How Does Investment in Working Capital Effect the Protability of Manufacturing Companies at Indonesian Stock Exchange?

Isni Andriana, Yuliani, K. M. Husni Thamrin, and Taufik Saggaff
Universitas Sriwijaya, Palembang, Indonesia

Keywords: Working Capital Investment,Current ratio, Firm Growth, Leverage, Indonesian Stock Exchange

Abstract: Purpose – The purpose of this paper is to investigate the effect of investment in working i.e cash conversion cycleand control variables i.e. current ratio, firm growth and leverage to firm profitability for a sample of 51 of manufacturing companies in Indonesian stock exchange. In addition, this paper also tries to find the break event point of cash conversion cycle and profitability. Design/methodology/approach – The study is based on secondary financial data obtained from Indonesian capital market directory from 2014 to 2017.Multiple linier regression was applied to knowthe effect of cash conversion cycle, current ratio, firm growth and leverage to profitability. Findings – The findings indicate that cash conversion cycle, current ratio positively influence profitability, meanwhile, firm growth and leverage do not effect profitability. The results also confirm the inverted U-shape relationship between cash conversion cycle and profitability. The break event point of cash conversion cycle is 66 days. Originality/value– To best of our knowledge this research is a preliminary attempt contributing to the literature by providingevidence for an inverted U-shaped relation between working capital investment and profitability of manufacturing companies at the Indonesian stock exchange. Research limitations – This research only focuses on manufacturing sector companies. For further research, it is recommended to observe all companies sectors in the Indonesian stock exchange and add other relevant variables. Practical implications -The findings have implication for management of manufacturing companies at the Indonesian stock exchange.to pay attention to investment efficiency in working capital.

SCITEPRESS
SCIENCE AND TECHNOLOGY PUBLICATIONS

1 INTRODUCTION

The establishment of a company certainly wants to get profitability. The level of corporate profitability can be caused by investment in working capital(Bhatia and Srivastava, 2016). Investment in working capital is represented by the cash conversion cycle (CCC) which consists of accounts receivable period (ACP), inventory conversion period (ICP) and accounts payable period (APP). Cash conversion cycle is a span of time when companies make cash outflows and receive cash inflows (Ambarwati, 2010). There is still a debate in financial literature that the level of corporate profitability is determined by the level of investment in working capital.

The conservative group argues that the company must do a little investment in working capital so that is faster, the company is efficient in using its working capital and ultimately gives a positive impact on the optimization of the profitability of the company (Garcia-Teruel and Martinez-Solano; 2007). The the cash conversion cycle will be shorter. Shorter cash conversion cycle can improve profitability because it will reduce investment in inventories and receivables. Farzinfar and Arani(2012) proved that there was a negative relationship between the collection period of accounts receivable and profitability on pharmaceutical companies in the Iranian stock exchange. Mohamad (2010) examined the effect of cash conversion cycle on profitability on the Malaysian stock exchange. The results concluded that there was a significant negative relationship between cash conversion cycle and profitability. Reducing inventory and receivable investment can reduce storage and insurance costs and the risk of uncollectible receivables. If cash conversion cycle research that support this view are Mansoori and Ahmad (2012); Shubita's (2013). Their research results concludedthat the lower the investment in working capital, the higher the profitability.

Andriana, I., Yuliani, ., Thamrin, K. and Saggaff, T.
How Does Investment in Working Capital Effect the Probability of Manufacturing Companies at Indonesian Stock Exchange?.
DOI: 10.5220/0008442005160524
In *Proceedings of the 4th Sriwijaya Economics, Accounting, and Business Conference (SEABC 2018)*, pages 516-524
ISBN: 978-989-758-387-2
Copyright © 2019 by SCITEPRESS – Science and Technology Publications, Lda. All rights reserved

Meanwhile, traditional groups argue that large investment in working capital will lead to a longer cash conversion cycle and increase the profitability due to increased investment in inventories and receivables (Tauringana and Afrifa, 2013).High inventory investment will reduce production disruption so that it will reduce the chance of loss of demand.However, increasing investment in accounts receivable will increase sales because customers are given more time to pay, which in turn will increase the profitability. Researchers such as Samiloglo and Dermirgunes (2008) Attari and Raza (2012); Awad and Jayyar (2013); Abuzayed (2012);Enqvist et al., (2014) supported this view. Their research results proved that the cash conversion cycle had a positive effect on the firm profitability.

