

รายงานการวิจัยผลของการจัดการทุนหมุนเวียนที่มีต่อประสิทธิภาพ  
ในการทำกำไรของบริษัทจดทะเบียนไทย

EFFECTS OF WORKING CAPITAL MANAGEMENT ON THE  
PROFITABILITY OF THAI LISTED FIRMS

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ประจำปีงบประมาณ 2554 จำนวนเงินที่ได้รับการสนับสนุน 30,000 บาท

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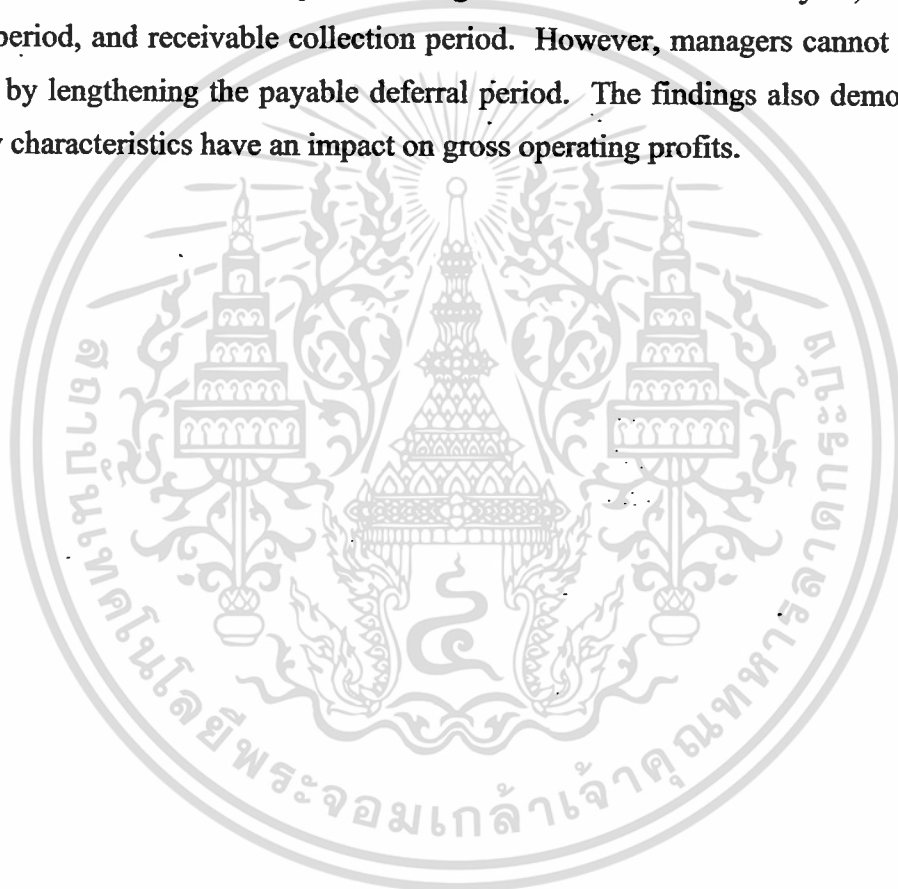
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บทคัดย่อ

วัตถุประสงค์ของงานวิจัยคือศึกษาผลของการจัดการทุนหมุนเวียนที่มีต่อประสิทธิภาพในการทำกำไรของบริษัทจดทะเบียนไทย การวิเคราะห์ Regression ใช้ข้อมูลบริษัท 255 บริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทยระหว่างปี พ.ศ. 2550 ถึง 2552 ผลการศึกษาพบว่ามีความสัมพันธ์ในทางลบระหว่างกำไรขั้นต้น กับวงจรเงินสด ระยะเวลาการจำหน่ายสินค้า และระยะเวลาเก็บหนี้จากลูกหนี้ อย่างไรก็ตามผู้บริหารไม่สามารถเพิ่มประสิทธิภาพในการทำกำไรโดยการขยายเวลาชำระหนี้เจ้าหนี้ ผลการศึกษายังแสดงว่าลักษณะอุตสาหกรรมมีผลต่อกำไรขั้นต้น

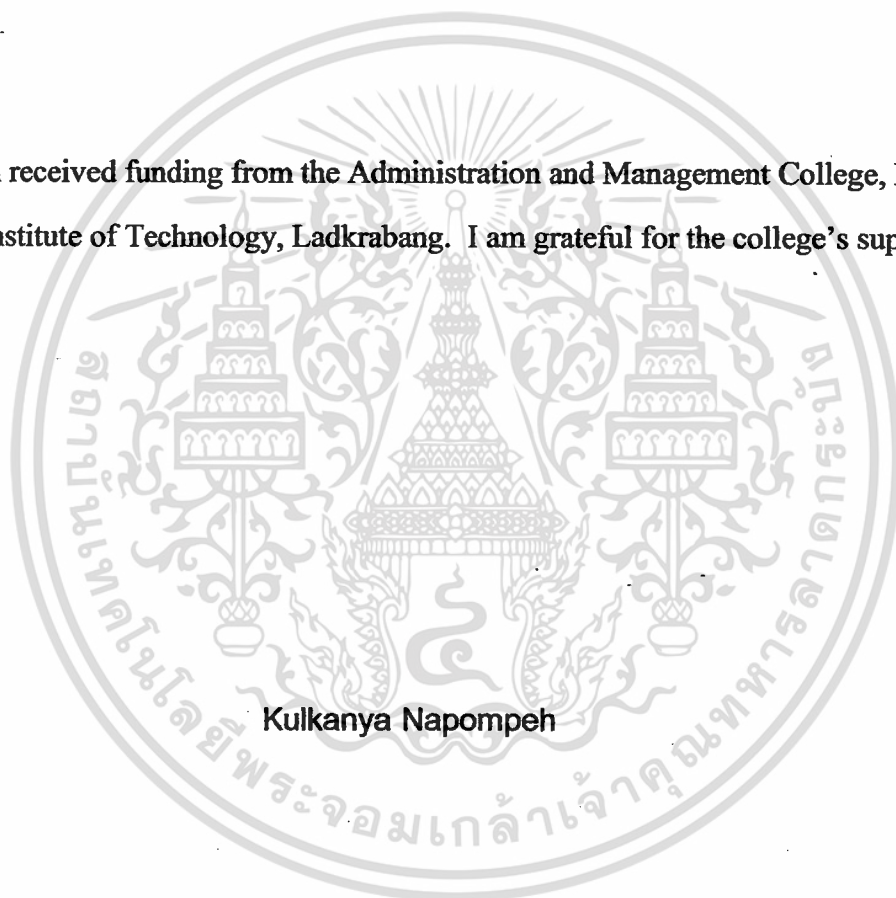
## ABSTRACT

The primary purpose of this research was to examine the effects of working capital management on profitability. The regression analysis was based on a sample of 255 companies listed on the Stock Exchange of Thailand from 2007 through 2009. The results revealed a negative relationship between the gross operating profits and inventory conversion period and the receivable collection period. Therefore, managers can increase the profitability of their firms by shortening the cash conversion cycle, inventory conversion period, and receivable collection period. However, managers cannot increase profitability by lengthening the payable deferral period. The findings also demonstrated that industry characteristics have an impact on gross operating profits.



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Kulkanya Napompeh

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
ไม่ว่ากรณีใดๆทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

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## CHAPTER 1

# INTRODUCTION

### 1.1 IMPORTANCE OF THE RESEARCH

Traditionally, corporate finance literature has focused on long-term financial decisions. Researchers have emphasized studies that analyze investments, capital structure, dividends, mergers and acquisitions, and company valuation, among other topics. However, current assets and liabilities are important components of total assets and need to be analyzed cautiously because working capital management plays an essential role not only in a firm's profitability and risk but also in its value (Smith, 1980). Working capital is the amount of capital needed to manage the day-to-day business of a firm. It is the lifeblood of a business and it plays a vital role in keeping the wheels of a firm running. That organizations, whether profit oriented or nonprofit and regardless of size or nature of business, could not exist without working capital is, thus, undeniable. Shin and Soenen (1998) emphasized that efficient management of working capital may be important in creating value for shareholders. The core tenet of working capital management is to provide support sufficient to ensure that normal day-to-day business functions operate smoothly and efficiently through a trade-off among the three dimensions of working capital (i.e., liquidity, profitability, and risk) (Sur and Chakraborty, 2011). An accepted measure of working capital management is the cash conversion cycle, or the resultant time lag between expenditure for the purchase of raw materials or rendering of services and collection for sales of the finished goods. The longer the time lag, the larger the investment in working capital; as a result, the larger the financing needs of the firm. Interest expense will also be higher, which results in a higher default risk and lower profitability (Charitou, Elfani, and Lois, 2010). Many researchers (Nazir and Afza, 2008; Raehman and Nasr, 2007; Lazaridis and Tryfonidis, 2006; Deloof, 2003) have examined the relationship between a measure of the cash conversion cycle and corporate

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profitability. Most of these researchers have found a strong negative association. These results confirm that managers can create value for shareholders by shortening the cash conversion cycle to the smallest rational amount of time. The objective of this study was to investigate the relationship between working capital management, as measured through the cash conversion cycle, and corporate profitability. Until now, there has been no published research to shed light on the impact of working capital management on the profitability of Thai listed firms; this paper contains an assessment of the impact of working capital management on the profitability of Thai listed firms.

## **1.2 OBJECTIVE OF THE RESEARCH**

This research will assess the impact of working capital management on the profitability of Thai listed firms.

