Impact of working capital management on firm profitability: Empirical study in Vietnam

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C H R O N I C L E	A B S T R A C T
	This article studies the impact of working capital management (WCM) on firm profitability (FP) in Vietnam. The study uses the Generalized Least Squares (GLS) regression method using a sample of 5,295 firms (observations) listed on stock market in Vietnam from 2009 to 2018. First, the study found that inventory turnover, average receivables (AR), average payment (AP), cash conversion cycle (CCC) had negative impacts on the firm profitability (FP). However, when we continued using quadratic function, we found that INV, AR, AP and CCC had a non-linear relationship (the U-curve) with FP. These research results contribute managerial contributions for firms in efficiently using capital when considering its investment policy.

1. Introduction

Working capital management (WCM) is one of important content in financial decision; but it is not a new topic in the literature. However, in the integration period of Vietnam economy with high competition, the local firms face to many potential risks. Specifically, in recent years, an increasing Vietnam firms had financial difficulties, even closed down or bankrupted. Therefore, the firms depend on external investment when implementing working capital management strategy. How does WCM influence the firm profitability (FP) when the firm has difficulties in approaching external investment or when the expense for using external investment is too high in comparison with the expense for using internal capital. So, despite the fact this is not a new research topic, WCM study is still very important for firm in these days. New findings on the relationship between WCM and FB will make theoretical and practical contribution to WCM literature in Vietnam. Through this research, we hope financial managers would change their minds of WCM, and then establish the most efficient and suitable WCM strategy for the firm. This research was implemented from simply model to complex one. Specifically, in model 1, we examine whether it does exist or not exist the linear relationship between inventories turnover (INV), average receivables (AR), average payment (AP), cash conversion cycles (CCC) and FP (such as ROA), and whether these relationships are positive or negative? Then, in model 2, we consider the non-linear regression model (quadratic function) to study how WCM impact to FP?

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2 . Theoretical background

2.1 Working capital management (WCM)

WCM is the exchange of risk and profit. Specifically, WCM policy is classified into three types: aggressive policy, matching policy and conservative policy. Aggressive working capital policy is characterized with high risk and profit. Matching working capital policy is featured with lower risk and profit. Conservative policy is associated with the lowest risk and profit. To manage efficiently the working capital, firm needs to carefully focus on four current accounts: receivables, inventories, cash and short-term securities (Brealey, & Myers, 2006). Generally, working capital is a value of the whole current assets that sticks to the firm's business cycle. In each business cycle, all features such as cash, inventories, and receivables would return to cash, the first form of assets. Working capital includes receivable, inventories, and liabilities which could be optimized and impacted by the corporate busines. Working capital of the firm is a measure of liquidity. On the other hand, an efficient working capital management allows the firms to invest in the future growth, pay short-term financial liabilities and reduce financial expenses. The problem consists in working capital optimization; the firm could not optimize its working capital without causing negative effects on its growth and revenue in the future. Therefore, firm needs to define the suitable ratio because this working capital ratio creates the balance between risk and firm profitability (Filbeck & Krueger, 2005).

2.2 Receivable management

Credit sales are purchases made in which the firm gives credit to its customer. Credit sales cause accounts receivable. Firm could receive its money in several weeks or months, depending on payment terms. Receivable management is credit management, including decisions related to sales terms, credit analysis, collecting debt decision and policies. A firm loosens its receivable policy means that it is increasing business credit. According to Emery, there are several reasons for a firm's business credit increase; it is simply because of the flexibility in the firm operation or opportunities to have more profit from expanding to more customers. However, business credit also brings about many risks. Firstly, customers may have to confront with financial crisis or bankruptcy, business credit becomes bad debt. Secondly, the firm would lose the interest rate in the period of the debt. In case the receivable is too big, the firm needs to be in debt with specific interest rate. Theoretically, the firm should lower the conditions for credit sales to acceptable level that it still gets profit by increasing revenue. In this case, there is an exchange between increased profit and expense related to increased receivable by lowering the conditions for credit sales. The question is when the firm should loosen its conditions for credit sales and when it should not. It is necessary to focus in two factors to achieve an efficient working capital management: On one hand, the firm need to choose the most suitable credit policy to the firm business, etc.

