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Working Capital, Financial Constraints, and Firm Value: Evidence of Indonesia Manufacturing Firm

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Abstract
This study examines the effect of working capital management and financial constraints (which proxied by size, cash flow, leverage, and Z-score) to the firm value in manufacturing listed on the Indonesia Stock Exchange during the period of 2012-2016. The research uses multiple regression data panel with fixed effect model of 110 firms. Data processing is statistical software Eviews 9. The results show that working capital and financial constraints affect the firm value.

Key Words: Working Capital, Financial Constraints, Firm Value

1. Introduction

In theory, maximizing shareholder wealth by the company is clearly explained, but in real life sometimes it is complicated. The shareholder wealth is related to the value of the company. The latter, the value of a company can be viewed both as a long-term value of the company. The difficulty of corporate management in the decision-making process arises when this linkage does not exist, that is when shareholder wealth is only considered in terms of financial performance generated in the short term. The value of the firm is based on some of the same basic concepts that are reflected in the financial statements (Johnson, 1999).

Each industry has different working capital characteristics. In practice, the manufacturing sector has a more complex working capital component than others, because the manufacturing industry sector has the process of producing raw materials into intermediate goods to finished goods that require payment several months before the goods sold to customers or so-called accrual payment.

Working capital management related to cash flow is one of the challenges for manufacturing companies. In general, working capital describes the current situation, while cash flow is a measure of a company's ability to generate cash over a given period of time. In accounting, the calculation of working capital is expressed as net working capital which equals to current assets minus current liabilities. If net working capital is negative (debt is greater than the asset), it will affect short-term cash flow. According to Pimplapure and Pushparaj (2011), if the company has negative working capital, there will be liquidity problems that cause disruption of the company's operations so that the income becomes decreased. As a result, the value of the company will also decrease.

However, the optimal level of working capital depends heavily on the company's financial condition. This financial condition described by financial constraints. The optimal level of working capital with financial constraints is lower than the optimal level of working capital with no financial constraint (Banos et al, 2014). Financial constraints are a condition where companies have limited money-making ability, which may cause companies to reduce their investment in working capital by collecting receivables, tightening credit terms, liquidating existing inventories, and easing credit requirement supplied (Hill et al, 2010). Molina and Preve (2009) conducted a study showing the result that companies experiencing financial constraints have significantly reduced the rate of trade credit compared to growing companies. Thus, overall working capital is inversely correlated with financial constraints. Typically, investors tend to avoid companies that have a high financial constraint. According to Douglas (1997), a company has financial constraints when the company has significant problems in repaying debt. The variables used to prohibit the existence of financial constraints of a company according to Banos et al (2014) are size, cash flow, leverage, and Z-Score.

2. Method

The population of this study is manufacturing companies listed on the Indonesia Stock Exchange in the period of 2012-2016. The selection of sample based on purposive sampling technique in accordance with predetermined criteria. Based on the dimension of time and time sequence, this research is called panel data.

Below are the hypothesis of the research:

H1 : Networking capital positively affects the firm value.
H2: Size has a positive effect on the firm value.
H3: Cash flow has a positive effect on the firm value.
H4: Leverage has a negative effect on the firm value.
H5: Z-Score positively affects the value of the company.

This study uses the dependent variable of firm value, which is influenced by independent variables such as net working capital, size, cash flow, leverage, and Z-Score. The table below shows the details of the variables along with how they are calculated.

Tabel 1 The Definition of Variables

Variable	Acronym	Measurement	Reference
Firm Value	VALUE	*Tobin's q = (Total assets – Book value equity + Market value equity) / Total assets*	(Cetorelli and Peristiani, 2015)
Net Working Capital	NWC	*(Accounts receivables + inventories – accounts payable)/ Sales*	(Afrifa, 2016)
Size	SIZE	*Ln (Total Assets)*	(Baños Caballero, García Teruel, & Martínez Solano, 2014)
Cash Flow	CF	*(Net profit + Depreciation and amortization)/Total assets*	(Chauhan and Banerjee, 2017)
Leverage	LEV	*Total debt/Total assets*	(Yang et al, 2012)
Z-Score	ZSCORE	*Z=(ROA+Equity/Asset)/σ ROA*	(Li, Tripe, & Malone, 2016)

Furthermore, the empirical research model used is the regression equation formulated as follows:

$$VALUE_{it}= \alpha_0+\beta_1 NWC_{it-1}+\beta_2 SIZE_{it-1}+\beta_3 CF_{it-1}+\beta_4 LEV_{it-1}+ \beta_5 ZSCORE_{it-1}+e_{it}$$

3. Results

The following table summarizes the descriptive statistic after being treated with 'winsorize' using STATA on the research variables in which the variables are firm value (VALUE), working capital (NWC), firm size (SIZE), cash flow (CF), leverage (LEV), and bankruptcy prediction (ZSCORE).