An interesting issue about the effect of investment in working capital on profitability is that if investment in working capital is small, it will cause the risk of losing sales and disruption to production, therefore a reduction of investment in working capital can cause a negative influence on the profitability of the company (Baños-Caballero et al. , 2012). Contrary, there is a risk of bankruptcy if the company invests a large amount of working capital because it will increase financing expenditure which in turn gives a negative influence on firm profitability (Pais and Gama; 2015).Based on the two group views above, it can be concluded that the effect of investment in working capital on profitability can be linear (Tahir and Anuar, 2016), and non-linear (Singhania and Mehta, 2017). This condition indicates that there is an optimal investment in working capital or break-event point of working capital investment in relation to profitability.

Research on the effect of investment in working capital on profitability as well as the break-event point of working capital investment in relation to profitabilityis still little done by previous researchers, especially in Indonesia. An interesting phenomenon is that the manufacturing sector in the Indonesian stock exchange have a very large investment in working capital compared to other sectors so that the efficiency of investment in working capital must be a serious concern for the management. According to data from Indonesia stock exchange shows that more than 50% of total assets of manufacturing companies are working capital.

Because there are still differences in the results of previous studies about the effect of investment in working capital on profitability, linear and non-linear relationships between working capital investment to profitability, large investment in working capital of manufacturing companies in Indonesian stock exchange, the absence of researchers conducting this research in the manufacturing sector in Indonesian Stock Exchange, it is necessary to conduct further research on how working capital investment affects the profitability of manufacturing companies in the Indonesia Stock Exchange 2014 – 2017. This research also examines the breakeven point of working capital investment in relation to the profitability of the manufacturing sector in the Indonesia Stock Exchange 2014 - 2017.Control variables consisting of current ratio, firm growth and leverage are used to reduce the potential bias due to the omitted variables.

The contribution of this research to the literature study is to fill the gap by looking at the breakevent point of investment in working capital n relation to the firm profitability which is still very little done by previous researchers, especially in the Indonesian stock exchange. The results of this study are expected to provide benefits for academics, practitioners and strengthen working capital management theories. In addition, the results of this study are useful for management in an effort to improve the firm profitability and alsoprovide benefits external parties such as investors, creditors, government, suppliers.

2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Risk-Return Trade Off Theory

Working capital management should pay attention to the trade-off between return and risk, therefore the company must decide the level of production. The amount of current assets is highly dependent on the company's working capital policy that directs the company whether to use an aggressive or conservative working capital policy.

2.2 Working Capital Investment Views

Working capital is a short-term asset used in a company's operations. One of the ways used to analyze the efficiency of investment in working capital is to calculate the cash conversion cycle. Cash conversion cycle describes the amount of working capital investment of a company. Cash conversion cycle focuses on the timeframe that occurs when a company invests working capital and receives cash back on the investment (Ambarwati, 2010).

The amount of investment in working capital depends on the length of the working capital cycle. If

the company has a lot of inventory and a long credit sale, it will reduce the company's cash and eventually it will extend the cash conversion cycle. The size of the investment in working capital can affect the profitability. There are two views about the effect of investment in working capital on profitability. Traditional views argue that if a company makes a large investment in working capital, it will increase profitability. The company produces large quantities of supplies that will reduce total production costs and ensure the scarcity of goods that consumers want so that efficiency occurs and meet consumer demand which ultimately increases profitability. Petersen and Rajan (1997) revealed that increasing credit sales would provide increased sales and price incentives for companies so that they could have a positive impact on profitability. Awad and Jayyar (2013); Chaklader and Shrivastava (2013); Martínez-Sola et al (2013); Bhunia and Das (2015); proved that the increase in working capital investment represented by the cash conversion cycle increases the profitability.