2.3 Inventory management

In a firm, inventory is one of the most valuable assets; it usually occupies high proportion in total assets of a firm. Therefore, inventory management is very important in working capital management. Inventory is the connection between production and consumption. All salesmen want to upgrade their inventory to meet the all demands of customers. However, high inventory will lock the firm's capital that cannot spend in other business. Inventory management and optimization consists in balancing the revenue and capital. If the inventory is too low, the firm may lose its customers for lack of goods. On the other hand, high inventory may lock the firm's capital to use in a better business. Inventory level is reducing in recent decades (Brealey, & Myers, 2006). The most favorite inventory management by manager is just-in-time; the inventory is kept in the lowest and efficient level that could optimize the supply chain (Brealey, & Myers, 2006).

2.4 Payables management

The firm gives its customer credit sales by generating its receivables; the other firms which receive its credit sales will have payables. Payables represent the obligation of a firm to pay all of its short-term debts to creditors. Payables emerge when the firm buys goods and services with credit sales. By receive credit sales, the firm could reduce its money in working capital management and economize some resources by capital tie-up of the suppliers. Payables maximization and payables condition lengthening could be competitive advantage of the firm. Lengthening the payment term helps the firm have more time to mobilize cash from receivable to liquidize the payables as well as efficient business management. However, the payment term lengthening also brings about risks such as: the firm may lose the discount from the suppliers as well as breaking the good relationship between the buyer and supplier. Delaying payables should not be used often, for the suppliers will doubt about the firm performance and they may cease the business or require prompt payment. Finally, it impacts to the firm business. There are several factors can allow firm manager to assure the performance of payables management: payables policy, policy implementation and result control.

3. Literature review

3.1Empirical studies finding the negative relationships between working capital management and firm profitability

Jose, Lancaster and Stevens (1996) study the relationship between WCM and firm profitability. Specifically, they use samples of 2718 firms in the period 1974-1993. The results indicate that CCC had negative relationship with the firm profitability, assessed by ROA (Return on Assets) and ROE (Return on Equity). It also indicates that shortening the CCC (cash conversion cycle) may increase the firm profitability. Thus, the manager can improve the firm profitability by suitable working capital management. Shin and Soenen (1998) study the relationship between WCM and firm profitability. The results discover the negative relatioship between CCC and FP. Accordingly, it indicates that the firm managers could create valuable assets for its shareholders by reducing CCC to suitable lowest level. In the literature, studies in developed countries such as in Taiwan (Wang, 2002), Belgium (Deloof, 2003), Japan (Nobanee, Abdullatif and AlHajja, 2011), Spain (Juan Garcia-Teruel & Martinez-Solano, 2013), Singapore (Mansoori & Muhammad, 2012) and the United Kingdom (Tauringana & Adjapong Afrifa, 2013) indicate the negative relationship between CCC and other part of CCC such as: receivables, Inventory Turnover and Payables with the FP. Accordingly, the firm managers could increase the firm profit by efficiently controlling working capital management. Meanwhile, several researches in developing countries such as in Greece (Lazaridis & Trifonidis, 2006), Kenya (Mathuva, 2010), Brazil (Ching, Novazzi & Gerab, 2011) and Pakistan (Afeef, 2011) also indicate that WCM clearly had negative effects on the profitability of the firms. Therefore, firm managers should suitably optimize cash conversion cycle, receivables, and inventories.

3.2 Empirical studies finding the positive relationships between working capital management and firm profitability

In the literature, several empirical studies have indicated a negative relationship between working capital management and firm profitability. However, some others find a positive relationship between them. Gill, Biger and Mathur (2010) study the relationship between WCM and FP through a survey of 88 firms listed on New York stock market in the period 2005-2007. They found a positive relationship between CCC and the firm profitability by indicating that the firms could increase its performance by increasing CCC. Sharma and Kumar (2011) study the effects of working capital on the firm profitability of 263 firms listed on Bombay stock market in the period 2000-2008 and analyze data with OLS (ordinary least square). The research result found positive relationship between WCM (AR, CCC) and the firm profitability. Perhaps it is because Indian market is a new and competitive market, the firms expand credit sales policy to have more customers. Meanwhile, Akinlo and Olufisayo (2011) study the impact of working capital on profitability of 66 Nigerian firms in the period 1999-2007. The research result indicates the positive relationship between INV, AR and CCC with FB. Therefore, the firm could create value for its shareholders by increasing business credit for customers and increasing inventories to suitable level. Besides, the results also show the negative relationship between payables and the firm profitability, matching with the opinion that the firms have low profitability often have more time to pay the debt. Baveld (2012), studies the relationship between working capital management and profit of 37 largest firms in Holland in crisis period 2004-2006, financial crisis in 2008-2009. Empirical studies show the positive relationship between the receivable and the firm profitability. In crisis period, helping customers overcome difficulties with credit sales will improve the firm's prestige as well as the firm's revenue in the future, when the economy recovers after crisis.

