



Journal of Small Business and Enterprise Development

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Article information:

To cite this document:

Hien Tran Malcolm Abbott Chee Jin Yap , (2017), " How does working capital management affect the profitability of Vietnamese small- and medium-sized enterprises? ", Journal of Small Business and Enterprise Development, Vol. 24 Iss 1 pp. 2 - 11

Permanent link to this document:

<http://dx.doi.org/10.1108/JSBED-05-2016-0070>

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How does working capital management affect the profitability of Vietnamese small- and medium-sized enterprises?

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Abstract

Purpose – Well-designed and implemented working capital management (WCM) will encourage positive returns for a business and establish the firm's value, while ineffective management will undoubtedly lead to failure of the enterprise. The paper aims to discuss these issues.

Design/methodology/approach – In business, fixed capital and working capital are the two main forms of capital used. The current assets used in the business as working capital for day-to-day operations include raw materials, work in progress, finished goods, bills receivable, cash and bank balance. This paper analyses the relationship between WCM and profitability in Vietnamese small- and medium-sized enterprises (SMEs) after integration into the global economy.

Findings – The results suggest that SME owner-managers can increase their firm's profitability by reducing the number of days of accounts receivable, accounts inventories and accounts payable to an optimal minimum. In addition, a robustness check of this study indicates that high profitability will be achieved, with an optimal level of working capital investment in accounts inventories, accounts receivable and accounts payable.

Originality/value – No work of this sort has been applied to Vietnamese circumstances. It is also rare in SE Asia more generally.

Keywords SMEs, Vietnam, Profitability, Working capital

Paper type Research paper

Introduction

Most firms have a large amount invested in working capital (Deloof, 2003); this is especially true of smaller organisations. The nature of small business is that it has limited access to long-term capital markets; therefore, they tend to depend on their own capital, loans from friends and relatives, short-term bank credit, and trade credits to finance working capital required for day-to-day business operations. Therefore, most assets of small- and medium-sized enterprises (SMEs) are in the form of current assets, and current liabilities are one of their main sources of external finance (Garcia-Teruel and Solano, 2007).

Working capital management (WCM) in SMEs is essential to sustaining the life of the business. A steady flow of cash is essential to maintain a business, and sufficient working capital will maximise profitability; while poor WCM is one of the primary reasons for business failure. This is recognised in the previous studies by Deloof (2003) in Belgium; Padachi (2006) in Mauritius; Lazaridis and Tryfonidis (2006) in Greece; Garcia-Teruel and Solano (2007) and Caballero *et al.* (2012) in Spain; Gill *et al.* (2012) in the USA; Ding *et al.* (2013) in China; and Enqvist *et al.* (2014) in Finland.

In relation to the association between WCM and profitability, some previous researchers have focussed on the impact to a firm's profitability of optimal inventory management, optimal accounts receivable and payable, and the cash conversion cycle (Deloof, 2003; Padachi, 2006; Lazaridis and Tryfonidis, 2006; Garcia-Teruel and Solano, 2007; Gill *et al.*, 2012; Caballero *et al.*, 2012). In addition, other researchers have examined the relationship between WCM and access to capital (Ding *et al.*, 2013), and the impact of



working capital on profitability (Enqvist *et al.*, 2014). Some findings from this research have been consistent, while others have been mixed; however, the main finding that has been commonly identified is that the management of working capital has a significant impact on a firm's profitability.

Although research of this sort has been extensive in the case of developed countries, work on capital management is more limited in the case of developing countries. In this study, therefore, we follow the approach used in the previous studies of Deloof (2003), Lazaridis and Tryfonidis (2006), Padachi (2006), Padachi and Howorth, Garcia-Teruel and Solano (2007) and Caballero *et al.* (2012), which involves undertaking an in-depth and comprehensive examination of the WCM and profitability of SMEs to verify the determinants of SME profitability in terms of capital management, in the Vietnamese context.