## **1.3 BENEFITS OF THE RESEARCH**

This study will definitely enrich the finance literature on the issue of the relationship between working capital management and profitability.

## CHAPTER 2

# WORKING CAPITAL MANAGEMENT AND CASH CONVERSION CYCLE

### 2.1 WORKING CAPITAL

In order for a business to be successful, that is, to make profits from an operation and to survive in the long run, there are many factors such as capability in building sales, controlling expenses, and allocating funds in business assets properly, etc. In general there are two major types of investments in assets. The first is investments in fixed assets, which are buildings, machinery, equipment, etc. The other type is investments in current assets, which are cash, accounts receivable, inventories, etc., so that the operating cycle of business can move on continuously, not pause or be interrupted. Working capital simply refers to current assets used in operations, sometimes called gross working capital. Net working capital refers to the assets and liabilities required to operate a business on a day-to-day basis. Operating activities also generate payable and accrual liabilities. When inventory is purchased on credit, the payable represents material that can be temporarily used without payment. A firm's net working capital reflects the net amount of funds required to support routine operations. In other words, net operating working capital is defined as current assets minus current liabilities. However, people often use the term "working capital" for "net working capital." In practice it pays to be sure that when people talk about working capital, they are using the same definition. The objective of asset management is to maximize value for the owners.

Investments in current assets make an operation move continuously. An operation cycle starts with buying raw materials in order to produce products, then producing finished goods for sale. If they are credit sales, they will cause accounts receivables. When accounts receivables pay cash, businesses will get cash to be used again for operating expenses. This will make sales turnover, make business grow, and can increase

sales with the money invested. Purchasing raw materials to produce, selling products, and collecting money from sales is an operating cycle of business which will go on continuously. If some problems occur that make the business cycle stop such as inability to collect money from accounts receivable or sell finished goods, the business will become short of working capital. Thus the business cannot pay creditors, and has to find external funds to pay debts in order to be able to buy raw material or finished goods to sell again. If these problems increase, firms cannot manage their working capital, and they have to borrow more and more money, firms may become bankrupt. The important indicators of effective working capital management are operating cycle and cash conversion cycle.

## **2.2 OPERATING CYCLE**

Operating cycle is the time gap between the arrival of inventory stock and the date when cash is collected from receivables. The length of the operating cycle is equal to the sum of the lengths of the inventory and accounts receivable periods. The inventory period is the average time required to convert materials into finished goods and then to sell the goods. A shorter cash conversion cycle is related to better performance of firms. A shorter cash conversion cycle could be associated with high profitability because it improves the efficiency of using the working capital.

## **2.3 CASH CONVERSION CYCLE**

Cash conversion cycle (CCC) is a cycle in which firms purchase inventory, sell goods on credit, and then collect money from accounts receivable. Therefore, cash conversion cycle is the time between cash disbursements and cash collection. It can be considered as the operating cycle less the accounts payable period; that is, the cash conversion cycle equals the sum of the inventory conversion period and receivables collection period, minus the payables deferral period. The accounts payable period is the length of time the firm is able to delay payment on the purchase of raw materials and payment of wages.

**Example 1**

Without credit, a firm's cash is tied up from the moment it purchases inventory until it collects its accounts receivable. Suppose it holds its inventory 60 days and collects its accounts receivable in 40 days. Then it would take 100 days for the original investment to be converted back into cash.

**2.3.1 COMPONENTS OF CASH CONVERSION CYCLE**

The cash conversion cycle consists of the inventory conversion period, receivables collection period minus payable deferral period

1. The inventory conversion period is the average time required to convert materials into finished goods and then to sell those goods. The inventory conversion period can be calculated as follows:

$$\text{Inventory conversion period} = \text{Inventory} / \text{Sales per day}$$

2. Receivables collection period is the average length of time required to convert the firm's receivables into cash. The receivables collection period is calculated as follows:

$$\text{Receivables collection period} = \text{Receivables} / \text{sales per day}$$

3. Payables deferral period is the average length of time between the purchase of materials and labor and the payment of cash for them. Payables deferral period can be calculated as follows.

$$\text{Payable deferral periods} = \text{Payables} / \text{cost of good sold per day}$$

**Example 2**

JUNE corporation has an inventory conversion period of 70 days, a receivables collection period of 40 days, and a payable deferral period of 30 days. What is the length of the firm's cash conversion cycle?

**Cash Conversion Cycle (CCC) = Inventory conversion period + Receivables collection period – Payables deferral period**

$$= 70 + 40 - 30 = + 80 \text{ days}$$

This means that JUNE has to finance manufacturing costs for an 80 day period.

How can the management of a firm like JUNE translate this information into Thai dollar figures so they will know the amount of funds that must be provided to finance their inventories and accounts receivables? Suppose the firm manufactures and sells 100 baskets per day at a price of THB12.00. Production cost per unit is THB 8.00 to produce the baskets. Gross profit per unit is THB 4.00. Each day the investments in inventory increase by  $\text{THB } 8.00 \times 100 \text{ units} = \text{THB } 800.00$ . If this inventory is sold it will produce cash inflow of  $\text{THB } 12.00 \times 100 \text{ units} = \text{THB } 1,200.00$ . Cash is needed to finance a 80 day inventory supply and will be  $\text{THB } 800 \text{ per day} \times 80 \text{ days} = 64,000.00$ . When liquidated, this inventory will provide  $\text{THB } 1,200.00 \times 80 \text{ days} = \text{THB } 96,000$  of cash inflow. However, the company must provide THB 64,000 in cash at present to be able to realize the larger the cash inflow in the future that creates the profits. This cash must be provided from non-spontaneous sources. Even though each Thai dollar is recovered after 80 days, THB 64,000.00 is a permanent investment because this amount has to be continually reinvested.

JUNE should shorten its cash conversion cycle as much as possible without hurting operations. This would increase JUNE's value because the shorter the cash conversion cycle, the lower the required net operating working capital, and the higher the resulting free cash flow.

### Example 3

KMITL turns out 1,000 machine parts a day at a cost of THB 60 per part for materials and labor. It takes the firm 10 days to convert raw materials into a machine part. KMITL allows its customers 40 days in which to pay for the machine parts, and the firm generally pays its suppliers in 30 days. Note that Baht (THB) is Thai currency.

What is the length of KMITL's cash conversion cycle? At a steady state in which KMITL produces 1,000 machine parts a day, what amount of working capital must it finance? By what amount could KMITL reduce its working capital financing needs if it was able to stretch its payables deferral period to 40 days?

**Cash Conversion Cycle (CCC) = Inventory conversion period + Receivables collection period – Payables deferral period**

$$= 10 + 40 - 30 = + 20 \text{ days}$$

$$\text{Working capital financing} = 1000 \times 20 \times \text{THB } 60 = \text{THB } 1, 200, 000$$

If the payables deferral period were increased by 10 days, then its cash conversion cycle would decrease by 10 days, so its working capital financing needs would decrease by:

$$\text{Decrease in working capital financing} = 1,000 \times 10 \times \text{THB } 60 = \text{THB } 600,000$$

#### Example 4

If labor accounts for 30 percent of product cost and is paid every 20 days, material expenses account for 60 percent of cost and are paid an average of 50 days, and other accruals account for 10 percent of the cost and are paid every 30 days, calculation of the payable deferral period would be as follows:

Weight for: Labor	=	30% × 20 days/2	=	3.0 days
Materials	=	60% × 50 days/2	=	15.0 days
Accruals	=	10% × 30 days/2	=	1.5 days
		100% period	=	19.5 days

### 2.3.2 SIGN OF CASH CONVERSION CYCLE

The sign of cash conversion cycle can be positive, zero, or negative, which have the following meanings:

**+** means firms have to pay cash for resources such as materials and wages before getting working capital back from the operation. In this case firms need outside financing of cash conversion cycle for a number of days worth of operating cash in order to keep the business operating smoothly.

**0** means that firms can pay suppliers or creditors from working capital from the

operation, so they do not need outside financing .

- means that firms get payments from receivables before the time to pay creditors or suppliers. A “negative” cash conversion cycle is a major advantage of firms such as Internet bookseller Amazon. Although Amazon warehouses some of the books it sells, many titles are not ordered from publishers until orders are received from customers. However, Amazon charges customers' credit cards immediately when books are shipped and basically gets payment within two days. At the same time, the Internet bookseller doesn't pay publishers for, approximately, almost a month and a half. (<http://business.yourdictionary.com/cash-conversion-cycle>). Dell's cash conversion cycle is a negative 44 days, which means that Dell's sales are converted in hard cash 44 days before Dell needs to pay for purchase invoices to vendors.

#### **2.3.4 SHORTENING THE CASH CONVERSION CYCLE**

The cash conversion cycle can be shortened by (1) reducing the inventory conversion period by producing and selling goods faster, (2) by reducing the receivables collection period by accelerating collections, or (3) by stretching the payables deferral period by delaying the firm's own payments. To the level that these actions can be done without increasing costs or depressing sales, they should be performed.

As a whole, a shorter cash conversion cycle means greater liquidity, which means less of a need to borrow, more chance to grasp price discounts with cash purchases for raw materials, and an increased competency to fund the business expansion into new product lines or markets. In contrast, a longer cash conversion cycle increases a firm's cash needs and negates all the positive liquidity advantages just stated.

