The Financial Factors Affecting Cash Conversion Cycle of Listed Companies on the Stock Exchange of Thailand

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Abstract

Cash conversion cycle (CCC) is an indicator for measuring working capital management. Understanding the determinants of the cash conversion cycle is crucial for corporate managers aiming to optimize their working capital management strategies. The purpose of this research was to investigate the factors that impact the cash conversion cycle. Based on a sample of 313 listed companies on the stock exchange of Thailand, for the period between 2019 and 2023, statistical analysis was performed on the data comprising 1,565 firm-years. Descriptive statistics, Pearson correlation and regression were used to analyze data. The results showed that the factors affecting the cash conversion cycle included return on assets (ROA), sales growth (SG), cash flow from operations (CFO), debt to equity ratio (DE) and firm size. Moreover, return on assets, sales growth, cash flow from operations, debt to equity ratio had a significant negative association with the CCC. However, the results showed a significant positive relation between firm size and the CCC. The study contributes to business managers in managing working capital to maintain liquidity. Additionally, it informs relevant agencies on how to support business development effectively.

Keywords**:** *Cash Conversion Cycle, Financial Factors, Working Capital Management*

1. Introduction

Financial liquidity issues are crucial in business operations. According to the latest survey by the Stock Exchange of Thailand in 2023 (Research Department, Stock Exchange of Thailand, 2023), more than half of the respondents from listed companies in the Stock Exchange of Thailand have experienced liquidity problems. The most common issues were declining sales, followed by delays in receiving payments from debtors due to trade credit, and some companies began experiencing bad debts from international customers. This issue arises from economic problems. Working capital is essential for managing business liquidity. During economic downturns, efficient working capital management is vital for business operations (Akgün & Karataş, 2021). Proper working capital management ensures the business's continuity. Insufficient working capital may require borrowing, leading to financial problems and possibly bankruptcy (Koralun-Bereznicka, 2014).

Working capital management involves securing funds for operations to cover production costs, labor costs, energy costs, and raw materials costs. Revenue generation depends on the ability to sell products. Furthermore, some businesses inevitably have to offer credit to customers as a sales strategy, requiring time to collect payments from debtors. Businesses that fail to effectively manage debtors and inventory in accordance with their payment schedules to creditors and other obligations will encounter liquidity shortages.

Indicators for measuring working capital management can be expressed in various ratios, such as the current ratio, net working capital to total assets ratio, or by breaking down the components of working capital management, including debtor turnover, inventory turnover, and creditor turnover, or in the form of a cash conversion cycle (Pratap & Kumar, 2014). Cash conversion cycle is the net time interval between actual cash expenditures on purchase of productive resources and the recovery of cash receipts from selling products. This is calculated by adding the number of days of the inventory turnover period to the period for receiving payments from debtors and subtracting the period for paying creditors (MacLean, 2015). Several factors may influence working capital management. Previous research indicates that working capital management depends on the nature of the industry (Koralun-Bereznicka, 2014). Additionally, it has been summarized that

the size of the business affects working capital management (Koralun-Bereznicka, 2014; Sardo & Serrasqueiro, 2022; Czerwonka & Jaworski, 2023). Furthermore, the business's cash flow and capital structure also affect working capital management. However, previous research results still vary. Amr (2019) found that debt burden, economic index, performance, and business value are positively correlated with the cash conversion cycle. Conversely, cash flow from operations, growth rate, age, and business size correlate negatively with the cash conversion cycle. In addition, higher return on assets, investment in capital expenditure and growth opportunities have a significant negative association with the CCC (Mathuva, 2014).

This research aims to examine the financial factors influencing the cash conversion cycle as an aspect of working capital management in companies listed on the Stock Exchange of Thailand. The research findings can provide valuable insights for business managers to optimize working capital management and maintain liquidity. Additionally, they inform relevant agencies on how to support business development effectively. Credit providers can also use the findings for financial analysis in making credit decisions.

2. Objectives

To examine the financial factors affecting the cash conversion cycle of companies listed on the Stock Exchange of Thailand.