Our results suggest that the SME owner or managers can increase their firm's profitability by reducing the number of days of accounts receivable, accounts inventories and accounts payable to an optimal minimum. Similarly, high profitability will be achieved, with an optimal level of working capital investment in accounts inventories, accounts receivable and accounts payable. These results may contribute ideas to Vietnamese SME owner-managers for more efficient capital management, and will contribute to the existing literature on SME WCM. The work of this paper is organised as follows. In the second section, the theoretical foundations of the study are introduced; in the third section the sample and variables are described. The results of empirical analysis are presented in the fourth section, and in the fifth section, correlation analysis to discuss of the causality in the relation between WCM and profitability in SMEs is presented. The conclusion of this study will be presented in the final section.

Theoretical foundations

WCM is a significant area of financial management; the efficient WCM can significantly impact on the profitability and liquidity of the business (Deloof, 2003; Shin and Soenen, 1998), particularly in SMEs (Lazaridis and Tryfonidis, 2006; Padachi, 2006; Garcia-Teruel and Solano, 2007; Caballero *et al.*, 2012; Gill *et al.*, 2012). When firms possess large inventories, they can increase sales, leading to improved firm performance and profits. Large inventories can also help firms avoid the risk of interruptions in the production process and costly stock-outs. In addition, granting trade credit to customers can stimulate sales, as it allows customers to verify the quality of the product before making purchase payments, and can also be an inexpensive source of credit for customers. On the other hand, granting trade credit and holding large inventories can reduce the money available as working capital. However, firms may have an optimal level of working capital that maximises their value or can increase corporate profitability by reducing the number of days of accounts receivable and inventories to a reasonable minimum. These ideas were indicated in the research by Deloof (2003).

In business operations, cash with accounts receivable, accounts inventories and other current assets is needed to pay obligations – a longer cash conversion cycle indicates a longer between the outlay of cash and cash recovery, with a shorter cycle indicating a more aggressive working capital policy.

In business investment, targeting of high profitability can be related to high potential risk, while reduced risk tends to decrease potential profitability. However, working capital needs to be maintained at an optimal level to sustain and develop the business – when a business does not achieve this, there is potential for the business to fail. Thus, WCM is one of the main areas in corporate finance where relationships between the firm's short-term financing and investment decisions can directly impact on profitability whilst aggressive working capital policies can enhance profitability. Those suggestions were presented in the work undertaken by Padachi (2006) based on Mauritian small manufacturing firms,

Lazaridis and Tryfonidis (2006) used a sample of 131 Greek firms listed in the Athens Stock Exchange, Garcia-Teruel and Solano (2007) based on 8,872 SMEs Spanish firms and Caballero *et al.* (2012) also based on a data panel of 1,008 Spanish SMEs, which re-validated the findings by Deloof (2003).

Sample and variables

The sample

The sample comprises Vietnamese SMEs. The sample was carried out according to the requirements established by Decree No. 56/2009/ND-CP issued on 30 June 2009 by the Vietnam Government. As part of this selection, large firms on the Hanoi Stock Exchange (HSE) with capital over Vietnamese currency (VND)100 billion were excluded, as well as firms with financial statements missing from the 2010-2012 period. In addition, firms that did not satisfy the Vietnamese SME definition – those with registered capital less than VND10 billion, and firms in the services, banking and finance, insurance, education and foreign investments industries – were all excluded from the sample.

The sample consists of 200 Vietnamese manufacturing SMEs listed on the HSE with financial statements available for each year of the 2010-2012 period, with reports indicating their manufacturing status, as producers of manufacturing goods in combination with goods services. In this study, the period 2010-2012 was chosen because Vietnam became a member of the WTO in 2007, and the data in this period were readily available and not disturbed by any major changes as confirmed by the public financial statements.

