

# **Chapter 1**

## **BACKGROUND TO THE STUDY**

### **1.1 INTRODUCTION**

This opening chapter of the thesis gives a general introduction to the research study. The aim of the chapter is to provide a general overview and background of the study, which will serve as the foundations for other chapters that follow, and for the study as a whole. The chapter first provides the research background and elaborates on the subject of the study, that is, the small and medium-sized enterprises (SMEs) in the manufacturing sector. In this sub-section, the increasing significance of SMEs, as well the manufacturing sector, in the Malaysian economy are highlighted. The next sub-section presents the problem statement, followed by the research objectives of this study. Then the rationale for undertaking the research study is explained. The chapter ends with the overall structure of the thesis.

### **1.2 RESEARCH BACKGROUND**

All business entities, large and small, are involved in selling goods and services to their customers. While some of these transactions will be on cash terms, a substantial portion involves credit. Sales made on credit will increase the seller's investment in accounts receivable. The higher is the credit sales volume, the larger would be the proportion of assets tied up in receivables. Thus, the

importance of trade credit management depends upon the degree to which the company sells on credit.

In general, a company would want to collect receivables sooner rather than later as this will enable the company to increase its frequency of reinvestment, or turnover, of its capital. Frequent turnover would not be possible if collections are slow as they deny the company the use of its own capital. And, the longer these accounts receivable remain uncollected, the higher would be the cost of credit to the credit provider. Therefore, best practices in trade credit management are vital for companies to remain resilient and competitive. However, as far as Malaysia is concerned, there is no documented record that gives an account of the trade credit management practices adopted by the businesses. Hence, trade credit management will be the theme of this research study, with SMEs in the manufacturing sector as the research elements. The following sub-sections provide the rationale of selecting the manufacturing SMEs as the subject of this research study.

### **1.2.1 Small and Medium-Sized Enterprises**

The contribution of a dynamic small and medium-sized enterprise sector has long been acknowledged throughout the world. The empirical work by Birch (1979) that highlighted the contribution of small business sector as a major source of net job creation, has raised the interest of policymakers in employment issues.

Though there were questions as to the robustness of the results with respect to their validity across countries, sectors and over time, and several methodological matters, the impact is that Birch's work has drawn attention to the importance of the small business sector which has led to further studies of the subject. Since

then, in the more developed nations, and much later in the developing and less developed countries, the sector has been a vital part of the economy. As small firms constitute the majority of enterprises found in all the industrialised countries, this sector is considered to be an important vehicle for development and growth in the economy. For example, in the European Union, SMEs are economically important with 98 percent of an estimated 19.3 million enterprises defined as SMEs, providing around 65 million jobs which is roughly two thirds of employment within the EU (Lukacs, 2005). In the US economy, the sector represents more than 99.7 percent of all employers, employing more than half of all private sector workers, creating 60 to 80 percent of the net new jobs, and generating half of the private gross domestic product (USSBA Office of Advocacy, 2004). In these mature economies, SMEs have played, and will continue to play, an important role in enhancing their national economic well being. In fact, the SMEs are said to be one of the major players in shaping the economic landscape of the twenty-first century.

Proven to be successful in generating economic activities in the industrialised nations, many other countries reckon the SME sector to be an important means to accelerate the achievement of economic and socio-economic objectives. Hence, in developing countries, interest in the role of SMEs in the national development process has become an important part of policy formulation and planning (Cook, 2001). The Malaysian government, recognising the potential role of SMEs towards enhancing the future prospects of the economy, has provided support in numerous forms to the development of SMEs. The government believes that a viable and vibrant SME sector is necessary in promoting domestic-led growth that will foster the economic endurance in the

more competitive and more dynamic economic climate resulting from globalisation and liberalisation of trade (National SME Development Council, 2004). As a result, over the past couple of decades, SMEs have become an increasingly important part of the economy. The trend is expected to continue and SMEs will proliferate with the intensified government initiatives and commitment towards the development of SMEs. A recent survey by the Department of Statistics (2007) verifies the presence of the SMEs. The 2005 census indicates that 99.2 percent of business establishments in Malaysia are small and medium enterprises. Total employment in the SMEs accounted for more than 5.6 million workers in 2005 (National SME Development Council, 2007b).

Since the SMEs form the bulk of business establishments, it has been a common subject for research. Moreover, as pointed out by Curran and Blackburn (2001), SMEs have an extreme range and form in terms of product and diverse ownership background that provide an interesting subject for research.

### **1.2.2 The Manufacturing Sector and the SMEs**

Manufacturing is defined as the physical or chemical transformation of materials or components into new products, whether the work is performed by power-driven machines or by hand, whether it is done in a factory or in the worker's home, and whether the products are sold at wholesale or retail (Department of Statistics, 2006). The manufacturing sector is being targeted for this study because it is one of the main contributors to gross domestic product (GDP) and employment in Malaysia. This sector, considered to be the prime mover in the

growth of the Malaysian economy, accounts for 32 percent of the country's GDP (Bank Negara Malaysia, 2007) and 76.7 percent of the country's total exports for 2006 (Ministry of International Trade and Industry, 2007). Despite growing at a slower pace in the recent couple of years, the manufacturing sector will continue to be a vital part of the economy.

Over the past few decades, the Malaysian economy has seen radical changes in the industrialisation programme (more details on the industrialisation policy is provided in Chapter 3). The import substitution strategy, started in the 1960s was changed to one of export-oriented industrial policy in the mid-1980s (Gan, Toh, & Mathe, 1995). This transformation has made the manufacturing sector the most important sector that is reflected by its contribution to GDP. This has also encouraged the emergence of more SMEs in certain strategic manufacturing sectors, such as electric and electronic products sub-sector, that provide important linkages to larger international companies (Abdullah, 2002).

With the success of the industrialisation programme, the presence of SMEs in the manufacturing sector has intensified drastically. As an illustration of significance, manufacturing SMEs numbered more than 39,000, representing about 96.5 percent of manufacturing establishments in Malaysia (National SME Development Council, 2007b). As the large majority of the manufacturing establishments in Malaysia are SMEs, their importance to the Malaysian economy is fundamental. SMEs play a significant role in providing the support in a complementary way to the larger enterprises, to enhance the development of a broad-based, globally competitive industrial sector. Their collaboration is needed by large corporations as suppliers or subcontractors and purchasers of products

and in many service capacities. Competent SMEs can be vital to the economic efficiency of large enterprises and they contribute towards improving economic relationships and fostering strong linkages between and within industries, both upstream and downstream in the various sectors.