## **2.4 LIERATURE REVIEW**

Efficient working capital management deals with planning and controlling current assets and current liabilities in a manner that gets rid of the risk of being unable to cope

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า  
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with short term obligations due on one side and avoiding excessive investment in these assets on the other side (Eljelly, 2004). Previous research has documented that working capital management may have an important influence on the firm's profitability. Johnson and Soenen (2003) also reported that efficient working capital management is one of the key characteristics of financially successful firms. Most of the empirical research concerning working capital management and profitability relationship confirms the notion that reducing current assets in comparison to total assets reduces working capital investment; therefore, it would positively affect the firm's profitability. Many scholars (Shin and Soenen, 1998; Deloof, 2003; Lazaridis & Tryfonidis, 2006; Raheman & Nasr, 2007; Charitou, Elfani, & Lois, 2010; Mōhamad & Salad, 2010; ) measured working capital using the cash conversion cycle. Deloof (2003) analyzed a sample of Belgian firms and found that firms can raise their profitability by reducing the periods for receivables collection and inventory conversion. He also reported that the unanticipated negative relationship found between the number of days of accounts payable is that less profitable firms wait longer to pay their bills. Wang (2002) used a sample of Japanese and Taiwanese firms and found that a shorter cash conversion cycle is related to better performance. Shin and Soenen (1998) used a sample of US firms, and Erasmus (2010) used a sample of South African firms. Both of them measured working capital management with net trade cycle (NTC) and found a significant negative relationship between NTC and profitability. Ganesan (2007) analyzed the working capital management efficiency of firms in the telecommunication equipment industry and found that although daily working capital is negatively related to profitability, it's not a statistically significant influence on telecommunication equipment industry firms' profits. Mohamad and Saad (2010) used a sample of Malaysian firms to investigate the effects of working capital components, i.e., cash conversion cycles, current ratio, current asset to total asset ratio, and found an inverse relationship between working capital variables, including the cash conversion cycle, and a firm's performance. Raheman, Qayyum, Afza, & Bodla (2010) studied working capital management and firm performance in the

manufacturing sector of Pakistan and found that there are variations in sectoral performance in terms of different measures of working capital management.

Similar research has also investigated firms listed on the Athens Stock Exchange (Lazaridis and Tryfonidis, 2006), firms listed on the Karachi Stock Exchange (Raheman and Nasr, 2007; Nazir and Afza, 2008), a sample of Saudi joint stock companies (Eljelly, 2004), firms listed in the Johannesburg Securities Exchange, (Eramus, 2010), and a sample of firms listed in the Cyprus Stock Exchange (Charitou, Elfani, & Lois 2010). Most of these studies' findings are similar to those of Deloof (2003), whose work showed that there was a negative association between firm profitability and the amount invested in working capital.

Firms may have an optimal level of working capital that maximizes their value. On the other hand, keeping a larger inventory and granting credit to customers easily and being willing to wait a longer time to be paid may result in higher sales. More inventory lessens the risk of not having enough stock to sell. Trade credit, a vehicle to attract new customers, may incite sales because it allows customers to assess product quality before paying (Long, Maltiz and Ravid, 1993; and Deloof and Jegers, 1996; Deloof, 2003). The bad side of granting generous trade credit and keeping high inventories is that money is stashed in working capital. Another component of working capital is accounts payable. Delaying payments to suppliers allows a firm to assess the quality of the goods purchased, and it can be an inexpensive and flexible source of financing for the firm. On the other hand, late payment can be very costly if the firm is granted a discount for paying early. (Deloof, 2003).

## **2.5 RESEARCH METHODOLOGY**

### **2.5.1 FIRMS INCLUDED IN THE STUDY**

The data set in this study was obtained from the Stock Exchange of Thailand. The data include yearly data on sales, cost of goods sold, total assets, financial assets, inventory conversion period, average collection period, payable deferral period, cash conversion

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period, and debt ratio. The sample consisted of 255 firms that have all the needed data for the three-year period from 2007 through 2009. Therefore, data obtained from this study were panel data on 765 firms' observations. Since observations for the same firm are repeated over the years of the study, it is important to focus on the variance over years as well as over cross sections. The 255 firms come from 7 industries: industrial, consumer products, service, resources, technology, building and construction materials, and agriculture and food; the number of firms in each sector is shown in Table 1. A list of firms is in Appendix 1.

TABLE 2.1 GROUPING OF INDUSTRIES

SEQUENCE NUMBER	INDUSTRY	FIRMS
1	Industrials	67
2	Service	48
3	Consumer products	21
4	Resources	15
5	Agro & Food	34
6	Construction & Building Materials	44
7	Technology	26

## 2.5.2 METHODOLOGY

To test the impact of the cash conversion cycle and its components on profitability, the cash conversion cycle, the receivable collection period, the inventory conversion period, and the payable deferral period were regressed against gross operating profit. A non-parametric correlation (Spearman) was also used to examine the relationships between the variables used in this study.

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### 2.5.3 VARIABLES

In order to analyze the impact of working capital management on firms' profitability, the gross operating profit (GROSS) was used as the dependent variable. This variable comes from subtracting the cost of goods sold (COGS) from total sales and dividing the result by total assets minus financial assets. This research employed this variable instead of earnings before interest tax depreciation amortization (EBITDA) or profits before or after taxes, in order to associate operating success or failure with an operating ratio and relate this variable with other operating variables (i.e. cash conversion cycle). In addition, to exclude the participation of any financial activity from an operational activity that might impact profitability in general, financial assets are subtracted from total assets.

With regard to the independent variables, working capital management was measured using the cash conversion cycle (CCC). This measure is calculated as an inventory conversion period plus receivables collection period minus the accounts payable deferral period. In this respect, the inventory conversion period (INV) was defined as  $365 \times (\text{Inventory} / \text{cost of goods sold})$ . This variable represents the average time of stock held by firms. Receivables collection period (ARR) was defined as  $365 \times (\text{Accounts Receivables} / \text{Sales})$ . This variable reflects the average time that the firm takes to receive payments from its customers. Payable deferral period (PAY) was defined as  $365 \times (\text{Accounts Payables} / \text{Cost of Goods Sold})$ . This variable indicates the average time the firm takes firms to pay their suppliers. Another variable chosen for the model specification is that of firm size measured through the Natural logarithm of sales (LnSales). The fixed financial asset ratio (FIXEDFA) used to evaluate the effect of investments on non-operating financial assets and is calculated by dividing fixed financial assets by total assets, where fixed financial assets mean shares and participation of other firms. Debt ratio (DEBT), which is calculated by dividing total debts by total capital, is used to evaluate the influence of long-term capital structure.

## CHAPTER 3

### EMPIRICAL RESULTS

#### 3.1 DESCRIPTIVE STATISTICS

TABLE 3.1 gives the descriptive statistics of the collected variables. The total of observations sums to  $n = 765$ . On average 5.94 percent of total assets are financial assets (including participation to other subsidiaries). Total sales have a mean of 17,889.57 million baht while the median is 2,777.51 million. The firms included in this research had an average of 20.75 percent operating profit. Inventory takes on average 124.31 days to be sold (43.0 median days). The credit period granted to their customers ranged at 61.18 days on average (median 52.0 days) while they paid their creditors in 52.15 days on average (median 37.12 days). Overall the average cash conversion cycle ranged at 133.73 days (median 59.03 days).

TABLE 3.1 DESCRIPTIVES STATISTICS OF THE COLLECTED VARIABLES

VARIABLE	N	MEDIAN	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
FIXED FA	765	1.36	5.94	10.87	.00	83.41
LNSALES	765	7.93	11.31	91.35	3.70	2,534.23
SALES	765	2777.51	17,889.57	11,2282.17	40.53	200,0815.8
DEBT RATIO	765	43.65	42.58	23.14	.30	157.94
GROSS PR	765	17.61	20.75	17.46	-17.94	200.69
INV	765	43.0	124.31	305.10	.00	3,413.14
ARR	765	52.0	61.18	59.34	.00	631.00
PAY	765	37.12	52.15	54.01	.00	502
CCC	765	59.03	133.73	307.21	-412	3751.77