Variables

This study adhered to the empirical framework of all of these researchers – Deloof (2003), Garcia-Teruel and Solano (2007) and Caballero *et al.* (2012) – using gross operating income to measure the profitability defined as the dependent variable, to test the relationship between WCM and profitability, which is defined as sales minus cost of goods sold, and is divided by total assets minus financial assets.

This study has aimed to examine the impact of WCM on firm profitability, and the determinants of credit access – the researcher has sought to understand which independent variable is most predictive of the dependent variable. The relationship between independent and dependent variables can either be positively correlated, where an increase in one variable coincides with an increase in another variable, or negatively correlated, where one variable increases as the other decreases. In line with Deloof (2003), Lazaridis and Tryfonidis (2006), Garcia-Teruel and Solano (2007), Gill *et al.* (2010) and Caballero *et al.* (2012), the key variables used to comprehensively measure WCM in SMEs are the number of days of accounts receivable, number of days of accounts inventories, number of days of accounts payable and the cash conversion cycle. To examine such relationships, the multiple regression analysis of association was employed, in which a dependent variable was regressed onto independent variables as presented in the following standard regression equation:

$$\text{Profitability} = \beta_1\text{AR} + \beta_2\text{INV} + \beta_3\text{AP} + \beta_4\text{CCC} \\ + \beta_5\text{SIZE} + \beta_6\text{SGROW} + \beta_7\text{DEBT} + \mu$$

The number of days of accounts receivable is calculated as (365 × average accounts receivable) divided by sales – this variable represents the average number of days that the firm takes to collect debts of sales from customers. The number of days of accounts inventories is calculated as (365 × average inventory) divided by cost of goods sold – this variable reflects the average number of days of stock held by the firm. The number of days of accounts payable is calculated as (365 × average accounts payable) divided by purchases – this variable reflects the average time it takes firms to pay their supplier.

In this respect, the cash conversion cycle is calculated as number of days of accounts receivable + number of days of accounts inventories – number of days of accounts payable, which is a comprehensive measure of WCM, that is, the longer cash conversion cycle indicates the more time between outlay of cash and cash recovery.

Together with the key variables, control variables such as firm size, sales growth and financial debt were included in this study. Here the firm size is defined as the natural logarithm of sales expressed in VND millions, and sales growth reflects the development of the natural business, measured as follows: $(\text{sales}_1 \text{ (this year's sale)} - \text{sale}_0 \text{ (previous year's sale)})$ divided by sale_0 (previous year's sale). The financial debt variable is a ratio of financial debt to total assets, which reflects the financial access of the firm as included in the regression.

In addition, to validate this study's hypotheses, firms' sales, sales growth and financial debt were also introduced. Sales is defined as the natural logarithm of sales expressed in millions of VND, while sales growth reflects the development of the natural business, and is measured as follows: $(\text{sales}_1 \text{ (this year's sale)} - \text{sale}_0 \text{ (previous year's sale)})$ divided by sale_0 (previous year's sale). The financial debt variable is a ratio of financial debt to total assets, which reflects the financial access of the firm as included in the regression.

Empirical analysis

Description of sample

The capital structure and business activities have a series of distinct characteristics based on the sector activity in which the SMEs operate. Thus, Table I reports the ratios of Vietnamese SMEs' capital structure.

In Table I, the ratio of leverage to total assets and ratio of equity to capital are 54 and 46 per cent, respectively, with a capital average of around VND168,500 million – which is below the SME registered capital definition under Decree No. 56/2009/ND-CP by the Vietnam Government (www.economica.vn/.../eedeb5241be5a5e74eb1bda4f790). The working capital of Vietnamese manufacturing SMEs in the sample amounts to 66 per cent of total assets, which indicates that SME working capital is a large portion of the firm's total assets, and signifies a significant proportion of an SME's assets.

The data in Table I also show that leverage represents about 54 per cent of total capital, which indicates that short-term sources such as trade credit, short-term loans, bank overdrafts, tax provision and other current liabilities are often used to finance temporary working capital needs. In addition, fixed assets occupy around 27 per cent of total capital, while the smallest ratio is financial assets at around only 7 per cent. The high ratio of working capital in the total capital illustrates the important role of WCM in Vietnamese SMEs.