### **1.3 PROBLEM STATEMENT**

Although the government has scored some notable successes in the development of small and medium-sized industry, much remains to be done. Traditionally, assistance for SMEs in Malaysia has been spread out through a number of different government agencies; hence, past efforts have been uncoordinated and sectional. The development programmes run by these agencies were not synchronised, and often overlapping with two or more agencies running similar training or courses. Further, some of the areas were given more emphasis while other sections were overlooked, and this hinders the managers/owners of SMEs to grasp the overall managerial perspectives. For example, the SMEs were exposed to the various sources of financial assistance but training and guidance to management of the resources were lacking. The setting up of the National SME Development Council recently signifies the government's concern over the matter. The council is to provide the strategic framework for more concerted and coordinated inter-agency support programmes to propel the progress of SMEs.

Despite providing significant value-added contribution to the economy, SMEs continue to wrestle with several issues confronting them. Chief among them, are problems related to working capital management (or rather mismanagement), particularly which involves day-to-day operation of the

business (G. Hall & Young, 1991). Among those frequently quoted include cash and cash flow management (Anvari & Gopal, 1983; Khan, 1982), credit management (Grablowsky, 1976; Howorth, Peel, & Wilson, 2003; Peel, Wilson, & Howorth, 2000), and late payment by credit customers (Howorth & Reber, 2003; Howorth & Wilson, 1998). All these predicaments are in fact interrelated and overlapping. Effective and efficient trade credit practices, for instance, will reduce delay in payment from debtors, which subsequently may improve cash flows of the firm. Hence, credit decision making generally will have an impact on the firm's liquidity position.

But, important though credit management is, it is often neglected and managed apathetically. Howorth & Wilson (1998) describe credit management procedures of small firms that found late payment by their customers to be the greatest problem, as "ad hoc and unsystematic." McMahon & Holmes (1991) restate Grablowsky's (1976) finding of the receivable management of small firms predominantly as "naïve practices." Grablowsky (1976) reveals that approximately 95 percent of firms that sold on credit tended to sell to anyone who wished to buy. Most of these firms had no credit checking procedures and guidelines. This view is supported by the Bolton Committee (1971) that many firms are haphazard in granting credit and slow and irregular in the collection of debts. Although dated, these patterns still appear to hold today. More recent studies show that there are still persisting problems related to trade credit management (Howorth & Reber, 2003; Peel et al., 2000).

Literature on trade credit management so far discussed, focuses on mature economies of developed nations. What is the situation in developing

countries? Do the dire needs to strengthen the national economies motivate the developing nations to promote the expansion of SMEs at the expense of managerial efficiency? Most of the support programmes undertaken by government agencies for the development of SMEs are financial in nature. Non-finance assistance such as training and advisory programmes is lacking or ineffective (Bruch & Hiemenz, 1984). The paucity of research in trade credit management impedes better understanding of the subject. Building on this premise, this research study attempts to answer the following principal research question:

*What are the practices adopted by Malaysian manufacturing SMEs in managing their trade credit; and what relationship, if any, do these practices appear to have on certain selected financial characteristics?*

#### **1.4 RESEARCH OBJECTIVES**

To date, a number of surveys have examined trade credit management practices of small firms in other countries, but no comparable survey has been made of Malaysian companies. Hence, this research aims to achieve the following objectives:

1. To investigate and report findings on the trade credit management practices of Malaysian SMEs in the manufacturing sector.
2. To identify factors (company characteristics) that influence the trade credit management practices of Malaysian SMEs in the manufacturing sector.



## **1.5 SIGNIFICANCE OF RESEARCH**

The rationale for undertaking the study, particularly in Malaysia, is ostensible. A study on credit management of Malaysian SMEs has apparently never been done, or if done, never published. Despite being a significant component of the working capital of a business operation, and its impact on the liquidity position, hence the company's survival, trade credit management in Malaysia is unexplored. This research study represents an attempt to add to the state of knowledge on trade credit management practices among Malaysian small and medium-sized enterprises in the manufacturing sector. Therefore, research in the local context embracing numerous aspects of SMEs trade credit management is both timely and meaningful.

Presently, in the absence of any comprehensive report on contemporary trade credit management practices locally, Malaysian businesses tend to carry out their credit activities without any proper guiding principle. Their courses of action are mostly based on intuition or common practice of the business community. Therefore, the profile of trade credit practices and findings on liquidity analysis produced by this study will enable companies to compare the practice of the industry to their own. Accordingly, this would provide a basis for the SMEs to evaluate the effectiveness and suitability of their own trade credit operations. This is an essential prerequisite to promoting a sound credit culture in the Malaysian business practices. In due course, companies are anticipated to implement the credit practice norms of the industry. Hopefully, these norms will evolve to become best practices in trade credit management that will subsequently provide a benchmark that can serve as guidelines to be adopted and implemented by SMEs in Malaysia towards attaining better performance.

In addition, the findings of the research study would be a useful input to policymakers in formulating forward-looking policies and programmes in the development of Malaysian SMEs. In the past, support programmes by various government agencies have been focused on the funding requirement of the SMEs since it is one of the most frequently cited problems. Concern over the financing issues has regrettably pushed aside the managerial skills advancement needs that are essential to the progress of SMEs. In spite of the fact that non-financial assistance, usually training and advisory programmes, have been implemented, evaluation of their impact on the development of SMEs has been extremely limited and incomplete at best (Bruch & Hiemenz, 1984). Upgrading business competence of the owners or managers is a more pressing issue that needs to be ironed out. Hence, results from this study will hopefully enrich the understanding on SMEs, and assist the people involved in SMEs support programmes in designing their activities.

