DECLARATION

I hereby declare that the project is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at USM or any other institutions.

(Signature)

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DATE : *8 JULY 2009*

Does Shareholder Concentration Matter in Small and Medium Enterprises (SMEs)?

Empirical Evidence from SMEs in manufacturing sector in

Northern Corridor Economic Region (NCER).

Lim Kent Soon

Research report in partial fulfillment of the requirements for the degree of

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TABLE OF CONTENTS

Chapter 5   DISCUSSIONS AND CONCLUSIONS

LIST OF TABLES

LIST OF FIGURES

ABSTRAK (MALAY)

Memandangkan peranan penting yang dimainkan oleh Perusahaan Kecil and Sederhana (PKS) dalam pertumbuhan ekonomi negara, satu daya saingan yang kuat diperlukan oleh industri ini demi menjayakan Wilayah Ekonomi Koridor Utara (NCER). Penyelidikan ini mengkaji pengaruh pemusatan pemegang saham, masukan dan keluaran kewangan terhadap kecekapan operasi relatif dalam penggunaan sunber kewangan (kecekapan kewangan) bagi PKS yang terlibat dalam sektor pengeluaran di NCER dalam tahun kewangan 2007. Nilai kecekapan kewangan dijanakan oleh Analisis Pembungkusan Data (DEA). DEA mendapati bahawa hanya 27 buah PKS mentakuk kecekapan 100% and kebanyakan daripadanya adalah dari Pulau Pinang dan Perak. Penyelidikan ini menyampaikan tiga penemuan yang penting; pertama, pemusatan pemegang saham memang mempengaruhi kecekapan kewangan bagi PKS yang terlibat dalam sektor pengeluaran di NCER; kedua, masukkan kewangan yang rendah dan keluaran kewangan yang tinggi menghasilkan kecekapan kewangan yang tinggi bagi PKS yang terlibat dalam sektor pengeluaran perlu memberi tumpuan terhadap pengurusan; ketiga, taburan kecekapan kewangan adalah tidak setara antara ketiga-tiga negeri di NCER. Penemuan yang ketiga adalah sejajar dengan kes Korea yang dilaporkan oleh Yang (2006).

ABSTRACT

Given the important role of SMEs as a growth factor in local economy, ensuring a strong and competitive development for this industry segment has become a key concern in making the Northern Corridor Economic Region (NCER) a success. This study investigates the effects of shareholder concentration, together with financial inputs and outputs on the relative operating efficiency in utilization of financial resource (financial efficiency) for SMEs in manufacturing sector in NCER for the financial year 2007. The financial efficiency is derived from Data Envelopment Analysis (DEA). DEA shows that only 27 SMEs scored 100% efficiency, and they are mostly from Penang and Perak. This study delivers three important findings: first, shareholder concentration does affect the financial efficiency for SMEs involved in manufacturing sector in NCER; second, lower financial inputs and higher financial outputs produce higher financial efficiency SMEs involved in manufacturing sector in NCER; third, the distribution of financial efficiency is not balance across the three states in NCER. The last point is consistent with the Korean case reported in Yang (2006).

Chapter 1

INTRODUCTION

1.1   Background of Study

Small and medium enterprises (SMEs) have been widely recognized as the backbone of

Malaysian economic. This industry segment has started to gain attention among policymakers,

large corporations and the research community for their role in providing tax revenue, output,

employment and product diversity. Since SMEs represent the largest percentage of

establishments in Malaysia at 99.2%, the contribution of SMEs to the Malaysia economy

cannot be taken lightly. In terms of economic contribution, SMEs contribute 32% to Gross

Domestic Products (GDP), 51.5% to total work force and 19% to total exports.

Figure 1.1 shows the services sector was the highest contributor to GDP, with 19.7%,

followed by manufacturing (8.4%) and primary agriculture (3.9%). Services sector was also

leading the contribution to employment, with 33.9%, followed by manufacturing (14.5%) and

primary agriculture (3.1%). The major contributor to export was manufacturing sector, with