Meanwhile the conservative view holds that the cash conversion cycle which is too long indicates that the company has a lot of investment in inventories which will increase warehouse costs, insurance costs and security costs which in turn will have a negative impact on profitability. Companies that have large working capital will pay a high interest rate. This group believes that small investment in working capital has a positive impact on the profitability of the company. According to Shi and Zhang, (2010) the collection of receivables that are too long will have a negative impact such as high transaction costs from changes in receivables to cash back. Literature studies that support the cash conversion cycle that takes a long time will have a negative impact on the company's profitability, namely Lyngstadaas and Berg, (2016); Ukaegbu (2014); Banos-Caballero et al., 2013).

The contradiction of the empirical study above shows that it is not always the relationship of investment in working capital toprofitability is linier. Thus investment in working capital should consider the balance between costs and benefits. If the positive and negative impacts of working capital investment on profitability depend on the length of the company's cash conversion cycle, then this indicates that profitability will be optimal at the breakeven-point point of the cash conversion cycle.

2.3 Cash Conversion Cycle and Profitability

Effective and efficient management of working capital is very important for the long-term sustainability growth. If the company lacks working capital to expand sales and increase production, then it is likely to lose revenue and profits (Sartono, 2010), However, the more cash conversion cycle, the longer the cash collection is embedded in inventories and receivables, so the possibility of getting cash back will be longer. If the cash cycle is stalled, the source of working capital funds for subsequent operating activities will be hampered, then it can have an impact on the company's income and profits. Cash conversion cycle is a measurement of the amount of investment in working capital. According to Lyngstadaas and Berg, (2016) the length of the cash conversion cycle indicated that the company had a lot of investment in accounts receivable, inventories that would incur cost costs including warehouse costs, insurance costs, paying high interest rates and security costs which would ultimately had a negative impact on financial performance. A literature study that supported that if the length of the cash conversion cycle wouldhave a negative impact on the profitability are Bhatia and Srivastava, (2016); Lyngstadaas and Berg, (2016); Pais and Gama, (2015); Enqvist et al., (2014); Ukaegbu, 2014; Banos-Caballero et al., 2013); Shubita (2013) and Mansoori and Muhammad (2012). Based on the theoretical and empirical studies above, this research hypothesis is:

H1: Cash Conversion Cycle affects profitability.

2.4 Liquidity and Profitability

Liquidity is the ability of a company to fulfill its short-term obligations (Subramanyam& Wild; 2010). Liquidity is measured by the amount of current assets compared to the amount of current debt. Current assets are used for the company's operational needs in the short term usually less than one year. The importance of liquidity can be seen from the consideration of the impact that comes from the inability of the company to meet its short-term obligations. Lack of liquidity will prevent the company from gaining the opportunity to make a profit. According to Reeve at al (2012) that a company that fails to pay its debt in a regulated manner can experience difficulties in repairing credit. The lack of available credit can lead to a decrease in the profitability of the company, or the company can

become bankrupt. Research conducted by Ganguli, Santanu K. (2016) proved that liquidity has a negative effect on the profitability of the company. However, most of them prove that liquidity has a significant influence on the profitability of the company, as the research conducted by Nworji et.al (2014), Boadi, Antwi, and Lartey (2013), Pratheepan (2014), Zaid, Ibrahim and Zulqernain (2014). theoretical and empirical studies above, this research hypothesis is:

H2: Liquidity has a positive effect on profitability

2.5 Firm Growth and Profitability

According to Pande (2011) firm growth can be represented by the growth of company sales from year to year. Sales growth is characterized by an increase in market share which will have an impact on increasing the firm sales so that it will increase the firm profitability. Pagano and Schlvardi (2003) stated that if a firm growth experiences an increase, it gives an indication that there has been an increase in sales and finally increase profitability.DarushYazdanfar (2013), proved that firm growth provided a positive impact on the profitability of a company. Based on the theoretical and empirical studies above, this research hypothesis is:

H3: Firm growth has a positiveeffect on profitability

2.6 Leverage and Profitability

The trade-off theory states that the optimal level of debt when the balance occurs between the benefits of debt and the cost of debt (Myers, 1984). Debt benefits are obtained at a certain level of debt, but these benefits will decrease after an increase in debt levels. If the company has more debt, the smaller the taxable income, but the higher the company's financial risk. High debt will cause companies to have higher interest expenses. The high leverage shows that the company is not solvable, meaning that the total debt is greater than the total assets. If this goes on continuously and interest expense increases, it can reduce profitability (Horne, 2009). The study was conducted by Charumathi (2012) on insurance companies in India proved that leverage had a negative effect on profitability. However, research conducted by Agiomirgianakis, et.al (2013) proved a positive relationship between leverage and profitability. Based on the theoretical and empirical studies above, this research hypothesis is:

H4: Leverage has a negative effect on profitability

3 DATA AND METHODOLOGY

The scope of this research is about the effect of investment in working capital on profitability and the breakeven point of the investment in working capital in the manufacturing companiesin Indonesia Stock Exchange 2014-2017. The data source of this study came from the financial statements of the manufacturing companies companies in the Indonesia Stock Exchange 2014-2017 which came from the official web of the Indonesian stock exchange, namely www. idx.co.id. The type of data used is secondary data. The population of this study is 150 companies of manufacturing companies in the Indonesia stock exchange period 2014 – 2017. Based on the purposive sampling method, the selected sample is 51 companies. Research variables and variable measurements are on Table 1.

Table 1: Research Variables and Variable Measurements

Research Variables	Variable Measurements
Inventory conversion period (ICP)	ICP = Average inventories× 365/cost of goods sold
Accounts receivable period (ARP)	ARP = Average receivables× 365/sales
Accounts payable period (APP)	APP = Average payables × 365/cost of goods sold
Cash Conversion Cycle (CCC)	CCC = ICP + ARP – APP
Quadratic Cash Conversion Cycle (CCC^2)	CCC^2

Return On Assets (ROA)	ROA = $\frac{\text{Net Income}}{\text{Total Aset}}$ x 100 %
Current Ratio (CR)	CR=Total Current Assets /Total Current Liabilities
Firm Growth (FG)	FG = (Current year sales / previous year sales) – 1
Leverage (LEV)	LEV = The ratio of total debt to total assets

The data analysis technique used is multiple linear regression. The research model is as follows:

$$Y = \beta_0 + \beta_1 X1_{it} + \beta_2 X2^2 it + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 X5_{it} + \epsilon it \quad (1)$$

Y = Return on Asset in period t (ROA_{it})
X1 = *Cash Conversion Cycle* in period t (CCC_{it})
$X2^2$ = Square of *Cash Conversion Cycle* in period t (CCC^2it)
X3 = *Current ratio* in period t(CR_{it})
X4 = *Firm Growth* in period t (FG_{it})
X5 = *Leverage*in period t ((L_{it})
B_0 = Constant
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = regression coefficient
ϵit = *random disturbance*

According to a literature study that the relationship of investment in working capital to profitability may be a non-monotonic relationship. This study refers to Nufazil Ahangar & farooq shah (2017) research using a quadratic model to test the relationship. This model is used to see the break-even point of working capital investment in the company's profitability by calculating quadratic cash conversion cycle (CCC^2). The Breakeven point is calculated by defining the CCC variable to profitability and making the derivative the 0. The CCC^2breakeven point formula is: $-\beta 1 / 2\beta 2$. The cash conversion cycle and profitability of the company are expected to be positively related to the low and negative level of investment in working capital at a higher level of investment in working capital. Thus, it is expected that $\beta 1$ becomes positive and $\beta 2$ becomes negative.