#### 3.2 RESEARCH FINDINGS

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TABLE 3.2 MEAN AND MEDIAN VALUE OF VARIABLES FOR 2007-2009

INDUSTRY	No. of Firms	INV	AR	AP	CCC	SALES	DEBT RATIO	FIXED FA	GROSS OPERATING PROFITS
<i>Industrials</i>									
2007	67	55.0	60.2	47.1	79.0	2,215.1	39.7	.48	13.2
2008	67	48.0	56.0	41.0	77.5	27,74.9	38.1	.52	14.0
2009	67	57.4	68.0	44.0	92.0	1814.9	38.6	1.08	11.0
Median (2007-2009)	201	53.4	60.0	45.0	79.0	23,10.9	38.6	.79	12.7
Mean (2007-2009)	201	79.4	67.6	54.4	92.4	52,85.2	41.1	3.92	14.7
<i>Service</i>									
2007	48	24.2	46.5	35.2	32.4	1,665.3	40.4	2.1	26.0
2008	48	25.0	43.7	41.5	29.5	1,692.0	40.2	1.7	27.1
2009	48	28.2	48.5	47.0	34.8	1,811.5	36.9	1.5	26.6
Median (2007-2009)	144	24.2	46.5	35.2	32.4	1,665.3	40.4	2.1	26.0
Mean (2007-2009)	144	42.7	65.3	52.9	58.0	6,546.8	39.1	8.6	27.4
<i>Consumer products</i>									
2007	21	89.0	63.0	59.0	69.0	1,882.8	21.3	10.9	22.0
2008	21	66.2	58.0	46.0	75.8	1,987.1	22.5	11.3	22.4
2009	21	87.5	62.9	47.8	104.0	1,590.6	17.2	11.7	23.6
Median (2007-2009)	63	76.0	62.1	48.1	75.8	1,832.6	19.6	11.3	22.4
Mean(2007-2009)	63	85.1	59.7	54.1	92.2	9,772.5	27.5	13.9	26.3
<i>Resources</i>									
2007	15	30.0	34.0	27.1	29.4	9,140.1	46.2	1.2	16.2
2008	15	22.4	26.8	18.	24.0	8,142.3	49.0	1.2	11.9
2009	15	36.0	28.0	22.6	36.0	6,619.4	47.7	1.3	10.6
Median (2007-2009)	45	26.4	28.0	22.2	30.0	8,139.7	46.4	1.2	13.3
Mean(2007-2009)	45	64.3	55.5	28.1	91.7	157,777.5	42.8	5.7	15.7
<i>Agro &amp; Food</i>									
2007	34	28.8	33.4	16.1	46.5	4,009.05	31.8	1.7	23.1
2008	34	25.7	32.3	14.7	40.5	4,209.4	31.1	1.4	27.9
2009	34	30.5	28.5	18.8	43.3	3,975.9	33.3	1.8	27.2
Median (2007-2009)	102	27.0	31.8	17.0	41.5	4,009.0	32.7	1.6	25.4
Mean(2007-2009)	102	47.3	34.0	25.3	55.1	11,088.8	37.6	5.0	30.2
<i>Construction &amp; Building Materials</i>									
2007	44	124.6	51.0	44.6	135.4	2,285.7	53.3	1.7	10.5
2008	44	76.7	45.5	38.1	114.4	3,343.9	54.3	1.5	13.3
2009	44	100.6	46.0	40.5	125.2	2,635.8	52.7	2.6	11.8
Median (2007-2009)	132	100.6	46.5	41.0	125.2	2,588.4	53.3	1.8	11.8

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TABLE 3.2 (CONTINUED)

INDUSTRY	No. of Firms	INV	AR	AP	CCC	SALES	DEBT RATIO	FIXED FA	GROSS OPERATING PROFITS
Mean (2007-2009)	132	412.4	57.7	71.2	399.9	11,498.6	51.8	5.7	14.1
<i>Technology</i>									
2007	26	41.9	68.0	45.6	50.8	5,004.6	52.6	.07	19.4
2008	26	42.3	72.3	49.8	58.0	6,476.0	61.1	.14	17.2
2009	26	39.3	74.9	62.8	57.2	5,917.3	64.5	.64	17.8
Median (2007-2009)	78	41.3	72.9	47.8	56.5	5,844.8	60.7	.16	17.9
Mean (2007-2009)	78	70.4	83.1	60.2	90.2	16,872.8	55.93	1.61	21.50

TABLE 3.2 illustrates mean and median values of the inventory conversion period, receivables collection period, payable deferral period, sales, debt ratio, fixed financial assets ratio, and gross profit. Since the standard deviation of the variables mentioned is very high, the median value was used to explain the results. The results revealed that the highest median value of the cash conversion cycle (CCC) is in the construction and building industry at 125.2 days. This does make sense because normally it takes a longer time to produce a house or building. The resources industry, including energy and utilities, and mining, has the lowest median value of CCC at 30 days (mean value of CCC = 91.7 days). The service industry, including the sectors of tourism and leisure, health care services, and transportation and logistics, runs second, with a median CCC of 32.4 days; however, it has the lowest mean value of CCC compared with all industries, at 52.9 days. The lowest median value of the inventory conversion period, found in the service industry, is equal to 24.2 days. In addition, the highest median value of gross operating profit is in the service industry, equal to 26%, while the second highest value is in the consumer products industry, including home and office products, personal products and pharmaceuticals, and fashion, at 22.4%. The construction and building materials

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industry has the lowest gross operating profits, equal to 11.8%. This study showed that the industry for construction and building materials has the longest cash conversion cycle and the lowest gross operating profits. In contrast, the service industry, which has the lowest mean cash conversion cycle, has the highest gross operating profits, equal to 26.0%. The consumer products industry has a median cash conversion cycle equal to 75.8 days and gross operating profits of 22.4%, whereas the resources industry has a cash conversion cycle of 30 days and gross operating profits of 13.3%. The agriculture and food industry has a CCC equal to 41.5 days and gross operating profits of 25.4%. The results also showed industry effects on profitability.

TABLE 3.3 shows the symbols of the first 20 firms with the shortest cash conversion cycle for 2007, 2008, and 2009. It also lists their gross operating profits. The list of firms that have the shortest conversion cycle for the three years is nearly the same, although firms' ranking may vary from year to year.

TABLE 3.3 FIRMS WITH THE SHORTEST CASH CONVERSION CYLCE

2007			2008			2009		
SYMBOL	CCC (DAYS)	GROSS PROFITS	SYMBOL	CCC (DAYS)	GROSS PROFITS	SYMBOL	CCC (DAYS)	GROSS PROFITS
BLAND	-412.00	2.26	N-PARK	-244	3.73	N-PARK	-243	2.69
N-PARK	-118.00	-0.64	CK	-162	9.36	CK	-135.4	5.69
ERAWAN	-73.41	17.89	ERAWAN	-77.73	15.21	CPALL	-55.0	76.89
CPALL	-62.00	54.10	CPALL	-55.00	74.02	ROBINS	-53.88	39.31
ROBINS	-61.49	40.06	ROBINS	-54.34	41.36	SUPER	-52.22	-195
TRUE	-45.39	16.52	CPH	-46.29	13.36	ERAWA	-51.37	12.48
MINT	-29.02	45.51	MALEE	-32.80	33.42	MALEE	-48.8	34.7
AJ	-26.44	7.38	CCP	-30.94	7.12	CCP	-38.75	6.21
CPH	-25.22	15.15	MINT	-25.62	45.77	CPH	-28.68	12.20
TFI	-20.08	17.16	TRUE	-21.12	16.14	MANRIN	-27.26	-1.71
2007			2008			2009		
OHTL	-15.00	51.89	S&P	-18.66	75.41	MINT	-26.36	37.76
HMPRO	-14.00	34.34	HMPRO	-18.00	37.43	HMPRO	-24.00	40.52
MALEE	-13.60	28.44	GEN	-17.77	14.04	YNP	-19.78	-10.65
PB	-9.00	42.21	MANRIN	-15.15	0.61	S&P	-18.18	75.96
CSL	-6.67	48.06	PB	-13.00	44.32	PB	-14.00	48.36
SVH	-4.88	37.74	BLAND	-8.00	2.89	GEN	-12.26	6.37

TABLE 3.3 (CONTINUED)

2007			2008			2009		
SYMBOL	CCC (DAYS)	GROSS PROFITS	SYMBOL	CCC (DAYS)	GROSS PROFITS	SYMBOL	CCC (DAYS)	GROSS PROFITS
MANRIN	-4.49	11.46	CSL	-5.26	50.05	SPI	-12.00	13.28
SPC	-4.00	62.36	OHTL	-4.55	54.45	SE-D	-10.00	69.78
S&P	-3.66	68.85	SE-ED	-4.00	72.92	AFC	-6.00	4.58

TABLE 3.4 presents Pearson correlations for the variables that are included in the regression model. The gross operating profit is negatively correlated with the variables of inventory conversion period, receivables collection period, payables deferral period, and cash conversion cycle. This reveals that keeping products in stock less time, collecting payments from customers earlier, and paying suppliers earlier are all associated with an increase in the firm's profitability. These results are consistent with the notion that the shorter the period between production and sale of products, the larger the firm's profitability. Meanwhile the negative relation between accounts payable and gross profit indicates that more profitable firms delay their payment from their suppliers and creditors.

TABLE 3.4 CORRELATION FOR THE COLLECTED VARIABLES

	FIXED FA	DEBT RATIO	LNSALES	GROSS OPERATING PROFITS	INV	ARR	PAY
DEBT RATIO	-.14 .000**						
LNSALES	.021 .565	-.06 .09					
GROSS OPERATING PROFITS	.10 .00**	-.13 .00**					
INV	-.09 .01**	.05 .13	-.02 .68	-.15 .000**			

TABLE 3.4 (CONTINUED)

ARR	.02	-.01	-.02	-.19	.05		
	.63	.88	.63	.00**	.14		
	FIXED FA	DEBT RATIO	LNSALES	GROSS OPERATING PROFITS	INV	ARR	PAY
PAY	.03	.32	.002	-.09	.22	.22	
	.47	.00**	.96	.01**	.00**	.00**	
CCC	-.10	-.002	-.02	-.17	.97	.21	.10
	.00**	.96	.61	.00**	.00**	.00**	.01**

\*\*\* Significant at the 1% level

\*\* Significant at the 5% level

\* Significant at the 10% level

### 3.2.1 REGRESSION ANALYSIS

In order to shed more light on the relation of working capital management on a firm's profitability, regression analysis was employed. The independent variables are fixed financial assets, the natural logarithm of sales, debt ratio, and cash conversion cycle. Industry dummy variables were also included. However, in order to have the minimum degrees of freedom necessary, this research used industry categories instead of sectors, which resulted in seven industries: Industrials, Services, Consumer Products, Technology, Agro & Food Industry, Resources, and Property & Construction materials. This is expressed as 6 dummy variables in order not to fall into the dummy variable trap, the situation of multicollinearity. Dummy 1, Dummy 3, Dummy 4, Dummy 5, Dummy 6, and Dummy 7 represent Industrials, Consumer Products, Technology, Agro & Food Industry, Resources, and Property & Construction respectively.

