

SIGNIFICANT IMPACT OF WORKING CAPITAL AND MACROECONOMIC CONDITION ON PROFITABILITY IN PROPERTY INDUSTRY

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Abstract: Working capital management is important for managers to manage business operations smoothly and efficiently. This study investigates impact of working capital management and macroeconomic condition on profitability in Indonesian property industry. This study used data from the quarter financial report of 19 property firms listed in Indonesia Stock Exchange over the period 2011-2015 quarterly, while GDP, inflation, and interest rate data were obtained from Statistic Indonesia and Bank of Indonesia. The data were analyzed using panel data regression analysis. This study found that accelerating Cash Conversion Cycle (CCC) and being more aggressive in working capital policy would improve profitability. Furthermore, the result showed that macroeconomic condition, firm size, sales growth, and capital structure have significant effects on the profitability.

Keywords: corporate finance, working capital, macroeconomic, profitability, property

Abstrak: Manajemen modal kerja sangat penting bagi manajer dalam mengelola operasional bisnis agar berjalan secara lancar dan efisien. Studi ini meneliti dampak dari manajemen modal kerja dan kondisi makroekonomi terhadap profitabilitas di industri properti Indonesia. Penelitian ini menggunakan data dari laporan keuangan secara kuartalan dari 19 perusahaan properti yang terdaftar di Bursa Efek Indonesia selama periode 2011–2015, sementara data PDB, inflasi, dan suku bunga didapatkan dari Badan Pusat Statistik dan Bank Indonesia. Data dianalisis menggunakan analisis regresi data panel. Penelitian ini menunjukkan bahwa mempercepat siklus konversi kas dan lebih agresif dalam kebijakan modal kerja akan meningkatkan profitabilitas. Selanjutnya hasil penelitian menunjukkan bahwa kondisi ekonomi makro, ukuran perusahaan, pertumbuhan penjualan, dan struktur modal berpengaruh signifikan terhadap profitabilitas.

Kata kunci: keuangan perusahaan, modal kerja, makroekonomi, profitabilitas, properti

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INTRODUCTION

Working capital management is important for managers to manage business operations smoothly and efficiently. Working capital management manages 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). Efficiency in working capital is important for the company (Setiono et al. 2017), increase profitability (Usama, 2012; Song et al. 2012; Hsieh and Wu, 2013; Awan et al. 2014; Valentina, 2014; Iqbal and Zhuquan, 2015; and Linda, 2015), and increase market value (Duggal and Budden, 2015).

Differences business characteristics in every industry make the level of working capital different (Duggal and Budden, 2015). Consistence with Figure 1 of net working capital needed per Rupiah of sales in every industry (study case in Indonesia) is different. Figure 1 shows that property industry has a highest working capital needed compared to another industry.

Property and construction sector is composed of two sub-sectors, namely, property and building construction. The main business of the property industry is providing real estate, residence, apartment, condominium, office building, mall, hotel, department store, hospitality, and other properties. Property business in Indonesia is interesting because property demand is higher than property supply. According to Bank of Indonesia, supply commercial property supply index was 105,07 while commercial property demand index was 126,78 in 2015. According Statistic Indonesia (2015), real estate industry contributed 268.811,40 billion Indonesian

Rupiah to GDP in 2015. However in the middle of December 2015, the growth demand commercial property was slowing down (Bank of Indonesia, 2016).

According Table 1, profitability (ROA and ROE) on property industry relatively decreased from 2013 to 2015. Decrease in profitability would be a problem in property industry and shareholders do not like this problem. One of the causes that made profitability decrease was impact of slowing down of GDP growth. This is consistent with the study by Iqbal and Zhuquan (2015) showing that there is positive relationship between GDP and profitability. Another reason in this case was that there was an increasing interest rate (BI rate) from 5.75% in 14 Mei 2013 to 6.00% in 13 June 2013 and 7.5% in 12 November 2013. This is also consistent with the studies by Alper and Anbar (2011) and Bhayani (2010) showing there was a relationship between interest rate and profitability.