3.3 Empirical studies finding the non-linear relationships between working capital management and firm profitability

Accordingly, almost empirical studies from previous researches indicate that WCM impacts to FB. However, according to the researches, working capital management has both negative and positive effects on the firm profitability. In the first trend, WCM positively impacts to FP. There are many ways to explain this positive relationship. At first, increasing inventories could help increase the firm profitability; purchasing more inventories, the firm would receive discounts from the suppliers, reducing expenses for input goods and services. Besides, when resource prices unusually fluctuate, keeping high inventories level will help the firm stabilize input expenses. On the other hand, high inventories level also helps the firm keep the continuality of production line, meeting all demands of the signed contracts with partners. And also, with a high level of inventories, in case of scarcity or accidental high demands on the products, the firm will not lose unscheduled orders. Secondly, increasing credit sales will also allow firm increase its revenue. The customer may consider the credit sales as discounts and encouragement for buying goods or services of the firm in the period of low demand, helping firm improve the relationship with its customers, and at the same time, giving customer opportunities to define the quality of the goods or services before payment. Credit sales reduce the unbalance between the buyer and seller; it might be one of the most important criteria for choosing a supplier when the buyer cannot distinguish the difference between the products. At last, from the account of payables, if the firm pays the debt before the term, it may receive payment discount from the seller/supplier; if the firm delays the debt, the supplier may stop the delivery, breaking down the production line, negatively impacting to firm performance.

In the second trend, the investment in working capital can cause negative effects on FP in case the firm's working capital at high level. When working capital of the firm is at low level, increasing it on the basis of internal sponsorship with low expenses will lead to positive effects on the firm business. When increasing working capital to higher level, surpassing the internal capital, the firm needs to embark on external investment, increasing expenses. On the other hand, increasing inventories at higher level will lead to other increased expense such as stock, insurance and securities. Moreover, using too much credit sales when investing on working capital, the firm may cope with more credit risk, leading to financial exhaust, increasing risk of bankruptcy. Besides, keeping high level of working capital, the firm may lose its opportunities to participate in other valuable projects. Negative and positive impacts of working capital management on the firm profitability indicate that working capital could only help the firm increase its profitability at specific level. If the working capital surpasses this level, increasing it may negatively impact to firm profitability. On the basis of the above results, several researches indicated a non-linear relationship between working capital management and firm profitability. Accordingly, there exists of optimized level of working capital to maximize the firm performance. The study of Banos-Caballero, Garrcia-Teruel and Matinez-Solano (2010) using samples from 4076 non-financial organization at small and average size in Spain in period from 2001-2005 indicated that longer cash conversion cycle was used for bigger firm with higher working capital. In the same direction, Banos-Caballero, Garcia-Teruel and Martinez-Solano (2012) continued to expand their studies about the relationship between WCM and FP for 1008 small and medium firms in Spain in period from 2002-2007. In this research, the author examined the non-linear relationship between WCM and FB to assess the exchange between profit and risk in different working capital strategies. The results showed the existence of the optimized level of working capital for the firm to balance the benefit and expense, optimizing the firm value. Also, the research instantly examined the above result, affirmed that the profit would reduce when the working capital exceeds the optimized level. Recently, Banos-Cabalero, Garcia-Teruel and Martinez-Solano (2014) used samples of 258 UK firms in the period 2001-2007 to test the relationship between working capital management and firm profitability. With the same approach, in 2014, Banos-Caballero et al. used Tobin'Q to measure the firm performance instead of traditional accounting measurement; Tobin'Q reflects the expectation of market value of the firm. The research findings found the non-linear relationship between WCM and FB, demonstrating that there is an optimized level of working capital balancing the expense and benefit in maximizing FB by WCM.

4. Research methodology

4.1. Research models

In order to answer the above research question, we use two models:
 -Model 1: Studies the impacts of each factors of WCM on FP (ROA): Inventories (INV), Average Receivables (AV), Average Payment (AP), Cash Conversion Cycle (CCC).
 -Model 2: Studies the impacts of WCM on FP by finding the non-linear relationship, which means there is optimized working capital level that balances the benefit, expense and maximizing the firm profitability.

