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The relationship between working capital management and profitability of SMEs in China

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ABSTRACT: This objective of this paper is to examine how working capital management affect Chinese listed SMEs' profitability. This research uses 358 listed Chinese SMEs as samples, and the sample period covers from 2009 to 2018. We employ multiple proxies to measure the efficiency of working capital management (WCM), including receivable collection period (RCP), payable deferral period (PDP), inventory conversion period (ICP), and cash conversion cycle (CCC). Based on the descriptive and quantitative analysis used, this research finds a significant negative relationship is existing between the components of WCM, like RCP, ICP and CCC, and companies' profitability. Thus, it is important for managers to consider proper working capital management as part of companies' strategy so that the firm's market value and profitability can increase.

Keywords: Working Capital Management, Profitability, SMEs

I. INTRODUCTION

Working capital deals with both current assets and current liabilities in a company (Raheman and Nasr 2007). Working capital can be treated as a force to support many economic units and companies' lives, so it is considered one of the most important parts of corporate management (Makori and Jagongo 2013). The majority of the companies put a lot of money and resource into their working capital to maintain daily operations; they also keep enough accounts payable to get short-term financing (Deloof 2003). Gill (2011) points out the primary objective of Working capital management (WCM) is to find the optimal balance between WCM components, like inventory, accounts payable, and accounts receivable. WCM is, therefore important for many companies. An efficient WCM can help to create shareholders' value (Vural et al. 2012). Inventory is an essential constituent part of working capital. Keeping a high level of inventories can decrease the cost of entering the manufacturing process and the risk of stock out (Makori and Jagongo 2013). Companies can also get an advantage when the market value of inventory increase (Blinder and Manccini 1991). Nevertheless, too many inventories will also cause the problem like obsolescence and thus decrease the profitability. Some companies grant trade credit to customers, so customers can try the product before paying the bill, which may attract customers and increase companies' profitability. However, granting trade credit to customers occupies some money in working capital (Deloof 2003) and thus causes some extra cost; it will then decrease companies' profit. Accounts payable is also a vital constitutional part of working capital. It is on the opposite to accounts receivable, Deloof (2003) also pointed out companies can treat accounts payable as an inexpensive and flexible way for financing. Thus, they can increase profitability with the extra money. To take comprehensive consideration of those component, cash conversion cycle is treated as a popular way to measure the efficiency of WCM.

Most of the previous studies take no account of the size of the company and focus more on an entire industry. There should be some difference between large-sized companies and small-sized companies, as small-sized companies have a larger proportion of current assets and current liabilities. Thus, this research selected focus on the study of listed SMEs. Besides, only a few studies focus on observations in China. According to the Ministry of Industry and Information Technology in China, the number of small and medium-sized enterprises (SMEs) in China had exceeded 30 million by the end of 2018, which is an important part of the whole market. China attaches great importance to the development of SMEs and adopts supportive policies for SMEs, like preferential tax reduction and exemption policy. As the SMEs is important in China, this study will focus on determining the relationship between WCM and profitability of listed SMEs in China. Besides, most studies only use return on asset and return on equity as proxies to measure profitability. Still, this study also uses operating profit to sales and Tobin's Q ratio in addition to these two ratios. Tobin's Q represents the market value of a firm and reflects the present value of all future profit, so it is a better measure of profitability.

The primary research objective of this study is therefore: (1) To establish the relationship between WCM and Profitability for listed SMEs in China. (2) To analyze the influence of different components of WCM on profitability for listed SMEs in China.

Maximizing profit is the ultimate objective of most companies. However, companies also pursuit liquidity; because companies can not survive for a more extended period without profit and may face the problem of insolvency or bankruptcy without liquidity (Raheman and Nasr 2007). WCM thus should be adequately considered as it directly affects both profitability and liquidity of a company. Compared to large companies, the primary financing resource for SMEs is current liabilities. SMEs also have less technology and people to manage working capital (Tauringana and Afrifa 2013), but these two components are all essential to conduct WCM. As a result, SMEs with limited resources compared to their large competitors may face operational problems. Many researches find that managers spend plenty of time on daily operations related to WCM. On the one hand, current assets are the assets that are continuously changing into other types of assets. On the other hand, current liability should be paid in a short period, which relies on the operating profit generated by assets. Put them together, the management of working capital becomes flexible, frequent, and time-consuming (Raheman and Nasr, 2007). Thus, it is significant for managers of SMEs to know efficient WCM with limited resources and understand how WCM may affect profitability.