## **1.6 ORGANISATION OF THE THESIS**

The thesis is divided into seven chapters. The current Chapter One serves as an introduction to the overall research work undertaken. It gives the background of the study, the research problems and objectives, the rationale for embarking on the study, and the structure of the thesis. Chapter Two reviews the literature related to trade credit management practices. However, prior to focusing on credit management, the chapter discusses the goal of financial management and the concept of working capital management. Chapter Three presents the nature and problems of SMEs in Malaysia. The chapter begins with the geographical and historical perspectives of Malaysia and her economy. It provides the

definition, the problems and challenges faced by, and future prospects of SMEs in Malaysia. This chapter also elaborates initiatives taken by the government in the development of SMEs, and describes some of the important agencies that are responsible in supporting the development of SMEs.

Chapter Four covers the research methods applied in this research study. Research design, data collection and coding are presented in this chapter. Here, the variables are identified and defined, and the last section of the chapter elaborates on the research methods that will be utilised. Chapter Five reports on the descriptive statistics related to the sample. In this chapter, the variables representing company characteristics as well as the trade credit management practices will be described using the frequency tables as well as descriptive statistics. Chapter Six offers the bivariate and multivariate analyses of the variables, while Chapter Seven summarises the results and concludes by offering recommendations to owner-managers of the SMEs as well policymakers, and some suggestions for future research. The thesis eventually ends up with a bibliography that lists the literature referred to during the process of the study and various appendices consisting supporting material for the research.

## **Chapter 2**

### **A REVIEW OF LITERATURE AND RELATED RESEARCH**

#### **2.1 INTRODUCTION**

The purpose of this chapter is to highlight literature related to the central theme of the thesis, which is trade credit management. The chapter begins with the broad concept of financial management goal. Next, the chapter gives an overview of working capital management. The discussion that follows then, will narrow down to one of the major components of working capital, i.e. trade credit. The rest of the chapter will focus on trade credit management.

Literature on working capital and trade credit management in the Malaysian context is barely available, particularly on smaller firms. Publicly available financial information on SMEs is scarce, and if there is any, the data is often incomplete and the quality questionable. Research on larger firms, especially those with shares traded on the local bourse, is more feasible as financial records on companies listed on the stock exchange are made available to the public. Nevertheless, except for a few (e.g. Regupathi & Zainudin, 2003), most research done on large firms focus on other areas of corporate finance and investment. Short-term financial management has been considered relatively unimportant and virtually ignored by researchers despite the known fact that management of working capital occupies the largest portion of a financial manager's time. Since many aspects of short-term financial management are

unexplored, especially in Malaysia, research in the local context is both timely and meaningful.

## **2.2 AN OVERVIEW OF FINANCIAL MANAGEMENT**

Financial management is concerned with the maintenance and creation of economic value or wealth (Keown, Martin, Petty, & Scott, 2005). A company, one of the legal forms of business organisation, is the vehicle or agent that is established for the purpose of creating wealth. The company obtain funds from the owners and creditors, and invest them primarily in acquiring assets such as land, buildings, plants, manufacturing products or buying trading stocks, and also financing customers' purchases of these stocks. The company then employs people to manage the investment and conduct its business activities, that is, to manufacture and sell goods, that will create value to the company. Revenues generated from these economic activities, after meeting the costs of operations and financing, accrue to the owners. In essence, financial management involves in making decisions related to how and how much funds to be raised and how these fund should be invested.

Credit management, on the other hand, is part of financial management. As stated earlier, one of the uses of funds raised by the company is to finance purchases made by customers. In other words, customers are offered trade that allows them to delay payment to a later date. The expectations from this credit transaction are that the customers will deliver their promises to make payment on the due date, and subsequently, this arrangement will encourage them to make repeat purchases in the future. This investment in customers requires proficient

handling as it affects the cash flows of the company, which may consequently affect its operations.

Credit management is one of the many subsets of financial management. To understand trade credit management, one must look at it within the framework of the overall operation of the company. Because of this relationship, trade credit policies and operating procedures of trade credit management must be coherent with the overall financial management goal of the company.

### **2.2.1 Goal of Financial Management**

The theory of business finance, as commonly suggested in many financial management textbooks (for example Ehrhardt & Brigham, 2003; Keown et al., 2005; Ross et al., 2007), rests on the premise that the company should seek to maximise the wealth of its current shareholders. A shareholder's current wealth in the company is the product of the number of shares owned times the current per share price. Given the number of shares any shareholder owns, the higher the share price, the greater the shareholder's wealth. Therefore, maximisation of the share price, hence the market value, of a company is consistent with the wealth maximisation objective. Consequently, the stock market price is an important criterion by which the company is judged.

Frequently in large companies, the shareholders, though they own the business, are not actively involved in the management of the companies. Instead, they hand over this task to professional managers who may have little or no equity stake in the company. Chandra (2001) offers several reasons for the separation of ownership and management in large companies:

- The capital accumulated by companies is pooled from thousands or even hundreds of thousands of owners. It is not practical for many owners to be actively involved in managing the company;
- Professional managers may be more qualified to run the business because of their technical expertise, experience, and personality traits;
- Separation of ownership and management enable unrestricted change in owners through share transfers without interfering with the operation of the business; and
- Given economic uncertainties, investors would like to hold a diversified portfolio of securities. Such diversification is achievable only when ownership and management are separated.

Because of the separation of owners and decision makers, there exist an agency relationship. In this situation, the shareholders are the principals while the management team plays the role of an agent. While the shareholders control the company notionally, the managers practically control it on a day-to-day basis. In theory, most financial managers would subscribe to the goal of shareholders wealth maximisation and there is no reason to believe that managers consider only their own interests at the expense of the shareholders. In practice, however, it is likely that some, possibly most, managers would consider their own welfare when making business decisions. Undeniably, this can cause managers to make decisions that favour themselves but considered sub-optimal in the viewpoint of the owners. This conflict of interest between the managers and the owners is called agency problem and the cost to the company in mitigating agency problem

is termed as agency cost. This, however, will not be discussed further as the issue is beyond the scope of this research study. What is more pertinent is whether the maximisation of shareholder wealth is relevant in the context of small business.

### **2.2.2 Financial Management Goals for SME**

In the perspective of larger corporations, it has been widely accepted that maximisation of shareholder wealth is a reasonable financial management goal that would be likely to be pursued. How different is this likely to be for the smaller ones? A considerable amount of literature has been published on this issue (for example, Holmes, Hutchinson, Forsaith, Gibson, & McMahon, 2003; LeCornu, McMahon, Forsaith, & Stanger, 1996; Welsh & White, 1981).