4.1.1 Research model on the relationships between working capital management and firm profitability

WCM is measured by inventories, average receivables (AR), average payment (AP), cash conversion cycle (CCC). Several other variables are counted in recession model to control the impact of other factors on FP. Specifically, variables such as size, financial gearing (LV), cash ratio (CR) and investment ratio. Thus, research model is proposed as follows:

$$\text{ROAi,t} = \beta_0 + \beta_1 \text{INV}_{i,t} + \alpha_1 \text{SIZE}_{i,t} + \alpha_2 \text{LV}_{i,t} + \alpha_3 \text{CR}_{i,t} + \alpha_4 \text{FATA}_{i,t} + \varepsilon_{i,t} \quad\quad (1a)$$
$$\text{ROAi,t} = \beta_0 + \beta_1 \text{AR}_{i,t} + \alpha_1 \text{SIZE}_{i,t} + \alpha_2 \text{LV}_{i,t} + \alpha_3 \text{CR}_{i,t} + \alpha_4 \text{FATA}_{i,t} + \varepsilon_{i,t} \quad\quad (1b)$$
$$\text{ROAi,t} = \beta_0 + \beta_1 \text{AP}_{i,t} + \alpha_1 \text{SIZE}_{i,t} + \alpha_2 \text{LV}_{i,t} + \alpha_3 \text{CR}_{i,t} + \alpha_4 \text{FATA}_{i,t} + \varepsilon_{i,t} \quad\quad (1c)$$
$$\text{ROAi,t} = \beta_0 + \beta_1 \text{CCC}_{i,t} + \alpha_1 \text{SIZE}_{i,t} + \alpha_2 \text{LV}_{i,t} + \alpha_3 \text{CR}_{i,t} + \alpha_4 \text{FATA}_{i,t} + \varepsilon_{i,t} \quad\quad (1d)$$

The variables in models are measured as in Table 1.

Table 1
Variable measurement and research hypotheses

Variable Type		Abbreviation	Measurement	Impact
Profitability	Dependent	ROA	ROA = Net income/average total assets	
Inventories	Independent	INV	Log (Average ages of Inventories×365/ Cost of Goods)	-/+
Average Receivables	Independent	AR	Log (average receivable×365/ Turnover)	+/-
Average Payment	Independent	AP	Log (Average payment×365/ Cost of goods)	+/-
Cash Conversion Cycle	Independent	CCC =INV+AR-AP	Log (Average ages of Inventories ×365/Cost of goods) + Log (average receivable ×365/Turnover) – Log (average payment×365/ cost of good)	+/-
Firm size	Control SIZE		Log (Total assets)	+
Financial Gearing	Control LV		Total liabilities/Total assets	-
Current Ratio	Control CR		Total current assets/Total current liabilities	+
Asset turnover Ratio	Control FATA		Fixed assets/total assets	-

Source: Authors

4.1.2 Research model on linear relationship between working capital management and firm performance

According the previous researches, Banos-Caballero et al. (2014) believed that the relationship between working capital and firm performance is non-linear. Therefore, this research was implemented to examine if there is non-linear relationship between working capital management and firm performance, which means that there is an optimized level of working capital that the firm could balance the expense and benefit to maximize firm profitability with working capital management. Research model use quadratic function to examine non-linear relationship. WCM is examined on the basis of inventories INV and INV^2, average receivables (AR) and (AR^2), average payment (AP) and (AP^2), cash conversion cycle (CCC) and (CCC^2). The model 2 of the research is specifically proposed as bellows:

$$ROA_{i,t} = \beta_0 + \beta_1 INV_{i,t} + \beta_2 INV^2_{i,t} + \alpha_1 SIZE_{i,t} + \alpha_2 LV_{i,t} + \alpha_3 CR_{i,t} + \alpha_4 FATA_{i,t} + \varepsilon_{i,t} \tag{2a}$$
$$ROA_{i,t} = \beta_0 + \beta_1 AR_{i,t} + \beta_2 AR^2_{i,} + \alpha_1 SIZE_{i,t} + \alpha_2 LV_{i,t} + \alpha_3 CR_{i,t} + \alpha_4 FATA_{i,t} + \varepsilon_{i,t} \tag{2b}$$
$$ROA_{i,t} = \beta_0 + \beta_1 AP_{i,t} + \beta_2 AP^2_{i,t} + \alpha_1 SIZE_{i,t} + \alpha_2 LV_{i,t} + \alpha_3 CR_{i,t} + \alpha_4 FATA_{i,t} + \varepsilon_{i,t} \tag{2c}$$
$$ROA_{i,t} = \beta_0 + \beta_1 CCC_{i,t} + \beta_2 CCC^2_{i,t} + \alpha_1 SIZE_{i,t} + \alpha_2 LV_{i,t} + \alpha_3 CR_{i,t} + \alpha_4 FATA_{i,t} + \varepsilon_{i,t} \tag{2d}$$

In this research, we use GLS (Generalized Least Squares) method. This method can improve the disadvantages of model such as self-correlative, changing variance; thus, the result is reliable.