In order to realize the objectives, this research use both descriptive analysis and quantitative analysis. For quantitative analysis, both correlation analysis and regression analysis will use to get a better understanding of the relationship between WCM and profitability. Four fixed effect regression model is designed for the regression analysis part. By using those research methodologies, the result shows a significant negative relationship is between RCP and profitability. ICP has a significant negative correlation with profitability and CCC is also negatively related to profitability. However, PDP has no relationship with companies' profitability.

As mentioned above, this research focuses on Chinese SMEs, which is rarely investigated. The result of this paper can give future investigator a basic knowledge of the management of working capital of SMEs' in China and understand the relationship between component of working capital and profitability. Managers can thus get some suggestions about which component of working capital they need to focus in the daily operation.

This paper is divided into 6 parts. Literature review part can give reader some basic knowledge about this topic. Then in part III and IV, research methodology and the related empirical result are given. Part V gives the discussion of those results and this part also include the discussion about the limitation, reliability and validity and theoretical contribution of this research. Then in the las part, conclusion is given to summarize this paper.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Institutional Background of SMEs in China

This paper focuses on the study of SMEs in China. It is important for Chinese SMEs to understand how WCM may affect profitability because SMEs have become one of the major drivers of China's economic growth (Li 2003). Development of Chinese SMEs can be divided into three phases over the last two decades. The first phase is from 1978 to 1992. During this period, China focus on the expansion in number and scale of SMEs. From 1992 to 2002, government has adopted many measures for the reform of SMEs. Both private and public SMEs experienced rapid growth in that time. Starting from 2002, China published the SMEs promotion law for their future development (Chen 2006).

Extant Literature

In literature, working capital is the amount of funds a company needed for its day-to-day operation (Sayaduzzaman 2006). Generally, it means the excess of current assets to current liabilities (Sagner 2014). Therefore, WCM is the management of companies' current assets and current liabilities; as well as financing the assets. It plays an essential role in companies, as it affects both profitability and liquidity of a company (Raheman and Nasr 2007).

Profitability is the degree to which a business or activity produce a financial gain. It can be measured by the ratio like Return on Assets (ROA) and Operating profit to sales (OPS) (Afeef 2011). However, different ratios and proxies are used to measure profitability in various studies. The firm's size and study's requirement can affect the selection. Deloof (2003) considers the effect of financial assets to total assets in his study because operating activities will contribute little to ROA if a large part of the assets is related to financial assets, so he minus the financial assets in the denominator of ROA. However, financial assets are not important in SMEs, so using ROA will not alter the results in the study of SMEs (García-Teruel and Martinez-Solano 2007). Vural et al. (2012) use Tobin Q, which equals the market value of a company divided by its assets' replacement cost to measure the companies' value and performance.

Numerous researchers have conducted related studies to observe the relationship between components of WCM and profitability from different aspects and different period:

Relationship between Receivable Collection Period (RCP) and Profitability

RCP is one proxy to measure the efficiency of WCM, which measures the time taken to collect cash from customers (Mathuva 2015). Account receivable is caused by granting trade credit to customers, which can increase profitability to some extent because it can attract customers to try product quality first (Deloof and Jegers 1996). Moreover, large companies tend to have advantages in the cost of financing compared to individuals, so accounts receivable can be a source for customers to finance (Petersen and Rajan 1997), and that can also enhance the profitability of companies. The results of correlation analysis made by Afeef (2011), Deloof (2003) and Raheman and Nasr (2007) show a significant negative relationship between RCP and profitability, which

means companies should keep RCP as short as possible to increase profitability. Based on these pieces of evidence, this study gives the following hypothesis:

Hypothesis 1: RCP is negatively associated with profitability.