Descriptive statistics

Table II presents the working capital descriptive statistics of this study's quantitative sample. These results show that the gross operating income is on average at 21.2 per cent

Capital structure descriptors	Minimum	Maximum	Mean
Capital (VND million)	15,073	1,332,745	168,549
Ratio of working capital to assets	0.13	0.98	0.66
Ratio of fixed assets to assets	0.00	0.84	0.27
Ratio of financial capital to assets	0.00	0.55	0.07
Leverage to total capital	0.07	1.42	0.54
Ratio of equity to total capital	0.026	1.00	0.46

Notes: 200 Vietnamese manufacturing SMEs 2010-2012; 600 firm-year observations

Source: Author's data analysis

Table I.
Capital structure
descriptive statistics
of Vietnamese SMEs

Working capital descriptors	Minimum	Maximum	Mean
Gross operating income (profitability)	-0.06	1.58	0.21
Sales	4,951	1,170,534	169,397
Sales growth	-0.68	5.39	0.095
Number of days of accounts receivable	2.08	696	134
Number of days of accounts inventories	1.07	1,286	124
Number of days of accounts payable	-601	990	114
Cash conversion cycle	-784	1,253	144

Notes: 200 Vietnamese manufacturing SMEs 2010-2012; 600 firm-year observations. The gross operating income was defined as sales minus cost of goods sold, and is divided by total assets minus financial assets. Firm's sales (size) in the natural logarithm of sales annually, expressed in millions of Vietnamese currency (VND); sales growth was measured as follows: $(sales_1 \text{ (this year's sale)} - sale_0 \text{ (previous year's sale)})$ divided by $sale_0$ (previous year's sale). The number of days of accounts receivable is calculated as $(365 \times \text{average accounts receivable})$ divided by sales. The number of days of accounts inventories is calculated as $(365 \times \text{average inventory})$ divided by cost of goods sold. The number of days of accounts payable is calculated as $(365 \times \text{average accounts payable})$ divided by purchases. The cash conversion cycle is calculated as number of days of accounts receivable + number of days of inventory - number of days of accounts payable

Source: Author's data analysis

Table II.

Working capital descriptive statistics of Vietnamese SMEs

(of total assets minus financial assets), while the maximum is 158.0 per cent. In contrast, the minimum gross operating income is at -6 per cent, which signifies failure of the business. The average SME's annual sale is VND169,397 million, compared with a maximum of VND1,170,534 million and a minimum of only VND4,951 million. These results indicate a large gap in firm size between small and medium enterprises. The mean sales growth is at 0.095, compared with -0.68 for the minimum and 5.39 as the maximum.

Table II presents statistics on business activities for this study's sample. With regard to the average number of days of accounts receivable (134), as SMEs receive payment on sales after this time, this result indicates that the collection of sales can take too long. The average number of days of accounts inventories is similar at 124, showing that most SMEs take 124 days to sell their products, while the number of days of accounts payable is 114, potentially indicating a generous policy of trade credit. Also in these tabled results, the average cash conversion cycle is 144, while sales growth is at around 9.5 per cent, which reflects weakening domestic demand.

Correlation analysis

Table III presents Pearson correlation coefficients for all variables considered in this study. As these results indicate, there is a negative relationship between gross operating income and the number of days of accounts receivable, as significance is at the 0.01 level (-0.419**). The relationship between gross operating income and the number of days of accounts inventories is also negative due to the significant reach at the 0.01 level (-0.272**). In addition, the association between gross operating income and the number of days of accounts payable is negative at the 0.05 level (two-tailed); the size is small (-0.164*), which indicates a weak and random relationship. The correlation between cash conversion cycle and gross operating income is also negative and significant at the 0.01 level (-0.351**). The positive sign of correlation between gross operating income and sales growth at the 0.001 level (0.591**) indicates a positive relationship; thus, an increase in the sales growth variable will likely lead to an increase in gross operating income.

