SOPRONI EGYETEM

LÁMFALUSSY SÁNDOR KÖZGAZDASÁGTUDOMÁNYI KAR

A konferenciát támogatta / Supported by:
Magyar Nemzeti Bank (MNB)
/ Hungarian National Bank (MNB)

NEMZETKÖZI TUDOMÁNYOS KONFERENCIA
A MAGYAR TUDOMÁNY ÜNNEPE ALKALMÁBÓL

International Scientific Conference on the Occasion of the Hungarian Science Festival

Sopron, 2021. november 4.
4 November 2021, Sopron

PANDÉMIA – FENNTARTHATÓ GAZDÁLKODÁS – KÖRNYEZETTUDATOSSÁG / PANDEMIC – SUSTAINABLE MANAGEMENT – ENVIRONMENTAL AWARENESS

KONFERENCIAKÖTET / Conference Proceedings

Szerkesztette / Edited by: OBÁDOVICS Csilla, RESPERGER Richárd, SZÉLES Zsuzsanna

Nemzetközi tudományos konferencia a Magyar Tudomány Ünnepe alkalmából /
International Scientific Conference on the Occasion of the Hungarian Science Festival

Sopron, 2021. november 4. / 4 November 2021, Sopron

PANDÉMIA – FENNTARTHATÓ GAZDÁLKODÁS – KÖRNYEZETTUDATOSSÁG /
PANDEMIC – SUSTAINABLE MANAGEMENT – ENVIRONMENTAL AWARENESS

KONFERENCIAKÖTET /
Conference Proceedings

(LEKTORÁLT TANULMÁNYOK / PEER-REVIEWED STUDIES)

Szerkesztette / Edited by**:**
OBÁDOVICS Csilla, RESPERGER Richárd, SZÉLES Zsuzsanna

SOPRONI EGYETEM KIADÓ /

UNIVERSITY OF SOPRON PRESS

SOPRON, 2022

Nemzetközi tudományos konferencia a Magyar Tudomány Ünnepe alkalmából /
International Scientific Conference on the Occasion of the Hungarian Science Festival

Sopron, 2021. november 4. / 4 November 2021, Sopron

Mottó / *Motto:* **„Tudomány: iránytű az élhető jövőhöz”** / „Science: a Compass For a Livable Future”

Szervező / *Organizer:* **A Soproni Felsőoktatásért Alapítvány** / For the Higher Education at Sopron Foundation

A konferencia védnöke / Patron of the Conference:
Innovációs és Technológiai Minisztérium / Ministry for Innovation and Technology

Felelős kiadó / Executive Publisher**: Prof. Dr. FÁBIÁN Attila**
a Soproni Egyetem rektora / Rector of the University of Sopron

Szerkesztette / Edited by:
Prof. Dr. OBÁDOVICS Csilla, Dr. RESPERGER Richárd, Prof. Dr. SZÉLES Zsuzsanna

A kötet tanulmányait lektorálták / Peer-reviewed by:
Dr. BARTÓK István, BAZSÓNÉ dr. BERTALAN Laura, Dr. BEDNÁRIK Éva, Dr. habil. BODNÁR Gabriella, Dr. BRUDER Emese, Dr. HOSCHEK Mónika, Dr. habil. Eva JANČÍKOVÁ, Dr. JANDALA Csilla, Dr. habil. KOLOSZÁR László, Dr. KÓPHÁZI Andrea, Dr. KOVÁCS Tamás, Prof. Dr. KULCSÁR László, Prof. Dr. Markus MAU, Prof. Dr. Nicole MAU, Dr. MÉSZÁROS Katalin, Dr. NEDELKA Erzsébet, Dr. NÉMETH Nikoletta, Prof. Dr. OBÁDOVICS Csilla, PAPPNÉ dr. VANCSÓ Judit, Dr. habil. PAPP-VÁRY Árpád, Dr. PATAKI László, Dr. PIRGER Tamás, Dr. RESPERGER Richárd, Dr. habil. SZABÓ Zoltán, Prof. Dr. SZÉKELY Csaba, Prof. Dr. SZÉLES Zsuzsanna, Dr. SZÓKA Károly, Dr. TAKÁTS Alexandra

Tördelőszerkesztő / Layout Editor: TAKÁCS Eszter

Borítóterv / Cover Plan: ZSIDY Emese

ISBN 978-963-334-411-8 (pdf)

DOI: 10.35511/978-963-334-411-8

© Soproni Egyetem Kiadó / University of Sopron Press
Sopron, 2022 – Minden jog fenntartva.

