

Impact of Working Capital on Financial Performance of Small and Medium- Sized Enterprises in Vietnam

Doan Thanh Ha¹, Bui Dan Thanh² & Hoang Thi Thanh Hang³

Abstract

The paper analyzes the impact of working capital on financial performance of the small and medium-sized enterprises in Vietnam. Using panel data for 1,209 enterprises in the period from 2008 to 2015, with OLS method, REM and FEM, the paper finds that receivables and working-capital turnover impact negatively on financial performance of enterprises. Meanwhile, accounts payable period and inventory conversion period have a direct relationship with corporate financial performance. In addition, the results of the study also find that the growth rate, size, and age of enterprises also affect financial performance directly.

Keywords: working capital, receivables, account payable, inventory, financial performance, small and medium-sized enterprises (SME).

1. Problem statement:

The roles of Small and medium-sized enterprises (SME) have been improved in the process of integration of Vietnam and contributed to the GDP, state budget, capital attraction, job creation of Vietnam and people's income. However, there are still problems to improve. Among those is the low financial performance of enterprises. Financial performance is an indicator for asset-utilization performance and enterprises' policies to maximize their profit. Working capital decision is crucial to financial performance. Up to now, there have been studies on this relationship. However, up to now, there have been many practical studies on the issue with different results. The objective of this study is to analyze the impact of capital structure on Vietnamese enterprise's financial performance, period from 2008-2015. Based on the result of this study, we will give recommendation to managers in order to design optimum working- capital structure to enhance enterprises' financial performance.

2. Theory basis and practical studies

2.1. Theory of working capital

Working capital is defined as the difference between current assets and current liabilities. In broader definition, working capital is the value of all the current assets, which are tight to business cycle of enterprise. In each cycle, the current assets are in forms of cash, account receivable, and inventory. According to Tran Ngoc Tho et al. (2007), current assets and current liabilities are called working capital. Current assets are defined as assets to use in daily business transaction of enterprises to bring back cash to the enterprises within one year; key short-term assets are account receivables, inventory, cash, and marketable securities. Enterprises always employ current liabilities to financial its demand for working capital, the current liabilities includes: short-term loan, account payables, tax payables to the State and other short-term debts working capital is defined as the difference between current assets and current liabilities, which means:

¹ Email: hadt@buh.edu.vn, Department of Finance, Banking University of Hochiminh City, Vietnam.

² Email: danthanh81@gmail.com, Department of Accounting, College of Economic Ho Chi Minh City, Vietnam.

³ Email: hanghtt@buh.edu.vn, Business Administration Faculty, Banking University of Hochiminh City, Vietnam.

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

With quick turnover, decision-making for working capital to achieve maximum profit is a challenge to financial manager. We can learn that, if one enterprise with strong finance projection in long-term cannot well manage the working capital, its competitiveness will be deriorated and that will lead the enterprise to go bankruptcy.

2.2. Practical studies on working capital and financial performance

Arunkumar and Ramanan (2012), this study analyzed the impact of working capital management to financial performance of manufacturing enterprises in India. The sample includes 1.198 enterprises, with a period of 5 years, from 2005-2006 to 2009-2010. The result showed that financial performance will be improved with quicker cash conversion cycle. Meanwhile, this study stressed that enterprises tend to extend its inventory conversion period (ICP) and account payables conversion period (APP); and shorten its conversion cycle for short-term asset to enhance its business performance.

Lazaridis and Tryfonidis (2006) studied the relationship between working capital and financial performance of 131 listed enterprises in the Greece Stock Exchange from 2001 to 2004. Working capital is measured by cash conversion cycle (CCC) and CCC components, financial performance is measured buy total operating income (total operating income = ((revenue – cost of goods sold)/ (total assets – financial assets)). The result shows that there is an inverse relationship between financial performance and CCC, the average receivables turnover and average account payable turnover. However, the financial performance and average inventory turnover have no statistical meaning.

Afeef (2011), the study found that the working capital management has a bigger affect on financial performance of small enterprises than it does on big enterprises because a large part of small enterprises' asset are short-term, and most of total debt is short-term debt. The sample includes 40 SMEs listed on the Karachi Stock Exchange in the period of 6 year from 2003 to 2008. The findings from this research tell us that working capital management is important to financial performance of SMEs. Based on the correlation analysis and data regression analysis, the author give conclusion that there is strong inverse relationship between ICP; ACR and management performance of SMEs. However, there is no correlation with high significant level between Account payable and Cash Conversion Cycle, Leverage Degree (DR).

Deloof (2003), studies 1.009 enterprises in Belgium from 1992 to 1996, to test the relationship between working capital management represented by CCC and profitability measured by total operating income. The result show that the inverse relationship between profitability and component of CCC, which are days of Account Receivable, days of inventory, days of account payable. However, the inverse relationship between CCC and profit found in this study has no statistical meaning. Deloof concluded that the profit of a company can be improved by reducing days of account receivables and inventory.

