

The Influence of Working Capital and Solvability on Profitability and Firm's Value in the Infrastructure, Utilities and Transportation Sector

Ditta Prissyli¹, Lukytawati Anggraeni², Hendro Sasongko³

^{1,2}Bogor Agricultural University, School of Business, Jl Raya Pajajaran, Bogor, Indonesia

³Pakuan University, Faculty of Economic, Jl. Pakuan, Bogor, Indonesia

Abstract: The research is conducted to know working capital and solvability to profitability and firm's value. The objects used are 21 companies of infrastructure, utility and transportation sectors of Indonesia Stock Exchange in 2010-2016. The hypothesis in this study is using panel data regression. The study aims to explore the effects of working capital and solvabilitas component i.e cash conversion cycles (CCC), current asset to total asset ratio (CATAR), current liabilities to total asset ratio (CLTAR), and degree of financial leverage (DFL) to the firm's performance by looking at firm's value i.e Tobin's Q (TQ) and profitability i.e. net operating profit (NOP). The results shows that CCC has a positive influence on the profitability of the company sector, but having a negative influence on the firm's market value. DFL has a positive influence on profitability and firm value. Companies with high CCC scores require higher external financing. Therefore, the importance of managing working capital needs to ensure an increase in the firm's value and profitability of the company and strategic thinking in the operational aspects of the company to operate efficiently and effectively.

Keywords: Working capital, Solvability, Profitability, and Tobin's Q

1. Introduction

The progress of Infrastructure has a vital role as the driving force of the economy's activity so that the economic growth in Indonesia as the island nation can evenly. Infrastructure development that continues to develop in various areas enhance the attractiveness for investors. Figure 1 shows the movement of the stock price index between sectors in the last six years in Indonesia stock exchange (BEI), to see that since the end of the year 2011 shows a positive trend and the

highest increase experienced in 2014, where in the central infrastructure development projects running.

This situation demanded the company to define a strategy and appropriate measures in order to obtain the maximum profit. The main thing is to be done i.e., apply the working capital management by analyzing the financial statements so that the results can be used as the basis for determining policies for management.

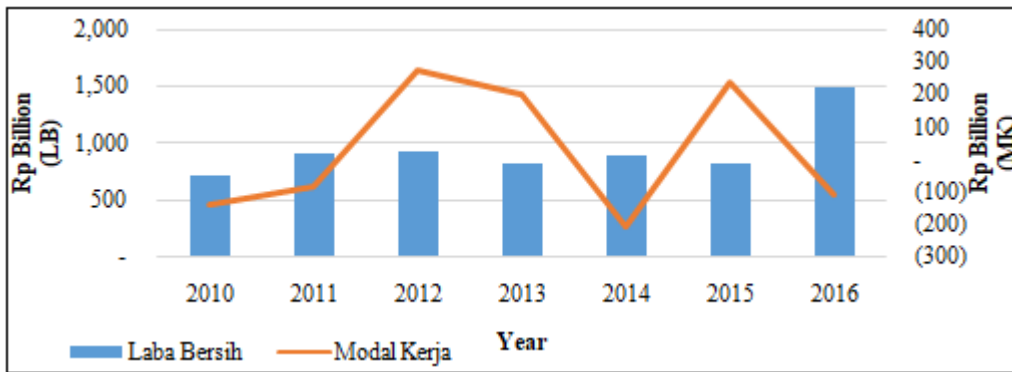


Source: IDX, IDX Statistics 2010-2016

Figure 1: The movement performance of the Sectoral Shares (Dec 2010-Jan 2016).

According to Valentina (2014) determination of working capital in the company varies according to the type of small and large business corporations, yet Munawir (1991) confirms that service companies such as enterprise infrastructure that moves in the field transportation (land, sea and air) does not require a large investment in cash, accounts receivable or inventory, because operational costs

can be met from the receipts-receipts and accounts receivable billing period is relatively short. Figure 2 presents information on average net working capital and corporate profit related 2010-2016 period based on the average value of the total current assets or commonly called GWC and the profit of the company.