According to Horne and Wachowicz (2009) regarding working capital, aggressive working capital policy would increase profitability. This is in line with the study conducted by Puraghajan et al. (2014) in which aggressive in working capital investment policy and working capital financing policy would increase profitability. Nevertheless, the studies conducted by Shan et al. (2015) and De Rozari et al. (2015) found that less degree of aggressiveness (more conservative) would increase profitability, and from their study, it can be seen that there was lack of information influence working capital policy and profitability. The case studies by Linda (2015); Valentina (2014); Yulianti (2013); Sumantri (2015) in Indonesia showed there was relationship between working capital and profitability.

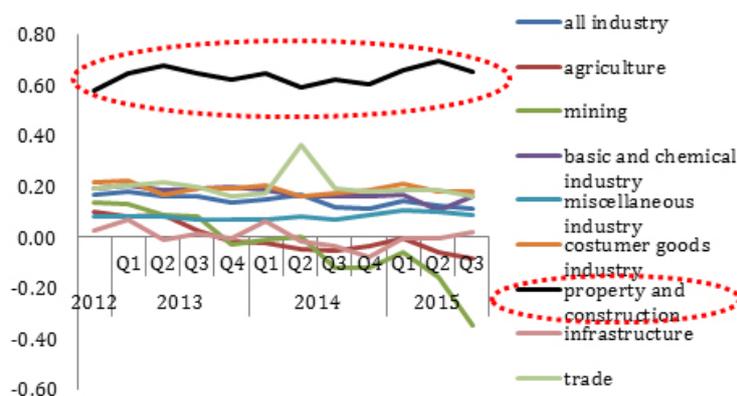


Figure 1. Net working capital needed per Rupiah of sales (study case in Indonesia) (Bank of Indonesia, 2015)

According to Usama (2012); Song et al. (2012); Hsieh and Wu (2013); Awan et al. (2014); and Iqbal and Zhuquan (2015), cash conversion cycle had negative effects on profitability. However, Ahmad et al. (2014) and Thapa (2013) stated there was a positive relationship between cash conversion cycle and profitability. Based on previous studies, there is inconsistency result of relationship between cash conversion cycle and profitability.

The studies for degree of aggressiveness in the working capital policy impact on profitability were carried out by Puraghajan et al. (2014); De Rozari et al. (2015); and Shan et al. (2015). However, there is inconsistency in their results. De Rozari et al. (2015); Shan et al. (2015) stated that less degree of aggressiveness (more conservative policy) would increase profitability. Their studies were inconsistent with the theory in Horne and Wachowicz (2009) stating that aggressive working capital policy would increase profitability. The study by Puraghajan et al. (2014) gave consistent result with Horne and Wachowicz (2009) in which they showed that aggressive strategy in working capital policy would increase profitability and risk of profitability.

Based on this background, our study would investigate impact of working capital management and macroeconomic condition on profitability in Indonesian property industry. Working capital efficiency proxy by CCC, working capital policy proxy by CATAR for working capital investment policy and CLTAR for working capital financing policy, and macroeconomics indicator (such as GDP growth, interest rate, and inflation) while profitability performance was measured by ROA and ROE.

METHOD

Working capital is important for business operations. Property industry has a bigger cash conversion cycle and net working capital needed per rupiah of sales than another industry. Profitability trend in property industry and GDP growth decreased from 2013 to 2015, and this becomes a problem for management and investor in property industry. This study aims to investigate the impact of working capital and macroeconomic condition on profitability in property industry. Profitability is our independent variable while working capital and macroeconomic indicator is our dependent variable. Figure 2 showed our research framework.

This study used data from the quarter financial report of 19 property firms listed in Indonesia Stock Exchange (IDX) over the period of 2011-2015, while GDP, inflation, and interest rate data were obtained from Statistic Indonesia and Bank of Indonesia. The firms were selected based on criteria of never delisted during the period of 2011-2015. Those with missing data were excluded and those having a negative cash conversion cycle were eliminated. The final sample of this study involved 19 property firms. The data were analyzed using panel data regression analysis.