SZERVEZŐK

Szervezők: A Soproni Felsőoktatásért Alapítvány
Soproni Egyetem Lámfalussy Sándor Közgazdaságtudományi Kar

A konferencia elnöke: Prof. Dr. SZÉLES Zsuzsanna PhD egyetemi tanár, dékán

Tudományos- és Szervező Bizottság:

elnök: Prof. Dr. OBÁDOVICS Csilla PhD egyetemi tanár, Doktori Iskola-vezető
tagok: Prof. Dr. FÁBIÁN Attila PhD egyetemi tanár, rektor
Prof. Dr. SZÉKELY Csaba DSc professor emeritus
Prof. Dr. KULCSÁR László CSc professor emeritus
Dr. habil. POGÁTSA Zoltán PhD egyetemi docens
Dr. habil. TÓTH Balázs István PhD egyetemi docens, igazgató
Dr. KERESZTES Gábor PhD egyetemi docens, dékánhelyettes
Dr. NEDELKA Erzsébet PhD egyetemi docens, dékánhelyettes
Dr. HOSCHEK Mónika PhD egyetemi docens, intézetigazgató
Dr. KOLOSZÁR László PhD egyetemi docens, intézetigazgató
Pappné dr. VANCSÓ Judit PhD egyetemi docens, intézetigazgató
Dr. KOVÁCS Tamás PhD egyetemi docens
Dr. RESPERGER Richárd PhD adjunktus, a konferencia titkára

ORGANIZERS

Organizers: For the Higher Education at Sopron Foundation
University of Sopron Alexandre Lamfalussy Faculty of Economics

President of the Conference: Prof. Dr. Zsuzsanna SZÉLES PhD Professor, Dean

Scientific and Organizing Committee:

chair: Prof. Dr. Csilla OBÁDOVICS PhD Professor, Head of the Doctoral School
members: Prof. Dr. Attila FÁBIÁN PhD Professor, Rector
Prof. Dr. Csaba SZÉKELY DSc Professor Emeritus
Prof. Dr. László KULCSÁR CSc Professor Emeritus
Dr. habil. Zoltán POGÁTSA PhD Associate Professor
Dr. habil. Balázs István TÓTH PhD Associate Professor, Director
Dr. Gábor KERESZTES PhD Associate Professor, Vice Dean
Dr. Erzsébet NEDELKA PhD Associate Professor, Vice Dean
Dr. Mónika HOSCHEK PhD Associate Professor, Director of Institute
Dr. László KOLOSZÁR PhD Associate Professor, Director of Institute
Dr. Judit PAPP-VANCSÓ PhD Associate Professor, Director of Institute
Dr. Tamás KOVÁCS PhD Associate Professor
Dr. Richárd RESPERGER PhD Assistant Professor, Secretary of the Conf.

TARTALOMJEGYZÉK / CONTENTS

Plenáris előadások
Plenary Lectures

1. szekció: Versenyképesség és fenntartható gazdálkodás
Session 1: Competitiveness and Sustainable Management

2. szekció: Turizmus, marketing
Session 2: Tourism, Marketing

3. szekció: Fenntarthatóság, környezettudatosság
Session 3: Sustainability, Environmental Awareness

4. szekció: Vállalati döntések a koronavírus-járvány idején
Session 4: Corporate Decisions During the Coronavirus Pandemic

5. szekció: Versenyképesség és fenntartható gazdálkodás
Session 5: Competitiveness and Sustainable Management

6. szekció: Fenntarthatóság, környezettudatosság – marketing
Session 6: Sustainability, Environmental Awareness – Marketing

7. szekció: Fenntartható pénzügyek
Session 7: Sustainable Finances

8. szekció: Versenyképesség – munkaerőpiac
Session 8: Competitiveness – Labour Market