Source: annual report of the company (LKT) 2010-2016 (data processed)

Figure 2: Gross working capital (GWC) and Non-profit Sector Infrastructure Companies, utilities and transportation 2010-2016

Infrastructure projects that keep running and expansion perusahaan became the reason of occurrence of improved GWC each year, but the increase was not in line with the company's profit growth. This does not cover the possibility of the company undertook to increase the total debts both short term and long term with increasing operational needs. Raheman (2010) and Zariyawati (2009) says that there is a dilemma in the management of working capital, whether the company prioritizes the profitability or liquidity of the company as both are important in the operation of an undertaking.

Research on the influence of working capital on performance or the performance of the company has already done a lot and shows different results regarding the components of working capital and a large part of the research of separating the components of cash conversion cycle. Lyroudi and Lazaridis (2000) and Abuzayed (2010) States that cash conversion cycle and its components as the variable working capital has positive influence towards profitability, while Usama (2012) found the opposite. The impact of working capital on the performance influential companies in making option strategy tailored to the target in a different way so that it could affect the relationship between the provision of working capital and operational performance (Li and Dong 2014). This study attempted to perform an analysis of variable working capital that consists of the cash conversion cycle and its associated components, financial ratio, the size of the company, the market value of the company, as well as other variables that have an impact on profitability and value of the company in order to know the development of working capital and the company's performance as well as its influence on the profitability of the corporate sector and the value of infrastructure, utilities, and transportation in BEI years 2011-2016.

Associated with the existing background, then the formulation of the problem posed in this study, namely:

- 1) How can the development of working capital and solvency of the company in the sector of infrastructure, utilities, and transportation in BEI?
- 2) How the company's performance in the sectors of infrastructure, utilities, and transportation in BEI?

- 3) How does the influence of working capital and solvency against profitability and the value of the company's infrastructure sector, utilities, and transportation in BEI?

Research Objective

This research was conducted with the following goals:

- 1) Analyze policy developments working capital and solvency of the company sectors of infrastructure, utilities, and transportation in BEI.
- 2) Analyze the performance of companies in the sector of infrastructure, utilities, and transportation in BEI.
- 3) Analyze the effect of working capital and solvency against profitability and the value of the company's infrastructure sector, utilities, and transportation in BEI.

Benefits of Research

The results of this study are expected to provide benefits, such as:

- 1) For researchers, in addition to knowledge of the understanding of the working capital management and its effects on profitability and corporate value
- 2) For academia, as new knowledge is expected to complement the findings of earlier research and became a reference for further research.
- 3) For the company, as information for management and policy consideration in determining working capital and solvency of the company to be able to increase the profit and the value of the company in the next period.

The Scope of Research

This research is focused on the influence of working capital and solvency level against the profitability and value of the company's infrastructure sector, utilities, and transportation were listed on period 2010 to 2016 in BEI.

2. Methods

Type and Sources of Data

The data used in this research is a good secondary data are qualitative as well as quantitative obtained by downloading from the website of BEI (www.idx.co.id) and the website of these companies and related agencies. The following details will be presented on Table 1.

Table 1: Type and Sources of data

Variable		Denomination	Ref.	Source
Dependent (Y)	Profitability			
	a. ROA	Ratio	Mohammad danSaad (2010)	LKT*
	b. ROE	Ratio	LyrouridanLazaridis (2000)	LKT
	c. NOP	Value	Raheman et al.(2010)	LKT
	Corporate value			
	a. TQ	Ratio	Klapperdan Love (2002)	LKT
Independent (X)	Leverage			
	a. DFL	Ratio	Adenugba (2016)	LKT
	Working Capital			
	a. CCC	Days	Fillbeckdan Krueger (2005)	LKT
	b. CATAR	Ratio	Mohammad danSaad (2010)	LKT
	c. CLTAR	Ratio	Mohammad danSaad (2010)	LKT
	d. SG	Ratio	Raheman et al.(2010), Pais (2015)	LKT
Control (X)	e. GDP	Percent (%)	Iqbal danZhuquan (2015)	BPS**
	f. SBI	Percent (%)	Fillbeckdan Krueger (2005)	BI***