Regression analysis

To assist in answering this study's research questions, a standard multiple regression analysis was used. The multiple regression analysis was performed via SPSS to test for

Variables	Gross operating income (PROFIT)	SIZE	SGROW	AR	INV	AP	CCC	DEBT
PROFIT	1	0.056	0.591**	-0.419**	-0.272**	-0.164*	-0.351**	-0.217**
SIZE		1	0.023	-0.207**	-0.124	-0.162*	-0.109	-0.263**
SGROW			1	-0.176*	-0.029	-0.029	-0.109	-0.094
AR				1	0.207**	0.523**	0.406**	0.004
INV					1	0.188**	0.766**	-0.017
AP						1	-0.233**	-0.425**
CCC							1	0.286**
DEBT								1

Notes: 200 Vietnamese manufacturing SMEs 2010-2012; 600 firm-year observations. Gross operating income (PROFIT) is calculated as gross operating income divided by total capital minus financial assets; firm size (SIZE) as the natural logarithm of sales; sales growth (SGROW) is measured as the equation $(\text{sales}_1 - \text{sales}_0) / (\text{sales}_0 - \text{sales}_0)$ (previous year's sale); number of days of accounts receivable (AR) is calculated as $(365 \times \text{average accounts receivable}) / \text{sales}$; number of days of accounts inventory (INV) is calculated as $(365 \times \text{average inventory}) / \text{cost of goods sold}$; number of days of accounts payable (AP) is calculated as $(365 \times \text{average accounts payable}) / \text{purchases}$; cash conversion cycle (CCC) is calculated as number of days of accounts receivable + number of days of accounts inventory - number of days of accounts payable; financial debt (DEBT) is measured as the ratio of financing debt to total assets. **, *Correlation is significant at the 0.05 and 0.01 level (two-tailed), respectively

Source: Author's data analysis

Table III.
Pearson correlation
coefficients of working
capital management
and profitability

significant coefficients between the dependent and independent variables. The outputs of this regression analysis can be found in Table IV.

In this study's sample, the results show that the average number of days of accounts receivable is lengthy at 135 days. Given that there is a negative and significant relationship between profitability (gross operating income) and number of days of accounts receivable, the coefficient of accounts receivable is negative and significant - this implies that a decrease in the number of days of accounts receivable by one day is associated with an increase in gross operating income. This finding is consistent with the previous studies by Deloof (2003), Garcia-Teruel and Solano (2007), Lazaridis and Tryfonidis (2006) and Padachi (2006). However, a possible explanation for the long period of days of accounts receivable among Vietnamese SMEs is that when firms provide customers with large volumes of sales in trade credit, this may lead to increased profitability, which implies that more investment in accounts receivable is usually associated with higher sales, leading to higher profitability. Another explanation in this study is that if SMEs provide customers with a short deadline for payment due to the lower investment in accounts receivable, this might reduce sales and lead to a negative effect on profitability. Thus, the findings of this study suggest that high profitability will be achieved if a certain investment in accounts receivable is reached, while firm profitability is lower if they move away from their optimal level of trade credit.

In the data analysis, the results show that the average number of days of accounts inventories is long at 124. In the results of the bivariable analysis, and the regression analysis, the coefficient of the number of days of accounts inventories and profitability is negative and significant. These results indicate that an SME's gross operating income on assets is reduced by lengthening the number of days of accounts inventories, which is consistent with the findings of Caballero *et al.* (2012), Deloof (2003), Garcia-Teruel and Solano (2007) and Padachi *et al.* (2008).