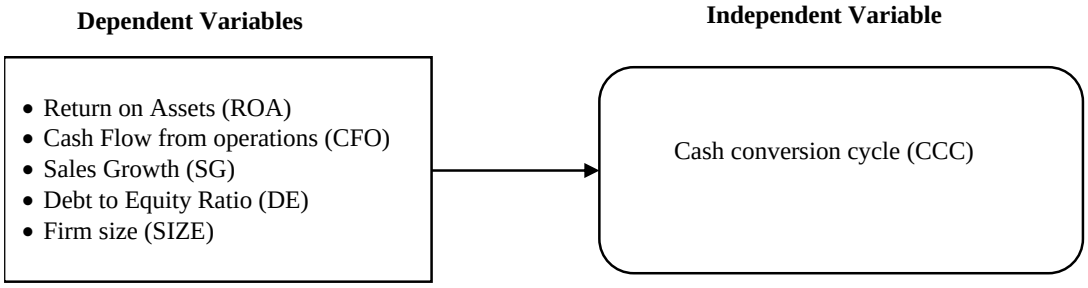

Figure 1 conceptual framework

3. Materials and Methods

3.1 Sample

The population of this research consists of 627 companies listed on the Stock Exchange of Thailand (data from the Stock Exchange of Thailand, 2023). The sample must have complete performance data from 2019 to 2023, and financial reports on December 31 each year. Excluding financial sector companies due to their unique financial structures, the sample consists of seven industry groups: agriculture and food industry, resources, technology, services, industrial products, consumer products, and real estate. Finally, the sample includes 313 companies with complete data.

3.2 Variables

The dependent variable is Cash Conversion Cycle (CCC). Consistent with prior studies, this study uses the CCC as a comprehensive measure of working capital management. The independent variables are financial factors, which include: 1. Cash flow from operations (CFO) 2. Debt to Equity ratio (DE) 3. Return on Assets (ROA) 4. Sales growth (SG) and 5. Firm size (SIZE).

3.3 The data collection

The data used in the research are secondary data collected from companies listed on the Stock Exchange of Thailand including seven industry groups: agriculture and food industry, resources, technology, services, industrial products, consumer products, and real estate and construction. Data collection was carried

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out for each company from 2019 to 2023, spanning 5 years, from the SETSMART database system. After selecting the companies with complete data, the observation includes 1,565 sets.

3.4 Data Analysis

This research is a quantitative study that analyzes data using the following statistics: 1) Descriptive Statistics, including mean, standard deviation, maximum, and minimum values, 2) Pearson Correlation, and 3) Multiple Regression Analysis, used to test the impact of financial factors on cash conversion cycle (CCC). The study model is as follows:

$$CCC_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 CFO_{it} + \beta_3 SG_{it} + \beta_4 DE_{it} + \beta_5 SIZE_{it} + \varepsilon_{it}$$

where

CCC_{it} is the cash conversion cycle of company I in year t
ROA_{it} is the return on total assets of company I in year t
CFO_{it} is the cash flow from operating activities to total assets of company I in year t
SG_{it} is the sales growth of company I in year t
DE_{it} is the total debt to equity ratio of company I in year t
$SIZE_{it}$ is the natural logarithm of total assets of company I in year t

4. Results and Discussion

4.1 Descriptive statistics

Table 1 shows the average (Mean), maximum (Max), minimum (Min), and standard deviation (Std. Dev.) of all variables used in the study. The total data used in the analysis is 1,565 observations.

Table 1 Descriptive statistics

	CCC	ROA	CFO	SG	DE	SIZE
Mean	157.11	5.17	0.07	0.08	1.24	15.98
Max	2,561.73	58.22	0.42	8.62	71.10	21.96
Min	-848.74	-50.52	-0.47	-0.96	0.01	11.96
Std. Dev.	301.37	8.47	0.09	0.49	2.27	1.62
Observations	1,565	1,565	1,565	1,565	1,565	1,565

The descriptive statistics show that Cash Conversion Cycle (CCC), as a dependent variable, has an average of 157.11 days, indicating that firms take an average of 157.11 days to complete their CCC. The CCC values range from a minimum of −848.74 days to a maximum of 2,561.73 days, with a standard deviation of 301.37 days. The variation in CCC length explains the difference. The high value of CCC indicates that those companies have longer periods for collecting accounts receivable and maintaining inventory than the period for paying accounts payable. Companies with longer cash conversion cycles are likely to experience more cash constraints. In contrast, firms with a negative CCC receive cash from sales before paying their accounts payable.

Return on Assets (ROA) has a mean value of 5.17, suggesting that companies generate approximately 5.17% profit from their invested assets. The ROA exhibits a minimum value of -50.52, a maximum of 58.22, and a standard deviation of 8.47. A negative ROA indicates that firms are experiencing a loss.

The average cash flow from operations (CFO) stands at 0.07, indicating that, on average, cash flow from operations accounts for 7 percent of total assets. The cash flow from operations ranges from a minimum

value of -0.47 to a maximum of 0.42, with a standard deviation of 0.09. Negative cash flow values occur when firms incur higher expenditures than receipts from operating activities.

Sales Growth (SG) has an average of 0.08, indicating an 8% increase in sales compared to last year, with a minimum value of -0.96, a maximum value of 8.62, and a standard deviation of 0.49. Negative values of sales growth mean a decrease in sale revenue.

The average debt to equity (DE) ratio is 1.24, showing firms rely more on debt than equity. The values range from 0.01 to 71.10 with a standard deviation of 2.27. Debt to equity ratio varies widely among companies in the study sample.

