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THE INFLUENCE OF WORKING CAPITAL MANAGEMENT AND MACROECONOMIC INDICATOR ON LIQUIDITY IN INDONESIA PROPERTY INDUSTRY

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ABSTRACT

Working capital is important for business operations. The purpose of this study is to investigate the impact of working capital management and macroeconomic indicator on liquidity of public listed property industry in Indonesia. This study used data from quarter financial report of 19 property firms listed in Indonesia Stock Exchange over the period 2011-2015 quarterly, while GDP, inflation, and interest rate from Statistic Indonesia and Bank of Indonesia. The data was analyzed using panel data regression analysis. The result showed that Cash Conversion Cycle (CCC) is positively correlated with Current Ratio (CR), while CCC is negatively correlated with Quick Ratio (QR). These study find policy in working capital management will improve the liquidity. Furthermore, the result showed that working capital, macroeconomic, firm size, sales growth, and capital structure have significant effect on the liquidity. These results have practical implication to corporate manager for design a financial strategy.

KEYWORDS

liquidity, macroeconomic, working capital.

INTRODUCTION

Working capital is very important for business operations. Working capital management manage the administration of the firm's current assets (cash and marketable securities, receivables, and inventory) and the financing (especially current liabilities) needed to support current assets (Horne and Wachowicz 2009). Managers must manage working capital properly so that business operations run smoothly and efficiently. Working capital management can be measured by the cash conversion cycle (CCC) as in previous research conducted by Iqbal and Zhuquan (2015); Ahmad, Nadeem, and Hamad (2014); Hsieh and Wu (2013); Bolek (2013); Linda (2015); Valentina (2014) showed by accelerating the cash conversion cycle (proxy of working capital management) would increase profitability.

Horne and Wachowicz (2009) claims there is trade-off between liquidity, profitability, and risk when manager set a level of working capital (working capital policy). Working capital proxy by current assets to total assets (CATAR) and current liabilities to total assets (CLTAR). CATAR is a proxy from working capital investment policy and CLTAR is a proxy from working capital financing policy (Puraghajan *et al.* 2014; Nazir and Afza 2009; Rozari *et al.* 2015; Shan *et al.* 2015). Puraghajan *et al.* (2014) showed that aggressive strategy in working capital policy would increase profitability and risk of profitability. Most studies look at the influence of working capital on profitability but study about the influence of working capital on liquidity is rare.

Liquidity information is very important to every stakeholder because liquidity describe company's ability to pay all current liabilities. Every companies or industries have different degrees of liquidity. For example, real estate may be very illiquid. It can be hard to find a buyer, negotiate a fair price, and close a deal on short notice (Brealey *et al.* 2011). Therefore it is important to look liquidity without inventory especially in properties industry. Furthermore in this study we look impact of working capital on liquidity that measured by current assets ratio and quick ratio to look liquidity without inventory.

According to a survey by Bank of Indonesia, industry property is effected by domestic economics condition so it's important to look impact of macroeconomic indicator on liquidity in industry property. Therefore, in this study include macroeconomic variable such as GDP growth, interest rate, and inflation impact on liquidity in property industries.

Property bussiness in Indonesia is very interesting because property demand higher than property supply. According to Bank of Indonesia commercial property demand index is 126,78 while supply commercial property supply index is 105,07 in 2015. According Statistic Indonesia real estate industry contributed 268.811,40 billion Indonesian Rupiah on GDP in 2015.

REVIEW OF LITERATURE

Many researchers have studied working capital that interesting and useful for this study such as, Iqbal and Zhuquan (2015) examined the relationship between working capital management and profitability of Pakistani firms listed on Karachi Stock Exchange during 2008-2013 using panel data and panel least square for analysis. The research found negative relationship between the measure of profitability and Average Payment Period, Average Collection period, Inventory turnover in days, Cash conversion cycle and Debt while positive relationship was found between ROA and Size, GDP growth and Sales growth of Pakistani firms.

Ahmad, Nadeem, and Hamad (2014) investigated the impact of working capital on the corporate performance in the cement, chemical and engineering sectors of Pakistan 2007-2011 using panel data analysis. The results showed that cash conversion cycle, average collection period and operating cycle are positively whereas average age of inventory and average payment period is negatively related to the return on equity. The results indicate that working capital management influences the firms' profitability.

Usama (2012) examined the influence of working capital management on profitability and liquidity of pakistani firm in food sector that listed on Karachi Stock Exchange during 2006-2010. He found there is significant positive affect of working capital management on profitability and liquidity of the firms. Size of firm and cash conversion cycle has significant positive effect on firm’s liquidity.