TABLE 3.5 presents results of REGRESSION 1. This regression equation shows that there is a negative relationship between the cash conversion cycle and profitability, which is consistent with the notion that a decrease in the cash conversion cycle will produce more profits for a firm. The above result is highly significant.

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Moreover the regression shows that the larger the firms (measured through the natural logarithm of sales) the larger gross operating profits with a very high level of significance. Gross operating profits statistically decrease as debt ratio increases. Fixed financial assets have a positive relation with gross operating profits but it is not significant:

Regression (1)

GROSS OPERATING PROFITS = 28.282 +.041 FIXED FA +-.05 DEBT RATIO -.006 CCC+.07  
3LNSALES-12.670 DUM 1- 1.206 DUM 3 – 4.180 DUM 4 + 3.298DUM 5 – 10.824 DUM6 -  
10.138 DUM 7

TABLE 3.5 EFFECTS OF WORKING CAPITAL MANAGEMENT ON GROSS OPERATING PROFITS (EQUATION 1)

Predictor	Coef	SE Coef	t	P	VIF
Constant	28.282		17.198	.000***	
FIXED FA	.041	.026	.804	.422	1.109
DEBT RATIO	-.050	-.066	-2.027	.043**	1.14
CCC	-.006	-.103	-3.043	.002***	1.23
LNSALES	.073	.384	12.541	.000***	1.008
DUM 1	-12.670	-.320	-7.896	.000***	1.761
DUM 3	-1.206	-.019	-.538	.591	1.342
DUM 4	-4.180	-.073	-1.976	.049**	1.447
DUM 5	3.298	.064	1.739	.082*	1.467
DUM 6	-10.824	-.146	-4.320	.000***	1.227
DUM 7	-10.138	-.215	-5.225	.000***	1.517

\*\*\* Significant at the 1% level

\*\* Significant at the 5% level

\* Significant at the 10% level

Analysis of Variance

Sources	DF	SS	MS	F	P
Regression	10	69,462.2	6,946.2	32.0	.000
Residual Error	754	163,352.4	216.6		
Total	764	232814.6			

Durbin-Watson Statistic = 1.80

R Square = 29.8 % Adjusted R Square = 28.9 %

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Std. Error of the Estimate = 14.72

TABLE 3.6 presents results of REGRESSION 2. In the second equation, the dependent variable is gross operating profit and it has the same independent variables as in the first equation. The only difference is the substitution of the cash conversion cycle with the inventory conversion period. There is a negative relationship between gross operating profits and inventory conversion period. This does make economic sense. The longer the inventory is tied up, the less working capital is available. Therefore, the firm's profitability can be improved by reducing inventory conversion period.

Regression (2)

GROSS OPERATING PROFITS = 27.865 +.047 FIXED FA -.044 DEBT RATIO -.004 INV+.074 LNSALES-12.697 DUM 1-1.184 DUM 3 – 4.298 DUM 4+ 3.366 DUM 5– 10.929 DUM6 – 10.612 DUM 7

TABLE 3.6 EFFECTS OF WORKING CAPITAL MANAGEMENT ON GROSS OPERATING PROFITS (EQUATION 2)

Predictor	Coef	SE Coef	t	P	VIF
Constant	27.865		17.016	.000***	
FIXED FA	.047	.03	.905	.366	1.108
DEBT RATIO	-.044	-.059	-1.810	.071*	1.131
INV	-.004	-.075	-2.189	.029**	1.68
LNSALES	.074	.385	12.539	.000**	1.008
DUM 1	-12.697	-.320	-7.8888	.000**	1.762
DUM 3	-1.184	-.019	-.526	.599	1.344
DUM 4	- 4.298	-.075	-2.027	.043**	1.446
DUM 5	3.366	.066	1.770	.077 *	1.466
DUM 6	-10.929	-.147	-4.350	.000***	1.227
DUM 7	-10.612	-.225	-5.394	.000***	1.857

\*\*\* Significant at the 1% level

\*\* Significant at the 5% level

\* Significant at the 10% level

### Analysis of Variance

Sources	DF	SS	MS	F	P
Regression	10	68,500.2	6,850.0	31.4	.000
Residual Error	754	164,314.4	217.9		
Total	764	232814.6			

Durbin-Watson Statistic = 1.805

R Square = 29.4 % Adjusted R Square = 28.5 %

Std. Error of the Estimate = 14.76

TABLE 3.7 presents results of REGRESSION 3. In the third regression, all variables are the same except the inventory conversion period was replaced with the receivable collection period. The third regression shows that there is a negative relationship between gross operating profit and accounts receivable. This indicates that managers can improve profitability by shortening the credit period provided to their customers.

#### Regression (3)

GROSS OPERATING PROFITS = 30.758 +.067 FIXED FA -.047 DEBT RATIO -.048 DSO +.073 LNSALES-12.684 DUM 1 -1.805 DUM 3- 3.433 DUM 4+ 1.883 DUM 5 - 11.462 DUM6 -12.684 DUM 7

TABLE 3.7 EFFECTS OF WORKING CAPITAL MANAGEMENT ON GROSS OPERATING PROFITS (EQUATION 3)

Predictor	Coef	SE Coef	t	P	VIF
Constant	30.758		17.863	.000***	
FIXED FA	.067	.041	1.312	.190	1.097
DEBT RATIO	-.047	-.062	-1.933	.054*	1.130
ARR	-.048	-.16	-5.232	.000**	1.053
LNSALES	.073	.382	12.615	.000***	1.009
DUM 1	-12.684	-.320	-7.999	.000**	1.760
DUM 3	-1.805	-.028	-.814	.416	1.343
DUM 4	-3.433	-.060	-1.637	.102	1.456
DUM 5	1.883	.037	.993	.321	1.501
DUM 6	-11.462	-.155	-4.627	.000***	1.228
DUM 7	-12.684	-.269	-7.093	.00***	1.580

\*\*\* Significant at the 1% level

\*\* Significant at the 5% level

\* Significant at the 10% level

### Analysis of Variance

Sources	DF	SS	MS	F	P
Regression	10	73,249.9	7,325.0	34.6	.000
Residual Error	754	159,564.7	211.6		
Total	764	232814.6			

Durbin-Watson Statistic = 1.775

R-Square = 31.5 % Adjusted R Square = 30.6 %

Std. Error of the Estimate = 14.54

TABLE 3.8 presents results of REGRESSION 4. In the last regression, the same variables are used except the one of inventory conversion period, which was replaced with accounts payable. There is a negative relationship between gross operating profit and accounts payable deferral period, which was in contrast to the notion that the longer a firm delays its payments, the higher level of working capital levels it reserves and uses in order to increase profitability. This difference may be because less profitable firms take longer to pay their obligations. This negative relation confirms the negative correlation between gross operating profits and accounts payable deferral period presented in Table 3.4. However, this result is not statistically significant. This result is consistent with previous research (Deloof, 2003; Charitou, Elfani, & Lois, 2010).

#### Regression (4)

GROSS OPERATING PROFITS = 27.698 +.061 FIXED FA +-.036 DEBT RATIO -.009 PAY + .074 LNSALES-12.794 DUM 1 -1.329 DUM 3- 4.399DUM 4 + 3.157 DUM 5 – 11.240 DUM6 - 12.193 DUM 7

TABLE 3.8 EFFECTS OF WORKING CAPITAL MANAGEMENT ON GROSS OPERATING PROFITS (EQUATION 4)

Predictor	Coef	SE Coef	t	P	VIF
Constant	27.698		16.784	.000**	
FIXED FA	.061	.038	1.182	.238	1.099
DEBT RATIO	-.036	-.047	-1.379	.168	1.248
PAY	-.009	-.03	-.849	.396	1.109

TABLE 3.8 (CONTINUED)

Predictor	Coef	SE Coef	t	P	VIF
LNSALES	.074	.386	12.542	.000***	1.01
DUM 1	-12.794	-.323	-7.931	.000***	1.760
DUM 3	-1.329	-.021	-.589	.556	1.343
DUM 4	-4.399	-.076	-2.068	.039**	1.446
DUM 5	3.157	.062	1.639	.102	1.497
DUM 6	-11.240	-.152	-4.433	.000***	1.243
DUM 7	-12.193	-.028	-6.695	.000***	1.583

\*\*\* Significant at the 1% level

\*\* Significant at the 5% level

\* Significant at the 10% level

#### Analysis of Variance

Sources	DF	SS	MS	F	P
Regression	10	67,613.8	6,761.4	30.9	.000
Residual Error	754	165,200.8	210.1		
Total	764	232,814.6			

Durbin-Watson Statistic = 1.797

R Square = 29.0 % Adjusted R Square = 28.1 %

Std. Error of the Estimate = 14.80

All regression models were tested for multicollinearity. The variance inflation factor (VIF) is used to identify whether one independent variable has a strong linear association with the remaining independent variables. How much the variance of an estimated regression coefficient increases if the predictors are correlated (multicollinear) is measured through VIF. The largest VIF among all predictors is often used as an indicator of severe multicollinearity between the predictors in the regression models. When VIF is greater than 5-10, then the regression coefficients are poorly estimated (Montgomery and Peck, 1982). All variables had a variance inflation factor that ranged between 1-1.9, showing that there is absence of multicollinearity between the independent variables in the regression models.