Relationship between Payable Deferral Period (PDP) and Profitability

PDP is another proxy to measure WCM, which measures the time taken to pay for suppliers (Mathuva 2015). In contrast to accounts receivable, suppliers allow companies to try product quality first and then pay the money. It can affect profitability because it can be an inexpensive way for companies to finance, but companies with low profitability tend to delay the payment, and it can be costly if suppliers offer a discount for early payment (Deloof 2003). The result of Deloof's study, which is based on 1009 large non-financial companies, finds decrease PDP can increase companies' profitability in Belgian. Similarly, Raheman and Nasr (2007) conclude that less profitable companies tend to wait longer for payment to suppliers. Hence, this study hypothesizes:

Hypothesis 2: PDP is negatively associated with profitability.

Relationship between Inventory Conversion Period (ICP) and Profitability

ICP is the time taken to convert companies' inventory into sales (Mathuva 2015). It can affect profitability, because companies with a suitable number of inventories can reduce the risk of stock out. Still, companies with too few inventories may result in the problem of keeping normal operation (Van Horne and Wachowicz 2005). On the contrary, the money spending on inventories is locked up in working capital and occupy some capital (Deloof 2003). The studies made by Alipour (2011), Deloof (2003), Afeef (2011), and García-Teruel and Martinez-Solano (2007) find a significant negative relationship between ICP and profitability. Therefore, this study gives the following hypothesis:

Hypothesis 3: ICP is negatively associated with profitability.

Relationship between Cash Conversion Cycle (CCC) and Profitability

CCC is one of the most popular proxies to measure the efficiency of WCM. It measures the amount of time to convert its investment in the raw material into receiving the cash flows from sales. Longer CCC may increase companies' profitability, as it increases sales; however, increase CCC can decrease the profitability if the benefit from attracting more customers by trade credit does not surpass the cost of investment (Deloof 2003). Afeef (2011) draws the conclusion that CCC has no significant association with the profitability variable. Nevertheless, in the study of Shin and Soenen (1998) for listed American companies, they use Net Trade Cycle (NTC), calculated by CCC divided by sales figure and multiply by 365. They find a strong negative relationship between WCM and CCC, which implies that companies with a short CCC is more profitable. Jose, Lancaster, and Steven (1996) draw a similar conclusion that those industries with lower CCC are more profitable. Therefore, this study has the following hypothesis:

Hypothesis 4: CCC is negatively associated with profitability.

III. RESEARCH METHODOLOGY

Data source and Sample Selection

This research is going to establish relationship between WCM and profitability for listed SMEs in China. This research uses the sample period from 2009 to 2018. Financial data used in this research is collected from China Stock Market and Accounting Research Data Base (CSMAR). SMEs selected for this research are listed in the Small and Medium Enterprise Board (SMEs Board), which is set up by Shenzhen Stock Exchange for a cluster of small and medium-sized companies.

There is a total number of 942 SMEs listed in SMEs Board. However, only 358 companies have complete financial data from 2009 to 2018, so all of the 359 is selected as the sample for this research.

Variables used in the Study

The following is the variables used in this research to measure the efficiency of WCM and profitability. Previous studies influence the choice of these variables. Return on assts (ROA), operating profit to sales (OPS), return on equity (ROE) and Tobin's Q are used as dependent variables to measure profitability of companies. These ratios are calculated as follows:

ROA= Net Income/Total Assets
OPS= Operating profit /sales
ROE= Net Profit/Shareholders' Equity
Tobin's Q = (Market Value of equity + Book Value of Debt) / Total Assets

CCC, RCP, PDP and ICP, which is mentioned as some most essential constitute parts of WCM, are used as independent variable to measure the efficient of WCM. These ratios are calculated as follows:

RCP= (Average Accounts Receivable / Net Credit Sales) ×365
PDP= (Average Accounts Payable / Cost of Goods Sold) ×365
ICP= (Average Inventory/Cost of Sales) × 365
CCC= Receivable Collection Period + Inventory Conversion Period - Payable Deferral Period