An alternative explanation for the negative significant relationship between the number of days of accounts inventories and profitability in this study is that Vietnam SMEs face acute difficulties including limited access to financial sources, currency depreciation and inflation. These difficulties can directly impact on firm performance. Most Vietnamese

Regression model	Gross operating income and OLS with alternative variables				
	(1)	(2)	(3)	(4)	(5)
<i>p</i> -value	0.0001	0.0001	0.0001	0.0001	0.0001
<i>Firm size (sales)</i>					
β -value	0.010	0.023	0.060	0.79	0.042
<i>t</i> -value	0.196	0.419	1.083	1.419	0.750
<i>p</i> -value	0.845	0.676	0.280	0.158	0.454
<i>Sales growth</i>					
β -value	0.521	0.518	0.565	0.554	0.553
<i>t</i> -value	10.237	9.830	10.547	10.243	10.242
<i>p</i> -value	0.0001	0.0001	0.0001	0.0001	0.0001
<i>Financial debt</i>					
β -value	-0.201	-0.173	-0.184	-0.297	-0.103
<i>t</i> -value	-3.341	-3.213	-3.311	-4.851	-1.747
<i>p</i> -value	0.001	0.002	0.001	0.0001	0.0082
<i>No. of days accounts receivable</i>					
β -value	-0.250	-0.322			
<i>t</i> -value	-3.913	-6.004			
<i>p</i> -value	0.0001	0.0001			
<i>No. of days accounts inventories</i>					
β -value	-0.196		-0.252		
<i>t</i> -value	-3.804		-4.686		
<i>p</i> -value	0.0001		0.0001		
<i>No. of days accounts payable</i>					
β -value	-0.065			-0.261	
<i>t</i> -value	-0.960			-4.389	
<i>p</i> -value	0.338			0.0001	
<i>Cash conversion cycle</i>					
β -value	-				-0.257
<i>t</i> -value	-				-4.497
<i>p</i> -value	-				0.0001

Table IV.
Regression results of
equations (5.1), (5.2),
(5.3), (5.4) and (5.5)

Notes: 200 Vietnamese manufacturing SMEs 2010-2012; 600 firm-year observations
Source: Author's data analysis

SMEs, therefore, have an amount of cash invested in accounts inventories to maintain a large volume of inventories and reduce the risk of a running out of stock, and maintain goods in balance due to the price fluctuations or generous trade credit policy that they expect will lead to a higher volume of sales. However, when holding larger stock volumes, SMEs may have to forgo sales income of pay higher interest rates, and as a result profitability is lower. Thus, high profitability of SMEs will be achieved if a certain level of accounts inventories is achieved, while profitability will be lower if the optimal level of accounts inventories is not maintained.

Trade credit is an important source of financing for most firms, and plays an important role in the working capital financing of small firms. In particular, constrained SMEs can use direct trade credit as an inexpensive source of financing to reduce their gap of financial demand (Padachi *et al.*, 2008). However, if firms speed up their payment to suppliers, this might increase profitability due to receiving a discount for earlier payment (Deloof, 2003). In this study's data analysis, the results show that the average number of days of accounts payable is 114, which is shorter than the average number of days of both accounts receivable and inventories.

In the bivariable and regression analyses, the correlation between gross operating income and the number of days of accounts payable is negative; however, the strength of their relationship is weak and random. Consistent with Garcia-Teruel and Solano (2007) and Deloof (2003), the results of this study indicate that the relationship between profitability and the number of days of accounts payable is negative and random.

In business operations, accounts receivable, accounts inventories and other current assets is related to cash needed to pay current obligations. The longer the cash conversion cycle, the more time is likely between the outlay of cash and cash recovery. In contrast, a shorter cash conversion cycle indicates a more aggressive working capital policy. In this study's data analysis, the results show that the average cash conversion cycle is 144 days, which is shorter than the number of days of both accounts receivable and inventories.