### 3.3 DISCUSSION

Previous researchers have argued that firms can increase profitability by shortening the cash conversion cycle. This can be accomplished by (a) reducing the inventory conversion period by producing and selling goods faster, (b) by reducing the receivable collection period, which can be done by accelerating collections, or (c) by strengthening the payable deferral period by delaying the firm's payments to its creditors and suppliers. However, the findings of this research confirmed that only two actions can increase profitability: reducing the inventory conversion period and reducing the receivable collection period. The results of this study showed a significant inverse relationship between firm profitability and the inventory conversion period and receivable collection period. This study also found a negative relationship between the payable deferral period and profitability, which may be a result of less profitable firms taking longer to pay their creditors and suppliers. This is consistent with Deloof (2003); however, this result is not significant.

## CHAPTER 4

# CONCLUSIONS AND SUGGESTIONS

### 4.1 CONCLUSIONS

Working capital is the amount of capital needed to manage the day-to-day business of a firm. Hence, it is the lifeblood of a business and it plays a pivotal role in keeping the wheels of a firm running. The efficient management of working capital is also important in creating value for shareholders. The basic objective of working capital management is to run the company effectively with as little money as possible tied up in short-term assets. This involves a trade-off among the three dimensions of working capital (i.e., liquidity, profitability, and risk). A key measure in working capital management is the cash conversion cycle (i.e., the resultant time lag between expenditure for the purchase of raw materials or rendering of services and collection for the sale of finished goods). Essentially, decisions about investments in customer And inventory accounts and supplier credit limits are manifested in the firm's cash conversion cycle. Previous researchers have used measures based on the cash conversion cycle to analyze whether shortening this cycle has positive or negative effects on a firm's profitability. The objective of the current research was to provide empirical evidence about the effects of working capital management on the profitability of a sample of Thai listed firms. Data on a panel of 765 Thai listed firms were collected, covering the period from 2007 through 2009. The results were consistent with previous studies (Joes et al., 1996; Shin & Soenen, 1998; Wang, 2002; Deloof, 2003; Gatvia-Teruel & Martinez-Sa-olano, 2007; Raheman & Nasr, 2007; Charitou, Elfani, & Lois, 2010); a statistically significant relationship exists between profitability, measured through gross operating profits, and the cash conversion cycle, inventory conversion period, and receivable collection period. However, this research could not confirm that the accounts payable deferral period affects a firm's gross operating profit. Thus, it appears that managers can create value for shareholders by reducing the number of days

in the inventory conversion period and receivables collection period to a reasonable minimum. The results showed that industry characteristics also have an impact on gross operating profits.

#### **4.2 SUGGESTIONS**

Managers can increase the profitability of their firms by shortening the cash conversion cycle. This can be accomplished by (a) reducing the inventory conversion period by producing and selling goods faster, (b) by reducing the receivable collection period, which can be done by accelerating collections, or (c) by strengthening the payable deferral period by delaying the firm's payments to its creditors and suppliers. To the level that these actions can be done without increasing costs, depressing sales, or hurting the firm's reputation, they should be performed.

#### **4.3 SUGGESTIONS FOR FURTHER STUDY**

1. Because this study focused on large firms, future studies should focus on the effects of working capital management in small firms. Since most small companies' assets are in the form of current assets, current liabilities are a main source of external financing because these companies find it difficult to obtain funding in the long-term capital markets. Therefore, efficient working capital management is particularly important for smaller companies.
2. Further research should focus on the impact of working capital on the profitability of firms in different industries, such as the construction and building materials industry, which this study found to have the longest cash conversion cycle, and the service industry, which has the highest gross operating profits and the mean shortest cash conversion cycle.
3. Further study should focus on what factors affect net working capital.

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ไม่ว่ากรณีใดๆทั้งสิ้น อีกทั้งห้ามมิให้ดัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้

## APPENDIX 1 LIST OF SAMPLE FIRMS

NUMBER	SUMBOL	COMPANY NAME	INDUSTRY	SECTOR
1	TCP	THAI CANE PAPER PUBLIC COMPANY LIMITED	Industrials	Paper & Printing Materials
2	UTP	UNITED PAPER PUBLIC COMPANY LIMITED	Industrials	Paper & Printing Materials
3	AJ	A.J. PLAST PUBLIC COMPANY LIMITED	Industrials	Packaging
4	CSC	CROWN SEAL PUBLIC COMPANY LIMITED	Industrials	Packaging
5	NEP	NEP REALTY AND INDUSTRY PUBLIC COMPANY LIMITED	Industrials	Packaging
6	PTL	POLYPLEX (THAILAND) PUBLIC COMPANY LIMITED	Industrials	Packaging
7	SPACK	S. PACK & PRINT PUBLIC COMPANY LIMITED	Industrials	Packaging
8	TCOAT	THAI COATING INDUSTRIAL PUBLIC COMPANY LIMITED	Industrials	Packaging
9	TFI	THAI FILM INDUSTRIES PUBLIC COMPANY LIMITED	Industrials	Packaging
10	THIP	THANTAWAN INDUSTRY PUBLIC COMPANY LIMITED	Industrials	Packaging
11	TMD	THAI METAL DRUM MANUFACTURING PUBLIC COMPANY LIMITED	Industrials	Packaging
12	TOPP	THAI O.P.P. PUBLIC COMPANY LIMITED	Industrials	Packaging
13	TPP	THAI PACKAGING & PRINTING PUBLIC COMPANY LIMITED	Industrials	Packaging
14	GC	GLOBAL CONNECTIONS PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
15	PATO	PATO CHEMICAL INDUSTRY PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
16	PTTCH	PTT CHEMICAL PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
17	TCB	THAI CARBON BLACK PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
18	TCCC	THAI CENTRAL CHEMICAL PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
19	TPC	THAI PLASTIC AND CHEMICALS PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
20	UP	UNION PLASTIC PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
21	VNT	VINYTHAI PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
22	WG	WHITE GROUP PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
23	YCI	YONG THAI PUBLIC COMPANY LIMITED	Industrials	Petrochemicals & Chemicals
24	AH	AAPICO HITECH PUBLIC COMPANY	Industrials	Automotive

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		LIMITED		
25	BAT-3K	THAI STORAGE BATTERY PUBLIC COMPANY LIMITED	Industrials	Automotive
26	CWT	CHAI WATANA TANNERY GROUP PUBLIC COMPANY LIMITED	Industrials	Automotive
27	KMART	KARMARTS PUBLIC COMPANY LIMITED	Industrials	Automotive
28	EASON	EASON PAINT PUBLIC COMPANY LIMITED	Industrials	Automotive
29	GYT	GOODYEAR (THAILAND) PUBLIC COMPANY LIMITED	Industrials	Automotive
30	HFT	HWA FONG RUBBER (THAILAND) PUBLIC COMPANY LIMITED	Industrials	Automotive
31	IHL	INTERHIDES PUBLIC COMPANY LIMITED	Industrials	Automotive
32	IRC	INOUE RUBBER (THAILAND) PUBLIC COMPANY LIMITED	Industrials	Automotive
33	SAT	SOMBOON ADVANCE TECHNOLOGY PUBLIC COMPANY LIMITED	Industrials	Automotive
34	SMC	SMC POWER PUBLIC COMPANY LIMITED	Industrials	Automotive
35	SPG	THE SIAM PAN GROUP PUBLIC COMPANY LIMITED	Industrials	Automotive
36	SPSU	S.P. SUZUKI PUBLIC COMPANY LIMITED	Industrials	Automotive
37	STANLY	THAI STANLEY ELECTRIC PUBLIC COMPANY LIMITED	Industrials	Automotive
38	TKT	T.KRUNGTHAI INDUSTRIES PUBLIC COMPANY LIMITED	Industrials	Automotive
39	TNPC	THAI NAM PLASTIC PUBLIC COMPANY LIMITED	Industrials	Automotive
40	TRU	THAI RUNG UNION CAR PUBLIC COMPANY LIMITED	Industrials	Automotive
41	TSC	THAI STEEL CABLE PUBLIC COMPANY LIMITED	Industrials	Automotive
42	YNP	YARNAPUND PUBLIC COMPANY LIMITED	Industrials	Automotive
43	AMC	ASIA METAL PUBLIC COMPANY LIMITED	Industrials	Steel
44	CITY	CITY STEEL PUBLIC COMPANY LIMITED	Industrials	Steel
45	CSP	CSP STEEL CENTER PUBLIC COMPANY LIMITED	Industrials	Steel
46	MAX	MAX METAL CORPORATION PUBLIC COMPANY LIMITED	Industrials	Steel
47	SMIT	SAHAMIT MACHINERY PUBLIC COMPANY LIMITED	Industrials	Steel
48	SNC	SNC FORMER PUBLIC COMPANY LIMITED	Industrials	Industrial Materials & Machinery
49	SSI	SAHAVIRIYA STEEL INDUSTRIES PUBLIC	Industrials	Steel