Based on the study of Afeef (2011) and García-Teruel and Martinez-Solano (2007), whose researches also focus on SMEs, except the variables discussed above, some control variables may have some influences on the management of working capital, are also selected based on prior studies. They are current ratio (CR), natural logarithm of sales (NLS), which is used to measure the size of company; debt ratio (DR), which is used to measures the extent of a company's leverage and sales growth (SG). These variables are calculated as follows:

CR = Current Assets/Current Liabilities
NLS= ln (Sales)

DR= Total Debt/ Total Asset
SG= (Sales1 – Sales0)/Sales0

Statistical Tools used in the Study

Both descriptive and quantitative analysis will be used for this study. For descriptive analysis, mean value, standard deviation, maximum and minimum value of each variables will be given. For quantitative analysis, correlation analysis is used to determine the relationship between each variables and regression analysis will also be made to get a better understanding of the relationship between WCM and profitability. Statistic tool used for all the above analysis is Stata 15.

The Regression Model

Based on the above discussion, this study then use Regression Analysis evaluate the effect of the variables of working capital management on profitability. This research uses four dependent variables and four independent variables. Thus, 16 fixed-effect regression models are displayed as:

Model 1:

$$ROA = \beta0 + \beta1\ RCP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (1)$$
$$OPS = \beta0 + \beta1\ RCP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (2)$$
$$ROE = \beta0 + \beta1\ RCP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (3)$$
$$Tobin's\ Q = \beta0 + \beta1\ RCP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (4)$$

Model 2:

$$ROA = \beta0 + \beta1\ PDP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (1)$$
$$OPS = \beta0 + \beta1\ PDP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (2)$$
$$ROE = \beta0 + \beta1\ PDP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (3)$$
$$Tobin's\ Q = \beta0 + \beta1\ PDP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (4)$$

Model 3:

$$ROA = \beta0 + \beta1\ ICP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (1)$$
$$OPS = \beta0 + \beta1\ ICP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (2)$$
$$ROE = \beta0 + \beta1\ ICP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (3)$$
$$Tobin's\ Q = \beta0 + \beta1\ ICP + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (4)$$

Model 4:

$$ROA = \beta0 + \beta1\ CCC + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (1)$$
$$OPS = \beta0 + \beta1\ CCC + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (2)$$
$$ROE = \beta0 + \beta1\ CCC + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (3)$$
$$Tobin's\ Q = \beta0 + \beta1\ CCC + \beta2\ CR + \beta3\ LNS + \beta4\ DR + \beta5\ SG + \varepsilon \quad (4)$$

IV. EMPIRICAL RESULTS

The Descriptive Analysis

Table 1 below shows the descriptive analysis results related to 358 sample companies. It includes mean value, standard deviation, maximum and minimum values of each variables used. Minimum and maximum value are given, so that the extreme value of each variable can be easily discovered. The table shows that return on assets has a mean value of 4.8%. Operating profit is on average 7.4% of sales. The mean value of return on equity is 6.4% and Tobin's q has a mean value of 2.946. The average time for these companies to collect accounts receivables is 91.248 days. It takes average 168.954 days for companies to sell their inventories. Companies need on average 83.241 days to pay their purchases on credit and their cash conversion cycle is 176.96 days on average. The average quick ratio is 2.661 and average debt ratio is 0.406. Sales growth ratio is on average of 24.8%.

Table 1
Descriptive Statistics for Variable Used

Variables	Obs	Mean	Std.Dev.	Min	Max
ROA	3137	0.048	0.073	-1.324	0.46
OPS	3137	0.074	0.219	-7.161	1.035
ROE	3137	0.064	0.451	-23.148	0.638
TobinQ	3137	2.946	1.977	0.754	31.565
RCP	3137	91.248	84.909	0.001	1430.257
ICP	3137	168.954	294.649	0.009	5081.725
PDP	3137	83.241	70.908	0.118	1358.539
CCC	3137	176.96	297.073	-780.872	5016.707
CR	3137	2.661	3.981	0.075	104.667
LNS	3137	21.119	1.141	16.96	26.224
DR	3137	0.406	0.196	0.008	1.256
SG	3137	0.248	1.778	-.993	84.992

The Correlation Analysis

Table 2 shows the results of correlation analysis, which is used to analyze the degree of relationship between each two variables. The result shows significant negative relationships between ROA and all proxies to measure the efficiency of WCM at the significant level of 99%. The result depicts OPS has negative relationships with both RCP and PDP at the significant level of 99%. ROE has a significant negative relationship with RCP and it also has a negative relationship with PDP at the significant level of 90%. A significant positive relationship is discovered between Tobin's q ratio and RCP. Aside from that, Tobin's q has a significant negative relationship with ICP.