*LKT: Annual Report **BPS :BadanPusatStatistik ***BI : Bank of Indonesia

Analysis Data

Methods of data analysis that is used to look at the influence of working capital and solvability of the company toward profitability and the value of the company's infrastructure sector, utilities and transportation is a method of regression

analysis of the data panel. The company's performance is the dependent variable of this research, as measured by the ratio of profitability and corporate value (Q Tobin's) and processed using Eviews 9. Model analysis of the variables were developed based on the research of Abuzayed (2010) as follows:

1. Profitability

$$ROA_{it} = \beta_0 + \beta_1 CATAR_{it} + \beta_2 CLTAR_{it} + \beta_3 CCC_{it} + \beta_4 GDP_{it} + \beta_5 SG_{it} + \beta_6 DFL_{it} + \beta_7 SBI_{it} + \varepsilon_{it}$$

$$\beta_1, \beta_2, \beta_4, \beta_5, \beta_6 > 0 \quad \beta_3, \beta_7 < 0$$

$$ROE_{it} = \gamma_0 + \gamma_1 CATAR_{it} + \gamma_2 CLTAR_{it} + \gamma_3 CCC_{it} + \gamma_4 GDP_{it} + \gamma_5 SG_{it} + \gamma_6 DFL_{it} + \gamma_7 SBI_{it} + \varepsilon_{it}$$

$$\gamma_1, \gamma_2, \gamma_4, \gamma_5, \gamma_6 > 0 \quad \gamma_3, \gamma_7 < 0$$

$$NOP_{it} = \delta_0 + \delta_1 CATAR_{it} + \delta_2 CLTAR_{it} + \delta_3 CCC_{it} + \delta_4 GDP_{it} + \delta_5 SG_{it} + \delta_6 DFL_{it} + \delta_7 SBI_{it} + \varepsilon_{it}$$

$$\delta_1, \delta_2, \delta_4, \delta_5, \delta_6 > 0 \quad \delta_3, \delta_7 < 0$$

2. Firm's Value

$$TQ_{it} = \alpha_0 + \alpha_1 CATAR_{it} + \alpha_2 CLTAR_{it} + \alpha_3 CCC_{it} + \alpha_4 GDP_{it} + \alpha_5 SG_{it} + \alpha_6 DFL_{it} + \alpha_7 SBI_{it} + \varepsilon_{it}$$

$$\alpha_1, \alpha_2, \alpha_4, \alpha_5, \alpha_6 > 0 \quad \alpha_3, \alpha_7 < 0$$

Keterangan:

NOP = Net operating profit

ROA = Return on assets

ROE = Return on equity

TQ = Tobin's Q

CCC = Cash conversion cycle

CATAR = Current assets to total assets ratio

CLTAR = Current liabilities to total assets ratio

DFL = Degree of Financial Leverage

SBI = Interest rate

GDP = Gross domestic product

SG = Sales growth

i = Cross section data

t = Period

$\beta, \gamma, \delta, \alpha$ = Coef. Variable

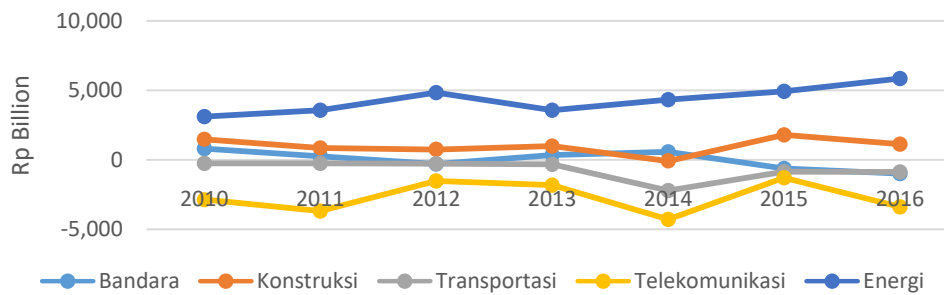
ε = error term

3. Result

Working Capital Analysis

Net working capital as well as the profit of the year 2010-2016 on the sector, it may not necessarily be followed by the increase of the profit obtained in the company. Based on the qualitative concept, the value of the NWC was the portion of