9. szekció: Poszter-előadások
Session 9: Poster Presentations

DOI: 10.35511/978-963-334-411-8_s5_Sohail_Quddus

The Impact of Working Capital Management on Firm Profitability: Evidence from Pakistan

Ali Akbar SOHAIL
PhD Student
University of Applied Sciences Burgenland, Austria
aliakbarsohail@gmail.com

Abdul QUDDUS
PhD Student
Tomas Bata University in Zlin, Department of Finance and Accounting, Czech Republic

Abstract
This study investigates the impact of working capital management on firm profitability. The study's sample includes of 21 non-financial firms, and data were obtained from the website of Pakistan Stock Exchange from 2014 to 2019. The Pooled, Fixed-effect, Random-effect, and Generalized Least Square methods are applied to estimate the quantitative models' estimation. The findings of the study indicate that working capital management has a significant and positive influence on the firm's profitability. Moreover, the overall regression findings suggest that working capital management is a significant element as an operational liquidity for firms. These results contribute significant indications for managers and related authorities to manage their optimal levels of working capital to boost firm performance.

Keywords: working capital management, cash conversion cycle, inventory turnover ratio, profitability, account payable
JEL Codes: G23; G32; F65

1. Introduction

The profit or market value of a corporation is the consequence of a number of financial decisions made by the organization (Aras–Yildirim, 2018). Estimating the financial needs of business, both short and long term, is a critical job because financial decisions are so crucial. This estimate should be based on careful financial planning to ensure that the company does not overinvest or underinvest in its resources. Working Capital Management (WCM) is the term used to describe the essential investment decisions that a finance manager undertakes in order to meet its operational costs of a firm and meet short-term debt responsibilities as they arise (Ukaegbu, 2014). If the operating capability of a company is not sufficiently regulated, working capital management becomes a continuous issue. According to Lazaridis and Tryfonidis (2006), ineffective WCM is a major cause of business and start-up failures. Working capital management is a critical part of performance management that could be enhanced (Prasad et al., 2019a). The day-to-day operations of a company demand additional financial resources due to inadequate working capital management, resulting in negative financial resources. It is possible that issues will develop. For example, a company may redirect its investment to suit the demands of the WC, thus impacting its financial success. Furthermore, a company's lack of cash may cause it to miss out on future investment possibilities that would increase its value or fail to adequately compensate its investors. As a result, it may be stated that if a WC management of a company is effective, it will be able to deliver good financial results. Managers' excellent performance, on the other hand, comes at the cost of increased liquidity risk, which can result in greater short-term financial expenses or increased operational risks such as stock outs, a lack of consumer incentives, or company interruption. The presence of conflicting forces impacting

the relationship heightens the need for a finance educator, researcher, or practitioner to assess if a company is effective in managing its working capital.

The goal of this research is to evaluate working capital management affects the profitability of publicly traded Pakistani firms by measuring the inventory turnover ratio, account receivable, and cash conversion cycle and financial performance gauged by the return on assets (ROA). The literature guide to businesses on how to improve their financial performance, including increasing profit margins on working capital management approaches, as well as the appropriate levels of inventory and receivables, are important for control management.

Following the introduction, the paper is divided into the following sections: the review of related literature is presented in the second section. Section 3 is dedicated to the methodology; the discussion of the results is included in section 4, and the conclusion and suggestions are covered in section 5.