5. Research findings and discussions

The results in Table 2 indicated that average return on asset (ROA) is 6%. Since INV, AR, AP and CCC > 0 and vary in big ratio, we counted the logarithm value of INV mean 4179, AR mean 4377, AP mean 3522. The size is measured by the logarithm value of average total asset mean 11722. The firms with average financial gearing (LV) of 50.3%, with current ratio 2098 and investment ratio measured by fixed assets on total assets 19.6%.

Table 2
Descriptive analysis

Variable	N	Mean	Std. Deviation	Min	Max
ROA	5259	0.067	0.067	-0.120	0.330
INV	5259	4.179	1.489	-9.401	7.717
AR	5259	4.377	1.017	1.234	7.572
AP	5259	3.522	1.119	-4.816	6.629
CCC	5259	4.795	1.151	-3.271	7.771
SIZE	5259	11.722	0.618	10.275	13.439
LV	5259	0.503	0.218	0.022	0.971
CR	5259	2.098	1.930	0.388	19.032
FAR	5259	0.196	0.188	0.000	0.953

Source: Calculated form Stata 14.0

In Table 3, analysis of correlation coefficient considers the close relationship between two or more variables with absolute value of correlation coefficient. If this coefficient is lower than 0.8, there are diversified values between two variables. The correlation coefficients between independent variables fluctuate from -0.46 to 0.642 (lower than 0.8), multi-collinearity problem rarely happens.

Table 3
Correlation matrix

	ROA	INV	AR	AP	CCC	SIZE	LV	CR	FAR
ROA	1								
INV	-0.21	1							
AR	-0.34	0.255	1						
AP	-0.29	0.33	0.497	1					
CCC	-0.25	0.642	0.705	0.266	1				
SIZE	-0.07	0.14	0.101	0.166	0.107	1			
LV	-0.46	0.26	0.15	0.338	0.123	0.323	1		
CR	0.307	-0.15	-0.04	-0.3	0.023	-0.19	-0.6	1	
FAR	0.057	-0.26	-0.29	-0.13	-0.38	0.035	-0.08	-0.1	1

Source: Calculated form Stata 14.0

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The regression results have indicated that INV, AR, AP, CCC and WCM had negative impacts on FP at level 1%. CCC showed the period of time since the firm pays for the input resource until it receives money from customers. The shorter CCC, the higher FP. This research finding matches with the results of Jose et al. (1996), Shin and Soenen (1998), Wang (2002), Mansoori and Muhammad (2012), Tauringana and Adjapong Afrifa (2013), Dang & Tran (2019), Van Thuy Thi et al. (2019) and Dang et al. (2018).

Table 4
Regression results of Model 1

	Model 1a	Model 1b	Model 1c	Model 1d
INV	-0.00468***			
AR		-0.0198***		
AP			-0.00913***	
CCC				-0.0135***
SIZE	0.00995***	0.0115***	0.0103***	0.0115***
LV	-0.135***	-0.131***	-0.132***	-0.134***
CR	0.00152***	0.00187***	0.000717	0.00220***
FAR	-0.000969	-0.0212***	0.000971	-0.0221***
_cons	0.0345**	0.0837***	0.0432***	0.0629***
N	5259	5259	5259	5259

*t statistics in brackets * p<0.1, ** p<0.05, *** p<0.01*
Source: Calculated form Stata 14.0

Table 5
Regression results of Model 2

	Model 2a	Model 2b	Model 2c	Model 2d
INV	0.00113**			
INV^2	-0.000689***			
AR		0.0138***		
AR^2		-0.00391***		
AP			0.00589***	
AP^2			-0.00258***	
CCC				0.0118***
CCC^2				-0.00292***
SIZE	0.0107***	0.0119***	0.0100***	0.0131***
LV	-0.134***	-0.133***	-0.127***	-0.133***
CR	0.00167***	0.00188***	0.00108**	0.00229***
FAR	-0.00567	-0.0248***	-0.00176	-0.0262***
cons	0.0239	0.0128	0.0257	-0.00496
N	5259	5259	5259	5259