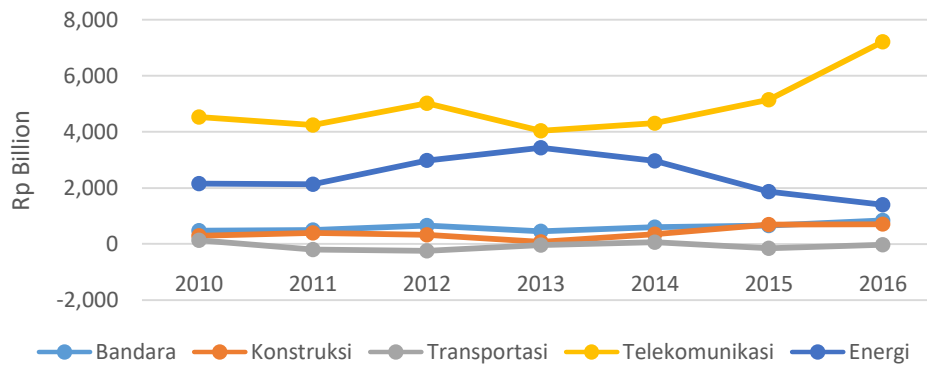
the amount of current assets that can really be used to finance the operational needs of the company without affecting the level of liquidity. Details of the growth of the NWC on the infrastructure sector, utilities and transportation are divided into 5 subsector can be seen in Figure 3.



Source: Financial Report of Company 2010-2016 (processed)
 Figure 3 growth in Net Working Capital each subsector of the infrastructure, utilities and transportation.

Based on Figure 3 differences are clearly visible on the energy subsector, where the NWC continues to experience a significant increase in the last three years. This happens because the company registered in the subsector of energy (PGAS and RAJA) increases the collectability of accounts

receivable period before, so despite the profit period runs has decreased but still can cover the total short-term liabilities has increased each year. As for the level of profitability obtained each subsector can be seen in Figure 4.



Source: Financial Report of Company 2010-2016 (processed)
 Figure 4 the resulting profit Growth each of the sub-sectors

Based on picture 4 seen that level of profitability achieved highest telecommunications subsector and in the last three years continues to experience a significant increase. Companies in this sector have very fluctuating levels of leverage. There are two companies that have higher leverage compared with companies in other subsector as e.g. TBIG amounting to 13.3% and 16.7% of TRAM it is caused in the last three years by TBIG need funds to do expansion construction of telecommunications towers in different regions support the development in the field of telecommunications, while the TRAM also has a fairly high spikes in a year later. Overall solvability ratio the company represented by the value of leverage is still in a safe condition for the company, because this sector does require large funds for the survival of his business.

4. Result of Regression Analysis Influence Working Capital and Solvability to Profitability and Firms Value Infrastructure Sector, Utility and Transportation

The Chow test results on all the models showed that the model used is the best FEM, judging from the value of $p < 0000 < \alpha 5\%$. Regression estimation based on the results

in table 2 suggests that the best approach is with the fixed effect model. The regression analysis model of influence of working capital and solvability against profitability at its best is a dependent variable as a NOP, because in addition to having the R-square value is the highest compared with the model of ROA and ROE, NOV model as the dependent variable is also the only one who passed the test results, while the classical assumptions of regression analysis the influence of working capital and solvency of the company are TQ2. The following table 2 shows the results of the regression in panel data model of FEM model on all research with weighting cross section.