Huynh Phuong Dong and Jyh-tay Su (2010), studied a sample of 131 listed company on the Vietnamese Stock Exchange in the period from 2006 to 2008. This study finds out the inverse relationship between the profitability and cash conversion cycle; it means the longer cash conversion cycle is the lower the profitability. Therefore, managers can create value for shareholders by lowering the cash conversion cycle. The result from this analysis of relationship between working capital and profitability of listed enterprises on the Vietnamese Stock Exchange also finds the inverse relationship between average cash conversion cycle, inventory turnover, and profitability. In addition, this study also found that enterprises with high profitability tend to defer their debt payment. Finally, the managers have to create real value for shareholders by disclosing cash conversion cycle and maintain its components at the best.

3. Data collection

The data is figures collected from financial statements of SMEs in Vietnam from 2008 to 2015. In the sample of 1.568 going enterprises supplied by Vietnam General Statistics Bureau from 2008 to 2015, the authors removed 359 enterprises of which the financial statements do not conform to regulation of Ministry of Finance; the final sample size is 1.209 enterprises. With the research period of 8 years, the sample size includes 9.672 observations.

4. Model and Methodology

4.1. Model

Based on studies of Arunkumar and Ramanan (2012), Lazaridis và Tryfonidis (2006), Afeef (2010), Deloof (2003), the author suggests the following model:

$$Y_{it} = \beta_0 + \beta_1 ACR_{it} + \beta_2 ICP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 Growth_{it} + \beta_6 Size_{it} + \beta_7 Age_{it} + u_{it}$$

Where:

Y_{it} is the dependent variable of ROA: The formulas of each dependent variables are as the below:

ROA = net income/Total asset

Independent variables used in the model:

- ACR = Account Receivable/Average daily revenue
- ICP = Inventory Value/Average daily cost of goods sold
- APP = Short-term Account payables/Average daily cost of goods sold
- CCC = ACR + ICP – APP
- Growth = (Revenue_t – Revenue_{t-1})/revenue_{t-1}
- Size: logarithm base 10 of total asset
- Age = Year t – Established Year
- U_{it} : is the error term of model

Based on theory and practical test, table 1 show the expected sign (+/-) of slopes for variables:

Table 1: Expected sign (+/-) of slope for variables

Independent Variables	ROA
ACR	-
ICP	+/-
APP	+
CCC	-
Growth	+
Size	+
Age	+

4.2. Data Analyzing Methodology

The sample is panel data. Therefore, the author employed 3 analysis methods includes: Pool Ordinary Least Squares Regression, Fixed effects model_FEM, Random effects model_REM. The OLS Pool Model is based on data gathered overtime, so, this model considers that all constant is unchanged overtime. In the other hand, FEM is based on hypothesis that the intercept (β_0) can be changed, but the slope is unchanged. With REM, both the intercept and slope are changeable overtime. Therefore, we remove factors that alter the intercept from the model. To select appropriate methodology, the author performed F-Test with the hypothesis:

- H_0 : all the slopes- ν_i are zero (it means there are no different between slope of variables overtime).
- Reject the H_0 with a pre-set significant level (significant level of 5%), we conclude that the FEM is appropriate

Therefore, the hypothesis H_0 supposes that variance of raw estimate does not include difference, var (ν_i) = 0 (or variance is unchanged overtime). If we reject H_0 , we conclude that there is variance of estimation, including group variance, it is suitable with REM. The suitability of REM and FEM estimation is tested by comparing to raw estimation.

Next, the author compares the REM and FEM. The author employed Hausman Test to choose appropriate estimate between fixed effect and random effect:

The Hypothesis H_0 supposes that there is no correlation between specification errors (ν_i) and explanatory variables in this model. The REM estimation is reasonable in accordance to hypothesis H_0 , but it is not suitable to alternative hypothesis. FEM is suitable with H_0 and alternative hypothesis.

- If we reject H_0 , we conclude that Fixed Effect Model is more suitable than Random Effect Model.

If we don't have proof to reject H_0 , it would mean that we can't reject the correlation between variances and explanatory variables, we conclude that the fixed effect is not appropriate, and we prefer to random effect.

After we choose appropriate regression method, we will test the self-correlation, multi linear, changeable variance with the selected method. If we find that there is self-correlation we will fix by using GLS in STATA.

5. Result and discussion

5.1. Descriptive Statistics Result

Table 2: Descriptive the variable of models

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	9670	-0.0873	8.42268	-826	26.6687
ACR	9670	528.1648	23536.81	0	2060425
ICP	9670	92.90735	81.6884	0	372.5814
APP	9670	103.2171	4490.352	0	440174.1
CCC	9670	517.8551	21742.53	-2088.41	2048015
Growth	8358	2.474306	48.45155	-1	2430.273
Size	9672	8.518488	1.364176	1.098612	11.51011
Age	9672	7.281017	4.735461	0	56

From the result in table 2:

Variable ACR - *Average cash collection cycle*: On average, it takes enterprises 528 days to fully collect the money from clients (about 17.6 months).

Variable ICP - *Inventory conversion period*: On average, it takes enterprises 92 days to manufacture and sell the inventory (about 3 months).

