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IMPACT OF WORKING CAPITAL MANAGEMENT TO FIRM PROFITABILITY AND FIRM VALUE IN DIFFERENT BUSINESS CYCLE: EVIDENCE FROM INDONESIA

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Abstract . *The business cycle is a natural phenomenon that occurs as long as the country's economy is still growing. A huge shock in 2008 brings a significant decline in Indonesia's economic growth. During this business, condition firm might have to change their corporate finance strategy. Nevertheless, during the recession, company might face financial constraint to the capital market thus change their external financing method to internal financing method which is working capital management. Working capital management has a strong relationship with profitability, the higher the profit, the firms have to bear higher risks. Following the previous research, the proxy of firms' profitability is ROA meanwhile firms' value is measured by Tobin's Q. Using panel regression from 2008 until 2018 with quarterly data of 146 manufacturing firms listed in BEI, the result is obtained using fixed effect and generalized least square method. The result of this research shows that working capital management has more significant effect on firm profitability during the recession rather during the expansion. On the other hand, aggressive inventory management and cash reserves have a significant effect on firm value during recession. Thus, our research advice firms to take aggressive working capital management during the recession to boost up both profitability and firm value.*

Keywords: *Inventory Days, Receivable Days, Payable Days, Cash Conversion Cycle, Cash Reserves, Firm Profitability, Firm Value*

INTRODUCTION

Indonesia has been facing unfavorable prevailing economic condition. Major recession happens between 2008-2010 because of the global crisis that happen around the world. The crisis begun at United States in 2007 and respectively affected other development countries including Indonesia (Directorate of Economic Research and Monetary Policy , 2009). In 2009, Indonesia get the lowest GDP growth which was 4.5%. After huge hit in 2009, Indonesia economic condition escalated in 2010 by achieving 6.1% of GDP growth. After achieved highest growth at 2011 6.5%, Indonesia GDP growth started to drop. Another recession happens between 2013 until 2016 due to slump of global economic condition especially in India and China that give significant effect on Indonesia (Directorate of Economic Research and Monetary Policy, 2014). On this period Indonesia GDP growth back on the lowest point which was 4.8% in 2015.

Indicator	2008*	2009*	2010	2011	2012	2013*	2014*	2015*	2016*	2017	2018
GDP	6.1%	4.5%	6.1%	6.5%	6.2%	5.8%	5.0%	4.8%	5.03%	5.07%	5.17%
Inflation	11.06%	2.78%	5.40%	3.79%	4.3%	8.4%	4.93%	3.35%	3.02%	3.61%	3.13%

Upside or downside trend in macroeconomic or recognize as economy fluctuation will continuously happen as long as the economy of the country is running. This type of fluctuation that occurs in economic activity of a country that organize their work mainly in business enterprise is defined as business cycle (Colander, 2004). Moreover, business cycle comes along with business trend with several phases such as: expansion where the economic has upturn trend, followed with general recession, contractions and improving and back again into the expansion phase of the next cycle.

Due to the condition that business cycle will continuously happen as long as the economics of the country runs, it essential to know which particular of corporate action have to be made during different business cycle. After a huge downturn during 2007-2009, many researchers put more attention on working capital management in order maximization of shareholder's value (Arachchi & Vijayakumaran, 2017). This research aligns with the finding of previous study which claims that larger number of business failures in recent years appeared as a result improper managing their current asset and their current liabilities (Smith, 1973).

Previous study has proved that changes in working capital management during the downturns affect firm profitability. According to Merville & Tavis (1973), working capital policies has impact on optimal policies, however can only implemented on system context. Working capital management by implementing trade-credit has influenced demand and would impact the other element of working capital such as inventory management and cash reserves needed to support the financing. Although it shows strong empirical evidence that working capital structure has been effective in stimulating the demand, the macroeconomics uncertainty has direct effect on determining working capital management (Merville & Tavis, 1973). An evidence from banking sector showed that firm reliance on bank loan to support their working capital financing is cyclical (Einarsson & Marquis, 2001).

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Similar research also has proved that impact of efficient working capital management towards firm's operating profitability increase during economic downturns. The more efficient inventory management and accounts receivable conversion periods has significant effect to profitability during economic downturns (Enqvist, et al., 2014). In contrary, an evidence from Finland companies has different results, more profitable companies tend to manage their conservative working capital such as relaxing trade credits (Mielcarz, et al., 2017).