The Regression Analysis

The regression analysis is used to give a better and more specific view of the

relationships between WCM components and profitability. Fixed effect regressions are used in this study. Data of accounts payable in 2018 used to calculate PDP variable are

Table 2
Pearson Correlation Coefficients

	ROA	OPS	ROE	TobinQ	RCP	ICP	PDP	CCC	CR	LNS	DR	SG
ROA	1.000											
OPS	0.733***	1.000										
ROE	0.429***	0.322***	1.000									
TobinQ	0.285***	0.155***	0.039**	1.000								
RCP	-0.160***	-0.194***	-0.066***	0.063***	1.000							
ICP	-0.062***	-0.005	-0.009	-0.048***	0.147***	1.000						
PDP	-0.154***	-0.158***	-0.034*	-0.016	0.543***	0.279***	1.000					
CCC	-0.071***	-0.022	-0.019	-0.025	0.302***	0.967***	0.193***	1.000				
CR	0.205***	0.204***	0.040**	0.244***	0.029*	-0.015	-0.120***	0.022	1.000			
LNS	0.085***	0.054***	0.068***	-0.365***	-0.273***	-0.103***	-0.157***	-0.143***	-0.251***	1.000		
DR	-0.407***	-0.325***	-0.160***	-0.385***	0.011	0.151***	0.207***	0.103***	-0.484***	0.446***	1.000	
SG	0.055***	0.037**	0.028	-0.019	-0.049***	-0.010	-0.030*	-0.017	-0.028	0.113***	0.051***	1.000

Note: *Significant at 90 percent. ** Significant at 95 percent. *** Significant at 99 percent.

missing for many selected SMEs, which may influence the result in some extent.

Table 3 below demonstrates the association of ROA with different WCM components. Column (1) shows the coefficient of RCP is -0.0001627 at 99% significant level, which means a significant negative relationship exists. Column (2) shows no relationship is between PDP and ROA. Column (3) demonstrates a significant negative relationship is existing between ICP and ROA. Column (4) indicates CCC is negatively related to ROA and the relationship is significant. The coefficient of the control variable LNS, DR and SG are also high negatively related to ROA. That means ROA increases with firms' size, which is measured by LNS and sales growth; it decreases with the ratio of total debt to assets. Table 3 signifies that companies can increase profitability by shortening RCP, ICP and CCC.

Table 3
Regressions Analysis for Sample Firms with
ROA as Dependent Variable

Dependent Variable: Return on Asset				
	(1)	(2)	(3)	(4)
RCP	-0.0001627***			
	(0.000)			
PDP		-0.0000207		
		(0.351)		
ICP			-0.0000183***	
			(0.004)	
CCC				-0.0000306***
				(0.000)
CR	-0.000504	-0.0005329	-0.0004977	-0.000456
	(0.187)	(0.168)	(0.197)	(0.236)
LNS	0.0052523***	0.0058108***	0.0054051***	0.0051397***
	(0.007)	(0.003)	(0.006)	(0.009)
DR	-0.2264235***	-0.234689***	-0.232623***	-0.2307203***
	(0.000)	(0.000)	(0.000)	(0.000)
SG	0.0025614***	0.0029551***	0.0029581***	0.0028973***
	(0.000)	(0.000)	(0.000)	(0.000)
Hausman	0.00	0.00	0.00	0.00

Note: p-values in parentheses. *Significant at 90 percent. ** Significant at 95 percent. *** Significant at 99 percent.

The fixed-effect regression model is used for this study. 398 SMEs are selected as samples. Sample period covers from 2009 to 2018 and all the data is collected from CSMAR. The dependent variable is return on assets.

Hausman is p-value of Hausman test. If null hypothesis rejected, using fixed-effect estimation. If accepted, random-effects estimation is a better option, which is more efficient than fixed effect regression.