In the case of SMEs, where they are frequently closely held, the shareholders and the managers are likely to be substantially the same individuals, or at least they are closely connected. In situation where there is an overlap between ownership and management, agency problems, and their potential associated costs, are less likely to have any significant impact to the company. As managers, and substantial shareholders at the same time, they usually involved totally in the management and operating activities of the company. This, perhaps, would lead them to make decisions based on a wealth-maximising goal more determinedly than would be the case in the typical large corporation.

Nonetheless, wealth-maximisation is not the only and primary goal. While investors who buy shares in large corporations do so with only an economic



reason, those who involve themselves in smaller businesses may well have numerous intentions (Holmes et al., 2003; LeCornu et al., 1996; Ray & Hutchinson, 1983). These motives might include the need to control one's own life, the desire to experience the satisfaction of building up a business, to have greater flexibility for personal life, and several others which tend to be related to the owner-managers themselves. Yet, irrespective of other goals that may be simultaneously pursued by an SME, decisions cannot be taken that consistently ignore the question of wealth. A business that makes a series of decisions, each causing wealth to diminish, will sooner or later fail (McLaney, 2006).

In view of the existence of multiple goals for an SME, the management style adopted therefore need not necessarily be the same as those practiced by their larger counterparts. Similarly, in managing their accounts receivable, SMEs may have different factors and constraints that they have to consider prior to making a credit decision.

### **2.3 WORKING CAPITAL MANAGEMENT**

Management of working capital refers to the management of current assets and current liabilities. Also termed as short-term financial management, the main focus is on the management of current assets as current liabilities often emerge in the context of current assets, for example acquisition of stock on credit gives rise to accounts payable.

Efficient working capital management will seek to strike a balance, between having too high and too low little liquidity, to achieve an optimal level. Firm liquidity should be neither excessive nor inadequate. Excessive liquidity

implies accumulation of idle funds that do not earn any profit for the firm, and insufficient liquidity not only affects the firm's ability to pay its current debts, but may also result in deteriorating credit standing and a potential forced liquidation of assets. Subsequently, insolvency and bankruptcy may occur.

One of the major components of working capital management that affects liquidity is trade receivable. An effective management of trade credit would reduce the probability of the cash flow problems faced by a company. Therefore, trade credit management is an essential function in the operation of an SME.

## **2.4 TRADE CREDIT MANAGEMENT**

In general, credit is the ability of obtaining economic value now, on good faith, in return for a promise to pay at a specified date in the future. Trade credit involves supplying goods and services on a deferred payment basis, thus creating an interval between purchase and payment. Instead of requiring cash at the time services are provided, or goods are delivered, payment is accepted at a later date. Alternatively, trade credit can be viewed as a loan a supplier provides to its customers in conjunction with product sales. This short-term loan is tied in both timing and value to the exchange of goods (Ferris, 1981). It is a by-product that is being packaged together to the goods sold or services rendered to customers, resulting in a simultaneous transaction in both financial services and the products supplied.

A distinctive feature of trade credit is the two-way nature of its transaction. A firm can use trade credit as a customer to obtain supplies, thereby generating accounts payable that represents its financial obligation towards the supplier.

Simultaneously, it can also be the provider of trade credit when it supplies goods to its customers. Until payment is made, the amount owed by customers, known as accounts receivable, is reported on the balance sheet as an asset that signifies its claim against the customers. Hence, trade credit makes up a considerable portion of both corporate current liabilities and current assets. As a customer, trade credit is an important source of short-term external finance. To the supplier, granting trade credit means that it is financing the customer's inventory and bearing the credit risk. Credit risk refers to the possibility of default or delay in the repayment by the debtor. Despite the risk and cost associated with it, trade credit constitutes a significant portion of a firm's total assets. Studies suggest that trade debtors represent more than 30% of total assets for UK corporate sector (Peel et al., 2000), and approximately 21% for US manufacturing corporations (Mian & Smith, 1992).

Similar to other business sectors, SMEs typically sell merchandise on credit. These credit transactions generate accounts receivable, which becomes one of the components in the asset side of the balance sheet. At some point in time, every asset on the balance sheet is expected to be converted to cash. The realisability of accounts receivable is the main concern of credit management. Non-payments and late payments by credit customers can negatively affect the business operation of a SME and its survival. For this reason, issues on liquidity and credit management of SMEs ought to be addressed competently.

Managing trade credit involves balancing the benefits to be reaped from extending trade credit with the cost entailed in doing so. In short, when a

company offers credit to its customers, essentially, it is investing in debtors to yield additional sales.

#### **2.4.1 Size of Investment in Accounts Receivable**

One way to appreciate the importance of trade credit management is to observe the proportion of accounts receivable to total assets. Moreover, since the theme of this thesis is trade credit management practices, it is therefore justified to look at the size of investment in debtors as a percentage of total investment in the company.

The importance of credit management in the operation of a company needs no emphasis. The analysis of quantum of accounts receivable in the company's balance sheet demands a more worthy attention from the management. Earlier studies have indicated that accounts receivable represent a major proportion of company's assets. For example, trade debtors are 21 percent of US manufacturing corporations' total assets (Mian & Smith, 1992). In the UK, the figures are 19 percent for large companies (Pike, Cheng, & Chadwick, 1998) and over 30 percent for small and medium-sized firms (Peel et al., 2000; Wilson, Watson, Singleton, & Summers, 1996). A more recent study estimates that trade debtor represents 28 percent of total assets in UK SMEs (Poutziouris, Michaelas, & Soufani, 2005). Studies on trade debtors in other countries illustrate similar trend. For large Belgian firms, the proportion is 33.7 percent (Deloof & Jegers, 1999). Exhibit 2.1 summarises the size of accounts receivable investment compared to total assets observed by previous studies.