2. Theoretical Background / Literature Review

Working capital management is seen as a critical factor in determining a company's profitability. Current assets minus current liabilities lead to working capital management (Aminu–Zainudin, 2016). Working capital management includes management of inventories, accounts receivable, accounts payable, and the cash conversion cycle. WCM is a vital component of an organization's survival, and effective WCM is one of the necessities for financial success (Ghosh–Maji, 2004). According to studies, the most commonly conducted routines in working capital management are cash and inventory protection, as well as credit risk evaluation (Fiador, 2016). According to Kabuye et al. (2019), a reduction in inventory kept by firms, as well as the number of days it takes for enterprises to clear their liabilities compared to the days it takes for customers to pay them, is connected with more business profitability. Lyngstadaas and Berg (2016), decreasing the cash conversion cycle improves business profitability. To summarize, WCM is critical for a company's profitability (Baker et al., 2017), which means that efficient and effective WCM ensures that a company can continue to operate while also having enough cash flow to meet its obligations. Both upcoming operational expenses and short-term debt maturity (Altaf–Shah, 2018). Akey (2019) investigated the influence of working capital management at the earnings of ten industrial entities listed on the Ghana Stock Exchange from 2009 to 2017. The researchers showed that the average deposit and cash conversion cycle had a negative and significant link with ROA, but a positive and significant relationship with ROA using panel regression analysis. Return on equity was linked to the average combination and the net trading cycle in a positive and negative, according to the research, whereas company size had a negative and significant correlation with return on equity. Prempeh and Peprah-Amankona (2018) studied the relationship between working capital management and business profit in developing countries using a balanced sample of 11 manufacturing firms. When using dynamic panel regression, there is a significant positive linear relationship between working capital management and firm profit (Arellano-Bond Estimation). Tufail and Khan (2013) looked at the financial implications of WCM policies. Data was collected from 117 textile companies between 2005 and 2010. The data was analyzed using regression analysis, and the results show that WCM rules have a detrimental effect on profits. In Accra Metropolis, Ebenezer and Asiedu (2013) investigated the link between profitability and WCM. The profitability of a manufacturing business is influenced by cash conversion cycles, inventory days, and payable accounts. According to studies companies require a robust plan for dealing with WCM components.

Murthy and Sree (2003) suggested profitability as a company's aptitude to attain financial stability through operational and investment decisions and strategies. The study of Adetayo (2013), the profitability of a business is comprised of organizational accomplishment metrics. As a result, a company's profitability is a measure of its standards and monetary goals. In the literature, a variety of measurements has used to assess a company's performance, notably liquidity and profitability (Reid–Joshua, 2004). According to Bradley and Moles (2002), the ultimate purpose of any business is to maximize profits; as a result, profitability measurements

are more extensively utilized than other metrics. ROA were utilized in this study due to their widespread use and suitability for the purpose. According to Khrawish (2011), the return on assets (ROA) is critical in determining a company's profitability. Because it characteristically provides intuition into a management's efficiency based on asset usage. Researchers have looked into how the individual components of WC affect the profitability of a firm, in addition to the composite measure of WCM efficiency. On the current asset side of a company's balance sheet, account receivables and inventory are examples of current assets (Richards–Laughlin, 1980). According to Kim and Chung (1990), the parallel results stem from distinct intuitive causes, such as the fact that keeping inventory on hand necessitates additional costs such as storage and insurance, which climb as inventory levels rise. Increasing working capital also means greater financing and opportunity expenses, which raises credit risk (Kieschnick et al., 2013). Firms and practitioners are thus aware that, in addition to locking up more cash, expanding working capital levels beyond a certain point puts them at danger of financial trouble and bankruptcy (Deloof, 2003). Besides that, Bzeouich, Lakhal, and Dammak (2019) focused on working capital and earnings management: the analysis used company performance as a predictor variable and establish a positive significant association between performance of firm and working capital management. As a consequence, the company's profitability is heavily influenced by working capital management. Prior research has revealed a correlation between working capital management and overall business performance. As a result, the following is the hypothesis:

H1: The components of WCM have a positive relationship with firm profitability.

3. Conceptual Model

The conceptual model in *Figure 1* is described on the basis above, and it shows WCM components as an independent variable and Return on Assets (ROA) as a dependent variable.