Table 4 below shows the fixed-effect regression analysis result related to the dependent variable "OPS." Column (1) shows RCP is significantly negatively related to OPS. Column (2) demonstrates that shorten PDP can increase companies' OPS, because the p-value of negative coefficient is extremely small. Column (3) implies that ICP is significant negatively related to OPS. Column (4) shows CCC has a negative relationship with OPS, and the relationship is significant based on an extremely small p-value. Control variable LNS and DR have a significant influence on OPS. OPS increases with firms' size, which is measured by LNS, and it decreases with the ratio of total debt to assets. Table 4 signifies that companies can increase profitability by shortening RCP, PDP, ICP, and CCC.

Table 4
Regressions Analysis for Sample Firms with
OPS as a Dependent Variable

Dependent Variable: Operating Profit to Sales				
	(1)	(2)	(3)	(4)
RCP	-0.00084*** (0.000)			
PDP		-0.000349*** (0.000)		
ICP			-0.0000807*** (0.000)	
CCC				-0.0001258*** (0.000)
CR	-0.0004099 (0.738)	-0.0007993 (0.526)	-0.0003887 (0.758)	-0.0002214 (0.86)
LNS	0.0464655*** (0.000)	0.0472086*** (0.000)	0.0476961*** (0.000)	0.0467817*** (0.000)
DR	-0.5604249*** (0.000)	-0.583319*** (0.000)	-0.5952589*** (0.000)	-0.5885628*** (0.000)
SG	0.0015767 (0.405)	0.003397* (0.079)	0.003637* (0.060)	0.0033916* (0.079)
Hausman	0.00	0.00	0.00	0.00

Note: p-values in parentheses. *Significant at 90 percent. ** Significant at 95 percent. *** Significant at 99 percent.

Table 5 below shows how does WCM component influence the ROE. Only RCP has a negative relationship with ROE at the significant level of 95%. PDP has a positive coefficient with ROE, but the p-value is 0.362, which means the relationship is

insignificant. ICP and CCC also have no relationship with ROE because their p values are 0.57 and 0.66, respectively. The coefficient of the control variable LNS, DR and CR are also high negatively related to ROE. That means, ROE increases with firms' size, which is measured by LNS; it decreases with the current ratio and the ratio of total debt to asset.

Table 5
Regressions Analysis for Sample Firms with
ROE as Dependent Variable

	(1)	(2)	(3)	(4)
RCP	-0.0003864** (0.017)			
PDP		0.0001583 (0.362)		
ICP			0.0000287 (0.570)	
CCC				-0.0000211 (0.666)
CR	-0.0072995** (0.016)	-0.0071628** (0.018)	-0.0073426** (0.015)	-0.0072806** (0.016)
LNS	0.0656538*** (0.000)	0.068812*** (0.000)	0.0683369*** (0.000)	0.0668244*** (0.000)
DR	-1.153287*** (0.000)	-1.189852*** (0.000)	-1.182819*** (0.000)	-1.173023*** (0.000)
SG	0.0057267 (0.219)	0.0068442 (0.141)	0.0067289 (0.148)	0.0066526 (0.153)
Hausman	0.00	0.00	0.00	0.00

Note: p-values in parentheses. *Significant at 90 percent. ** Significant at 95 percent. *** Significant at 99 percent.

Table 6 is related to the dependent variable: Tobin's Q ratio. Column (1) shows no relationship is between RCP and Tobin's Q. Column (2) shows a positive relationship between PDP and Tobin's Q with the p-value of 0.05, which means the relationship is significant. Column (3) and Column (4) show both ICP and CCC has significant negative relationship with Tobin's Q. The coefficient of the control variable LNS, DR, and CR are also high negatively related to Tobin's Q. That means, Tobin's Q decreases with firms' size, which is measured by LNS and the ratio of total debt to assets; it increases with sales growth.