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		COMPANY LIMITED		
50	SSSC	SIAM STEEL SERVICE CENTER PUBLIC COMPANY LIMITED	Industrials	Steel
51	TGPRO	THAI-GERMAN PRODUCTS PUBLIC COMPANY LIMITED	Industrials	Steel
52	TMT	THAI METAL TRADE PUBLIC COMPANY LIMITED	Industrials	Steel
53	TUCC	THAI UNIQUE COIL CENTER PUBLIC COMPANY LIMITED	Industrials	Steel
54	TYCN	TYCOONS WORLDWIDE GROUP (THAILAND) PUBLIC CO.,LTD.	Industrials	Steel
55	BSBM	BANGSAPHAN BARMILL PUBLIC COMPANY LIMITED	Industrials	Steel
56	CEN	CAPITAL ENGINEERING NETWORK PUBLIC COMPANY LIMITED	Industrials	Steel
57	MCS	M.C.S.STEEL PUBLIC COMPANY LIMITED	Industrials	Steel
58	PAP	PACIFIC PIPE PUBLIC COMPANY LIMITED	Industrials	Steel
59	TIW	THAILAND IRON WORKS PUBLIC COMPANY LIMITED	Industrials	Steel
60	TWP	THAI WIRE PRODUCTS PUBLIC COMPANY LIMITED	Industrials	Steel
61	RICH	RICH ASIA STEEL PUBLIC COMPANY LIMITED	Industrials	Steel
62	SAM	SAMCHAI STEEL INDUSTRIES PUBLIC COMPANY LIMITED	Industrials	Steel
63	CTW	CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED	Industrials	Industrial Materials & Machinery
64	FMT	FURUKAWA METAL (THAILAND) PUBLIC COMPANY LIMITED	Industrials	Industrial Materials & Machinery
65	KKC	KULTHORN KIRBY PUBLIC COMPANY LIMITED	Industrials	Industrial Materials & Machinery
66	PATKL	PATKOL PUBLIC COMPANY LIMITED	Industrials	Industrial Materials & Machinery
67	TCJ	T.C.J. ASIA PUBLIC COMPANY LIMITED	Industrials	Industrial Materials & Machinery
68	ASIA	ASIA HOTEL PUBLIC COMPANY LIMITED	Services	Tourism & Leisure
69	CSR	CITY SPORTS AND RECREATION PUBLIC COMPANY LIMITED	Services	Tourism & Leisure
70	ERAWAN	THE ERAWAN GROUP PUBLIC COMPANY LIMITED	Services	Tourism & Leisure
71	LRH	LAGUNA RESORTS & HOTELS PUBLIC COMPANY LIMITED	Services	Tourism & Leisure
72	MANRIN	THE MANDARIN HOTEL PUBLIC COMPANY LIMITED	Services	Tourism & Leisure
73	MME	MIDA-MEDALIST ENTERTAINMENT	Services	Tourism & Leisure

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		PUBLIC COMPANY LIMITED		
74	OHTL	OHTL PUBLIC COMPANY LIMITED	Services	Tourism & Leisure
75	ROH	ROYAL ORCHID HOTEL (THAILAND) PUBLIC COMPANY LIMITED	Services	Tourism & Leisure
76	BGH	BANGKOK DUSIT MEDICAL SERVICES PUBLIC COMPANY LIMITED	Services	Health Care Services
77	BH	BUMRUNGRAD HOSPITAL PUBLIC COMPANY LIMITED	Services	Health Care Services
78	KDH	KRUNGDHON HOSPITAL PUBLIC COMPANY LIMITED	Services	Health Care Services
79	M-CHAI	MAHACHAI HOSPITAL PUBLIC COMPANY LIMITED	Services	Health Care Services
80	NEW	WATTANA KARNAET PUBLIC COMPANY LIMITED	Services	Health Care Services
81	NTV	NONHAVEJ HOSPITAL PUBLIC COMPANY LIMITED	Services	Health Care Services
82	RAM	RAMKHAMHAENG HOSPITAL PUBLIC COMPANY LIMITED	Services	Health Care Services
83	SKR	SIKARIN PUBLIC COMPANY LIMITED	Services	Health Care Services
84	SVH	SAMITVEJ PUBLIC COMPANY LIMITED	Services	Health Care Services
85	VIBHA	VIBHAVADI MEDICAL CENTER PUBLIC COMPANY LIMITED	Services	Health Care Services
86	ASIMAR	ASIAN MARINE SERVICES PUBLIC COMPANY LIMITED	Services	Transportation & Logistics
87	BTC	BANGPAKONG TERMINAL PUBLIC COMPANY LIMITED	Services	Transportation & Logistics
88	TSTE	THAI SUGAR TERMINAL PUBLIC COMPANY LIMITED	Services	Transportation & Logistics
89	UST	UNITED STANDARD TERMINAL PUBLIC COMPANY LIMITED	Services	Transportation & Logistics
90	BJC	BERLI JUCKER PUBLIC COMPANY LIMITED	Services	Commerce
91	CPALL	CP ALL PUBLIC COMPANY LIMITED	Services	Commerce
92	HMPRO	HOME PRODUCT CENTER PUBLIC COMPANY LIMITED	Services	Commerce
93	IT	IT CITY PUBLIC COMPANY LIMITED	Services	Commerce
94	LOXLEY	LOXLEY PUBLIC COMPANY LIMITED	Services	Commerce
95	ROBINS	ROBINSON DEPARTMENT STORE PUBLIC COMPANY LIMITED	Services	Commerce
96	SINGER	SINGER THAILAND PUBLIC COMPANY LIMITED	Services	Commerce
97	SPC	SAHA PATHANAPIBUL PUBLIC COMPANY LIMITED	Services	Commerce
98	SPI	SAHA PATHANA	Services	Commerce

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		INTER-HOLDING PUBLIC COMPANY LIMITED		
99	APRINT	AMARIN PRINTING AND PUBLISHING PUBLIC COMPANY LIMITED	Services	Media & Publishing
100	EPCO	EASTERN PRINTING PUBLIC COMPANY LIMITED	Services	Media & Publishing
101	GRAMMY	GMM GRAMMY PUBLIC COMPANY LIMITED	Services	Media & Publishing
102	MAJOR	MAJOR CINEPLEX GROUP PUBLIC COMPANY LIMITED	Services	Media & Publishing
103	MATCH	MATCHING MAXIMIZE SOLUTION PUBLIC COMPANY LIMITED	Services	Media & Publishing
104	MATI	MATICHON PUBLIC COMPANY LIMITED	Services	Media & Publishing
105	MCOT	MCOT PUBLIC COMPANY LIMITED	Services	Media & Publishing
106	NMG	NATION MULTIMEDIA GROUP PUBLIC COMPANY LIMITED	Services	Media & Publishing
107	P-FCB	PRAKIT HOLDINGS PUBLIC COMPANY LIMITED	Services	Media & Publishing
108	PSAAP	PONGSAAP PUBLIC COMPANY LIMITED	Services	Media & Publishing
109	RS	RS PUBLIC COMPANY LIMITED	Services	Media & Publishing
110	SE-ED	SE-EDUCATION PUBLIC COMPANY LIMITED	Services	Media & Publishing
111	SPORT	SIAM SPORT SYNDICATE PUBLIC COMPANY LIMITED	Services	Media & Publishing
112	TBSP	THAI BRITISH SECURITY PRINTING PUBLIC COMPANY LIMITED	Services	Media & Publishing
113	TKS	T.K.S. TECHNOLOGIES PUBLIC COMPANY LIMITED	Services	Media & Publishing
114	WAVE	WAVE ENTERTAINMENT PUBLIC COMPANY LIMITED	Services	Media & Publishing
115	WORK	WORKPOINT ENTERTAINMENT PUBLIC COMPANY LIMITED	Services	Media & Publishing
116	FANCY	FANCY WOOD INDUSTRIES PUBLIC COMPANY LIMITED	Consumer Products	Home & Office Products
117	MODERN	MODERNFORM GROUP PUBLIC COMPANY LIMITED	Consumer Products	Home & Office Products
118	OGC	OCEAN GLASS PUBLIC COMPANY LIMITED	Consumer Products	Home & Office Products
119	ROCK	ROCKWORTH PUBLIC COMPANY LIMITED	Consumer Products	Home & Office Products
120	SIAM	SIAM STEEL INTERNATIONAL PUBLIC COMPANY LIMITED	Consumer Products	Home & Office Products
121	SITHAI	SRITHAI	Consumer Products	Home & Office

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		SUPERWARE PUBLIC COMPANY LIMITED		Products
122	OCC	O.C.C. PUBLIC COMPANY LIMITED	Consumer Products	Personal Products & Pharmaceuticals
123	S & J	S & J INTERNATIONAL ENTERPRISES PUBLIC COMPANY LIMITED	Consumer Products	Personal Products & Pharmaceuticals
124	AFC	ASIA FIBER PUBLIC COMPANY LIMITED	Consumer Products	Fashion
125	BNC	THE BANGKOK NYLON PUBLIC COMPANY LIMITED	Consumer Products	Fashion
126	CPH	CASTLE PEAK HOLDINGS PUBLIC COMPANY LIMITED	Consumer Products	Fashion
127	CPL	C.P.L. GROUP PUBLIC COMPANY LIMITED	Consumer Products	Fashion
128	ICC	I.C.C. INTERNATIONAL PUBLIC COMPANY LIMITED	Consumer Products	Fashion
129	LTX	LUCKYTEX (THAILAND) PUBLIC COMPANY LIMITED	Consumer Products	Fashion
130	NC	NEWCITY (BANGKOK) PUBLIC COMPANY LIMITED	Consumer Products	Fashion
131	PAF	PAN ASIA FOOTWEAR PUBLIC COMPANY LIMITED	Consumer Products	Fashion
132	PG	PEOPLE'S GARMENT PUBLIC COMPANY LIMITED	Consumer Products	Fashion
133	TNL	THANULUX PUBLIC COMPANY LIMITED	Consumer Products	Fashion
134	TPCORP	TEXTILE PRESTIGE PUBLIC COMPANY LIMITED	Consumer Products	Fashion
135	UPF	UNION PIONEER PUBLIC COMPANY LIMITED	Consumer Products	Fashion
136	WACOAL	THAI WACOAL PUBLIC COMPANY LIMITED	Consumer Products	Fashion
137	CCET	CAL-COMP ELECTRONICS (THAILAND) PUBLIC CO., LTD.	Technology	Electronic Components
138	DELTA	DELTA ELECTRONICS (THAILAND) PUBLIC COMPANY LIMITED	Technology	Electronic Components
139	EIC	ELECTRONICS INDUSTRY PUBLIC COMPANY LIMITED	Technology	Electronic Components
140	KCE	KCE ELECTRONICS PUBLIC COMPANY LIMITED	Technology	Electronic Components
141	METCO	MURAMOTO ELECTRON (THAILAND) PUBLIC COMPANY LIMITED	Technology	Electronic Components
142	TEAM	TEAM PRECISION PUBLIC COMPANY LIMITED	Technology	Electronic Components
143	ADVANC	ADVANCED INFO SERVICE PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
144	AIT	ADVANCED INFORMATION	Technology	Information & Communication Technology