The influence of working capital towards profitability and firm's value in these models, only CATAR which has positive significantly affect. Any increase in the proportion of investment assets to the total assets of the company smoothly one unit then it will increase the value of 0,353 NOP and increase the value of TQ is 1,1. The value of the variable CLTAR is only positive effect significantly to the value of the company, the higher values indicate the use of short-term debt that companies use to do the expansion could increase the market value of the company.

Table 2: The Result of Regression Analysis

Var. Ind	PROFITABILITY			FIRMS VALUE		
	ROA	ROE	NOP	TQ1	TQ2	TQ3
	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
C	-0.07	-1.172	-0.219	0.175	-0.063	0.154
PER	-	-	-	0.001**	-	-
CATAR	0.159***	0.343	0.353***	1.104*	1.100**	-
CLTAR	-0.028	-0.035	0.009	0.612***	0.561***	0.538***
CCC	-0.00004	0.0001	0.0001**	-0.0001***	-0.0001	-0.0001***
GDP	1.041**	15.380	3.401***	13.607**	20.99***	19.77**
SG	0.0008	0.008	0.001	-0.001	-0.007	-0.002
DFL	-0.0001	0.0001	0.0003***	0.0001	0.002	0.003***
SBI	-0.003*	0.05	0.006	-	-0.019	-
AR(1)	0.222**	-0.007	0.045	0.235***	0.349***	0.372***
R-Square	0.8070	0.2544	0.8884	0.8839	0.8963	0.8903
Prob F (Statistic)	0.0000	0.2702	0.000	0.000	0.000	0.000

*** : 1% ** : 5% * : 10%

The independent variables are significant positive effect on the CCC profitability of 0.0003. These results are in accordance with research Abuzayed (2010) who stating that the positive effect of the CCC with profitability, the higher the value of the CCC showed that the company's cash turnover is getting slower, but this is because the length of time billing accounts receivable turnover the company belongs to the old views of different corporate workmanship performed by companies engaged in the manufacturing sector. The value of the CCC against the value of the company has a significant negative influence, according to the research of Mohammad and Saad (2010), because the value of the company is persepi an investor against a corporation, with a slow rotation will lower the the attraction of investors.

The indicator of solvability against the profitability and firm's value used in the model was the DFL. The influence of the DFL only variable significantly to profitability, in other words the company seeks to raise debt to finance the company's operations so that it can increase profitability. These results fit with penelitian Adenugba (2016) shows the existence of a significant positive influence between DFL and profitability because any changes in earnings before interest and tax will cause a large change in net income the acquired company. Solvency indicators against the profitability and value of the company used in the model was the DFL ENDORSEMENT. The influence of the DFL only variable significantly to profitability, in other words the company seeks to raise debt to finance the company's operations so that it can increase profitability. These results fit with research from Adenugba (2016), which shows the existence of a significant positive influence between DFL and profitability because any changes in earnings before interest and tax will cause a large change in net income the acquired company.

The other variables that are used to look at its effect on profitability and the value of the company's infrastructure sector, utilities and transportation, among others, GDP, SG and SBI. Panel data regression results above stated that increasing GDP significantly positive means that each increase of the GDP effect on increasing the profitability of 1.041 and 20.99 times against the value of the company, with the word other rising GDP then this sector against the Government's budget will be increased. It can attract

investment interest investors. SG positive effect against the level of profitability of 0.001 but does not affect the value of the company. The value of the SBI no significant influence towards profitability and the value of the company's infrastructure sector, utilities and transportation.

5. Managerial Implications

Based on the results of the analysis of the influence of working capital and solvability of the company infrastructure then managerial implications that can be done is as follows:

- 1) The solvability ratio showed a positive influence towards the profitability of the company infrastructure, utilities and transportation, then the company should improve the external funding through working capital in managing their debt. The debt can be obtained either through the issuance of bonds and bank loans. Increase in short-term debt could even increase the value of the company. Later, the use of long-term debt for expanding companies can also increase the profitability of the company. Therefore, the need for increased corporate credibility in order to give confidence to the creditors and investors. The credibility of the company must be maintained from the given services at consumer companies both in terms of the development of the project and the quality of the resulting company.
- 2) Development of Infrastructure sector, utilities and transportation became one of the indicators of a country's progress. The results of the analysis show that economic growth is a positive effect towards the advancement of companies in the sector so that with the improvement of economic conditions will meningkatkan a good business climate, then the company's management needs to capture business opportunities where the economic conditions the country Indonesia currently continue to undergo improvements.