11%, followed by services (7.9%) and primary agriculture (0.1%).
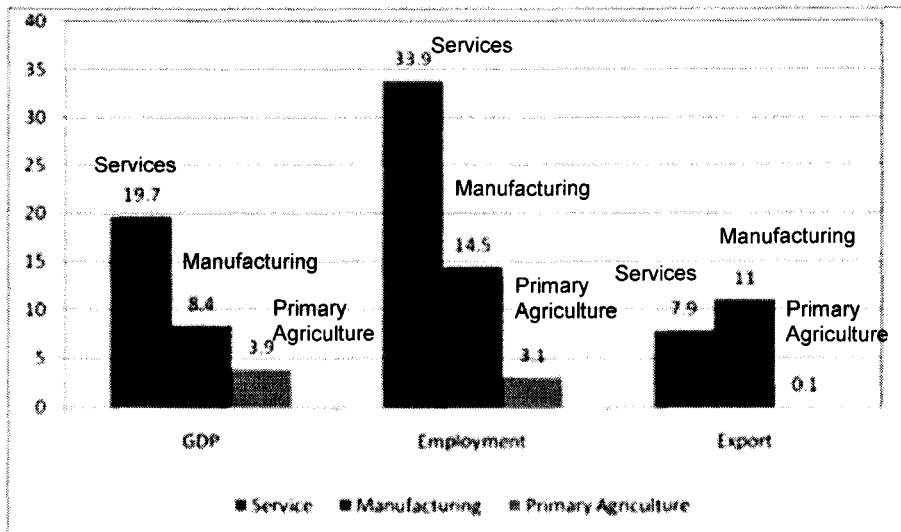
Source : Census of Establishments and Enterprises 2005, Department of Statistic, Malaysia

Figure 1.1 Contribution of SMEs to GDP, Employment and Export by Sector, 2005

Northern Corridor Economic Region (NCER) was launched by Malaysia former Prime Minister Datuk Seri Abdullah Ahmad Badawi in Alor Setar, Kedah on Monday, July 30, 2007. NCER encompasses the states of Perlis, Kedah, Penang and the north of Perak. It is a government initiative to accelerate economic growth and elevate income levels in Perlis, Kedah, Penang and northern Perak. Its main focuses are to improve and expand the agricultural, manufacturing, tourism and logistics sectors in the region.

The development blueprint for NCER will span from 2007 to 2025 and draw about RM177 billion in investments, involving programmes and projects to enhance human capital, infrastructure, innovation and competitiveness. Out of this RM177 billion, one-third of the sum will be spent by the government, while the remaining two-thirds will be undertaken through Private Finance Initiatives (PFI) and private sector investment. (The Star News, 30 July, 2007).

2

SMEs play an important role in ensuring the success of NCER based on their major contribution to the Malaysia export as shown in Figure 1.1. Among the three major sectors of SMEs, manufacturing sector is consider as the main sector in NCER due to the emerging of Penang as hub of Foreign Direct Investment (FDI), mainly in the electronic industry for the manufacturing sector. In addition, the rest of the states in NCER are started to be given attention by Malaysian government to improve the SMEs in manufacturing sector.

Due to the importance of SMEs in manufacturing sector in NCER, the Malaysian government has encouraged more entrepreneurs to venture into manufacturing industry by allocating more funds for SMEs loan. The potential in SMEs in manufacturing sector is also a key driver for the Malaysian government to launch the NCER for the development of Perlis, Kedah, Penang and northern of Perak.

1.1.1 The Concept of Small and Medium Enterprises (SMEs)

A common definition of SMEs is adopted by Malaysia in order to facilitate identification of SMEs in the various sectors. With this, the government is able to formulate effective development of policies, support programs and also facilitates provision of technical and financial assistance. As shown in Table 1.1, an enterprise is considered an SME in each of the respective sectors based on the annual sales turnover or number of full-time employees.

Table 1.1 *Definition of SMEs by Size*

	Micro-enterprise	Small enterprise	Medium enterprise
Manufacturing, Manufacturing-Related Services and Agro-based industries	Sales turnover of less than RM250,000 OR full time employess less than 5	Sales turnover between RM250,000 and less than RM10 million OR full time employees between 5 and 50	Sales turnover between RM10 million and RM25 million OR full time employees between 51 and 150
Services, Primary Agriculture and Information & Communication Technology (ICT)	Sales turnover of less than RM200,000 OR full time employees less than 5	Sales turnover between RM200,000 and less than RM1 million OR full time employees between 5 and 19	Sales turnover between RM1 million and RM5 million OR full time employees between 20 and 50

Source: SMIDEC website (www.smidec.gov.my)

Table 1.1 clearly shows that SMEs are divided into two major groups based on their sectors. The two major groups are "Manufacturing, Manufacturing-Related Services and Agro-based industries" and "Services, Primary Agriculture and Information & Communication Technology (ICT)". Both groups of sectors have their own definition of SMEs.

SMEs in the manufacturing, manufacturing related services and agro-based industries are enterprises with annual sales turnover more than RM250 thousand and not exceeding RM25 million or with full-time employees more than 5 and not exceeding 150, while SMEs in the services, primary agriculture and Information & Communication Technology (ICT) sectors are enterprises with annual sales turnover more than RM200 thousand and not exceeding RM5 million or with full-time employees more than 5 and not exceeding 50.

1.1.2 Profile of SMEs in Manufacturing Sector

According to Census on Establishments and Enterprise 2005, there are a total of 552,849 companies in operations. A total of 548,307 or 99.2% out of 552,829 companies were defined as SMEs. The services sector comprises of 474,706 SMEs or 86.6%, followed by 39,376 SMEs or 7.2% in the manufacturing sector and 34,225 SMEs or 6.2% in the agriculture sector.