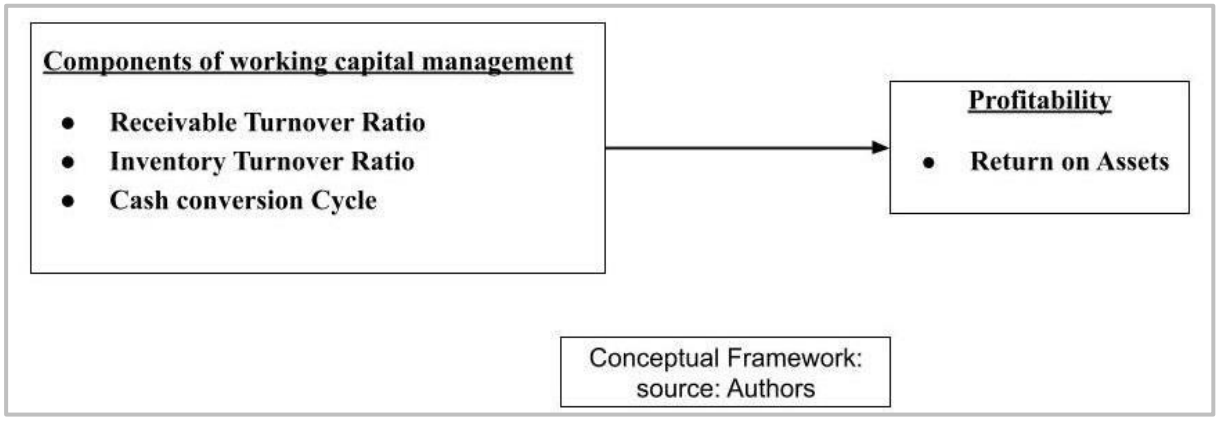

Figure 1: Conceptual Framework
Source: Authors

4. Research methodology

The study sample consisted of 21 non-financial firms. The purpose of the financial sector was to avoid skewed outcomes or unique conditions, such as the impact of working capital on business profitability in the presence of unclear economic policies. The primary focus of the study is on the management of working capital of enterprises; The Pakistan Stock Exchange (PSX) is hub for trading to all of the companies studied. The data was obtained from the Statistics department and covers the time span of 2014 to 2019 years. The ROA has been used as the performance variable of the firm in this study; as a result, it is attributed to as the predictor variables. This variable was included in the study since it was intended to link the organization performance. The main objective of this study is to examine the management of working capital of enterprises on firm performance. Receivable turnover ratio, Inventory turnover ratio, Cash

conversion Cycle has been implemented as the components of working capital management as an independent variable.

Table 1: Study variables descriptions

Variables of the study		Measures
Firm's Profitability	**ROA**	Net income / total assets
Inventory turnover ratio	**ITR**	Cost of goods sold / average inventory
Receivable turnover ratio	**RTR**	Dividing net sales / net receivable on average
Cash conversion cycle	**CCC**	Inventory outstanding days, account receivable, days-account payable days

Source: Created by the Authors

5. Research models

The study examines how independent variables affect a firm's profitability using panel data analysis of cross-sectional time series from 2014 to 2019. The following is a description of utilized as dependent variables with numerous additional variables are as follow:

The regression equations are as follow:

$$ROA_{it} = \beta_{it} + \beta_1(\mathrm{ITR}_{it}) + \beta_2(\mathrm{RTR}_{it}) + \beta_3(\mathrm{CCC}_{it}) + \varepsilon_{it} \quad (1)$$

$$ROA_{it} = \beta_{it} + \beta_1(\mathrm{ITR}_{it}) + \beta_2(\mathrm{RTR}_{it}) + \beta_3(\mathrm{CCC}_{it}) + \mu_{it} \quad (2)$$

i = Numbers of firm from 1- 21

t = Period of study 2014-2019

β_0 = the equation intercepts.

β_i = independent variables coefficients.

ε = the error terms

To assess regression models, the researchers utilized the Pooled, Fixed-effect method (FE) and the Random-effect approach (RE) (Wooldridge, 2001; Hansen, 1982; Arellano-Bond, 1991). The Pooled technique treats all observations as cross-section data, whereas FE and RE simultaneously evaluate time-series and cross-section components. The Hausman test was used to select the appropriate estimation outcomes for FE and RE. According to Gujarati and Porter (2009), FE and RE may have autocorrelation or heteroskedasticity issues. To assess heteroskedasticity, the Wald test is used, while autocorrelation is investigated using the Wooldridge, Breusch, and Lagrangian tests. If FE or RE will be appropriate, the study will use the Generalized Least Square (GLS) to solve the problems, as suggested by Kamarudin et al. (2019) and Gujarati and Porter (2019).

6. Research results

This section shows the descriptive, correlation and regression results for all quantitative model.

Table 2 shows the descriptive statistics for the variables utilized in the analysis. The income predicated on working capital is the mean value of ROA in 21 non-financial enterprises. The average inventory turnover ratio value for enterprises wishing to maintain a current asset balance is 0.1286514, the average RTR value is 1.001097, and the CCC is 0.147263. It signifies that the RTR value is higher, which has an impact on the financial performance of a firm. In this case, the second point to evaluate is the average CCC, which is 0.147263, indicating a very strong relationship with ROA. On the other hand, the ITR hold maximum value in the date.

