M., & Honisch, O. (1999). *Food and Agriculture in the Czech Republic: From a "velvet" Transition to the Challenges of EU Accession* (Vol. 437). World Bank Publications.
- [4] Davidova, S., Gorton, M., Iraizoz, B., & Ratinger, T. (2003). Variations in Farm Performance in Transitional Economies: Evidence from the Czech Republic1. *Journal of Agricultural Economics*, 54(2), 227-245.
- [5] Ec.europa.eu. (2016). *Agricultural census in the Czech Republic - Statistics Explained*. [online] Available at: [http://ec.europa.eu/eurostat/statistics-explained/index.php/Agricultural\\_census\\_in\\_the\\_Czech\\_Republic](http://ec.europa.eu/eurostat/statistics-explained/index.php/Agricultural_census_in_the_Czech_Republic) [Accessed 13 Jun. 2016].
- [6] Ec.europa.eu. (2016). *Agriculture - CEC Reports - Czech Republic*. [online] Available at: [http://ec.europa.eu/agriculture/publi/peco/czech/summary/sum\\_en.htm](http://ec.europa.eu/agriculture/publi/peco/czech/summary/sum_en.htm) [Accessed 13 Jun. 2016].

- [7] Gill, A., Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. *Business and Economics Journal*, 10(1), 1-9.
- [8] Hlavsa, T., & Aulová, R. (2013). Analysis of the Effect of Legal Form and Size Group on the Capital Structure of Agricultural Businesses of Legal Entities. *AGRIS on-line Papers in Economics and Informatics*, 5(4), 91.
- [9] Jarský, V. and Pulkrab, K. (2013). Analysis of EU support for managed succession of agricultural land in the Czech Republic. *Land Use Policy*, 35, pp.237-246.
- [10] Lazaridis, I., & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens stock exchange. *Journal of financial management and analysis*, 19(1).
- [11] Linková, E. (1991). *Agriculture in the Czech Republic*. České Budějovice [Czech Republic]: Ministry of Agriculture of the Czech Republic.
- [12] Liska, P. (1992). *Czechoslovak Law no. 229 on Land Ownership of 5/91*. Washington, D.C.: Eastern Europe Business Information Center.
- [13] López-Nicolás, C., & Meroño-Cerdán, Á. L. (2011). Strategic knowledge management, innovation and performance (pp. 502-509) *International journal of information management*, 31(6).
- [14] Mathijs, E., Blaas, G., & Doucha, T. (1999). Organisational form and technical efficiency of czech and slovak farms (pp. 331-344) *Most-most: Economic Policy in Transitional Economies*, 9(3).
- [15] Mathuva, D. (2009). The influence of working capital management components on corporate profitability: a survey on Kenyan listed firms (pp. 1-11) *Research Journal of Business Management*, 3(1).
- [16] Mohamad, N. E. A. B., & Saad, N. B. M. (2010). Working capital management: The effect of market valuation and profitability in Malaysia (pp. 140) *International Journal of Business and Management*, 5(11).
- [17] Nobanee, H., Abdullatif, M., & AlHajjar, M. (2011). Cash conversion cycle and firm's performance of Japanese firms. *Asian Review of Accounting*, 19(2), 147156.
- [18] Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: an analysis of Mauritian small manufacturing firms. (pp. 45-58.) *International Review of business research papers*, 2(2),
- [19] Paramasivan, C. and Subramanian, T. (2009). *Financial management* (pp. 76). New Delhi: New Age International (P) Ltd., Publishers.
- [20] Petrovic, B. and Solingen, E. (2005). Europeanisation and Internationalisation: The Case of the Czech Republic(pp.281-303) *New Political Economy*, 10(3).
- [21] Polák, P. and Kocurek, K. (2007). Cash and Working Capital Management In The Czech Republic. (pp.17-30) *Investment Management and Financial Innovations*, Volume 4(Issue 1).
- [22] Raheman, A., Afza, T., Qayyum, A., & Bodla, M. A. (2010). Working capital management and corporate performance of manufacturing sector in Pakistan (pp. 156-169) *International Research Journal of Finance and Economics*, 47(1).
- [23] Raheman, A., & Nasr, M. (2007). Working capital management and profitability—case of Pakistani firms (279-300) *International review of business research papers*, 3(1).
- [24] Rehman, A. (2006). Working Capital Management and Profitability: Case of Pakistani Firms (Unpublished Dissertation). *Pakistan: COMSATS Institute of Information Technology Islamabad*.
- [25] Slaboch, J., Bubáková, P. & Špička, J. (2016). Production Analysis of Biogas Plant in the Czech Republic. (pp.151-158) *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 64(1),
- [26] Swain, N. (1999). Agricultural restitution and co-operative transformation in the Czech Republic, Hungary and Slovakia. (pp.1199-1219). *Europe-Asia Studies*, 51(7),
- [27] Vavřina, J. and Růžičková, K. (2012). Agricultural Producers' Groups In The Czech Republic: Introductory Review And Discussion Of The Problem Area Economic Performance Measurement. (pp.441-450) *Acta Universitatis Agriculturae Et Silviculturae Mendelianae Brunensis*, Volume LX(Number 7, 2012),
- [28] Ženka, J., Žufan, P., Krtička, L. and Slach, O. (2015). Labour productivity of agricultural business companies and cooperatives in the Czech Republic: A micro-regional level analysis. *Moravian Geographical Reports*, 23(4).

----