As shown in Figure 1.1 previously, SMEs in manufacturing sector are the highest contributor among the three major sectors in Malaysia export with 11% of the total export of Malaysia. This shows the contribution of SMEs in manufacturing sector must not be taken lightly. This is especially true for SMEs in manufacturing sector.
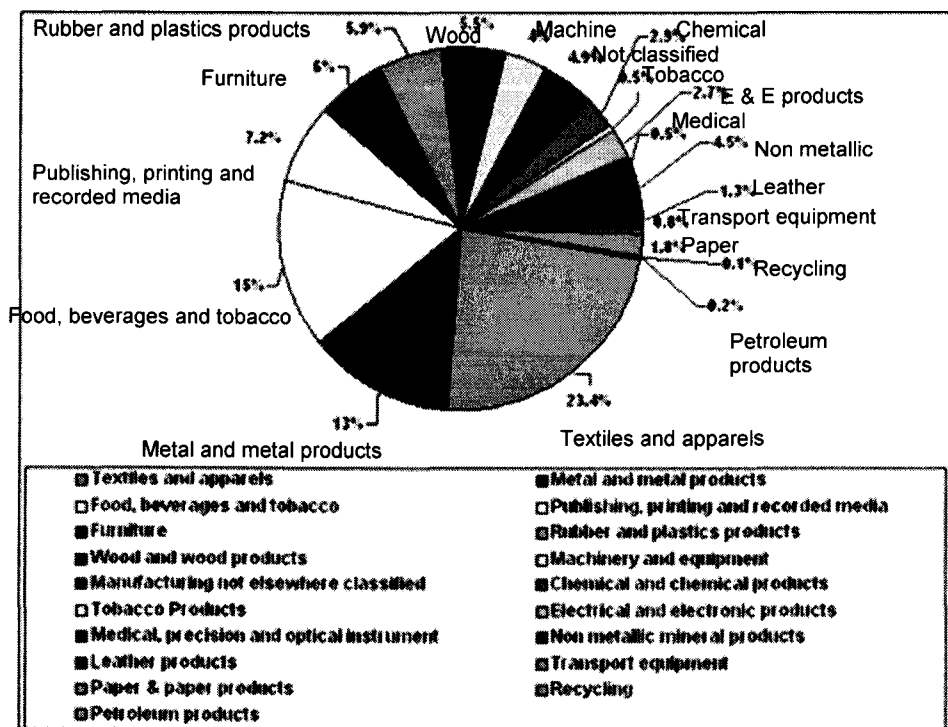
Source: Census of Establishments and Enterprises 2005, Department of Statistic, Malaysia

Figure 1.2 Distribution of SMEs in Manufacturing Sector, 2005

Figure 1.2 shows the distribution of SMEs in the manufacturing sector for the year 2005. Within manufacturing sector itself, there were 19 different sub-sectors. The three largest sub-sectors (above 10%) were *textiles and apparels* at 23.4%, followed by *food and beverages* (15.0%) and *metal and metal products* (13.0%). The rest of the sub-sectors were *paper and recorded media* (7.2%), *furniture* (6%), *rubber and plastics products* (5.9%), *wood and wood products* (5.5%), *machinery and equipment* (4%), *chemical and chemical products* (2.9%), *tobacco products* (0.5%), *electrical and electronic products* (2.7%), *medical, precision and optical instrument* (0.5%), *non-metallic mineral products* (4.5%), *leather products* (1.3%), *transport equipment* (0.8%), *paper and paper products* (1.8%), *recycling* (0.1%), *petroleum products* (0.2%) and *manufacturing not elsewhere classified* (4.9%).

1.1.3   The Concept of Northern Corridor Economic Region (NCER)

The visions of the NCER development include increase the agricultural exports from RM32bil to RM48 billion by 2012 and develop NCER to be the high-tech electronics hub of the region, expanding from the currently predominant assembly and test activities to higher value added such as Research and Development (R&D), wafer fabrication, chip design and automation design. Other than that, the visions also include improve the infrastructure in NCER by widening the major roads and connecting the monorail to some of the major towns.

The NCER development plan also includes building an inland commercial in Padang Besar, and expanding the Penang International Airport and the Butterworth Container Port. At the same time, Penang and Langkawi airports will be promoted as hubs for budget carriers and

small jets and the double tracking project between Ipoh and Bukit Kayu Hitam, which was proposed some time ago will be implemented as well. In addition, regional and international air links will be expanded to bring more visitors to NCER. The coastal vessel fleets and ferry services will be either expanded or tie-ups with regional ports in Sumatra, Phuket and Myanmar.