Table 6
Regressions Analysis for Sample Firms with
Tobin's Q as Dependent Variable

Dependent Variable: Tobin's Q Ratio				
	(1)	(2)	(3)	(4)
RCP	0.0005689 (0.310)			
PDP		0.0011836** (0.050)		
ICP			-0.000298** (0.039)	
CCC				-0.0002977* (0.080)
CR	0.0019518 (0.853)	0.0031531 (0.765)	0.0129565 (0.183)	0.0025307 (0.810)
LNS	-0.6600618*** (0.000)	-0.652205*** (0.000)	-0.573211*** (0.000)	-0.670965*** (0.000)
DR	-1.088447*** (0.000)	-1.150219*** (0.000)	-1.674224*** (0.000)	- 0.9985647*** (0.001)
SG	0.0355471** (0.029)	0.0351463** (0.03)	0.0307671* (0.053)	0.0333673** (0.039)
Hausman	0.00	0.00	0.00	0.00

Note: p-values in parentheses. *Significant at 90 percent. ** Significant at 95 percent. *** Significant at 99 percent.

Based on the results shown in Table 3 to Table 6, RCP has a negative relationship with ROA, OPS and ROE. Therefore, it means short RCP can increase companies' profitability. As PDP has a negative relationship with OPS, a positive relationship with Tobin's Q, and no relationship with ROA and ROE. Therefore, it has no relationship with profitability. Both ICP and CCC have negative relationship with ROA, OPS and Tobin's Q, but have no relationship with ROE, thus, the overall relationship is that shorter ICP and CCC can increase companies' profitability.

V. DISCUSSION

The result shows RCP has negative relationship with profitability, which is consistent to hypothesis 1, so hypothesis 1 is accepted. For hypothesis 2, it is rejected, because result shows PDP has no relationship with profitability. The result shows shorter ICP can increase the profitability of companies, therefore, it is consistent to hypothesis 3 and hypothesis is accepted. Hypothesis 4 is also accepted, because result

shows a negative relationship exists between CCC and profitability.

As the hypothesis 2 is rejected, an unexpected result related to the relationship between PDP and profitability is found. Unlike Raheman and Nasr (2007), whose previous research result signifies a negative relationship between PDP and profitability. This study shows PDP has no association with profitability. The studies of Vural et al. (2012) and Gill et al. (2010) also show the same result. This result can be explained by the following reasons: Accounts payable can have both positive and negative effects on profitability. One the one hand, suppliers allow companies to try product quality before paying the bill. It can be considered as an inexpensive way for companies to finance. Companies hold the money they should pay to suppliers. With the extra money and resources they obtained from accounts payable, companies can put more effort into the operation and thus increase their profitability (Makori and Jagongo 2013). On the other hand, it is costly if suppliers offer a discount for early payment, and low profitability companies always tend to delay the payment (Deloof 2003). The second reason is that data for account payable in 2018 is missing for any selected companies in CSMAR, and the result may be different if all the data can be collected.

Result shows a negative relationship is between RCP and profitability, which is associated with researches made by Afeef (2011), Deloof (2003) and Alipour (2011). The result means companies can increase their profitability by shortening days to collect accounts receivable. Account receivable is caused by granting trade credit to customers (Deloof and Jegers 1996); therefore, customers can consider account receivable as a flexible way for financing and get benefit from it (Petersen and Rajan 1997). From the perspective of companies, granting trade credit to customers occupies some money in working capital (Deloof 2003), and extending customers' payment term can cause some extra cost and then decrease the profitability. Therefore, companies should formulate proper credit policies to balance the benefit and cost from accounts receivable.

Research also shows ICP and profitability have a negative relationship. It means companies need to keep a short ICP to get high profit. This result is the same as the studies made by Alipour (2011), Afeef (2011), and García-Teruel and Martinez-Solano (2007). Keeping inventory can decrease the risk of stock out and get the advantage when the market value of inventory increase (Blinder and Manccini 1991). Nevertheless, the money spending on inventories is locked up in working capital (Deloof 2003). As inventory will occupy some part company's funds like accounts receivable, it will increase the company's extra costs and reduce the company's profitability. Therefore, companies should set proper inventory management policies based on companies' real conditions, so companies can reduce unnecessary inventory levels and at the same time, meet daily operational needs.