Puraghajan *et al.* (2014) investigated the impact of aggressive working capital approach on the profitability and risk of profitability of listed companies in Tehran Stock Exchange during the period 2007 to 2011 using data panel and multiple regression analysis. The result showed aggressive strategy in working capital policy increase return on equity and risk return on equity.

Nazir and Afza (2009) investigated relationship between working capital management policies and a firm’s profitability of industrial firms listed in KSE during 1998-2005 using panel data analysis. They found a negative relationship between the profitability and degree of aggressiveness of working policies.

OBJECTIVES

The main objectives of this study are:

1. To investigate the impact of working capital management on liquidity in properties industry.
2. To investigate the impact of macroeconomic indicator on liquidity in properties industry.

HYPOTHESES

Hypotheses of the research are formulated based on previous literature, as follow:

1. There is negative relationship between cash conversion cycle and liquidity.
2. There is negative relationship between working capital investment and liquidity.
3. There is positive relationship between working capital financing and liquidity.
4. There is positive relationship between GDP growth and liquidity.
5. There is significant relationship between Inflation and liquidity.
6. There is significant relationship between interest rate and liquidity.
7. There is significant relationship between size of firms and liquidity.
8. There is significant relationship between sales growth and liquidity.
9. There is significant relationship between debt to equity ratio and liquidity.

RESEARCH METHODOLOGY

This study used data from quarter financial report of 19 property firms listed in Indonesia Stock Exchange over the period 2011-2015, while GDP, inflation, and interest rate from Statistic Indonesia and Bank of Indonesia. The data was analyzed using panel data regression analysis.

Current ratio (CR) and quick ratio (QR) are used as a dependent variable while cash conversion cycle (CCC), current assets to total assets (CATAR), current liabilities (CLTAR), GDP growth(GDP), interest rates (ir), inflation, size of firm (SIZE), sales growth (SLGR), and debt to equity (DER) are used as a independent variable. The model is as follows:

$$(1) \quad CR_{it} = \gamma + \gamma_1 CCC_{it} + \gamma_2 CATAR_{it} + \gamma_3 CLTAR_{it} + \gamma_4 GDP_t + \gamma_5 Inflasi_t + \gamma_6 ir_t + \gamma_7 SIZE_{it} + \gamma_8 SLGR_{it} + \gamma_9 DER_{it} + \epsilon_{it}$$

$$\gamma_1 < 0; \gamma_2 > 0; \gamma_3 < 0; \gamma_4 > 0; \gamma_5, \gamma_6, \gamma_7, \gamma_8, \gamma_9 \neq 0$$

$$(2) \quad QR_{it} = \delta_0 + \delta_1 CCC_{it} + \delta_2 CATAR_{it} + \delta_3 CLTAR_{it} + \delta_4 GDP_t + \delta_5 Inflasi_t + \delta_6 ir_t + \delta_7 SIZE_{it} + \delta_8 SLGR_{it} + \delta_9 DER_{it} + \epsilon_{it}$$

$$\delta_1 < 0; \delta_2 > 0; \delta_3 < 0; \delta_4 > 0; \delta_5, \delta_6, \delta_7, \delta_8, \delta_9 \neq 0$$

TABLE 1: VARIABLE OF STUDY MEASUREMENT

Variable	Measurement
CR	Current assets/current liabilities
QR	(current assets-current liabilities)/current liabilities
CCC	Average collection period + inventory turnover in days – average payment period
CATAR	Current assets/total assets
CLTAR	Current liabilities/total assets
SIZE	Log natural total assets
SLGR	(Current year sales – last year sales)/last year sales
DER	Total debt/total equity
GDP	(current year GDP – last year GDP)/last year GDP

RESULT & DISCUSSION

DESCRIPTIVE STATISTICS

Descriptive statistics of the research data used on 19 property companies listed in Indonesia Stock Exchange over the period 2011-2015 quarterly are presented in Table 2.