Not forgeting the human capital development, the NCER development plan also includes providing vocational training for younger age groups with programmes targeting unemployed youths aged 15 and above, including graduates. The training programmes focused on matching supply with the demands of skills require in the job market. Moreover, an "Adopt a School" programme will be launched with the private sector initiatives to improve the quality of those disadvantaged schools.

In essence, the overall development plan under the NCER initiative targets to increase the region's real Gross Domestic Product (GDP) by 306 percent from RM52.7 bil in 2005 to RM214.1 bil in 2025. Correspondingly, this will increase real GDP per capita from RM8,988 per year in 2005 to RM24,582 in 2025. With the increment of GDP, employment in the region is forecast to increase from 2.43 million in 2005 to 4.0 million in 2025. (The Star News, 30 July, 2007).

1.2   Problem Statement

As Malaysia continues to face the challenges of globalization, the pooling and optimal use of available resources to promote SMEs development become vital in ensuring a resilient and dynamic economy growth. Due to the competitive business environment under globalization and deregulation, SMEs are contending with a number of challenges. They need to struggle under very small margins, tight cash flow, and fast pace of technological changes. In addition, in view of the recent up and down in fuel prices, they also have to face the uncertainties in the costs of production.

The launch of the Northern Corridor Economic Region (NCER), which encompasses the states of Perlis, Kedah, Penang and the north of Perak represents the direction of the government to accelerate economic growth in the north of Peninsular Malaysia. In this regards, ensuring a strong and competitive SMEs development in the northern region thus become a key concern for the policymakers. SMEs can act as an endogenous mechanism in generating domestic-led investment, which is important to provide a catalyst to nurture growth opportunities in the region. To ensure the success of NCER, it is thus essential to identify the strengths and weaknesses of SMEs in the region, especially for SMEs involved in manufacturing sector because manufacturing is the core sector in NCER. Thus, this will help to develop an alert system to detect the signs of fragility in their business to avoid failure under globalization.

Finance is one of the key factors to a successful business. SMEs not only need to have a sound and solid financial structure, they also need to understand the source of capital financing that specifically matched to their needs. However, there is still a large gap about SMEs' efficiency in utilizing financial resources, which can be regarded as SMEs' financial efficiency. The factors that could affect SMEs' financial efficiency need to be emphasized and properly managed in order to achieve higher financial efficiency for SMEs.

There are plenty of researches found that there is a positive effect of ownership concentration on the company performance, but there is no research found to be focusing on the effect of shareholder concentration on the SMEs' financial efficiency. Yang (2006) only studied on financial efficiency but did not include the effect of shareholder concentration. In addition, financial efficiency can be used as a measurement of SMEs performance. Thus, it is interesting to find out the effect of shareholder concentration on SMEs' financial efficiency.

This study investigates the effects of shareholder concentration, together with financial inputs and outputs on the relative operating efficiency in utilization of financial resource for SMEs in Malaysia. The relative operating efficiency or financial effciency is derived from Data Envelopment Analysis (DEA). The focus of this study is on SMEs involved in manufacturing sector and located in the Northern Corridor Economic Region (NCER), which covers four states, comprises Kedah, Penang, Perak, and Perlis in the financial year 2007.

In general, every SMEs need to have a good corporate governance system. Since corporate governance is a multi-faceted subject, the main focus area for this study is on the shareholder concentration. Usually, the ownership and top management in SMEs are overlapped with the

same group of people from the same family and involved in all levels. Thus, conflicts among shareholders in SMEs are reduced and the duration for a decision-making process will be shorter. However, this will also hinder SMEs from getting new ideas from outsiders and more reluctant to proceed with strategic changes. Thus, it is interesting to know whether shareholder concentration affects the financial efficiency of SMEs.

1.3   Research Objectives

The present study aims to gauge the effect of shareholder concentration on the performance of SMEs involved in manufacturing sector in NCER with respect to their relative operating efficiency in channeling financial resources and it is refer as financial efficiency in this study. At the same time, the effects from financial inputs and outputs on financial efficiency are being studied as well. The SMEs in NCER involve in various type of businesses, ranging from manufacturing, financial services, agricultural, mining, wholesale and retail, construction, transportation and more. Hence, it would not be accurate if we were to compare the financial efficiency between SMEs, which are involved in different type of businesses. Thus, this study is mainly focus on the manufacturing sector. The reason of choosing manufacturing sector is due to the recent government encouragement for SMEs to produce more local products and reduce the dependent on the imports from foreign countries. With the recent financial crisis, the role of SMEs is vital in reviving the local economy situation, especially in the manufacturing sector.