In spite of the fact that working capital management is essential for profitability, the goal of managing firm's corporate finance strategy is to optimize shareholders value which combining profitability of the firm and risk involve in decision making (Van Horne & Wachowicz, 2008). The trade-off between firm profitability, liquidity and also the risk reflected on the firm value, however, the empirical evidence on value effect of working capital investment is rarely found out (Caballero, et al., 2009). Therefore, this research is aimed to see the essential of working capital management for firm performance measure by both profitability and firm value during different business cycle in Indonesia.

Capital market was moving respectively with the GDP growth and with business cycle. During the recession period in 2008, market responded weaken along with the trend. This condition show that market strongly react due to changes in business cycle especially during the recession and it can be observed on the movement of share price in Indonesia Stock Exchange. From this condition, it can be concluded that firm were valued lower during the recession. Thus using the firm listed on the Indonesia Stock Exchange will be a perfect sample on this research.

Moreover, this research use manufacture sector which has several characteristic that suitable for this model. First, manufacturer firms have dominated to Indonesian GDP growth (Trading Economics, n.d.) which shows that decline on GDP growth also affect manufacture firm. Manufacture firms has special characteristic of their current asset which is around 50 percent of their total asset (Van Horne & Wachowicz, 2008). Because of the essential of different current asset proportion to the total asset, working capital management is important. Too much level of current asset might affect the return on investment below the standard. In contrary, too little current asset might harm the firms' liquidity and incur shortages and difficulties in paying the obligation and hard to maintain smooth operations activities (Van Horne & Wachowicz, 2008).

This research use 140 manufacturer firms that listed on Indonesia Stock Exchange from period 2008-2018. We use quarterly panel data analysis. There are several main activities on deciding the model on this research. First, defining the business cycle definition and determine the business cycle phase in Indonesia from 2008-2018. On defining business cycle, this paper refers to the business cycle phase that published by Organization of Economic Development. Second, the proxy for firm value is measure by Tobins'Q. Third, defining working capital management proxy, the control variables and correlation with firm value.

The expected result of the working capital management, firms who have more conservative working capital management during the recession have higher firm value since they anticipate for the future sales. Having too low current asset make the firm less liquid which increase firm's risk. Using more conservative working capital management reduce liquidity risk and provide the firm solvency. This result aligns with the previous research by Mielcarz, et al. (2016) that during the recession, firm who have more relax cash conversion cycle have higher firm value. Manage inventory and provide trade receivables induces sales in the future. However, using aggressive working capital management can increase firm profitability to some extent firm have to consider the risk that come along to change their working capital management.

LITERATURE REVIEW

Trend in working capital management

There are thousand research of optimal capital structure or investing decision for the company, but least in working capital management. However, larger number of business collapse because of their inability to plan and manage efficiently and properly their current asset and current liabilities of their firms (Smith, 1973).

Merville and Tavis (1973) has shown that working capital management has to be made simultaneously, including all the policies needed. Working capital policies induces and affects the demand, however, macroeconomic condition has more significant effect on determining the working capital policies for the firm. An initial research by Farazzi (1993) also founds that firms who have difficulties and face financing constrain use working capital to finance fixed investment. The high liquidity firm is more adaptable to fluctuations. In otherwords, they can make the fixed investment smoother without need for costly external funds. The reliance on larger firms to external financing also determine the degree of working capital needed. Since they need the high degree of working capital, they use external financing to cover that. However, research has shown that firm who rely more on external financing have significantly decline respective with recession in macroeconomics (Braun & Larrain, 2005).

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After huge shock in 2008 and global crisis, many research has focus on working capital management as the alternatives on relying to external funds which is riskier. Enqyvist (2014) has proven that during downturns economic condition has negative impact on company profitability, thus impact of efficient working capital management is increase during the recession. Inventory management and account receivables managed efficiently increase on profitability, especially during the recession. Another finding have the oppositve evidence. In Poland, firm which more profitable tend to use more conservative working capital where they put longer credit terms, have higher inventories, pay the payables in time and also accumulate cash during the crisis. However, financially constrained firm tend to cut their working capital to reduce internal cash flow.

Working capital management element

1. Cash Conversion Cycle

Degree of working capital is strongly related with cash conversion cycle. In other words, it reflected on the length of time between the cash spend for operating activities and when the cash return after a goods sold (Berk & DeMarzo, 2014). Between the beginning purchase of the inventory until the finish good is sold, the company might not pay directly to the supplier, in the opposite way, the customer also might not pay directly to the company after they receive the products. Moreover, the inventory might also not directly sold and sit on the shelf for some time.