**Exhibit 2.1**  
**Proportion of accounts receivable to total assets from previous studies**

<b>Authors</b>	<b>Year</b>	<b>Percent of receivables</b>	<b>Location</b>	<b>Types of business</b>
Mian & Smith	1992	21	US	Manufacturing corporations
Pike et al.	1998	19	UK	Large companies
Peel et al.	2000	> 30	UK	SMEs
Wilson et al.	1996	>30	UK	SMEs
Poutziouris et al.	2005	28	UK	SMEs
Deloof & Jegers	1999	33.7	Belgium	Large firms

Previous studies conducted on Malaysian companies, however, did not relate to any figure that would indicate the size of investment companies undertake in providing trade credit to customers. Undoubtedly, the considerable percentages displayed in Exhibit 2.1 highlight the importance of efficiently managing the sizeable resources that companies invest in accounts receivables. In fact, this has been acknowledged several decades ago by Brennan (1977, p. 15) when, after observing the magnitude of receivables in American corporations, he said, “it is readily apparent that effective management of receivable investment is a required characteristic of a successful and growing enterprise.”

#### **2.4.2 Theories of Trade Credit Extension**

Issues on trade credit have increasingly become the theme of academic research. One aspect that has been explored is why non-financial firms offer credit to their customers. Previous literature deliberating on motives of trade credit extension suggested several theories, though they are not mutually exclusive, justifying its continuous pervasive use in business transactions. One of the reasons put forward is the financing motive, an effect of credit market imperfections. The financing theory seeks to rationalise credit offered by firms in

their transactions. Larger firms with relatively easy access to funds, and tend to be more liquid, are motivated to sell the monetary resource to firms that have productive investment opportunities but that are restricted in their ability to obtain fund (Emery, 1984; Schwartz, 1974). Ferris (1984) views trade credit as an equivalent to a short-term loan that is tied in both timing and value to the exchange of goods.

Ferris (1981) also elaborates the transaction theory of credit use on the premise that both trading partners are motivated to economise on the joint costs of exchange. Trade credit moderates an uncertain flow of cash disbursements into a series of payments that can be planned; hence, with uncertainty removed, the reason for maintaining precautionary cash balance is eliminated. Essentially, this will separate the payment cycle and the delivery schedule, thereby reduces transaction costs when invoices are allowed to accumulate and paid monthly or quarterly rather than paying every time goods are delivered (Petersen & Rajan, 1997). Buyers will benefit when bills are allowed to accumulate for periodic payment since this will give them time to plan for payment of unexpected purchases, thus, enabling them to anticipate future cash outflows with greater certainty, and simplify their cash management (Schwartz, 1974). Separating the exchange of goods from the exchange of money not only reduces transaction costs and improves the operating efficiency, but it may lower the monetary theft risk, thereby reducing the need for costly employee monitoring (Pike et al., 1998). A related aspect of transaction motive is the opportunity provided to the buyer to ascertain the product quality during the credit period. This implicitly indicates that trade credit signals the product quality (Deloof & Jegers, 1996; Long, Malitz, & Ravid, 1993).

The basis of the investment motive of offering trade credit centres on the need to increase shareholder value by expending their resources in wealth-creating selling activities. Kim and Atkins (1978) evaluate accounts receivable investment using the net present value approach which provides a framework of analysis that is consistent with a wealth maximisation objective. Hence, firms that seek to establish lasting business relationships with important major customers will enhance their true value given that an ongoing customer relationship will generate the present value not only of the first order, but also all subsequent future sales. Essentially, trade credit offer can be viewed as a long-term investment to build up customer loyalty and to form a more stable customer base.

Trade credit can also be used as a marketing tool to facilitate the selling process and to compete in the market. Schwartz (1974) views credit terms as an integral part of the firm's pricing policy. Flexing a credit terms favourably, such as lengthening a credit period or increasing a cash discount, is equivalent to a price cut, thus enabling the firm to evade price restrictions. This subtle technique also provides the seller a more flexible approach to pricing without fear of competitor retaliation (Cheng & Pike, 2003). However, in coping competitiveness, especially in highly competitive industry, credit terms are frequently used. Failure to measure up to more favourable terms offered by other firms can shrink a firm's market share. Consequently, standard credit terms for an industry exist, as firms, mainly the smaller ones, feel compelled to correspond to such terms to remain in the business. From another point of view, Emery (1984) observes the setting of credit terms as a technique to stabilise uneven demand, that is, by offering

favourable terms when demand is low to improve sales and applying a more stringent terms when demand is high.

All these motivations, however, have a single purpose — to generate a larger flow of operating revenue, and hence profit, than possible without a commitment of funds to accounts receivable.

### **2.4.3 Credit Period and Late Payment**

Another subject on trade credit that has drawn researchers' attention is credit period and late payment. Credit period is the length of time allowed to the buyer before payment is considered past due. Late payment is the fulfilment of debt obligation at a date beyond the credit period. Several studies concentrate on late payment by small firms in the UK. Howorth and Wilson (1998) develop 13 small firm case studies and detail analysis on their management and financing of trade credit showed that late payment problems are common. However, firms suffering due to these problems are those undercapitalised and had poor credit management practices, and did not do anything about their debtors' late payments. Chittenden and Bragg (1997) examine the impact which late payment has on the SMEs and the overall economy. Peel et al. (2000) analyse the response of small firms on the legislative and regulatory measures in curbing late payment in the UK. Pike and Cheng (2001) study on large UK firms reveal that contextual variables like customer concentration, marketing channel and industry sector, and specific credit policies adopted influence the credit period taken. They conclude that longer credit is taken where firms are smaller, customer concentration is lower, the market is highly competitive, and customers are end-users.



#### **2.4.4 Outsourcing of Trade Credit Activities**

Another important facet of trade credit that is gaining the research interest is the decision whether or not to outsource trade credit management activities. Mian and Smith (1992) examine the credit management functions and the factors that have some bearing on the decision to subcontract them to specialised external agents. They conclude that firm size, industry concentration, and supplier's credit standing seem to have strong influence in determining the use of either one of the three outsourcing schemes suggested by them, or internalisation of the firm's accounts receivable management. In Australia, credit risk-assessment, one of the credit management functions, is found to be the most frequently outsourced activity (Lamminmaki & Guilding, 2004). Their findings also indicate that firms with sales orientation seem have greater tendency to externalise their credit management activities. In the meantime, very little evidence has been found to support the perception that smaller companies have a greater inclination to outsource these activities.