1.4   Research Questions

The purpose of this study is to find the answer for three simple questions. First, does shareholder concentration have any effects on financial efficiency of SMEs in manufacturing sector? This is the main focus of this study and it is important for the management of SMEs to manage the shareholder concentration well if it does affect the financial efficiency of SMEs. Second, what are the roles of financial inputs and outputs on financial efficiency of SMEs in manufacturing sector? The answer of this question gives a direction to properly manage the financial inputs and outputs in order to maximize the financial efficiency of SMEs. Third, across states and specifically in manufacturing sector, are the SMEs in NCER performing comparably well in terms of financial efficiency? This issue is more related to policy makers in deciding and fine-tuning the allocation of SMEs funding across different states in NCER.

1.5   Significance of the Study

Finding the answers of the research questions stated in Section 1.4 can benefit a lot of parties, ranging from the government to the private sector. In general, all the parties involved in developing the manufacturing sector SMEs in NCER will be benefited as well.

By knowing the effects of shareholder concentration on financial efficiency of SMEs, government will be able to implement certain policies, which can managed the shareholder concentration of SMEs in such a way that will improve the financial efficiency of SMEs.

Other than the government, any private sector that owns an SME will be able to manage the shareholder concentration internally in the direction of achieving higher financial efficiency.

The knowledge of the effects of financial inputs and outputs on financial efficiency of SMEs will guide the management team of SMEs to achieve higher financial efficiency by managing the financial inputs and outputs in the right direction. This is very important for every SMEs to stay competitive in their business, particularly in manufacturing sector.

It is also important to know whether the SMEs in NCER are performing comparably well in terms of financial efficiency. By knowing this, the policy maker can make a better estimate in distribution of funding to SMEs across the states in NCER. States with less number of high financial efficiency SMEs are likely to be given more attention and more funds can be allocated to improve the financial efficiency of the SMEs.

1.6   Definition of Key Terms

There are several key terms, which are frequently used in this study. The key terms are SMEs, Efficiency, Finance, DEA, NCER and Concentration. The definitions of key terms are stated as below.

- Small and medium enterprises (SMEs) are generally define as enterprises with annual sales turnover between RM200,000 and RM25 million.

- Efficiency is the ratio of output to input.

- Finance is a branch of economics concerned with resources allocation, as well as resources management, acquisition and investment.

- Data Envelopment Analysis (DEA) a frontier efficiency technique to benchmark the relative efficiency of the SMEs.

- Northern Corridor Economic Region (NCER) comprises of four states in the northern region of Peninsular Malaysia; Perlis, Kedah, Penang and the north of Perak, which represents the direction of the government to accelerate economic growth in the north of Peninsular Malaysia.

- The term concentration used in this study mainly focus on shareholder concentration, which represents the proportion of shares owned by the largest shareholder.

1.7   Organization of Remaining Chapters

The rest of this study is organized as follows: Chapter 2 provides a literature review and hypothesis development, Chapter 3 discusses the methodology and reports the process of data compilation. The descriptive statistic, correlation matrix, DEA and regression results are discussed in Chapter 4, and finally Chapter 5 presents the discussions and conclusions for this study.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the concept of financial efficiency and shareholder concentration. Section 2.2 presents the application of frontier efficiency techniques in research on efficiency issues in SMEs, which includes DEA as one of the popular frontier efficiency techniques used by researchers to determine the efficiency levels of SMEs. Section 2.2 also presents the financial input/output used by researchers in DEA and the role played by shareholder or ownership concentration. This follows by section 2.3, which presents the theoretical framework and hypotheses for this study. Finally, section 2.4 summarizes this chapter.

2.2 Review of the literature

Based on my survey, there are only two studies applied frontier efficiency techniques in research on efficiency issues in SMEs, which are Tan and Batra (2003) and Yang (2006). The study by Tan and Batra (2003) covers six emerging countries, which comprises of Colombia, Guatemala, Indonesia, Malaysia, Mexico and Taiwan and investigates the differences between different sizes of manufacturing SMEs in terms of technology, productivity and skills. There is no consistency in size and year for sample taken from each country. In term of year, the

data for Colombia, Indonesia and Mexico are for year 1992 while the data for Guatemala, Malaysia and Taiwan are for year 1999, 1994 and 1986, respectively. In term of sample size, the size varies from the smallest 300 firms for Indonesia and Guatemala, to 56,047 firms for Taiwan.

Tan and Batra (2003) apply a parametric stochastic production frontier (SPF) model, which is one of the five major frontier efficiency techniques. This model was applied on a list of variables, which measure the firms' financial status, production process and workers' quality. Basically, this study found that technical efficiency rises with firm size, but small firms are not inherently inefficient. The investment in new technology, quality control, automation and education and training of workers are common set of factors reported in this study. These factors play an important role in determining the efficiency levels of SMEs across the six emerging markets.