Result also shows a negative relationship is existing between CCC and profitability. Researchers like Alipour (2011), Shin and Soenen (1998) and Raheman and Nasr (2007) also find the same result. Therefore, companies are suggested to shorten their CCC to become more profitable. This is because longer CCC means greater investment in working capital components, like accounts receivables, account payables and inventories, so company will have to make more financing from creditors. Interest expenses will then increase as well as the default risk. As a result, companies'

profitability and value decrease. (Alipour 2011; Vural et al. 2012). As CCC is a comprehensive reflection of RCP, PDP and ICP, companies should keep accounts receivable, accounts payable and inventories at an optimal level to realize the efficient operation of working capital.

Limitation

Unlike the research made by García-Teruel and Martinez-Solano (2007), which is also related to SMEs, this research does not consider the type of companies and not analyze separately by different company types. The second limitation is, as mentioned above, data of account payable in 2018 is missing for many selected companies and result may be modified if they are complete. The third limitation is the sample size is small for this research, and all the data is secondary data.

Reliability and Validity

This research is reliable because all the data used in this research is collected from CSMAR database. The research methodology and main model used is based on the previous research papers. Besides, as the discussion part shows, each result this research produced is consistent with at least one previous research.

The reason for assuming that WCM component can affect profitability is because working capital related to both current assets and current liabilities. Current assets and current liabilities are closely related to companies' cash flow, so this research assumed WCM component would affect profitability. Table 7 below show the variance inflation factor for each model used in this study. All the value is lower than 10 and close to 1, which means the possibility for multicollinearity between these variables are small. This research uses 358 out of 942 SMEs listed in SME Board, and the result can generalize to all populations as SMEs have similar size and similar operating conditions. Therefore, this research is of high validity.

Table 7

Variance Inflation Factor Related to Each Model Used

Model 1		Model 2		Model 3		Model 4	
Variables	VIF	Variables	VIF	Variables	VIF	Variables	VIF
DR	1.57	DR	1.65	DR	1.61	DR	1.59
LNS	1.39	LNS	1.37	LNS	1.31	LNS	1.32
CR	1.31	CR	1.31	CR	1.31	CR	1.32
RCP	1.11	PDP	1.14	ICP	1.07	CCC	1.06
SG	1.01	SG	1.01	SG	1.01	SG	1.01

Theoretical Contribution

This research evaluates the relationship between WCM and profitability of listed SMEs China. Prior studies focus more on America and some European countries; only limited studies can be found related to China. Most studies did in China are in Chinese and now this research figure out the language problem. Moreover, this study focuses on

SMEs, which is also very few investigated. Nowadays, SMEs is a critical component of the whole market. The result of this paper can give future investigators a basic knowledge of the management of working capital of SMEs' in China. The result can also provide suggestions for the managers of SMEs by explaining the relationship of working capital management and companies' profitability. Thus, managers can understand which aspect they need to focus on the daily operation.

VI. CONCLUSION

The purpose of this paper is to make empirical research on the relationship between different working capital management components and profitability of listed SMEs in China. This study is critical because it focuses on Chinese SMEs, which is rarely observed by previous studies. In order to realize the purpose of this study, I used 358 SMEs' data covering from 2009-2018 and both descriptive analysis and quantitative analysis were used. For regression analysis, four fixed-effect regression models were developed to analyze four hypotheses respectively. This research used ROA, ROE, OPS and Tobin's Q ratio as the dependent variables to measure profitability of companies. RCP, PDP, ICP and CCC were used to measure the efficiency of companies WCM conditions.

The result of this study shows a significant negative relationship is existing between RCP and profitability. ICP has significant negative relationship with profitability, and CCC is also negatively related to profitability. However, PDP has no relationship with companies' profitability. Therefore, managers are suggested to keep a low level of accounts receivable and inventories to improve the profitability. Besides, managers should also consider accounts payable as it can affect CCC. The limitation of this research is the sample size is small and some data about accounts payable are missing for 2018. Secondary data is used for this research. Moreover, this research does not consider the type of companies and not analyze separately by different company types. Further research is recommended to investigate more samples and try to analyze the relationship based on different companies' type. Furthermore, future research can use different variables to measure profitability and working capital.

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