4 RESEARCH FINDINGS AND DISCUSSION

Based on the result of classical test assumption, research model are free from the case of multicollinearity, heteroskedasticity and autocorrelation. By using Kolmogorov-Smirnov test, the result showed that Asymp. Sig is 0.805 so it can concluded that research data is normal.

Tabel 1: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1618.168	5	323.634	8.153	.000[b]
	Residual	7859.940	198	39.697		
	Total	9478.108	203			

Based on these results on table 1 above, it can be concluded that this regression model can be used to predict the effect of cash conversion cycle, current ratio, firm growth and leverage on the profitability of companies in the manufacturing sector in the Indonesia Stock Exchange 2014-2017.

The regression result on tabel 2 below shows that constant value of B is 0.765, B of cash conversion cycle is 0,008. B of quadratic cash

conversion cycle is -0,00006, B of current ratio is 0.018, B of firm is growth - 0.005 and B of leverage is -0.072 These results conclude that the cash conversion cycle, the quadratic cash conversion cycle and the current ratio have an influence on the profitability of the manufacturing companies in Indonesia Stock Exchange 2014 - 2017 because its significance is less than 0.05. Meanwhile firm growth and leverage have no effect on the profitability of manufacturing companies in Indonesia Stock Exchange 2014 - 2017 because the significance value is higher than 0,005 or p>0.05.

Table 2: Regression Cofficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.765	1.320		.579	.563
	CCC	.008	.003	.303	2.813	.005
	CCC2	-0,00006	.000	.218	2.134	.034
	CR	.018	.005	.282	3.744	.000
	FG	-.005	.009	-.038	-.581	.562
	LEV	-.072	1.258	-.004	-.057	.954

Based on the regression results as shown in table 2 above shows that the value of the cash conversion cycle (CCC) coefficient is positive. The results of this study indicate that companies can increase working capital investment because these investments have a positive impact on profitability of the manufacturing companies in the Indonesian stock exchange 2014-2017. Management of manufacturing companies in the Indonesian stock exchange may make policy to increase investment in inventories and receivables because this policy will still have a positive impact on increasing profitability.

The profitability of manufacturing companies in the Indonesian Stock Exchange 2014-2017 increased along with a decrease in the level of investment in the company's working capital and a decrease in the profitability of the company in line with the increase in the level of investment in working capital of the company. Looking at the direction of the correlation coefficient, it is indicated that there has been a non-linear relationship between the cash conversion cycle and the profitability of the company. The results of this study provide information to the management of the manufacturing companies in the Indonesian stock exchange that at this point the company should pay attention to the efficiency of investment in working capital because data from Indonesia stock exchange shows that manufacturing companies require high working capital to operate the company. More than 50% of the total asset value of the manufacturing companies in the Indonesian stock exchange is a component of working capital. If the company management does not pay attention to the working capital investment policy, it can have an adverse impact on financial performance in this case the company's profitability. An interesting question is when the investment in working capital has a negative impact on profitability.

The Breakeven point is calculated by defining the cash conversion cycle variable to profitability and making the derivative the 0. The CCC^2 breakeven point formula is: $-\beta 1 / 2\beta 2$. Based on this formula, the CCC^2 breakeven point value is 66 days. This breakeven point results explain that if the company experiences cash conversion cycleover 66 days, the investment in working capital starts to be inefficient and will have a negative impact on the profitability.

Given the size of investment in working capital in the manufacturing companies, the management must really pay attention to the working capital management, especially those related to the components of cash management, securities management, accounts receivable management and inventory management because these components contribute to the amount of working capital investment. The results of this study also indicate that the management of manufacturing companies in 2014 - 2017 is quite good because the cash conversion cycle still has a positive effect on the profitability. However, the concern of the company is whether the

66 day time span is not too long even though the average value of the cash conversion cycle manufacturing sector in the Indonesia Stock Exchange 2014 - 2017 is 82 days. To measure the efficiency of cash conversion cycle time, the company can usecash conversion cycle information of manufacturing companies in other countries such as Malaysia, Singapore as benchmarking, thus the company can see whether the 66 days cash conversion cycle C has been optimal and will know the extent of the three CCC components consisting of Accounts receivable period (ARP), Inventory conversion period (ICP) and Accounts payable period (APP) have made the largest contribution to the cash conversion cycle. The results of this study support the research conducted by NufazilAhangar, farooq shah (2017), but contrary to the results of Mansoori and Ahmad (2012) and Shubita (2013).