The other study, which applied frontier efficiency techniques in research on efficiency issues in SMEs is conducted by Yang (2006). In this study, he focuses on the case of Korean SMEs regarding the issue of production efficiency across capital and non-capital regions. The sample for this study was 267 Korean SMEs that received government funding, from year 2000 to 2002 and analyses were done on the resource utilization and technical efficient for all the sample.

Yang (2006) applies another frontier efficiency technique, which is DEA. Basically, DEA is a nonparametric input/output analysis and the inputs used in this study are fixed assets,

companies' capital, fund raising (sum of finances), number of employees and other policy funds (sum of other operating funds). The two outputs used are total sales and business profit. Looking at the choice of inputs and outputs by Yang (2006), this clearly shows that his study focuses on SMEs' financial efficiency. From the results of his study, he concludes that large SMEs are relatively more efficient. However, the efficiency level is not balance across various regions and the results also showed that the SMEs in the capital area are relatively more efficient. The channeling of government funds is also related to other important findings in his study.

In terms of shareholding concentration or also known as ownership concentration, Ke and Isaac (2007) discover that ownership concentration has positive relationship with corporate performance. Their study focuses on three years Chinese listed property companies, from year 2000 to 2002 with a total of 137 companies. The ownership concentration is calculated using the proportion number of shares owned by the top 10 largest shareholders as the most significant shareholders. They use the regression test to find the relationship between ownership concentration and company performance, which were measured by earning per share (EPS), return on assets (ROA), sales, debt to asset ratio and growth rate.

In a study on the impact of ownership concentration on company performance in the US and in Central and Eastern Europe (CEE), Bedo and Acs (2007) use the shareholding of block owners, which means the owners with at least 5 percent ownership stake as the measure of ownership concentration. The sample for their study is 500 public corporations, which are the members of the S & P 500 as US sample and 169 public corporations that were member of the BUX (Hungary), WIG (Poland), SIB (Slovenia) and PX (Czech) as the CEE sample. The

financial data for third quarter of 2005 is used for their study. In their study, they divide the shareholders into three groups of largest block holders and they found that the first largest block holders have positive effect on the company performance. As the next largest block holders are included, the effects on company performance become less and even become negative. This is due to the spread of control in corporate decision making which causes the formerly positive effect on performance to become negative. This means that as shareholder concentration decreases, the company performance decreases as well.

Brunninge et. al. (2007) conduct a study on the effects of ownership, board composition and top management teams on strategic change in SMEs using a sample of 2,455 firms of SMEs in Sweden. They divide the ownership structure into two different groups, closely held and non-closely held firms. Closely held firms are defined as owner-managed firms, family business and incorporated partnership while non-closely held firms are the remaining firms other than closely held firms, which commonly managed by investment companies and parent companies. The findings from their study show that the closely held firms exhibit less strategic change compare to those firms with wide spread of ownership structure. However, there are no indications in their study on whether the strategic change in SMEs will have any effects on the company performance.

There is another study conducted by O'Regan et. al (2005), which focuses on the key drivers of decision-making and organizational performance. The identified drivers are ownership, the type and level of decision-making and employee deployment. The sample consisted of 1,000 small and medium sized UK electronics and engineering firms and questionnaires were sent to the 1,000 SMEs. However, it was found that 198 firms did not meet the size criterion, had

17

ceased operation or were not contactable. From the 802 SMEs left, 207 completed and usable questionnaires were received and representing a response rate of 26 per cent.

O'Regan et .al (2005) classified the ownership structure of the SMEs as leaders or laggards dependant of their level of profitability, measured by gross profit/loss per full time employee. The levels of decision-making were classified based on the formality of communications and job descriptions. The overall of the study findings indicate that leader type firms generate significant profits, while laggard type firms have much higher number of employees and tend to have lower level of profitability. The findings also indicate that leaders firms tend to be less formal in their communication activities and job descriptions, with leaders have higher level of empowerment with greater involvement by top management in key issues. However, O'Regan et .al (2005) did not include the ownership concentration as one of the variables in their study.

In a study by Becchetti and Santoro (2001), which focuses on the determinants of SMEs internationalization, found that ownership concentration (technological innovation, size, and age) negatively (positively) affects the creation of sale structures abroad (CSSA) decision and that was after controlling for the effect of access to foreign markets under the form of exports. This means that ownership concentration seems to have two offsetting effects on efficiency. On one hand, ownership concentration increases control group residual claims on firm profits and therefore manager and controlling shareholders have the incentive to monitor more closely on the managerial and firm performance. On the other hand, high ownership concentration reduces financial diversification of the control group, which stimulates technological diversification and thus leads to under investment in risky activities such as

internationalization. As the result, this reduced incentive to risky choices such as internationalization may limit SMEs access to further efficiency gains.