Following the structures of the models previously applied by De Rozari et al. (2015); Shan et al. (2015), we estimated the following regression model to examine the effects of the working capital and macroeconomic condition on corporate profitability in property industry case studies in Indonesia:

Table 1. GDP growth and firm's financial performance listed in Indonesia Stock Exchange (IDX)

		2013		2014		2015	
		Q4	Q4	Q1	Q2	Q3	Q4
GDP growth	% (yoy)	5.58	5.04	4.73	4.66	4.74	5.04
ROA	Ratio	7.32	6.89	6.39	6.40	6.73	6.30
ROE	Ratio	13.60	12.40	11.60	11.55	11.36	10.48
CR	Ratio	2.07	2.45	2.80	2.59	2.87	2.59
QR	Ratio	1.21	1.44	1.69	1.55	1.72	1.61
WCR	Ratio	0.17	0.20	0.21	0.18	0.20	0.20

$$ROA_{it} = \alpha_0 + \alpha_1 CCC_{it} + \alpha_2 CATAR_{it} + \alpha_3 CLTAR_{it} + \alpha_4 SIZE_{it} + \alpha_5 SLGR_{it} + \alpha_6 DER_{it} + \alpha_7 GDP_t + \alpha_8 Inflas_{it} + \alpha_9 ir_t + \epsilon_{it}$$

$$\alpha_1 < 0; \alpha_2 < 0; \alpha_3 > 0; \alpha_4 > 0; \alpha_5 > 0; \alpha_6 \neq 0; \alpha_7 > 0; \alpha_8 \neq 0; \alpha_9 < 0$$

$$ROE_{it} = \beta_0 + \beta_1 CCC_{it} + \beta_2 CATAR_{it} + \beta_3 CLTAR_{it} + \beta_4 SIZ_{it} + \beta_5 SLGR_{it} + \beta_6 DER_{it} + \beta_7 GDP_t + \beta_8 Inflas_{it} + \beta_9 ir_t + \epsilon_{it}$$

$$\beta_1 < 0; \beta_2 < 0; \beta_3 > 0; \beta_4 > 0; \beta_5 > 0; \beta_6 \neq 0; \beta_7 > 0; \beta_8 \neq 0; \beta_9 < 0$$

The firm's profitability was measured by ROA and ROE used as a dependent variable while independent variables used included working capital components i.e. cash conversion cycle (CCC) proxy for working capital efficiency, current assets to total assets (CATAR) proxy for working capital investment policy, current liabilities (CLTAR) proxy for working capital financing policy; and control variabel such as size of firm (SIZE), sales growth (SLGR), and debt to equity (DER). Furthermore macroeconomics indicator include GDP growth (GDP), interest rate (ir, we use BI rate), and inflation. The operational variables are presented in Table 2 including importance of working capital management for the company, decrease of property profitability in

the period of 2013-2015, and indication of the effect of domestic macroeconomic on profitability in the property industry. Therefore, it is necessary to analyze the effect of working capital and macroeconomic conditions on profitability in the property industry.

Many researchers have studied working capital that is interesting and useful for this study such as Usama (2012), Ahmad et al. (2014); Thapa (2013); Hsieh and Wu (2013); Enqvist et al. (2014); Valentina (2014); Yunos et al. (2015); Linda (2015); Yenice (2015); Iqbal and Zhuquan (2015) who used the cash conversion cycle (CCC) as a proxy of the working capital management while Gill and Biger (2012); Jamalinesari and Soheili (2015) used CCC as a proxy of the efficiency of working capital management.

Working capital policy was 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 (Nazir and Afza, 2009; Puraghajan et al. 2014; De Rozari et al. 2015; Shan et al. 2015).