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		TECHNOLOGY PUBLIC CO.,LTD.		
145	BLISS	BLISS-TEL PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
146	CSL	CS LOXINFO PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
147	FORTH	FORTH CORPORATION-PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
148	IEC	THE INTERNATIONAL ENGINEERING PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
149	JAS	JASMINE INTERNATIONAL PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
150	JTS	JASMINE TELECOM SYSTEMS PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
151	MFEC	MFEC PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
152	MSC	METRO SYSTEMS CORPORATION PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
153	PT	PREMIER TECHNOLOGY PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
154	SAMART	SAMART CORPORATION PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
155	SAMTEL	SAMART TELCOMS PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
156	SIM	SAMART I-MOBILE PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
157	SIS	SIS DISTRIBUTION (THAILAND) PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
158	SVOA	SVOA PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
159	THCOM	THAICOM PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
160	TRUE	TRUE CORPORATION PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
161	TT&T	TT&T PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
162	TWZ	TWZ CORPORATION PUBLIC COMPANY LIMITED	Technology	Information & Communication Technology
163	ASIAN	ASIAN SEAFOODS COLDSTORAGE PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
164	CHOTI	KIANG HUAT SEA GULL TRADING FROZEN FOOD PUBLIC CO., LTD.	Agro & Food Industry	Agribusiness
165	CM	CHIANGMAI FROZEN FOODS PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
166	CPI	CHUMPORN PALM OIL INDUSTRY PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness

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167	EE	ETERNAL ENERGY PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
168	GFPT	GFPT PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
169	LEE	LEE FEED MILL PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
170	PPC	PAKFOOD PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
171	STA	SRI TRANG AGRO-INDUSTRY PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
172	TLUXE	THAILUXE ENTERPRISES PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
173	TRUBB	THAI RUBBER LATEX CORPORATION (THAILAND) PUBLIC CO.,LTD.	Agro & Food Industry	Agribusiness
174	UPOIC	UNITED PALM OIL INDUSTRY PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
175	UVAN	UNIVANICH PALM OIL PUBLIC COMPANY LIMITED	Agro & Food Industry	Agribusiness
176	APURE	AGRIPURE HOLDINGS PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
177	CFRESH	SEAFRESH INDUSTRY PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
178	CPF	CHAROEN POKPHAND FOODS PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
179	F&D	FOOD AND DRINKS PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
180	HTC	HAAD THIP PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
181	LST	LAM SOON (THAILAND) PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
182	MALEE	MALEE SAMPRAN PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
183	MINT	MINOR INTERNATIONAL PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
184	OISHI	OISHI GROUP PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
185	PB	PRESIDENT BAKERY PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
186	PR	PRESIDENT RICE PRODUCTS PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
187	S&P	S & P SYNDICATE PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
188	SAUCE	THAITHEPAROS PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
189	SSC	SERM SUK PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
190	SSF	SURAPON FOODS PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage

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191	TC	TROPICAL CANNING (THAILAND) PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
192	TF	THAI PRESIDENT FOODS PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
193	TIPCO	TIPCO FOODS PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
194	TVO	THAI VEGETABLE OIL PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
195	TWFP	THAI WAH FOOD PRODUCTS PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
196	UFM	UNITED FLOUR MILL PUBLIC COMPANY LIMITED	Agro & Food Industry	Food and Beverage
197	AI	ASIAN INSULATORS PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
198	AKR	EKARAT ENGINEERING PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
199	BANPU	BANPU PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
200	BCP	THE BANGCHAK PETROLEUM PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
201	IRPC	IRPC PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
202	LANNA	THE LANNA RESOURCES PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
203	PTT	PTT PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
204	RPC	RAYONG PURIFIER PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
205	SCG	SAHACOGEN (CHONBURI) PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
206	SOLAR	SOLARTRON PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
207	SUSCO	SUSCO PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
208	TCC	THAI CAPITAL CORPORATION PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
209	TOP	THAI OIL PUBLIC COMPANY LIMITED	Resources	Energy & Utilities
210	PDI	PADAENG INDUSTRY PUBLIC COMPANY LIMITED	Resources	Mining
211	THL	TONGKAH HARBOUR PUBLIC COMPANY LIMITED	Resources	Mining
212	AMATA	AMATA CORPORATION PUBLIC COMPANY LIMITED	Property & Construction	Property Development
213	AP	ASIAN PROPERTY DEVELOPMENT PUBLIC COMPANY LIMITED	Property & Construction	Property Development
214	BLAND	BANGKOK LAND PUBLIC COMPANY LIMITED	Property & Construction	Property Development
215	CK	CH. KARNCHANG	Property &	Property

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		PUBLIC COMPANY LIMITED	Construction	Development
216	ESTAR	EASTERN STAR REAL ESTATE PUBLIC COMPANY LIMITED	Property & Construction	Property Development
217	EVER	EVERLAND PUBLIC COMPANY LIMITED	Property & Construction	Property Development
218	GOLD	GOLDEN LAND PROPERTY DEVELOPMENT PUBLIC COMPANY LIMITED	Property & Construction	Property Development
219	ITD	ITALIAN-THAI DEVELOPMENT PUBLIC COMPANY LIMITED	Property & Construction	Property Development
220	KC	K.C. PROPERTY PUBLIC COMPANY LIMITED	Property & Construction	Property Development
221	LH	LAND AND HOUSES PUBLIC COMPANY LIMITED	Property & Construction	Property Development
222	METRO	METROSTAR PROPERTY PUBLIC COMPANY LIMITED	Property & Construction	Property Development
223	MK	M.K. REAL ESTATE DEVELOPMENT PUBLIC COMPANY LIMITED	Property & Construction	Property Development
224	N-PARK	NATURAL PARK PUBLIC COMPANY LIMITED	Property & Construction	Property Development
225	NCH	N. C. HOUSING PUBLIC COMPANY LIMITED	Property & Construction	Property Development
226	NNCL	NAVANAKORN PUBLIC COMPANY LIMITED	Property & Construction	Property Development
227	NWR	NAWARAT PATANAKARN PUBLIC COMPANY LIMITED	Property & Construction	Property Development
228	PAE	PAE (THAILAND) PUBLIC COMPANY LIMITED	Property & Construction	Property Development
229	PF	PROPERTY PERFECT PUBLIC COMPANY LIMITED	Property & Construction	Property Development
230	PREB	PRE-BUILT PUBLIC COMPANY LIMITED	Property & Construction	Property Development
231	PRIN	PRINSIRI PUBLIC COMPANY LIMITED	Property & Construction	Property Development
232	PS	PRUKSA REAL ESTATE PUBLIC COMPANY LIMITED	Property & Construction	Property Development
233	QH	QUALITY HOUSES PUBLIC COMPANY LIMITED	Property & Construction	Property Development
234	ROJNA	ROJANA INDUSTRIAL PARK PUBLIC COMPANY LIMITED	Property & Construction	Property Development
235	SC	SC ASSET CORPORATION PUBLIC COMPANY LIMITED	Property & Construction	Property Development
236	SIRI	SANSIRI PUBLIC COMPANY LIMITED	Property & Construction	Property Development
237	SPALI	SUPALAI PUBLIC COMPANY LIMITED	Property & Construction	Property Development
238	SYNTEC	SYNTEC CONSTRUCTION PUBLIC COMPANY	Property & Construction	Property Development

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		LIMITED		
239	UNIQ	UNIQUE ENGINEERING AND CONSTRUCTION PUBLIC COMPANY LIMITED	Property & Construction	Property Development
240	UV	UNIVENTURES PUBLIC COMPANY LIMITED	Property & Construction	Property Development
241	CCP	CHONBURI CONCRETE PRODUCT PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
242	DCC	DYNASTY CERAMIC PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
243	DRT	DIAMOND BUILDING PRODUCTS PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
244	GEN	GENERAL ENGINEERING PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
245	KWH	WIJK & HOEGLUND PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
246	Q-CON	QUALITY CONSTRUCTION PRODUCTS PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
247	SCC	THE SIAM CEMENT PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
248	SCCC	SIAM CITY CEMENT PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
249	SCP	SOUTHERN CONCRETE PILE PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
250	STPI	STP&I PUBLIC COMPANY LIMITED	Property & Construction	Property Development
251	SUPER	SUPERBLOCK PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
252	TASCO	TIPCO ASPHALT PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
253	TCMC	THAILAND CARPET MANUFACTURING PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
254	VNG	VANACHAI GROUP PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials
255	RCI	THE ROYAL CERAMIC INDUSTRY PUBLIC COMPANY LIMITED	Property & Construction	Construction Materials

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