#### **2.4.5 Trade Credit Management and SMEs**

Besides focusing on issues related to trade credit management in general, researchers also narrow down their scope giving specific attention to the small and medium-sized enterprises. Elliehausen and Wolken (1993) investigate the motives for trade credit use by small businesses. Survey on trade credit practices of small firms have been conducted the US (Grablowsky, 1976), in Canada (Anvari & Gopal, 1983), and more often in the UK (Peel & Wilson, 1996; Peel et al., 2000; Wilson & Summers, 2002). These studies highlight trends of

poor credit management and policies among the small firms. Analyses on late payment reveal that most small firms are experiencing the problem (Howorth & Wilson, 1998; Peel et al., 2000). Nevertheless, late payment problems affect the firms differently, depending on their financial strength and management. Firms that are badly affected typically were undercapitalised and had poor credit management practices while those less pressured are firms with financial stability and knowledge of cash flow planning. Actual late payment was less in firms with good credit management procedures.

## **2.5 SUMMARY**

This chapter has reviewed literature relating to trade credit management. In view of the fact that credit management is a subset of financial management, the chapter began with the financial management goal of a company in general, and later more specific to SMEs. Discussion then focus on working capital management and trade credit management. Some theories on trade credit extension were reviewed. The chapter also examined literature on trade credit period and late payment, as well as outsourcing. It appears that, except for Kirkman (1977) and Goddard and Jay (1981), many of the previous studies examined a particular activity and not the entire process of trade credit management. This study, therefore, attempts to fulfil this gap.

## **Chapter 3**

### **NATURE AND PROBLEMS OF SMEs IN MALAYSIA**

#### **3.1 INTRODUCTION**

The previous chapter has reviewed the literature related to liquidity and trade credit management issues. This third chapter of the thesis attempts to give an overview of some important information on Malaysia and the development of small and medium-sized enterprises (SMEs) in Malaysia. The chapter begins with an introduction to the geographical and demographic characteristics of Malaysia and a brief description of the Malaysian economy against which the SMEs operate. The general scenario of the SMEs in Malaysia is then portrayed. The term SME will be defined, the contribution of SMEs in the economy will be deliberated, and their problems and prospects will be discussed. Additionally, the chapter also describes roles played by the government in promoting the development of SMEs. Some of the more important agencies that contribute to the growth of SMEs are elaborated.

#### **3.2 THE MALAYSIAN GOVERNMENT AND THE SMEs**

In many developed and developing countries, governments have played significant roles in the development of small and medium-sized enterprises. Similarly, the Malaysian government's involvement has been a momentous contribution towards the SMEs development. However, the Malaysian

experience is rather unique as the government participation has been not merely due to economic reasons but as an outcome of domestic political issues. The following sections provide the setting that has shaped the present business landscape of which SMEs are a part.

### **3.2.1 An Overview of Malaysia**

Malaysia is located in the Southeast Asia region, very close to, but north of the equator. Her population of 25.04 million (2003 estimates) is made up of 61 per cent Malays, 30 per cent Chinese, 8 per cent Indians and one per cent others (Department of Statistics, 2005). With a total land area of about 330,252 square kilometres, Malaysia comprises the Malay Peninsular, which has its frontier with Thailand in the north and Singapore in the south, and the two states of Sabah and Sarawak (together they are referred to as East Malaysia) who share the Borneo Island with Indonesia and Brunei (Abdull Hak, 2004). Although East Malaysia occupies the larger portion of Malaysia's total area, it is primarily comprised of undeveloped land and jungles. Hence, with about 82 per cent of the population living in the Malay Peninsular, its density is 116 persons per square kilometre compared to 22 persons and 14 persons in Sabah and Sarawak respectively (Md. Isa, 2005).

Malaysia is a small open economy, which is therefore, vulnerable to world economic cycles. To adapt to the changing environment, and to remain competitive in the world market, a combination of fiscal and monetary measures were implemented and several structural adjustments to the economy were undertaken in a flexible and pragmatic manner (Bank Negara Malaysia, 1999). Though the SME sector was initially unnoticed in the national economic

development, it has caught the attention of the economic architects of the country for the last two decades. Since then, the SMEs have played, and are increasingly playing a significant economic role in the Malaysian economy. In his message for the inaugural SME Annual Report 2005 (National SME Development Council, 2006), the Prime Minister, Abdullah Ahmad Badawi states:

*“In an increasingly competitive economic environment, Malaysia must continuously seek to find new sources of growth to broaden and diversify the economic base. To achieve this, efforts will focus on generating endogenous sources of growth through strengthening the capabilities and competitiveness of domestic industries. An important segment is the small and medium enterprises (SMEs), which represent a key source of endogenous growth as well as an impetus for broad based economic development”*

Nevertheless, the growing government interest on the SME sector increases not only because it has been proven to be an effective engine of growth in the more developed economies, but more importantly, it represents the blended outcome of economic, political and social developments in Malaysia. The following section elaborates the scenario.

### **3.2.2 The Historical Context**

The historical development of Malaysia saw a period of foreign colonisation of first by the Portuguese, next the Dutch, then the British, followed by the Japanese and finally back to the British before it gained her independence in 1957. The British colonisation is the most significant as it shaped the economic and social characteristics of Malaysia. There were two legacies of the British administration

that had some bearing to the present national policies: a narrow-based economy dependent on the revenue from raw materials, and a multi-ethnic society.

Understanding these two factors, elaborated next, is necessary so as to provide a better picture of the scenario to the government involvement in developing the small and medium-sized industries in Malaysia.

### ***The economic transformation***

Prior to its political independence in 1957, and in its first decade as an independent state, Malaysia essentially depended on the agricultural sector and the production of primary commodities, particularly rubber and tin, as the cornerstone of economic development. Under the colonial rule, the country was cast in the role of a producer of raw materials. In 1910, Malaysia (then, Malaya) accounted for no less than 40 percent of world production of tin while it recorded 51 percent of world exports of rubber (Brown, 1997). Other industries that did develop tended to be secondary and received little attention from the government. However, over-reliance on the two commodities to drive the country's economic activities had its drawback. Industries and the economy that depend almost entirely on natural resources are vulnerable to fluctuation in world commodity prices. Acknowledging the potential problem that might set in, the government embarked on an industrialisation programme to transform the agriculture-based economy into an economy of commerce and industry. The justification for the economic transformation was that there was a need to diversify the economy due to the instability of world commodity prices. Apart from diversification of the economy, the rationale for industrialisation was to

encourage the development of resource-based and labour-intensive industries so as to create more employment opportunities (Mahmood, 2000).