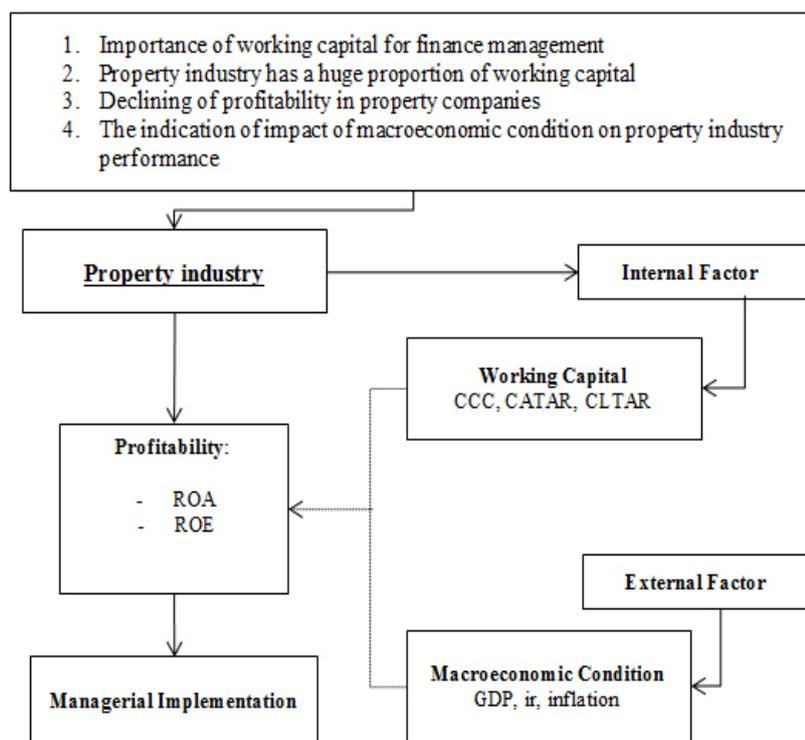


Figure 2. Research framework

Table 2 Variables of study measurement

Variable	Measurement
ROA	Net income/total assets
ROE	Net income/total equity
CCC	Average collection period + inventory turn-over 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

RESULTS

Descriptive statistics

Descriptive statistics using the research data from the 19 property companies listed in Indonesia Stock Exchange over the period of 2011-2015 quarterly are presented in Table 3. Table 3 showed that ROA is on the average of 5.81% with the standard deviation of 6.03% while ROE is on the average of 11.02 percent with the standard deviation of 10.5%. On average, the property company has 1,354 days of cash conversion cycle meaning that it needs 1,354 days for converting cash into account payable, inventory, and account receivables until it earns cash from costumers. Property industry has a much longer 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 of CATAR and CLTAR is 0.47 and 0.28, respectively. The average SIZE of our sample is 28.89 with the standard deviation of 1.30 and average SLGR of 0.42 with the standard deviation of 1.17. The average DER is 0.85 meaning that on average the property company uses more equity than its debt for financing the assets

Figure 3 showed that the average GDP growth is 5.52 with its highest value of 6.48 in 2011 of quarter I and lowest value of 4.66 in 2015 of quarter II. The average

inflation in Indonesia from 2011 to 2015 was 5.89 with the highest value of 8.60 in 2013 of quarter III and lowest value of 3.73 in 2012 of quarter I. The increase of inflation in the middle of 2013 was due to the increased oil price in Indonesia. The average interest rate was 6.77 with the highest value of 7.63 in 2014 of quarter IV and lowest value of 5.75 from 2012 of quarter II to 2013 of quarter I. The increase of interest rates (BI rates) in the mid-2013 was prioritized to strengthen the rupiah and keep inflation stable.

Panel data regression analysis

In this study, we used a fixed effect model with weighted GLS for analysis impact of working capital and macroeconomic indicator in property industry. Goodness of fit in our result has good values of R-squared of 0.9968 in the first model and 0.9947 in the second model. Durbin-Watson statistics in the first model and second model are 2.0638 and 2.0577 respectively with our dL value of 1.78182 and dU value of 1.87261 denoting the non-existence of autocorrelation between error function in regression equation. Table 4 shows the correlation matrix of all variables included in the analysis to detect multicollinearity, and the result shows that there is no multicollinearity because there is no correlation coefficient exceeding 0.80. According to Figure 4, there is no pattern in standardized residuals denoting the non-existence of heteroscedasticity between error functions in regression equation. The amount of F significance level in all models is 0.0000 less than alpha 5% which represents the significance of the model.