Firm's operating cycle is described as the length of purchase of the inventory and the time when the firm receives cash from selling the finish product. The firms can both pay the inventories cash or use term credits. Firm tend to pay their inventories using term credits which occurs on reducing cash cycle between the purchasing and the payment to the supplier (Berk & DeMarzo, 2014). The theory has been supported by Deloof (2003), cash conversion cycle has been the popular measurement of working capital management and interpret as the lag time between purchases of raw materials and returns sales of finish goods. The longer the cash conversion cycle direct to higher profitability since it generates higher sales, however, it might decrease firm profitability due to the increase on holding cost and granting too much trade credit to customers.

2. Inventory Management

Inventory management exist along with operations management and strongly relates to financing necessary to support the inventory. In finance, inventory management is arranged by inventory policy to an extent the degree of inventory has relationship with firm's profitability. It becomes important to arrange inventory as it will both cost and benefits. Excessive inventory results deplet in cash, however, efficient inventory increases firm value (Berk & DeMarzo, 2014). Holding more inventories avoid the firm of stock-outs, where the firm runs out of goods and decrease the sales. Furthermore, hold inventory is important because of seasonality demand which customer purchases do not match the production cycle. In contrary, holding too much inventory is also costly. The inventory carries carrying cost or holding cost which can decrease firm profitability (Berk & DeMarzo, 2014).

3. Account Receivables

Empirical evidence has shown that decrease on account receivables increase efficiency of working capital management, thus improving firm value (Arachchi & Vijayakumaran, 2017). Receivables management in overall determine how long the credit standard that the firm provides for the customer (Berk & DeMarzo, 2014). Deloof (2003), giving time for customer to use credits stimulate sales because customer have known the product quality before they pay (Deloof & Jegers, Trade Credit, Product Quality, and Intragroup Trade: Some European Evidence, 1966). Through provides credit for customer, firms may have significant cost benfits and inexpensive source of credit for customer (Petersen & Rajan, 1997).

4. Accounts Payable

Account payable or trade liabilities is a form of short-term of financing for business. Business usually postpone their payment to supplier and extend credit to supplier (Van Horne & Wachowicz, 2008). Using trade credit as short-term financing, firm has to manage their accounts payable to be optimal at the maturity time (Berk & DeMarzo, 2014). According to Peterson (1996), trade credit is beneficial for firm when they have financially troubled. There are different characteristic of the firm in managing their accounts payable. As Deloof (2003) stated, account payable has negative relation with profitability which means that less profitable firms tend to pay longer.

Ideal working capital management during business cycle

The decision making about working capital management is determined by 3 main fundamental reasons which maintaining uninterrupted workflow of operations, ensuring sufficient liquidity and solvency, and optimizing profitability of investment. However, during several conditions of macroeconomics, firms have to change their policies in order make decision making for working capital management in order maximize firm profitability. As it mentioned before, there is always tradeoff between profitability and risk during working capital management decision making.

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According to Enqvist (2014), decrease on cash conversion cycle improve firm profitability. Moreover, improving account receivables collection period, decrease inventory management during economic downturns increase firm profitability. Going with this statement, focusing on profitability becomes a dillemmas. As Van Horne, et al. mentioned previously, profitability increase respectively with risk. Decreasing current asset increase firm liquidity risk. Contrary with the Enqvist, Mielcarz, et al. (2016) has show that conservative working capital management increase firm profitability because firm tend to make an anticipation of business fluctuations. Conservative working capital management also decrease firm value due to liquidation issues (Van Horne & Wachowicz, 2008).

Previous research indicates that there is different financing behavior on corporate decision-making during 2008 financial crisis. The company tend to cut investment expenditures, deplete precautionary cash reserves, rely on credit lines and external financing, and sell assets in order to compensate for internal funds deficiency (Wilson & Summers, 2002). Another research support that firm size influenced company's decision making during the crisis. Gertler and Gilchrist (1994) found that large company tend to be heavily dependent on short-term debt financing that gradually increases through the phase of economic growth and then falls through the economic recession. Meanwhile for small companies more conservatism and they tend to use the short-term debt before the recession starts. In the other side, small firm found out that they do not tend to reduce inventories expenditure compare to larger firms.