Tabel 2 Statistic Descriptive

	WIN_VALUE	WIN_NWC	WIN_SIZE	WIN_CF	WIN_LEV	WIN_ZSCORE
Mean	1.525456	0.270611	27.96142	0.100379	0.494416	2.788926
Median	1.153600	0.238700	27.83385	0.081350	0.505950	2.732600
Maximum	3.400700	0.529700	30.41900	0.267800	0.781200	4.529000
Minimum	0.724300	0.084500	26.04080	-0.010600	0.211900	1.116500
Std. Dev.	0.870117	0.144478	1.365853	0.083815	0.184527	1.124927
Skewness	1.149654	0.482033	0.418153	0.694002	-0.053356	0.086044
Kurtosis	2.991352	1.998909	2.158091	2.516253	1.794383	1.741821
Jarque-Bera	121.1580	44.26597	32.27169	49.51303	33.57063	36.95606
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	839.0006	148.8361	15378.78	55.20830	271.9288	1533.909
Sum Sq. Dev.	415.6497	11.45981	1024.189	3.856719	18.69352	694.7377
Observations	550	550	550	550	550	550

The following table is the result of fixed effect regression using Eviews 9.

Tabel 3 The Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
WIN_NWC	0.05862	0.01883	3.11366	0.00200
WIN_SIZE	-0.17152	0.01771	-9.68275	0.00000
WIN_CF	0.52000	0.13534	3.84214	0.00010
WIN_LEV	0.54336	0.07104	7.64814	0.00000
WIN_ZSCORE	-0.02064	0.00444	-4.65332	0.00000
C	6.04219	0.46290	13.05299	0.00000

4. Discussion

4.1 Impact of working capital on firm value

Based on Table 3, it is known that the value of β_1 for a working capital variable is 0.05862 and p-value value is 0.00200. The value of p-value is less than the significance level $\alpha = 0.05$, then the NWC variable gives a significant influence on firm value. Thus, do not reject the hypothesis 1.

Based on the result of estimation of the working capital variable have a significant positive effect on firm value proclaimed through Tobin's Q. The result obtained from this research support result of research conducted by (Wasiuzzaman, 2015) found that working capital has a positive effect significantly on firm value using debt constrained firms). It can be interpreted that the more funds used in working capital can increase the profitability. That is, the funds are used to buy inventory, then the inventory is sold to consumers. Moreover, the convenience of credit policy can increase sales volume. Furthermore, the proceeds of sales or invoices on receivables to customers are reused to purchase raw materials. This working capital turnover demonstrates the efficiency of a company that will ultimately boost corporate profits and provides a positive signal to investors that the company can manage its short-term finance effectively (Cumbie & John, 2017). Positive working capital means a surplus of current assets. Companies can use it to invest. The positive working capital also means that the company can minimize the inventory, collect receivables quickly and remove expensive short-term financing. This can maximize the corporate value (Hampton, J.J & Wagner, 1989). The company is considered

to have good growth prospects in the future. In addition, the creditors will also assess that the company is trusted to maintain the continuity of the company's operations with loan funds from creditors.

In the other hand, this research contrasts with the previous study that showed that the relationship between working capital and firm value is not that significant (Kieschnick, R., LaPlante, M. Moussawi, 2008). The negative relationship indicates a reduction in investment of working capital, which means that corporate profitability is high so that the value of the company becomes high also.

4.2 Impact of financial constraints on the firm value

Based on Table 3 it is known that β_2 of SIZE is -0.17152 with the p-value of 0.0000. Thus value is less than α = 0,05 then the SIZE variable gives significant negative effect on company value. Testing hypothesis 2 rejected that there is a positive influence on company size (SIZE) and company value. Based on the estimation result of company size variable has the significant negative influence on company value. This result conflicts with research conducted by Riandini (2014) who found that firm size has a positive and significant impact on firm value. In this study, this influence is indicated by the coefficient of company size path to the value of a positive company which means a linear relationship between firm size and firm value. The value of the firm will increase in line with the increasing number of assets owned by the company. This is because before beginning to invest, investors also consider the total assets as an indicator of the size of the company in which the size of a large company is considered to have a good performance.

The negative relationship between company size and firm value indicates that large risk of assets will lead to idle assets or idle assets if management does not manage them properly. Hence, a large firm size, in this study represented by the total assets, if not managed or invested properly would be a financial constraint that could ultimately lower the value of the firm.

Based on Table 3, it is known that the value of β_3 of CF is 0.52000 with p-value is 0.00010. The value of p-value is greater than α = 0.05 which means CF gives significant positive effect on firm value. Thus, the hypothesis 3 is not rejected. The result of the test shows that cash flow has a positive but not significant effect.