Table 5 showed that there is a significant relationship between all independent variables and dependent variables. Cash conversion cycle (CCC) has a negative effect on profitability (ROA and ROE). This result is consistent with theory and previous studies by Hsieh and Wu (2013); Song et al. (2012); Awan et al. (2014); Usama (2012); Valentina (2014); Iqbal and Zhuquan (2015); and Linda (2015). Negative coefficient in CCC variable means efficiency in working capital would increase profitability, and a small coefficient values on CCC showed that there is a need for a big change in CCC to increase profitability in property business.

Table 3. Descriptive statistics of the internal factor variables

Variable	Average	Maximum	Minimum	Standard deviation
ROA	5.81	32.10	-9.68	6.03
ROE	11.02	52.43	-13.44	10.51
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 4. Multicollinearity test

	CCC	CATAR	CLTAR	GDP	INFLASI	IR	SIZE	SLGR	DER
CCC	1.000000	0.210777	-0.061539	0.083065	-0.091284	-0.045984	-0.133210	-0.147643	-0.105866
CATAR	0.210777	1.000000	0.269968	0.010030	-0.004649	-0.011034	0.151114	-0.073827	0.284408
CLTAR	-0.061539	0.269968	1.000000	0.313592	-0.113938	-0.194697	-0.215660	-0.074835	0.619024
GDP	0.083065	0.010030	0.313592	1.000000	-0.397812	-0.733751	-0.178427	-0.013831	0.015196
INFLASI	-0.091284	-0.004649	-0.113938	-0.397812	1.000000	0.598731	0.083648	0.048631	0.062459
IR	-0.045984	-0.011034	-0.194697	-0.733751	0.598731	1.000000	0.128885	0.030524	0.007517
SIZE	-0.133210	0.151114	-0.215660	-0.178427	0.083648	0.128885	1.000000	-0.104931	0.103718
SLGR	-0.147643	-0.073827	-0.074835	-0.013831	0.048631	0.030524	-0.104931	1.000000	-0.106781
DER	-0.105866	0.284408	0.619024	0.015196	0.062459	0.007517	0.103718	-0.106781	1.000000