Table 2: Descriptive statistic

Variable	Obs.	Mean	Std. Dev.	Max
ROA	126	0.0653521	0.2670163	0.4165002
ITR	126	0.1286514	0.2179937	0.8385806
RTR	126	1.001097	1.941377	13.28095
CCC	126	0.147263	0.1157831	7.6692

Source: Own processing

The Pearson correlation results for the research variables are shown in *Table 3*. Profitability of a firm is strongly connected with components of working capital management i.e. ITR, RTR and CCC. The correlation statistics among variables are compatible with the profitability metric. The components of working capital management are inextricably tied to a profitability of a firm, implying that a higher liquidity leads to higher firm profit and vice versa. To further test the presence of multicollinearity, the study calculates the variance inflation factor (VIF). VIF has a maximum value of 2.06, indicating that multicollinearity does not exist in our study.

Table 3: Correlation between variables and VIF

Variable	VIF	ROA	ITR	RTR	CCC
ROA	0	1.0000			
ITR	2.06	0.0712	1.0000		
RTR	1.07	0.1721	0.1726	1.0000	
CCC	1.04	0.5478	0.0027	0.0457	1.0000

Source: Own processing

Table 4: The estimation results of the Pooled, FE and RE

Variable	Pooled	FE	RE	Pooled	FE	RE
	(1)	(2)	(3)	(4)	(5)	(6)
CONS.	0.028	-0.289***	-0.033	0.063	-0.256***	0.005
	[0.73]	[2.09]	[-0.51]	[0.45]	[2.21]	[0.02]
ITR	0.103	1.421***	0.478**	0.207	1.432***	0.178**
	[1.01]	[4.72]	[2.21]	[1.07]	[4.40]	[1.29]
RTR	0.041*	0.074***	0.028***	0.021*	0.041***	0.038***
	[1.04]	[2.31]	[2.06]	[1.71]	[2.93]	[2.71]
CCC				0.000	0.000	0.000
				[0.78]	[0.49]	[0.31]
Obs.	126	126	126	126	126	126
R-Square	0.079	0.232	0.147	0.087	0.488	0.349
Val.	4.71***	21.71***	19.07***	1.46	26.82***	14.08***
Haus.		31.73***		49.03***		
Wal. /Bre.		1.421			1.543	
Woo.		51241.7***			51604.4***	
Variable	Pooled	FE	RE	Pooled	FE	RE

*Note: *, **, and *** are the significant level at 10%, 5% and 1%, respectively.*
Haus., Wal. /Bre., and Woo. Are Hausman test, Wald test/ Breusch, and Pagan Lagrangian test, and Wooldridge test, respectively.
Source: Own processing

The estimate of all qualified models performed by the Pooled, FE, and RE methods is shown in *Table 4*. All of the estimation outcome models are statistically significant at 10%, 5%, and 1%, respectively. The value of the Hausman test shows that if it is significant at a level less than 10%, the FE estimation is superior to the RE. In this study, there are five FE estimation findings that are more appropriate than RE estimates. The independent variables in the models explain 23.2 percent to 48.8 percent of profitability, according to the fixed effects estimate

findings. The RE and Pooled explanation proportion, on the other hand, is low, hovering around 0.087. At 1%, all ITR, RTR and CCC coefficients are significant and positive.

Table 5: The estimation of the Generalized Least Square model

Variable	(7)	(8)
CONS.	0.031***	0.067***
	[3.20]	[2.71]
ITR	0.101***	0.104***
	[3.21]	[4.71]
RTR	0.011**	0.009**
	[2.01]	[1.21]
CCC		0.000*
		[1.74]
Obs.	126	126
Val.	28.45***	31.53***

*Note: *, **, and *** are the significant level at 10%, 5% and 1%, respectively*
Source: Authors