The results of this study contrast with research conducted Supriyanti (2015) found that cash flow does not affect the value of the company. But the results of this study in accordance with research conducted by Vogt and Vu (2000) which states that companies with high free cash flow rate will have a higher corporate value of the return and performance of companies than companies that have a low free cash flow. Cash flow reflects available cash and is not used for working capital or investment in fixed assets. The results of this study indicate that the greater the cash flow owned by the company, the value of the company is also greater.

Cash flows are used to assess the quality of company management decisions over a period of time and their impact on operating outcomes. Cash flow is also one important factor for investors to make decisions, because a company's cash flow shows how effective and efficient the company is in generating cash and spending the cash. In the company taken as the sample of this study, high cash flow causes the company to experience low financial constraints so that the firm value increases. It is because the company does not face many obstacles in its activities to maximize the production performance by using the available cash.

Based on Table 3, the LEV coefficient or the value of β_4= 0,54336 and p-value 0,0000. The p-value value less than α = 0.05 means that leverage has a positive effect on firm value. Thus, hypothesis 4 is rejected. The results prove that the level of debt has a significant positive effect on the value of the company. This is contrary to research conducted by Riandini (2010) which states that leverage has a negative and significant influence on the company. The results of this study represent that the higher the debt level of a company, the higher the value of the company. The companies that have many debts, may have the opportunity to utilize the funds for their operations and increase the value of the company due to the reduced financial constraints to fund the operations.

The use of debt can have a positive impact on the value of the company due to tax factors such as tax shield. In the tax shield, the number of corporate tax bills can be reduced due to the amount of burden that also increases the depreciation expense and interest expense. Due to these tax factors, the company will enjoy tax deductibles so that increasing debt will boost the company's value (Modligiani and Miller, 1961).

From the perspective of investors themselves can see this from two different sides of the company with high debt levels reflect that the company has the opportunity to expand or diversify that will create growth. On the other hand, high levels of debt are also indicated that the company also has high business risks such as the inability of firms to pay interest on loans, insufficient funds to pay off maturing debt and bankruptcy risk in which markets and investors will respond negatively to the issue. Therefore, in order to prevent this risk, the management needs to set a competitive strategy so that the high debt can be utilized to maximize the sales profit.

The results of this study show that the higher the level of debt, the lower the financial constraints, and the value of the firm increases. That is, debt at a certain level can be utilized by the company in managing its production activities because it has sufficient funds. It also means that the company does not have many obstacles in its financial management.

Based on Table 3, the Z-Score coefficient or the value of β_5 is -0.02064 and the p-value is 0.00230. The p-value value is less than $\alpha = 0.05$ which means that Z-Score gives a significant negative effect on firm value. Then the Hypothesis 5 is rejected.

The results of this study are not in line with research conducted by Dahlan (2014) who found that the financial constraint which is proxied with Z-Score does not give a significant effect on the value of the company. In the study, it was shown that there is no difference in firm value between companies experiencing financial constraints in the period before, during and after the global financial crisis in 2008. This can happen because most investors may not use Z-Score as a basis for decision making in the capital market. In general, the Z-Score model for predicting bankruptcy is used by banking companies that provide loan funds.

Nam and An's (2017) study found that the risk of bankruptcy showed by K-Score had a significant positive effect on firm value, where K-Score was a modified model developed by Altman. The results of this study say that the Altman K-Score is the right proxy for predicting bankruptcy in companies in Korea. The importance of the results of this study is that companies can maintain financial health by reducing the risk of bankruptcy (default risk) to maintain the sustainability of the company, because the risk of bankruptcy can reduce the firm value.

The results of this study conclude that a high Z-Score (the lower the risk of bankruptcy) can reduce the value of the firm. This is contrary to the general assumption that the smaller the chances of a company's bankruptcy mean fewer financial constraints facing the company and assumed to increase the firm value.

Based on the analysis above, it can be concluded that financial constraints have an influence on the firm value. Of the four proxies of financial constraints, leverage variables show considerable influence on changes in corporate value. This is indicated by the largest leverage variable coefficient among the other three proxies. In other words, the level of debt or leverage is a determinant that contributes significantly to financial constraints.

Based on the analysis and discussion of research in the previous part, we can conclude that the working capital has a positively affects the value of 110 manufacturing companies in Indonesia Stock Exchange. Good working capital management will impact sales that increase profits. The company's profit has risen to a positive signal for investors as it is assessed to have growth prospects in the future. In addition, an increase of working capital will also increase creditor confidence in lent funds.

The financial constraints affect the value of 110 manufacturing companies in the Indonesia Stock Exchange. Of the four components of financial constraints (size, cash flow, leverage, and Z-Score), leverage variables have the greatest contribution to changes in corporate value.

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