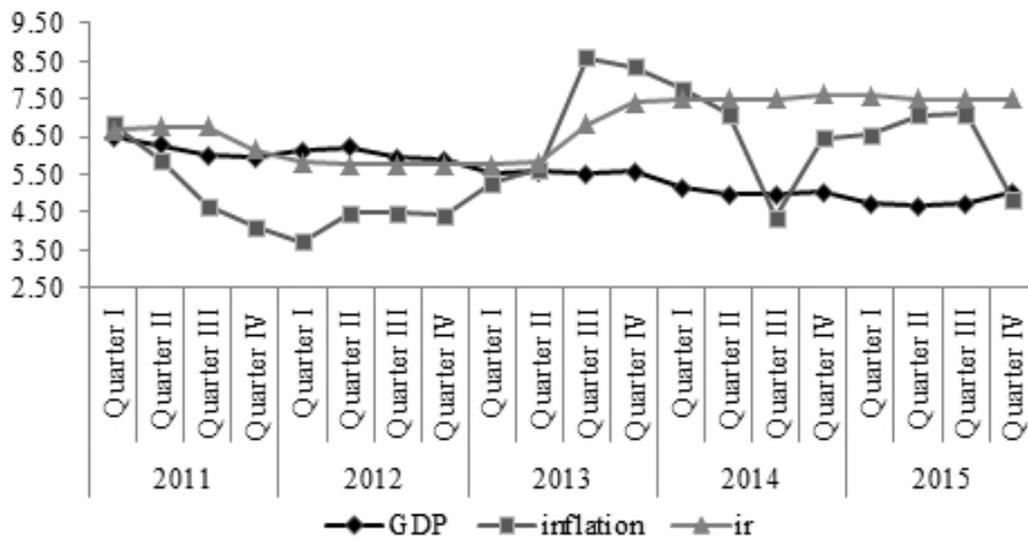


Figure 3. Descriptive statistics of macroeconomic indicator variables

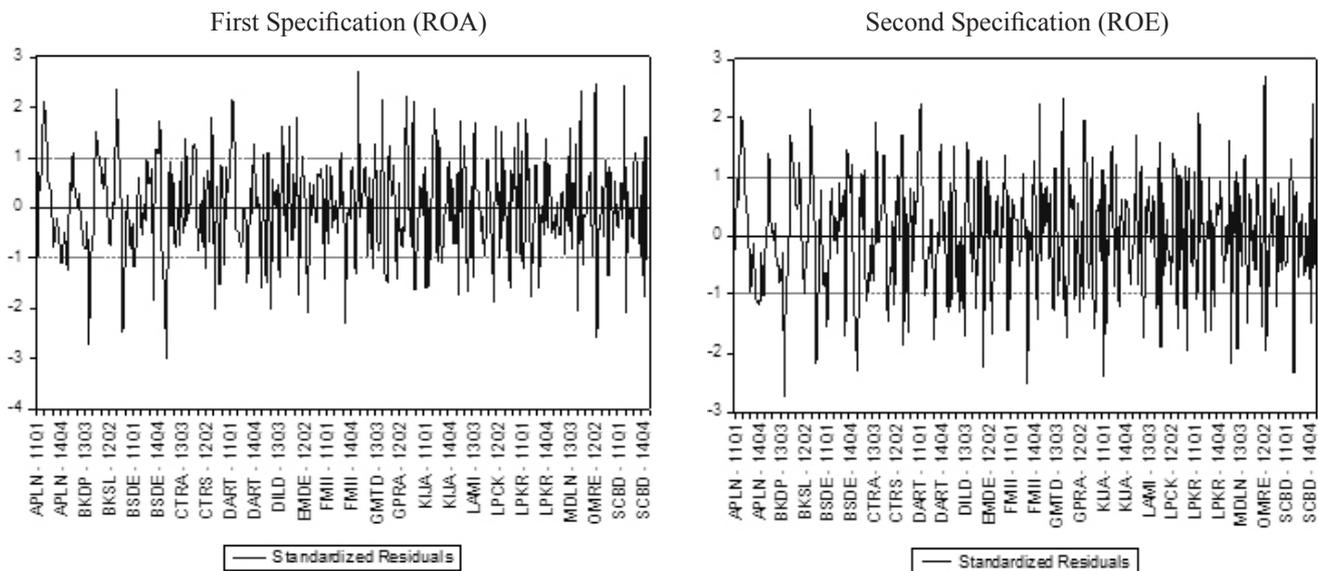


Figure 4. Heteroscedasticity results

Table 5. The impact of working capital and macroeconomic on profitability

Variable	Profitability	
	ROA	ROE
C	-170.52***	-305.61***
CCC	-1.6E-04***	-4.1E-04***
CATAR	-2.69***	-4.84***
CLTAR	0.48***	0.49***
SIZE	6.06***	10.78***
SLGR	1.08***	1.54***
DER	-3.77***	-0.73***
GDP	0.94***	1.94***
INFLASI	0.17***	0.24***
IR	-0.12**	-0.6***
R-squared	0.9968	0.9947
Adjusted R-square	0.9966	0.9943
F-statistic	4121.61	2436.16
Prob (F-statistic)	0.0000	0.0000
Durbin Watson stat	2.0638	2.0577

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

CATAR has a negative effect on profitability meaning that efficiency in working capital investment policy would increase profitability. CLTAR has a positive effect on profitability meaning that the use of more current liabilities and being more aggressive in working capital financing policy would increase profitability. These results are consistent with the study by Puraghajan et al. (2014) stating that aggressiveness in working capital investment policy and working capital financing policy would increase profitability.