From the literature review discussed, obviously there is a lack of research done on investigating the financial efficiency of SMEs, other than Yang (2006). Although Tan and Batra (2003) focus on efficiency of SMEs, they apply technical efficiency instead of financial efficiency. Both Yang (2006) and Tan and Batra (2003) apply different frontier efficiency technique; Yang (2006) applies DEA while Tan and Batra (2003) apply SPF. Similar to Yang (2006), this study applies DEA as the frontier efficiency technique to derive the financial efficiency for the SMEs. However, some of the inputs used in this study are different from Yang (2006).

Although there are plenty of researches on the effect of ownership concentration on the company performance, there is no research found to be focusing on the effect of shareholder concentration on the SMEs' financial efficiency. Ke and Isaac (2007) measure the Chinese listed company performance by EPS, ROA, sales, debt to asset ratio and growth rate but not using DEA to derive the financial efficiency. However, the calculation of ownership or shareholder concentration based on proportion number of shares owned by largest shareholder is adopted by this study. Most of the researches found that the ownership concentration has positive effect on company performance. Thus, the hypotheses for this study are developed based on the theories gathered from the literature review.

2.3 Theoretical Framework and Hypotheses

From the review of literatures, financial efficiency for each SMEs can be determined by DEA, based on the financial inputs and outputs. Most of the researches also found that shareholder concentration has positive effects on company performance. This study regards company performance as measured by financial efficiency, which can be derived from DEA based on the ratio of financial outputs to financial inputs and relative benchmarking. Based on these theories, a theoretical framework for this study is developed, as shown in Figure 2.1.

Independent Variables   **Dependent Variables**

| Shareholder Concentration | H1 : + → | Financial Efficiency (Derived from DEA) |

Financial Inputs
- Fixed Asset — H2 : -
- Current Asset — H3 : -
- Paid Up Capital — H4 : -

Financial Outputs
- Revenue — H5 : +
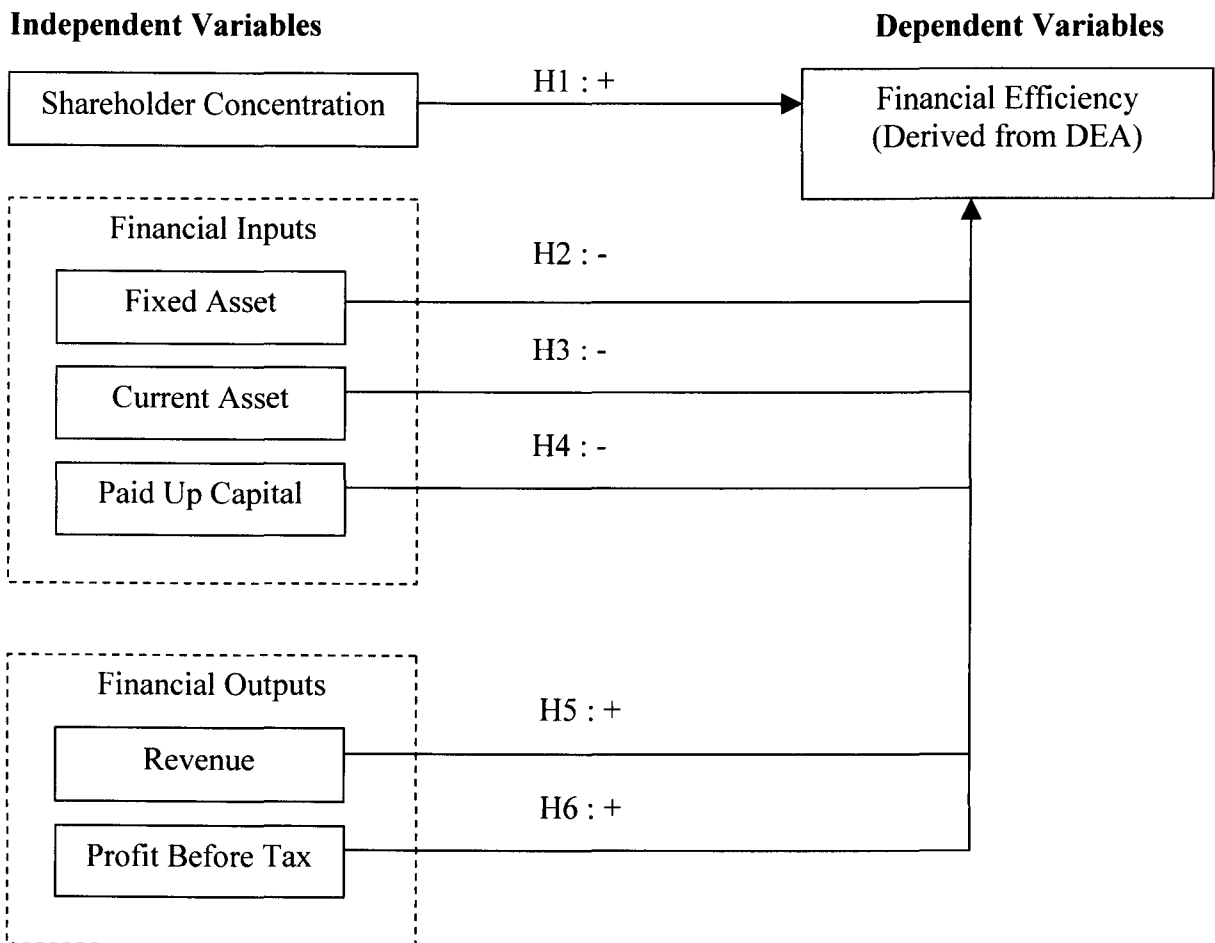- Profit Before Tax — H6 : +