The current ratio has a positive influence on profitability. The average level of liquidity is 190% as shown in table. Based on the liquidity value, it can be indicated that the level of liquidity of the manufacturing companies in the Indonesia Stock Exchange 2014-2017 is quite liquid to maintain the company's short-term obligations. This is evidenced by the positive influence of the company's liquidity level on the profitability of the manufacturing companies inIndonesia stock exchange 2014-2017. According to the results of previous studies that the level of liquidity in the manufacturing sector is 190% can be said to be quite liquid. This good level of liquidity also reflects that working capital management such as cash management, accounts receivable management, inventory management and efficient debt management can provide acceleration cash conversion cycle which in turn can help in meeting the short-term obligations of companies. The results of this study contradict the research conducted by Awad and Jayyar (2013), but in line with the results of research by Al-Nimer et al (2013).

Firm growth does not have an influence on the profitability of the company. Firm growth of manufacturing companies in Indonesia Stock Exchange 2014 – 2017shows a decline in sales This condition indicates that the average sales trend of some manufacturing companies during the 2014-2017 period was negative so that the possibility of not being able to cover the operational costs of the company. This condition can cause the firm growth to be unable to have a positive impact on profitability. Of the 51firms sample, 24 firm experienced negative sales changes. The results of this study contradicted to the research conducted by DarushYazdanfar, (2013) which proved that firm growth had a positive impact to profitability.

Leverage does not affect the profitability of the manufacturing s companies in the Indonesian stock exchange. According to the trade-off theory that the policy of increasing debt for companies can have a positive effect on the company's financial performance but at some point the composition of debt no longer has a positive impact and can even have a negative impact on the profitability. Leverage is described as a tool to see the extent to which a company's assets are financed by debt compared to its own capital. The high leverage can cause a high corporate burden and if this continues continuously, the interest expense will increase so that it will reduce the profitability of the company (Horne, 2009). The average of capital structure of the manufacturing companies in Indonesia Stock Exchange 2014 - 2017 is 49%. The results of this study indicate that the composition of the leverage of the manufacturing sector companies in the Indonesia Stock Exchange 20014 2017 has reached optimal so that it does not have an impact on the company's profitability in accordance with the trade-off theory of capital structure. The company management should pay attention to the composition of the current capital structure. The results of this study contradict the research conducted by Charumathi (2012) and Eriotis, et.al (2011).

5 CONCLUSIONS

The conclusions of this research are:

1. Cash conversion cycle has a positive effect to firm profitability.
2. Current ratio has a positive effect to firm profitability.
3. Firm growth has no effect to firm profitability.
4. Leverage has no effect to firm profitability.
5. This breakeven point result of cash conversion cycle (CCC) is 66 days

REFERENCES

Al-Nimer, M., Warrad, L., dan Al-Omari, R. 2013. The Impact of Liquidity On Jordanian Banks Profitability Through Return On Assets. *Interdiciplinary Journal of Contemporary Research in Busuness.* November, 2013. Vol.5, No.7. Halm.70-76. http://www.search.proquest.com

Ambarwati, Sri Dwi Ari. 2010. *ManajemenKeuanganLanjut.* Yogyakarta: GrahaIlmu.

Agiomirgianakis, G. M., Magoutas, A. I., &Sfakianakis, G. (2013). Determinants of profitability in the Greek tourism sector revisited: The impact of the economic crisis. Journal of Tourism and Hospitality Management,1 (1), 12-17.