The structural transformation that has taken place within the economy is characterised by the development of the manufacturing sector. Several strategies were adopted in the implementation of the industrialisation programme. The programme took off with import substitution policies, and later changed to export-oriented strategies (Gan et al., 1995). All these strategies had resulted in impressive performances by the manufacturing sector, particularly for electronic and textile products. However, the remarkable accomplishment before the 1990s to a large extent was due to favourable external demand rather than from the continued increase in productivity through higher value-added production and technology upgrading (United Nation Industrial Development Organisation, 1990). Low productivity growth, if it persists, could threaten the future growth and development of the manufacturing sector. Some limitations of the manufacturing sector identified then included a narrowly based industrial structure, lack of industrial linkages and research and development, insufficient manpower training and lack of export diversification. In response to the constraints, the government took actions stressing on strengthening and widening of the industrial base. One of the steps taken by the government was fostering strong linkages between and within sectors, and between large manufacturing firms and multinational corporations and local SMEs through subcontracting works (Kok, 1994). This was one of the factors that triggered the government concern over the development of SMEs.

### ***The New Economic Policy***

Another important issue that led to the government commitment towards the development of SMEs was the National Economic Policy (NEP) which was introduced in 1971. To explain the creation of the NEP, some historical background of the policy is necessary. The main economic activity during the first half of the nineteenth century depended heavily on the growth of two major industries, namely tin and rubber industries. Indeed, these industries flourished and Malaysia (then known as Malaya, prior to the inclusion of Sabah and Sarawak on the Borneo Island into the federation) emerged as a world exporter of commodity-based goods, predominantly rubber and tin. To reap the maximum benefits of the thriving market condition, the colonial administration imported workers from India to meet the needs of the rubber industry and introduced modern technology to be used by Chinese migrants in the tin mines. Activities supporting these industries, such as retailing and wholesaling, therefore also tended to fall into Indian or Chinese hands. This situation led to the relative impoverishment of the more numerous Malay populations and their marginalisation in economic terms as they remained largely in rural occupations.

Consequently, the socioeconomic disparity among the races, particularly between the Chinese and the Malays became more obvious. It was against this background that racial tension started to strain relations between the two ethnic groups. Tensions were worsened by the creation of political parties almost wholly along ethnic lines. At the height of the ethnic tension was a racial violence occurred in 1969, sparked by fears of excessive ethnic Chinese wealth and power. This unpleasant incident convinced the United Malays National Organisation (UMNO), the main component of the ruling coalition, that action was



necessary to institute social and economic reform to prevent such episodes happening in the future. This is the context in which the New Economic Policy (NEP) was introduced.

The New Economic Policy (NEP) was a 20-year government programme launched in 1971 with a twin objective of elimination of poverty, irrespective of race and the restructuring of society so that no race would be identified with any one economic function. However, to the SMEs, the NEP is an important milestone in the process of economic growth and development since the government involvement in the small and medium industries in Malaysia began mainly after the introduction of the NEP (Chee, 1986b). The policies on and programmes for small-scale industries stemmed from the socio-economic objectives of the government that were embedded in the NEP. Since the adoption of the NEP, numerous government and semi-government agencies were involved in one way or another in the promotion, support and development of the SME sector (Abdul Khalil, 1983). Until today, the government commitment has not receded.

Against the historical, political and economic background described above, the Malaysian SMEs are now examined in more detail.

### **3.3 OVERVIEW OF THE MALAYSIAN SMEs**

The importance placed by the government on SME development can be traced back in the early 1951 when the Rural Industry Development Authority (RIDA) was formed (Abdul Khalil, 1983). However, the emphasis then was more towards improving the standard of living of the rural population rather than exploiting it to

stimulate economic growth and contribute to the national income. Nevertheless, the perceptions gradually changed and contributions of the SME sector has now been recognised. This is clearly indicated by the commitment on the part of the government and its various agencies in supporting the development of SMEs through various policies implemented.

### **3.3.1 Definitions of SME**

What constitutes an SME? Different people in different countries have defined the term SME differently based by different measurement units. A study by Auciello in the mid-1970s, cited by Hailey (1991), revealed that there were 75 countries that had more than 50 different formal definitions of small-scale industries. Meanwhile, Mahmood (2000) relates in his thesis of a report by Watson and Everett that at one time, the United States Congressional Committee was presented with 700 definitions of a small business. These numerous definitions can generally be classified into two groups, one using the qualitative approach, and the other uses the quantitative measures (Curran & Blackburn, 1994).

The qualitative approach defines small businesses based on their unique characteristics that distinguish them from the larger businesses. For example, in the United Kingdom, the Bolton Committee (1971) considered a business as being small if it satisfied the following three characteristics: it has a relatively small share of its market; it is managed by its owners or part-owners in a personalised way, and not through the medium of a formalised structure; and it is independent in the sense that it does not form part of a larger enterprise, and that the owners-managers are independent in decision-making. Similarly, in

Australia, the Wiltshire Committee in 1971, cited in Holmes et al (2003, p. 13), proposed a similar qualitative definition of an SME as follows:

*“A business in which one or two persons are required to make all the critical management decisions: finance, accounting, personnel, purchasing, processing or servicing, marketing, selling, without the aid of an internal specialist and with specific knowledge in only one or two functional areas.”*

Several other researchers who concur with the qualitative approach of defining small business put forward several other attributes besides those suggested by the Bolton Committee and the Wiltshire Committee (for example, Ang, 1991; Curran & Blackburn, 1994; Osteryoung, 1997; Storey, 1994; Watson & Everett, 1996). It is observed that many of these features that distinguish small from large firms tend to relate to the ownership and managerial control of the firms. These elements are associated to the agency theory concept, which is also discussed at length in relation to defining small business (Ang, 1991; Holmes et al., 2003).

The quantitative approach to the definition of a small business on the other hand attempts to use some quantitative measures. Among the criteria that commonly used include the number of full-time employees, annual sales turnover, total assets, paid-up capital and shareholders' funds. For example, the European Community, as cited by Ibrahim (2000), utilises the size of workforce to define and categorise business establishments. Firms with less than 10 workers are considered to be micro business, those employing between 10 to 99 workers as small business, while firms that engage between 100 to 499 employees are

medium business. These demarcations were recently revised down in view of technological advances that have reduced the manpower requirements of firms. Ayyagari et al. (2005), in their study on SME sector across 76 countries, observe that different countries adopt different criteria such as employment, sales or investment to define small and medium enterprises. However, for the purpose of their research, 250-employees is taken as the cut-off for the definition of an SME.