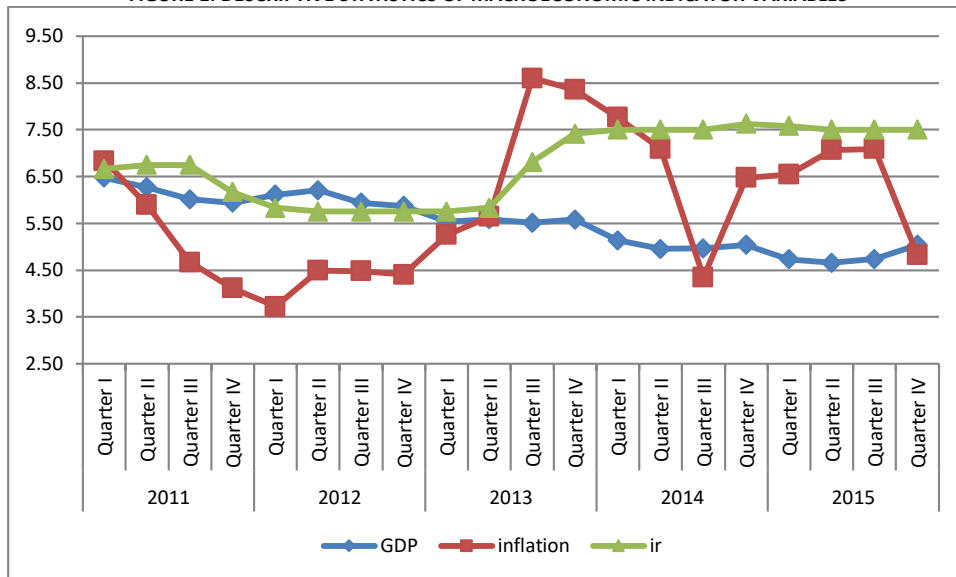
TABLE 2: DESCRIPTIVE STATISTICS OF THE INTERNAL FACTOR VARIABLES

Variable	Average	Maximum	Minimum	Standard deviation
CR	2.12	8.04	0.17	1.45
QR	1.03	7.77	0.08	1.00
CCC	1354	22161	2	1807
CATAR	0.47	0.88	0.09	0.21
CLTAR	0.28	0.71	0.02	0.14
SIZE	28.89	31.35	26.58	1.30
SLGR	0.42	12.18	-0.92	1.17
DER	0.85	3.56	0.15	0.50

Table 2 shows the average CR is 2.12, its means that average of company’s current assets are 2.12 times as large as its current liabilities. The average QR is 1.03, its means that average of companies quick assets (cash, marketable securities, and receivables) are 1.03 times as large as its current liabilities. While the average property company has 1354 days of cash conversion cycle means property company needs 1354 days for convert the cash become account payable, inventory, account receivables until get a cash from customer. Property industry have a long time for cash conversion cycle than another industry because it needs more time for building their property and inventory in this industry is property that are illiquid.

The average CATAR and CLTAR is 0.47 and 0.28, respectively. The average SIZE our sample is 28.89 with standard deviation 1.30 and average SLGR is 0.42 with standard deviation 1.17. The average DER is 0.85 means average property company used more equity than debt for financing the assets.

FIGURE 1: DESCRIPTIVE STATISTICS OF MACROECONOMIC INDICATOR VARIABLES



The average GDP growth is 5.52 with highest value is 5.48 at 2011 quarter I and lowest value is 4.66 at 2015 quarter II. The average inflation in Indonesia from 2011 until 2015 is 5.89 with highest value is 8.60 at 2013 quarter III and lowest value is 3.73 at 2012 quarter I. The average interest rates is 6.77 with highest value is 7.63 at 2014 quarter IV and lowest value is 5.75 at 2012 quarter II until 2013 quarter I.

THE ANALYSIS OF THE INFLUENCE OF WORKING CAPITAL AND MACROECONOMIC INDICATOR IN PROPERTY INDUSTRY

In this study we used fixed effect model with weighted GLS for analysis impact of working capital and macroeconomic indicator in property industry. Goodness of fit in our result have a goodvalue that result R-squared is 0.9989 in first model and 0.9871 in second model. Durbin-Watson statistic in first model and second model which is 2.0564 and 2.1023, respectively with our dL value is 1.78182 and dU value is 1.87261 denotes the non-existence of autocorrelation between error function in regression equation. According appendix 1 there is no pattern in standardized residuals denotes the non-existence of heteroscedasticity between error function in regression equation. The amount of F significance level in all model is 0.0000 less then alpha 5% which represents significance of the model.