Attari, Muneeb Ahmad. 2012. *The Optimal Relationship of Cash Conversion Cycle with Firm Size and Profitability. International Journal of Academic Research In Business and Social Science.* April 2012, Vol. 2, No. 4.Halm. 189-203. http://www.search.proquest.com

Abuzayed, B. (2012),"Working capital management and firms' performance in emerging markets: the case of Jordan", *International Journal of Managerial Finance*, Vol. 8 Iss: 2, pp.155 – 179.

Awad, IbrahimdanJayyar, Fahema. 2013. Working Capital Management, Liquidity and Profitability of the Manufacturing Sector in Palestine: Panel Co-Integration and Causality. *Journal ofModern Economy.* October 2013. Vol. 4.10 . Halm: 662-671. http://search.proquest.com

Boadi, E. K., Antwi, S., &Lartey, V. C. (2013). Determinants of profitability of insurance firms in Ghana. International Journal of Business and Social Research, 3 (3), 43-50.

Bhunia, A. and Das, A. (2015), "Underlying relationship between working capital management and profitability of pharmaceutical companies in India", American Journal of Theoretical and Applied Business, Vol. 1 No. 1, pp. 27-36.

Bhatia, S., & Srivastava, A. (2016). Working Capital Management and Firm Performance in Emerging Economies: Evidence from India. *Management and Labour Studies*, *41*(2), 71-87.

Baños-Caballero, S., García-Teruel, P. J., &Martínez-Solano, P. (2012). How does working capital management affect the profitability of Spanish SMEs?.*Small Business Economics*, *39*(2), 517-529.

Baños-Caballero, S., García-Teruel, P. J., &Martínez-Solano, P. (2013). The speed of adjustment in working capital requirement. *The European Journal of Finance*, *19*(10), 978-992.

Charumathi, B. (2012). On the determinants of profitability of Indian life insurers: An empirical study. Proceedings of the World Congress on Engineering (Vol. 1). London, UK.

Chaklader, B. and Shrivastava, N. (2013), "Relationship of WCM with firm's profitability during the period of global slowdown: an empirical study of manufacturing firms in India", Research Journal of Economics and Business Studies, Vol. 2 No. 3, pp. 41-50.

DarushYazdanfar, (2013),"Profitability determinants among micro firms: evidence from Swedish data", International Journal of Managerial Finance, Vol. 9 Iss 2 pp. 151 - 160

Enqvist, J., Graham, M., &Nikkinen, J. (2014). The impact of working capital management on firm profitability in different business cycles: Evidence from Finland. *Research in International Business and Finance*, *32*, 36-49.

Eriotis, N. P., Frangouli, Z., &Ventoura-Neokosmides, Z. (2011). Profit margin and capital structure: An empirical relationship. The Journal of Applied Business Research, 18 (2), 85-88

Farzinfar, A.A., Arani, Z.G.: The assessment of the effect of working capital management on the profitability of pharmaceutical companies of tehran stock exchange. Am. J. Sci. Res. 48, 121–129 (2012)

Ganguli, Santanu K. (2016) "Persistent High Liquidity, Ownership Structure and Firm Performance: Indian Evidence" *Corporate Ownership & Control*, Vol (14), no1, 38.

Garcia-Teruel, P. J., & Martinez-Solano, P. (2007). Effects of working capital management on SME profitability. International Journal of Managerial Finance, 3, 164–177.

Horne, Van J C., danWachowic J R. (2009). Fundamental of Finance Management. BukuKedua. Jakarta :Erlangga (ambil text book)

Lyngstadaas, H., & Berg, T. (2016). Working capital management: evidence from Norway. *International Journal of Managerial Finance*, *12*(3), 295-313.