Then, it comes to a conclusion that during the crisis, firm tend to use conservative working capital management both for firm profitability and risk that occurs during crisis. Conservative working capital management during crisis relaxing firm risk due to stock out condition and anticipate future demand.

METHODOLOGY

The sample of this research use 140 manufacturer firms that listed on Indonesia Stock Exchange during period 2008-2018. The measurement of the data is quarterly. We use manufacturer firms because of the special characteristic of current asset of manufacturer firms which is around 50% of their total asset.

The method on panel regression data analysis is using pooled OLS (Ordinary Least Square) with random effect model. The economic condition which divided into two phase that are recession and expansion are included as the dummy variable on the model.
Thus, we construct a model as follows:

$$TBNQ = \beta_0 + \beta_1 WCI_{at} + \beta_2 WCI_{at} Recession + \beta Control_{at} + \beta_{at} + \varepsilon_{it}$$

where i refers to the firm and t refers to time priod, TBNQ represent as dependent variable of firm's value that measured by Tobin's Q where total market value of equity and debt divided by book value of asset, WCIat as working capital cash management which divided total cash by total asset, Crisis represent dummy variable for business cycle where 1 indicates recession and 0 for expansionary period. WCIitxCrisis is to measure test H2 for recession period. Control indicates vairable control uses on this research as represent bellow. Meanwhile eit is represent error on this model. TO test all the hypothesis, it will be replaced by each variable of working capital management in different regression.

Independent Variables

The main variables for working capital management is measure by cash conversion cycle (Inventory turnover + account receivable turno ver – account payables day), inventory turnover (inventory multiply by day in a year divided by cost of goods sold), account receivable turnover (account receivable multiply by day in a year divided by annual sales), payable days (account payables multiply by day in a year divided by amount of purchase)

Control Variables

Size of the firms. Log Fixed Asset. Different firm size has different characteristic of working capital management, since smaller firms tend to use short-term debt as their external financing. In the other hand, larger firm that has better access to have long term debt and also capital market, has less current asset and can easily get cash requirement through borrowing (Moss, 1993).

Leverage. Total non-curret liabiilities to total asset. Using leverage reduce agency cost between shareholders and managers, thus, leverage increase firm's effinciency (Jensen, 1986) and working capital management decision has been influenced by the financial leverage in capital structure.

Sales growth. Sales in t1 – sales t0 divided to sales t0. Sales growth has correlation with firm's performance due to revenue volatility and thus may influence working capital management. Since the future is hard to be accurately predicted, companies has tendency to hold more inventories. Moreover, high growth firm tend to relax the trade credit terms as their sales already growing (Hill, Kelly, & Highfield, 2010).

Operating cash flow. Operating cash flow divided to total asset. According to Fazzari & Petersen (1993), cash flow has an effect on working capital decision making, the firm tend to relax the working capital management or more conservative.

Dividend payout. Dividend paid to total shares outstanding. Dividend pay out ratio becomes one of the indicator of the firm's growth phase to maturity and determine as attractive investment projects push the company to give the return for shareholders in term of dividend (Mielcarz, Ossichuk, & Wnuczak, 2017).
External finance. Add debt incurred to total asset. During economic crisis, industry that have more external financing face more difficulties, with the effect of credit crunch (Braun & Larrain, 2005). Thus, this take as a conderation for company to take internal financing during the crisis due to risk of credit when they too much rely on external financing (Braun & Larrain, 2005)
Growth opportunity. Price to book value ratio. Fast-growing industries tend to generate new investment opportunities respectively. They have to take the opportunity, unless they will decrease on their firm value because of their short product life cycles (Fazzari, 2003). During take a new opportunity for new project, firm may face several options for their decision and generate more aggressive working capital management. In evitable way, fast-growing company tend to accumulate more cash for attractive investment and reduce the reliance on external financing.

FINDINGS AND ARGUMENT

The researcher expected that there are positive significant effect of conservative working capital management to firm value. Where firm that have more conservative working capital management have better firm value. This condition is resulted as firm with conservative working capital management is more liquid and consider the trade-off between profitability and the risk. Firm performance is not only measure by the profitability. The proxy that only use profitability as the measurement of company performance is somehow too risky considering that during decision making on working capital management policies, the risk will increase along the profitability of the firm.

CONCLUSIONS

As the result shows, conservative working capital management have significant effect for firm's value during the crisis. For investor, firm that manage their working capital in more conservative way is more attractive to invest.

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