*t statistics in brackets * p<0.1, ** p<0.05, *** p<0.01*
Source: Calculated form Stata 14.0

The results of GLS regression (Table 5), for model 2 have indicated that INV, AR, AP and CCC positively impact on FP. Specifically, if INV, AR, AP and CCC lengthen to one unit (count by logarithm value), FP will correspondingly increase 0.00113, 0.0238, 0.00589, 0.0118 with statistical significance of 1%. Meanwhile, variables INV2, AR2, AP2 and CCC2 negatively impacts on FP. The signs of coefficient β_1 ($\beta_1>0$) and β_2 ($\beta_2<0$) imply the relationship between INV, AR, AP and CCC with FP is reverse parabolic relationship. Max value of INV, AR, AP and CCC (curving point) valued at $-\beta_1/2\beta_2$. It does mean that when at first lengthening INV, AR, AP and CCC will increase FP, however, when exceeding the optimized level (at curving point), it will cause negative impacts on FP. When the working capital is lower than the value at curving point, increasing working capital contributes to increase FP. This could be explained since expanding credit sales will encourage business (Brennan et al., 1988; Peterson & Rajan, 1997), encourage customer to buy more goods or service at low demand period (Emery, 1984) and allow the buyer to assess the quality of the products or service before payment (Smith, 1987). However, that does not mean continually increase working capital will create continual increase FP, when the working capital exceeds optimize level (curving point), it will have negative impacts on FP. This could be explained since keep too much inventories will increase the expenses of stock, security and insurance (Kim & Chung, 1990). Besides, maintaining high working capital will lead to external capital expense, the firm needs to bear more interest rate (Kieschnick et al., 2013) and higher credit risks. Moreover, keeping high level of working capital means that the firm may lose many other projects for lack of money. From the regression results of Table 5, the research findings indicate that variables control impacts on FP. SIZE, CR positively influence on FP with statistical significance 1%, this also matched with researches by Dang et al. (2018) and Ha et al. (2019). Meanwhile, variables LV and FATA negatively influence on FP with statistical significance 1%, matching with research of Dang et al. (2019).

6. Conclusion and recommendations

6.1. Conclusion

Our research has studied the relationship between WCM and FP of non-financial firms listed on Vietnam stock exchanges in the period 2009-2018. Our significant contribution consists in using GLS model to control the correlation and unchanged error which could seriously impacts on the previous research in Vietnam. The above results ordinarily answer the questions. Firstly, the study has indicated the relationship between WCM and FP which was not linear relationship as in many previous researches. The relationship between them is non-linear (parabolic relationship). It does mean that there is an optimized level of working capital which balance benefit, expense and maximizes the firm performance. The lower (or higher) the working capital in comparison with the optimized level, the less profit the firm gets, matching with previous research of Bano Caballero et al. (2010, 2014). When the working capital is lower than optimized level, it is suitable for the firm to invest more in working capital to increase turnover. Business opportunities open with increasing credit sales for customers, increasing more inventories to sustain the product price and keep the production line. Investing more in working capital is similar to reducing payment for suppliers, collecting more payment discount; at the same time helping the firm reduce input expense and having good relationship with suppliers. However, when the working capital exceeds the optimized level, it would negatively influence on FP because of increasing expense such as: stocking, insurance, securities and expenses for mobilizing external capital. Keeping too high working capital is similar to increasing interest rate, credit risk and bankruptcy, and at the same time losing other investment opportunities of participating in other projects. Therefore, the firm managers should efficiently manage working capital close to optimized level to avoid the negative influence of it.

6.2. Recommendations

Our findings are interesting for firm managers. Firstly, they should focus on working capital management, trying to keep the optimize level of working capital, avoiding negative impact on the firm performance. Besides, they could increase FP by optimizing INV, AR, AP and CCC. Besides, it is significant to manage working capital for better firm performance. On one side, good WCM will increase liquidity and positive influence on the corporate finance. On the other side, good WCM will increase other sponsorship since the credit organization will assess balance sheet of the firm to decide to invest in the corporate business. However, the impacts of WCM on FP also depend on characteristics of each firm as above analysis, i.e. internal investment, sponsor expenses when mobilizing external capital, ability to approach capital market and financial crisis of the firm. Therefore, the firm managers should define the financial situation of the company to efficiently control working capital.

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