Figure 2.1. Theoretical Framework.

Figure 2.1 shows the relationships between the independent variables and dependent variable that are used to develop the hypotheses for this study. The types of relationships (either positive or negative) are determined based on the theories gathered from literature review.

As there are plenty of researches found that there is a positive effect of ownership concentration on the company performance and company performance can be measured by financial efficiency, the first hypothesis is developed as below:

H1.   There is a positive relationship between shareholder concentration and financial efficiency for SMEs in NCER, which are involved in manufacturing sector.

The financial inputs are adopted from Yang (2006). The financial inputs are used to derive the financial efficiency from DEA. In general, financial efficiency is computed based on the ratio of financial outputs to financial inputs. Thus, all the financial inputs are logically assume to have negative effect on financial efficiency. Hence, the second, third and forth hypotheses are developed as below:

H2.   There is a negative relationship between fixed asset and financial efficiency for SMEs in NCER, which are involved in manufacturing sector.

H3.   There is a negative relationship between current asset and financial efficiency for SMEs in NCER, which are involved in manufacturing sector.

H4.	There is a negative relationship between paid up capital and financial efficiency for SMEs in NCER, which are involved in manufacturing sector.

Similar to financial inputs, the financial outputs are adopted from Yang (2006). The financial outputs are also used to derive the financial efficiency from DEA, based on the ratio of financial outputs to financial inputs. Since financial outputs are the nominators for the ratio, all the financial outputs are logically assume to have positive effect on financial efficiency. Hence, the fifth and sixth hypotheses are developed as below:

H5.	There is a positive relationship between revenue and financial efficiency for SMEs in NCER, which are involved in manufacturing sector.

H6.	There is a positive relationship between profit before tax and financial efficiency for SMEs in NCER, which are involved in manufacturing sector.

## 2.4	Summary

After a brief introduction in the beginning of this chapter, it was followed by the review of literature as in Section 2.2, which gathered the theories related to this study. Section 2.2 presented the lack of research done on investigating the financial efficiency of SMEs, other than Yang (2006). The frontier efficient technique, DEA applied by Yang (2006) is adopted by this study but some of the inputs used in this study are different from Yang (2006). There is no research found to be focusing on the effect of shareholder concentration on the financial efficiency of SMEs involved in manufacturing sector and most of the researches used other

measurements for the company performance. Ke and Isaac (2007) calculation method of ownership or shareholder concentration is adopted by this study. In addition, most of the researches found that the ownership concentration has positive effect on company performance and this theory is adopted for the hypotheses development for this study.

Section 2.3 presented the theoretical framework and hypotheses development for this study by applying all the theories gathered from the literature review. The theories state that DEA is a frontier efficiency technique, which can be used to derive the financial efficiency of the SMEs. Having the financial efficiency as the dependent variable, hypotheses are developed to test the relationship between all the independent variables (shareholder concentration, fixed asset, current asset, paid up capital, revenue and profit) and the financial efficiency. The types of relationships between them are determined based on the theories from literature review. The method of getting the results to test these hypotheses and the overall results are further discussed in the following chapters.

Chapter 3

METHODOLOGY

3.1   Introduction

This chapter presents an overview of the methodological perspective of this study. Section 3.2 describes the research design based on the research questions and theoretical models hypothesized in this study. Sections 3.3 and 3.4 present the population/sample and variables for this study. The procedure for this study is described in Section 3.5. Section 3.6 discusses the data analyses of this study. Finally, Section 3.7 summarizes this chapter.

3.2   Research Design

The research design for this study is quantitative research method using the analysis of the archival information or secondary data. The duration of this study is about 6 months and it involves the collection of data sourced from *"Suruhanjaya Syarikat Malaysia"* (SSM) – *Companies Commission of Malaysia*[1]. The sample for this study is the SMEs located in NCER, which involved in manufacturing sector. There are a total of seven variables involve in this study, which consist of six independent variables and one dependent variable and the patterns of association among the variables will be examined in this study.