The Wooldridge test and the Wald test/Breusch test estimate heteroskedasticity and autocorrelation (particularly columns 2 and 5) based on the Hausman test value (see Haus. row in *Table 3*). There is no autocorrelation in the Wooldridge test (see Woo. row). At 1% significance, the Wald test/Breusch and Lagrangian tests (see Wal. /Bre. row) indicated a heteroskedasticity problem. We use the GLS technique to estimate the impact of independent variables on dependent variables to solve the heteroskedasticity problem; the GLS estimation results are presented in *Table 5*. The findings reveal that almost all models are significant at 1%, and the significant sign of independent variable coefficients is similar to the estimate results in *Table 5*, except for CCC at 10% and RTR at 5%. The GLS approach's estimation findings are used in the study. As a result, the GLS regression outcomes show that the components of working capital management have significant and positive effect on firm profitability.

7. Conclusions

This article investigates whether working capital management influence firm's profitability of non-financial companies trading at Pakistan Stock Exchange from 2014 to 2019. Based on the systematic literature review, one hypothesis was established to look into the direct influence on the association among company WCM and performance. The two quantitative models have used to approximate one hypothesis through four-panel data processing methods (Pooled, FE, RE, and GLS methods). The study's results show that working capital management has a significant and positive impact on profitability. Furthermore, the aggregate regression results show that working capital management is an important component of a firm's operational liquidity. These findings provide important guidance for managers and other decision-makers in managing their ideal amounts of working capital to improve business performance. According to our findings, all corporate participants could undertake all necessary precautions to avoid losses induced by unmanaged working capital utilization. Regulatory bodies are one of the most key stakeholders in businesses.

References

Adetayo, J. O. (2013): Management of foreign exchange risks in a selected commercial bank in Nigeria. *Journal of Social Science*, Vol. 8 No. 3, pp. 207-213. DOI: https://doi.org/10.1080/09718923.2004.11892416

Akey, A. B. I. G. A. I. L. (2019): The impact of working capital management on the profitability of manufacturing companies listed on the Ghana stock exchange. Doctoral dissertation, University of Ghana, UG Space, Accra, Ghana.

Altaf, N. – Shah, F. A. (2018): Investment and financial constraints in Indian firms: does working capital smoothen fixed investment? *Decision*, Vol. 45 No. 1, pp. 43-58. DOI: https://doi.org/10.1007/s40622-018-0178-8

Aminu, Y. – Zainudin, N. (2016): A review of anatomy of working capital management theories and the relevant linkages to working capital components: a theoretical building approach. *European Journal of Business and Management*, Vol. 7 No. 2, pp. 10-18.

Aras, G. – Mutlu Yildirim, F. (2018): The impact of corporate finance decisions on market value in emerging markets. *International Journal of Productivity and Performance Management*, Vol. 67 No. 9, pp. 1959-1976. DOI: https://doi.org/10.1108/IJPPM-11-2017-0285

Arellano, M. – Bond, S. (1991): Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The review of economic studies, 58(2), 277-297. DOI: https://doi.org/10.2307/2297968

Baker, H. K. – Kumar, S. – Colombage, S. – Singh, H. P. (2017): Working capital management practices in India: survey evidence. *Managerial Finance*, Vol. 43 No. 3, pp. 331-353. DOI: https://doi.org/10.1108/MF-07-2016-0186

Bradley, K. – Moles, P. (2002): Managing strategic exchange risk exposure: evidence from UK firms. *Managerial Finance*, Vol. 5 No. 28, p. 2939. DOI: https://doi.org/10.1108/03074350210768149

Bzeouich, B. – Lakhal, F. – Dammak, N. (2019): Earnings management and corporate investment efficiency: does the board of directors matter? Journal of Financial Reporting and Accounting. DOI: https://doi.org/10.1108/JFRA-06-2018-0044

Deloof, M. (2003): Does working capital management affect profitability of Belgian firms? *Journal of Business Finance and Accounting*, Vol. 4 No. 30, pp. 573-588. DOI: https://doi.org/10.1111/1468-5957.00008

Ebenezer, A. B. – Asiedu, M. K. (2013): The relationship between working capital management and profitability of listed manufacturing companies in Ghana. *International Journal of Business and Social Research*, Vol. 3 No. 2, pp. 25-34.