TABLE 3: THE INFLUENCE OF WORKING CAPITAL AND MACROECONOMIC ON LIQUIDITY

Variable	Liquidity	
	CR	QR
C	14.83***	-1.91***
CCC	7.23E-05***	-3.74E-05***
CATAR	4.30***	2.35***
CLTAR	-9.11***	-5.06***
GDP	0.13***	0.23***
INFLASI	-0.05***	-0.02***
IR	0.14***	0.12***
SIZE	-0.5***	0.03***
SLGR	0.01***	-0.006**
DER	0.84***	0.44***
R-squared	0.9989	0.9871
Adjusted R-square	0.9988	0.9862
F-statistic	11773.36	1000.54
Prob (F-statistic)	0.0000	0.0000
Durbin Watson stat	2.0564	2.1023

Description: ***= significant at (α) = 1%, **= significant at (α) = 5%, *= significant at (α) = 10%

The result of the table 4 showed that there is a significant relationship between all independent variable and liquidity variable. The result showed there is positive and significant relationship between CCC and CR. These result consistent with the findings of Usama (2012). The cash conversion cycle (CCC) have positive effect on current ratio (CR) but negative effect on quick ratio (QR) that result showed when cash conversion cycle decrease inventory would decrease too, while cash and account receivable would increase. There is a positive and significant relationship between CATAR and liquidity (CR and QR), while there is a negative and significant between CLTAR and liquidity (CR and QR). This result showed aggressive working capital policy would decrease liquidity. The result consistent with Horne and Wachowicz (2009), they says high level of working capital policy (more conservative) lead to higher levels of liquidity and lower level of risk.

This study showed that there is relationship between macroeconomic indicator and liquidity performance in property industry. The result consistent with Bank of Indonesia study (2015) that showed macroeconomic condition would influence property industry performance. GDP growth has positive relationship with liquidity. Properties bussiness performance would increase when GDP growth increase and make firms liquidity increase. Interest rate have positive relationship with liquidity. Increasing interest rate would increase criteria of investment and make manager postpone for expansion and more maintain their liquidity. Inflation have negative relationship with liquidity. Inflation will make raw material price and cost production increase, it will make current liabilities increase then liquidity would decrease.

Size have negative effect on current ratio and positive effect on quick ratio these result showed the bigger size of company have a good inventory management than a small company. Furthermore sales growth (SLGR) have positive effect on current ratio but negative effect on quick ratio these result showed when SLGR increase company would increase inventory for their new stock and use their some quick asset for building property. DER variable have a positif effect on current ratio and quick ratio.

RECOMMENDATION / SUGGESTION

According to the result we suggest the manager to decrease cash conversion cycle (CCC) to increase quick assets. Manager can decrease cash conversion cycle by decrease days' inventory outstanding and days sales outstanding and increase days payable outstanding. The manager can decrease days inventory outstanding when they accelerate building property by choose a good contractor. Furthermore the manager should make a good marketing strategy for accelerate sales their

property and decrease days inventory outstanding. The manager should have a good negotiation skill to improve their bargaining power when company make contract with their supplier or costumer for decrease days sales outstanding and increase days payable outstanding.

When macroeconomic condition going slow down or decline such as GDP growth decline and inflation increase manager should choose more conservative working capital policy to maintain their liquidity. Conservative working capital policy means the managers should use more long term financing such as equity and long term debt for financing the working capital. Futhermore when macroeconomic condition decline the manager should postpone their expansion or investment for new property and maintain their liquidity.

CONCLUSIONS

This study aims to investigate the influence working capital and macroeconomic condition on liquidity in property industry Indonesia. Previous study conducted by Iqbal and Zhuquan (2015); Ahmad, Nadeem, and Hamad (2014); Hsieh and Wu (2013); Bolek (2013); Linda (2015); Valentina (2014); Puraghajan *et al.* 2014; Nazir and Afza 2009; Rozari *et al.* 2015; Shan *et al.* 2015 showed there is relationship between working capital and profitability while in our study showed there is relationship between working capital and liquidity.

Our study showed there is significant relationship between cash conversion cycle and liquidity performance. Furthermore, we found aggressive working capital investment policy (CATAR) and aggressive working capital financing policy (CLTAR) would decrease liquidity (CR and QR) in property industry. The result showed that there is relationship between macroeconomic indicator and liquidity performance in property industry. Liquidity in Indonesia property industry would decrease when GDP growth decline, interest rates too low, and there is inflation.

LIMITATIONS

This study was limited to 19 property firms listed in Indonesian Stock Exchange over the period 2011-2015 quarterly. the firm's liquidity measured by CR and QR. Working capital components include Cash Conversion Cycle, Current Liabilities to Total Assets Ratio, and Current Assets to Total Assets Ratio with control variables which include of Firm Size, Sales Growth, and DER.

SCOPE FOR FURTHER RESEARCH

Further research can investigate with another industry to see how the influence working capital and macroeconomic on liquidity in another industry. Furthermore, researcher can include cash ratio to enrich liquidity proxy.

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