Mansoori, Ebrahimdan Muhammad, Datin Dr. Joriah. 2012. The Effect of Working Capital Management On Firm's Profitability: Evidence From Singapore. *Interdiciplinary Journal Of Contemporary Research In Business.* Sept. 2012. Vol. 4, No. 5. Halm. 472-486. http://www.search.proquest.com

Mohamad, N.E.A.B. (2010), "Working Capital Management: The Effect of Market Valuation and Profitability in Malaysia", *International Journal of Business and Management*, Vol. 5 No. 11, pp. 140-147.

Myers, S.C. (1984). The capital structure Puzzle, the Journal of Finance, 39, 3, Papers and Proceedings, Forty-Second Annual Meeting, American Finance Association, 575-592.

Martínez-Sola, C., García-Teruel, P. J., &Martínez-Solano, P. (2013). Corporate cash holding and firm value. *Applied Economics*, *45*(2), 161-170.

Nworji, I. D., danAlayemi, Sunday Adebayo. (2014). Strategic Management of Liquidity and ItsRelationship with Profitability : Evidence from Emerging Market (Cement Industry in Nigeria). *Journal of Management Science* (IJMS). January.Vol. IV, Issue.1. Pg.1-9.http://www.search.proquest.com

NufazilAhangar, farooq shah (2017), "Working capital management, firm performance and financial constraints: Empirical evidence from India", Asia-Pacific Journal of Business Administration,

Pais, M. A., & Gama, P. M. (2015). Working capital management and SMEs profitability: Portuguese evidence. *International Journal of Managerial Finance*, *11*(3), 341-358.

Petersen, M.A. and Rajan, R.G. (1997), "Trade credit: theories and evidence", Review of Financial Studies, Vol. 10, pp. 661-91.

Pratheepan, T. (2014). A Panel data analysis of profitability determinants: Empirical results from Sri Lankan

manufacturing companies. International Journal of Economics, Commerce and Management, 2(12), 1-9.

Pagano, P., &Schivardi, F. (2003). Firm size distribution and growth. *Scandinavian Journal of Economics*, *105*(2), 255-274.

Pandey, I.M.:Working capital management. In: Pandey, I.M. (ed.) Financial Management, pp. 657–658. VikasPublishinh House Pvt Ltd, New Dehli (2011)

Shi, X., & Zhang, S. (2010). An incentive-compatible solution for trade credit termincorporating default risk. *European Journal of Operational Research*, *206*(1), 178-196.

Samiloglo F, Dermirgunes K (2008) The effect of working capital management on firm profitability: evidence from Turkey. Int J Appl Econ Financ 2(1):44–50

Sartono, Agus. 2014. *ManajemenKeuangan-TeoridanAplikasi*. Yogyakarta: BPFE-Yogyakarta.

Shubita, Mohammad Fawzi. 2013. Working Capital Management and Profitability: A case of Indusrial Jordanian Companies. *International Journal of Business and Science.Special issue-July* 2013.Vol. 4. No. 8. Halm. 108-115. http://www.search.proquest.com

Subramanyam, K.R. dan Wild, John J. 2010. *AnalisisLaporanKeuangan. Edisi ke-10, Buku 1 danBuku 2.* Jakarta: SalembaEmpat.

Tauringana, V., &AdjapongAfrifa, G. (2013). The relative importance of working capital management and its components to SMEs' profitability. *Journal of Small Business andEnterprise Development*, *20*(3), 453-469.

Tahir, M., &Anuar, M. B. A. (2016). The determinants of working capital management and firms performance of textile sector in pakistan. *Quality & Quantity*, *50*(2), 605-618.

Ukaegbu, B. (2014). The significance of working capital management in determining firm profitability: Evidence from developing economies in Africa. *Research in InternationalBusiness and Finance*, *31*, 1-16.

Zaid, N. A. M., Ibrahim, W. M. F. W., &Zulqernain, N. S. (2014). The Determinants of profitability: Evidence from Malaysian construction companies. Proceedings of 5th Asia-Pacific Business Research Conference. Kuala Lumpur, Malaysia.

SCITEPRESS
SCIENCE AND TECHNOLOGY PUBLICATIONS