6. Conclusions

- 1) The average of companies in the sector directs the working capital of which belonged to the purchase of fixed assets each year which shows that the company is trying to do to improve the profit expansion.
- 2) Company with high values of the CCC requires external financing is higher.

- 3) The importance of managing working capital needs to ensure an increase in the market value and profitability of the company and strategic thinking in the operational aspects of the company to operate efficiently and effectively.

7. Recommendations

- 1) Companies need to make the corresponding financing decisions allowing them achieve positive results, because if it is not able to maintain the level of the working capital of the company, allowing companies the profitability decline triggered the fall in the level of investor confidence in investing that have an impact on the value of the company.
- 2) The Government should provide support to improve the infrastructure of the sector's budget "APBD/APBN, so it can invite investors who are interested in investing in this sector.
- 3) The next researcher can perform a deep analysis about the capital structure of the company sectors of infrastructure, utilities and transportation.

References

- [1] Adenugba A. A, Ige A. A, Kesinro O. R. 2016. Financial Leverage and Firm's Value. European Journal of Research and Reflection In Management Sciences Vol. 4 No. 1, 2016, ISSN 2056-5992.
- [2] BPS. 2013. ProyeksiPenduduk Indonesia 2010-2035. [Internet]. [diunduhpada 2016 September 28]. Tersediapada www.bps.go.id
- [3] Fillbeck G and Krueger T M. 2005. An Analysis of Working Capital Management Results Across Industries. Mid-America Journal of Business. Vol. 20 No. 2
- [4] Li C and Dong H. 2014. Working Capital Management, Corporate Performance and Strategic Choices of the Wholesale and Retail Industry in China. Hindawi Publishing Corporation TheScientific World Journal. Vol. 10.
- [5] Lyroudi K and Lazaridis J. 2000. The Cash Conversion Cycle and Liquidity Analysis of the Food Industry in Greece. Social Science Research Network Electronic Paper.
- [6] Klapper L. F and Love I. 2002. Corporate governance, investor protection, and performance in emerging markets. World Bank Working Paper.
- [7] Munawir S. 1991. AnalisaLaporanKeuangan. Yogyakarta: Liberty
- [8] Mohammad andSaad. 2010. Working Capital Management: the Effect of Market Valuation and Profitability in Malaysia. International Journal of Business and Management. Vol. 5 No. 11.
- [9] Pais M. A and Gama P. M. 2015. Working capital management and SMEs profitability: Portuguese evidence. www.emeraldinsight.com/1743-9132.htm
- [10] Raheman A and Nasr M. 2007. Working capital management and profitability – case of Pakistani firms. International Review of Business Research Papers. Vol.3 No.1, Pp.279 – 300.
- [11] Usama M. 2012. Working Capital Management and its Affect on Firm's Profitability and Liquidity: In Other

- food sector of (KSE) Karachi Stock Exchange. Arabian Journal of Business and Management Review (OMAN Chapter). Vol. 1 No.12.
- [12] Valentina A H. 2014. AnalisisManajemen Modal KerjadanDampaknyaterhadapProfitabilitasdanNilaiPerusahaan (StudiKasuspadaIndustriLogam di Bursa Efek Indonesia. [tesis]. Bogor (ID): InstitutPertanian Bogor.
 - [13] Zariyawati. 2009. Working Capital Management and Corporate Performance: Case of Malaysia. Journal of Modern Accounting and Auditing. Vol. 5 No. 11

Author Profile

Ditta Prissyia received the bachelor degree in Accounting, Faculty of Economy, Pancasila University in 2014. She continued herstudy in Management and Business, School ofBusiness at Bogor Agricultural University from 2015.