In regression (5.1), when all seven independent variables are included in the model, the cash conversion cycle does not appear to be an important factor. This can be accepted as gross operating income measured by the number of days of accounts receivable, plus the number of days of account inventories, and then minus the number of days of accounts payable. However, in the bivariable analysis, the correlation between cash conversion cycle and gross operating income is significant; the strength of this relationship is represented by the negative correlation coefficient. In addition, in regression (5.5), when controlling for possible endogenous problems, the correlation between profitability and cash conversion cycle is also significant. Consistent with previous studies (Caballero *et al.*, 2012; Garcia-Teruel and Solano, 2007; Lazaridis and Tryfonidis, 2006; Padachi, 2006), the results of this study indicate that the relationship between the cash conversion cycle and profitability is significant and negative.

Similar to the results in Caballero *et al.* (2012), the results of this study reveal that both high and low working capital levels are associated with lower profitability. This is because the relationship between working capital and profitability is generally positive when a firm holds low levels of working capital, and is more negative when there are higher levels of working capital. This indicates not only a higher profitability effect, but also a greater risk effect for firms with low levels of working capital. Thus, the investment in working capital and profitability in SMEs can be an inverted *U*-shape.

Conclusion

WCM in SMEs is essential to sustaining the life of the business. A steady flow of cash is essential to maintain a business, and efficient working capital will maximise profitability, while poor WCM is one of the primary reasons for business failure. In this study, a sample of 200 Vietnamese SMEs was used to test the impact of WCM on the profitability in the period from 2010 to 2012. The results of this study indicate that WCM is a significant area of financial management; the efficient WCM can significantly impact on the profitability and liquidity of the business.

In this study, we find a significant negative relationship between gross operating income and the number of days of accounts receivable, accounts inventories and cash conversion cycle. These results are consistent with those found in previous studies in large firms (Deloof, 2003; Lazaridis and Tryfonidis, 2006), particularly in SMEs (Lazaridis and Tryfonidis, 2006; Padachi, 2006; Garcia-Teruel and Solano, 2007; Caballero *et al.*, 2012; Gill *et al.*, 2012). The negative relationship between accounts payable and profitability is consistent with the view of Deloof (2003) that less profitable SMEs delay to pay their debts.

The results suggest that owner-managers in Vietnamese SMEs can maximise profitability if an optimal level of working capital is achieved, while profitability will be lower if the optimal level of working capital is not maintained. Finally, this study offers new evidence on the impact of working capital on the profitability in Vietnamese SMEs as the efficient WCM can significantly impact on the profitability and liquidity of the business and poor WCM is one of the primary reasons for business failure. It is likely to be so in SMEs

from developing countries, particularly, some similar countries such as Cambodia, Laos and the Philippines. It is anticipated that this study will further contribute to the existing literature on WCM, capital raising and SMEs.

Limitations and the further study

The SME income statement and balance sheet data collected were based on a complex set of accounting standards, accepted as Vietnamese accounting principles that give considerable leeway on how to report financial data. Thus, the nature of the data might be limited. Another potential problem regarding the financial statement data is that it was collected from the HSE. Due to trading shares being publicly available, many firms want to show good earnings to improve bonuses and boost stock prices, and make stock options more attractive to share traders. Thus, this study's Vietnamese SME owner-managers have a vested interest in highlighting and selling their business's financial achievements, which may or may not benefit investors and other users of their financial information. Furthermore, on this public forum firms may use accounting techniques to report their losses or the disclosure of bad news or even understated financial risks to bring down their share price in trading, either to avoid paying taxes or to pave the way for shares buy back by power traders. Thus, the nature of the data could be manipulated or limited to what the SME owner-manager wants to promote.

The sample of this study was conducted in 2010-2012; it does not cover the 2007-2009 GFC, so may not be comparable with the influence of this special period on businesses including Vietnamese SMEs. In addition, as the data collected in this period were focussed on a subset of Vietnamese manufacturing SMEs, it may not fully support or compare with SMEs in other industries and countries, including the Asian region.

This study's models and findings on the relationship between WCM and profitability of manufacturing Vietnamese SMEs may provide the foundation for further studies in other SME sectors, as well as larger enterprises.

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