Variable APP - *Average account payables turnover*: On average, it takes enterprises 103 days to fully pay the money to suppliers (about 3.5 months).

Variable CCC - *Cash conversion cycle*: The cash conversion cycle of enterprises in the sample is 517 days (17,2 months).

5.2. Regression Result.

The F and Hausman Test showed that FEM is best appropriate. Other tests showed no auto-correlation and multicollinearity, but there is change in variance. To fix this error, the author employ GLS model (General Least Squares) in Stata. The result is shown in table 3. Table 3 depicts regression result of dependent variable ROA with the employment of independent variables, ACR, ICP, APP and CCC to measure impact of working capital on financial performance of enterprises.

Table 3: the result of ROA regression from ACR, ICP, APP, CCC

ROA	OLS	REM	FEM	GLS
ACR	-0.000407*** [-1377.65]	-0.000407*** [-1377.65]	-0.000407*** [-1293.25]	-0.000406*** [-4592.64]
ICP	0.000293*** [3.49]	0.000293*** [3.49]	0.000244* [1.88]	0.000183*** [21.17]
APP	0.000956*** [543.85]	0.000956*** [543.85]	0.000968*** [453.91]	0.000771*** [75.27]
CCC	-0.00000200** [-2.26]	-0.00000200** [-2.26]	-0.000000266 [-0.19]	-0.000000683*** [-7.44]
Growth	0.000410*** [3.03]	0.000410*** [3.03]	0.000382*** [2.61]	0.00005 [0.88]
Size	0.0165** [2.24]	0.0165** [2.24]	-0.00581 [-0.47]	0.00703*** [8.43]
Age	0.000337 [0.23]	0.000337 [0.23]	-0.00154 [-0.53]	0.000445*** [3.81]
_cons	-0.120** [-2.10]	-0.120** [-2.10]	0.0751 [0.74]	-0.0401*** [-5.96]
N	8356	8356	8356	8356
R-sq	0.996		0.996	

Note: *, **, *** significant level of 10%, 5%, 1% respectively.

The result from table 3 showed that, the variable-ACR and CCC has statistical meaning with significant level of 1%. ACR and CCC have inverse relationship with enterprise's financial performance, through respective constant (-0.000406); (-0.000000683). It means if we prolong the days of account receivables, and cash conversion cycle, the financial performance will be mitigated.

Similarly, this result showed that ICP and APP have statistical meaning with significant level of 1%. ICP and APP have direct relationship with enterprise's financial performance, through respective constant (0.000183); (0.000771). It means the shortage of goods will let the revenue to reduce. If the company does not have enough goods, the financial performance will be lower.

The ACP helps to support the fund for business. Therefore, account payable is considered as trade-credit financing. Enterprises will tend to defer the payment to suppliers, if the days of account payable rise, the CCC will decrease. The lower the CCC is, the better the financial performance is.

6. Summary and Policies Recommendation:

By analyzing the data of 1.209 SMEs in Vietnam from 2008 to 2015, using GLS regression, based on the result, we give some policy recommendations to enhance the financial performance of enterprises through working capital management.

Firstly, the ACR; on average it takes 528 days to fully collect money from clients (about 17,6 months) and the ACR regression coefficient is negatively correlated with enterprise's financial performance. In reality, the managers of enterprise do not manage the account receivable effectively, and thus increase the provision for account receivables, and opportunity cost, mitigate the financial performance. The enterprise's owner should focus on the following elements:

- When deciding the days for sale on credit, the manager should consider some of elements: business risk, quantity, type of goods, credit quality, type of company.
- The manager should always monitor the average account receivable conversion cycle and time to collect the account receivable, and test the aging report.
- Cash discount for whom make payment before due if they sign long-term contracts.

Secondly, Inventory Conversion Cycle: on average, it takes company 92 days to manufacture and consume inventory (about 3 months) and the regression coefficient ICP in this studies is positively correlated with enterprise's financial performance. With this result, the Vietnamese enterprises should focus to prolong the days of inventory to mitigate the risk of goods shortage, which may interrupt the supply chain, and reduce the enterprise's financial performance. To avoid abundant inventory which may cause loss, enterprises should verify the time for placing order, focus on storing the fast moving goods. In addition, enterprises may employ accounting software for inventory to help control the data for forecasting.

Thirdly, average of account payable conversion period: on average, it takes enterprises about 103 days to fully pay for the suppliers (about 3.5 months) and the APP regression coefficient is positively correlated with financial performance. Therefore, the enterprises should defer payment to supplier legally, to improve financing supply.

Fourthly, the cash conversion cycle: the average number of enterprises in the sample is 517 days (17,2 months) and CCC have an inverse relationship with financial performance. According to this result, if the CCC is prolonged, the financial performance is mitigated.

The relationship between cash conversion cycle and financial performance is very tight. The three components of cash conversion cycle are account receivable conversion period, inventory conversion period and account payable conversion period which are managed in different ways to maximize the financial performance or promote the growth of enterprises. Today, Vietnam is in the process of integration into the world economy. In such a situation, the financial management, especially the capital structure and working capital, take a very important role and it is what the manager should focus on.

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