Fiador, V. (2016): Does corporate governance influence the efficiency of working capital management of listed firms: evidence from Ghana. *African Journal of Economic and Management Studies*, Vol. 7 No. 4, pp. 482-496. DOI: https://doi.org/10.1108/AJEMS-08-2015-0096

Ghosh, S. K. – Maji, S. G. (2004): Working capital management efficiency: a study on the Indian cement industry. *Management Accountant*, Vol. 39 No. 5, pp. 363-372.

Gujarati, D. N. – Porter, D. C. (2009): Basic econometrics. Douglas Reiner, McGraw-Hill/Irwin.

Hansen, L. P. (1982): Large sample properties of generalized method of moments estimators. Econometrica: Journal of the econometric society, 1029-1054. DOI: https://doi.org/10.2307/1912775

Kabuye, F. – Kato, J. – Akugizibwe, I. – Bugambiro, N. (2019): Internal control systems, working capital management and financial performance of supermarkets. *Cogent Business and Management Talor and Francis*, Vol. 6 No. 1, pp. 4-5. DOI: https://doi.org/10.1080/23311975.2019.1573524

Kamarudin, F. – Sufian, F. – Nassir, A. M. – Anwar, N. A. M. – Hussain, H. I. (2019): Bank Efficiency in Malaysia a DEA Approach. Journal of Central Banking Theory and Practice, 8(1), 133–162. DOI: https://doi.org/10.2478/jcbtp-2019-0007

Khrawish, H. A. (2011): Determinants of commercial banks performance: evidence from Jordan. *International Research Journal of Finance and Economics*, Vol. 5 No. 5, pp. 19-45.

Kieschnick, R. – Laplante, M. – Moussawi, R. (2013): Working capital management and shareholders' wealth. *Review of Finance*, Vol. 17 No. 5, pp. 1827-1852. DOI: https://doi.org/10.1093/rof/rfs043

Kim, S.-S. – Min, B.-Y. – Chung, D.-H. (1990). Composition of Free Sugars, Free Amino Acids, Non-Volatile Organic Acids and Tannins in the Extracts of L. chinensis M., A. acutiloba K., S. chinensis B. and A. sessiliflorum S. Korean Journal of Food Science and Technology, 22(1), 76-81.

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*, Vol. 9 No. 1, pp. 26-35.

Lyngstadaas, H. – Berg, T. (2016): Working capital management: evidence from Norway. *International Journal of Managerial Finance*, Vol. 12 No. 3, pp. 295-313. DOI: https://doi.org/10.1108/IJMF-01-2016-0012

Murthy, Y. – Sree, R. (2003): A Study on Financial Ratios of Major Commercial Banks. Research Studies. Oman; College of Banking and Financial Studies, Sultanate of Oman.

Prasad, P. – Sivasankaran, N. – Saravanan, P. – Kannadhasan, M. (2019a): Does corporate governance influence the working capital management of firms: evidence from India. *International Journal of Corporate Governance*, Vol. 10 No. 1, pp. 42-80. DOI: https://doi.org/10.1504/IJCG.2019.098039

Prempeh, K. – Peprah-Amankona, E. (2018): Does working capital management affect Profitability of Ghanaian manufacturing firms? *Journal of Advanced Studies in Finance*, Vol. 19, pp. 22-33, SSRN 3289222.

Reid, W. – Joshua, D. (2004): The Theory and Practise of International Financial Management, Prentice Hall, NJ.

Richards, V. D. – Laughhin, E. J. (1980): A cash conversion cycle approach to liquidity analysis. *Financial Management*, Vol. 9 No. 1, pp. 32-38. DOI: https://doi.org/10.2307/3665310

Tufail, S. – Khan, J. (2013): Impact of working capital management on profitability of textile sector of Pakistan. Proceedings of 3rd International Conference on Business Management, pp. 1-29.

Ukaegbu, B. (2014): The significance of working capital management in determining firm profitability: evidence from developing economies in Africa. *Research in International Business and Finance*, Vol. 31, pp. 1-16. DOI: https://doi.org/10.1016/j.ribaf.2013.11.005

Wooldridge, J. M. (2001): Applications of generalized method of moments estimation. Journal of Economic perspectives, 15(4), 87-100. DOI: https://doi.org/10.1257/jep.15.4.87