Firm size (SIZE) is a natural log of assets, with a mean of 15.98 and a standard deviation of 1.62.

4.2 Correlations

Table 2 reports Pearson correlations between the variables. Most of the independent variables are significantly correlated with CCC except for return on assets (ROA). Sales growth (SG) and cash flow from operations (CFO) are negatively correlated with CCC, while firm size is positively correlated with CCC. Upon evaluating the correlation among the dependent variables, it was determined that the values are below 0.50. Consequently, there is no indication of multicollinearity, allowing for the inclusion of these variables in the regression model.

Table 2 Pearson Correlation

Pearson Correlation

	CCC	ROA	SG	CFO	DE	SIZE
CCC	1					
ROA	-0.045	1				
SG	-.087**	.160**	1			
CFO	-.161**	.485**	-0.015	1		
DE	-.050*	-.190**	.060*	-.088**	1	
SIZE	.064*	.152**	.055*	-0.010	.140**	1

*,**Significant at the 5 and 1 percent levels, respectively

4.3 Regression results

The study assessed the criteria for multiple regression analysis using values from Table 3. Condition 1: No autocorrelation in residuals, confirmed by a Durbin-Watson coefficient of 1.646 (acceptable range: 1.5-2). Condition 2: No multicollinearity, verified by VIF values under 2 and Tolerance values between 0 and 1 for each independent variable.

Table 3 Results of the regressions Model for CCC

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Tolerance	VIF
C	-246.319	32.404	-7.601	0.000**		
ROA	-0.547	0.083	-6.576	0.000**	0.683	1.465
SG	-21.675	1.460	-14.846	0.000**	0.955	1.047
CFO	-13.275	5.361	-2.476	0.013*	0.749	1.336
DE	-4.231	0.751	-5.635	0.000**	0.926	1.080
SIZE	25.911	2.038	12.716	0.000**	0.938	1.066

Adjusted R-squared	0.966	Durbin-Watson	1.646
F-statistic	138.597	Prob(F-statistic)	0.000

*, **Significant at the 5 and 1 percent levels, respectively

As shown in table 3, the statistical results reveal that return on assets (ROA) has a negative impact on the cash conversion cycle (CCC), consistent with Yilmaz & Nobanee (2023), but differing from Tiwari et al. (2023). Sales growth and cash flow from operations exhibit a significant negative relationship with the Cash Conversion Cycle (CCC), as noted by Tiwari et al. (2023), but inconsistent with Czerwonka & Jaworski (2023) and Yilmaz & Nobanee (2023). In addition, debt to equity has a negative significant relationship with CCC, consistent with Czerwonka & Jaworski (2023) and Yilmaz & Nobanee (2023), inconsistent with Tiwari et al. (2023) and Sardo & Serrasqueiro (2022). Firm size positively relates to CCC, consistent with Czerwonka & Jaworski (2023) and Yilmaz & Nobanee (2023), but inconsistent with Tiwari et al. (2023) and Sardo & Serrasqueiro (2022).

The results show a significant negative relationship between ROA and CCC, suggesting that firms with higher ROA have a shorter CCC, indicating better efficiency in managing working capital. Moreover, cash flow from operations has a significantly negative relationship with CCC. Higher cash flow from operations enhances liquidity and reduces CCC. Sales growth is inversely related to CCC, suggesting that as sales growth increases, CCC or working capital management improves. Whereas a positive relationship exists between firm size and CCC, implying larger firms can extend credit to customers and pay suppliers earlier, extending the CCC.

5. Conclusion

This paper examines the factors affecting cash conversion cycle (CCC) of listed companies on the Stock Exchange of Thailand. The study utilizes multiple regression analyses with CCC as the dependent variable. The findings indicate that the factors influencing CCC are return on assets (ROA), sales growth (SG), cash flow from operations (CFO), debt to equity (DE) and firm size. Return on assets (ROA), sales growth (SG), cash flow from operations (CFO), debt to equity (DE) negatively impact the cash conversion cycle (CCC). However, firm size has a positive impact on the cash conversion cycle (CCC). Finally, this study provides valuable guidelines for corporate managers to develop and improve working capital management, ensuring better liquidity and financial stability.

While this study focused on the cash conversion cycle (CCC) as an indicator of working capital management, future research could explore other indicators such as net working capital, current ratio, and quick ratio to provide a more comprehensive understanding of working capital management. Additionally, investigating the impact of external factors such as economic conditions, industry-specific challenges, and government policies on working capital management could offer valuable insights. Further research could also examine the role of technological advancements and digital transformation in optimizing working capital management strategies. Moreover, a comparative analysis of working capital management practices across different countries or regions could provide a broader perspective on the factors influencing CCC and other indicators.

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