There is a positive relationship between SIZE and Profitability. This result is consistent with Ahmad et al. (2014); De Rozari et al.(2015); Iqbal and Zhuquan (2015); and Shan et al. (2015) that used SIZE variable to be a control variabel. The result shows bigger firms would get better profitability than small firms. Sales growth (SLGR) has a positive effect on profitability. This result is with the results of De Rozari et al. (2015); Iqbal and Zhuquan (2015); and Shan et al. (2015) in which they used sales growth variable to be a control variabel. Increasing sales growth would increase net income and profitability.

The result shows there is a negative relationship between Debt to Equity Ratio (DER) and profitability. This result is consistent with that of Linda (2015) and De Rozari et al. (2015) that used DER variable to be a control variabel. Therefore, using more debt than equity for a capital would reduce profitability. Pecking order theory by Myers (1984) said that firms which have a big profitability will have a little debt, because they have greater internal fund for their capital.

This study shows that a macroeconomic indicator (GDP, ir, and iflation) has a significant impact on profitability in property industry. The result is consistent with the study of Bank of Indonesia (2015) that showed macroeconomic condition would influence property industry performance. Table 4 shows a positive relationship between GDP growth and profitability, indicating that the increase in GDP will make property industry obtain more profits. Increase in GDP growth

will increase property consumption, and property investment will increase property sales and increase property performance.

Interest rates have a negative effect on profitability. This result is consistent with a theory that there is a negative relationship between interest rates and investment (Dornbusch et al. 1998). Property product can be an investment product and consumption product. Investment in property would be interesting and to be an option when interest rates are low because money saving in banks, investment in bonds, and capital market will just generate little profit. Furthermore, decline in interest rates will increase purchasing power to property with credits payment, and this will increase sales of property and profitability on property industry.

The result showed that there is a positive relationship between inflation and profitability in property industry. This result is consistent with property news from Bank of Indonesia (2011) that showed volatility in commercial property price index has the same direction with consumer price index (CPI) as an inflation indicator. Increase in property price would increase net income and would then increase profitability.

Managerial Implementation

According to the result, managers should accelerate cash conversion cycle to improve their profitability. Managers can accelerate cash conversion cycle by accelerating inventory turnover in days and average collection period, and by extending average payment period. They can accelerate the building of the property by choosing a good contractor and making a good marketing strategy and tactic for accelerating sales turn over their property to accelerate inventory turnover in days. They also should improve negotiation skills to increase their bargaining power when a company makes a contract with their supplier or related parties for accelerating average collection period and extending average payment period.

In this case, profitability in property firm is declining. We suggest the managers to be more aggressive in their working capital policy especially in their working capital investment policy because according Table 4, the coefficient value in CATAR is more sensitive than CLTAR. Moreover, aggressiveness in working capital financing (CLTAR) is more at risk and enhances profitability slightly. Therefore, they should manage

working capital investment policy efficiently to increase their profitability. The result showed that the macroeconomic condition has a significant impact on profitability; therefore, they should see macroeconomic condition to make a good business strategy.

CONCLUSIONS AND RECOMENDATIONS

Conclusions

This study aims to investigate the impact of working capital and macroeconomic condition on profitability in property industry Indonesia. Our study showed working capital management and macroeconomic conditions have significant impacts on profitability in property industry. The result showed accelerating cash conversion cycle and being more aggressive in working capital policy would increase profitability in property firms. Aggressiveness in working capital investment policy is more sensitive than working capital financing to increase profitability in property firms. Profitability in property industry would decrease when GDP growth declines and interest rates are very high.

Recomendations

For further research, the authors suggest to see trade-off from the working capital policy. Furthermore, further study can use another proxy to measure profitability to see impact of working capital on profitability. In addition, further research can include loan to value (LTV) variables to see the effect of macroprudential policy on the performance of property companies.

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