In applying the quantitative approach, some definitions make use of just one parameter while others based on a combination of criteria. For example, apart from using the number of employees to determine whether or not a company is an SME, the (Malaysian) National SME Development Council (2006) also takes the annual sales turnover into consideration. Several other countries also adopted similar measure and some to the extent of applying three variables in their SME definitions. Exhibit 3.1 shows the measures used in the definitions of SMEs by some Asia-Pacific Economic Cooperation (APEC) nations.

**Exhibit 3.1**  
**Measures used in the SME definition in selected APEC economies**

<b>Country</b>	<b>Measures used in the definitions of SMEs</b>
China	Employment, sales and assets
Indonesia	Assets and sales
Japan	Employment and assets
Korea	Employment and assets
Malaysia	Employment and sales
Philippines	Employment and assets
Singapore	Employment and fixed assets
Taiwan	Employment and assets
Thailand	Employment, sales and capital

Source: APEC-SME Profile (<http://www.actetsme.org>), SME Annual Report 2005

The issue of defining SMEs has spawned an unresolved discussion that has led to a notable variety of definition. Consequently, it is not uncommon to define small businesses, or SMEs for that matter, using both qualitative and quantitative approaches. For example, although the Wiltshire Committee, as quoted by Holmes et al. (2003), adopts a qualitative definition, it includes the quantitative guideline that small businesses conforming to the report's definition would normally employ less than 100 people. The Bolton Committee (1971) too applies some quantitative parameters to their economic definition. However, the measures and their limits differ between industrial sectors. For instance, the 200 employee upper limit was used for manufacturing, and 25 for construction and mining/quarrying while retailing, wholesaling, motor trades and miscellaneous services utilise the annual turnover but with different cut-off points for each sector. Referring to the use of both qualitative and quantitative approaches to delineate small business as a two-part definition, Holmes et al. (2003, p. 19) propose the following definition:

*“A business which is independently owned and operated, with close control over operations and decisions held by the owners. Business equity is not publicly traded and business financing is personally guaranteed by the owners. The business will have less than twenty employees.”*

Regardless which approach is more appropriate, the definition should take into consideration the purpose it serves. As Neck (1977) remarks, “most definitions appear to be governed by the interests of the perceiver, the purpose of the definition, and the stage of development of the particular environment in which the definition is to be employed”. Hence, the diversity of definition for an

SME should be acknowledged and accepted, and attempts to set a standard global definition would not be necessary.

In Malaysia itself, there is no one comprehensive definition of an SME. Different agencies, statutory bodies, or researchers generate their own definitions for their own and differing purposes. In addition, the definition also tends to change over time to suit to the current situation.

To begin with, SME was not defined specifically but derived rather indirectly when the Industry Coordination Act (ICA), introduced in 1975, required all new and existing industrial establishments with more than 25 workers and paid-up capital of more than RM250,000 to apply for a new manufacturing licence. Hence, the Ministry of International Trade and Industry (MITI), which is responsible for licensing manufacturing establishments in Malaysia, categorised those businesses that did not meet the criteria outlined in the ICA, as small and medium enterprises. These measures, however, were amended in 1985 to include establishments with paid-up capital of more than RM1 million and employing more than 50 full time workers. The criteria were later changed in the following year embracing business concerns with paid-up capital up to RM2.5 million engaging more than 75 full time employees. Subsequently, in a 1998 report, MITI defined an SME as a firm with less than 150 full-time employees, and with an annual turnover of not more than RM25 million (Abdullah, 2002).

The lending guidelines by the Bank Negara Malaysia (BNM, the central bank) identifies the SMEs as those companies with net assets or shareholders' funds of up to RM10 million (Bank Negara Malaysia, 1999). The central bank's guideline usually tends to be perceived as directive by the commercial banks.

For instance, the then Bank Bumiputra Malaysia Berhad (now CIMB Bank Berhad), adopts the classification in providing loans to SMEs in the manufacturing sector (The New Straits Times, 1998). The Small and Medium Industries Development Corporation (SMIDEC), a government agency dedicated to improve and coordinate SME development programmes, in their earlier years, defines an SME as a manufacturing enterprise with shareholders' funds of less than RM2.5 million with RM500,000 as the demarcation that separates the companies between small and medium.

Researchers too do not use a unified definition of SMEs in their studies. Chee (1986b) identifies businesses employing less than 50 workers as a small and medium business. Salleh (1990) and Meyanatahan and Salleh (1994) categorise the industrial enterprises into tiny, small, medium and large scale industries. Companies with four or less workers are considered as tiny, those having between five and 49 employees are classified as small, and firms with employees between 50 and 199 are regarded as medium scale industries.

The numerous government and semi-government agencies, as well as the private sector, particularly the financial institutions, involved in the development of SMEs, resulted in variety of definitions for SMEs. Furthermore, some the programmes implemented by the various agencies are overlapping and uncoordinated, resulted in inefficient use of resources and unimpressive outcomes. These problems have led to the creation of the National SME Development Council (NSDC), which will be elaborated in a later section of the chapter. The NSDC introduced the definitions for SMEs in the manufacturing, manufacturing-related services, primary agriculture and services sector in 2005,

to assist in better identification of SMEs across all sectors and for more effective targeting of SMEs with respect to the design of policies and programmes (National SME Development Council, 2006). Exhibit 3.2 presents the basis for defining the SMEs, and the subgroups within the SMEs. For wider coverage, businesses are considered an SME as long as they meet *either* the threshold set for annual sales turnover *or* in terms of number of full-time employees.

**Exhibit 3.2**  
**SME definitions adopted by the National SME Development Council**

Size	Manufacturing (including agro-based) & manufacturing-related services	Primary agriculture and services sector (including ICT)
Micro	Sales turnover of less than RM250,000, or less than 5 full-time employees	Sales turnover of less than RM200,000, or less than 5 full-time employees
Small	Sales turnover of between RM250,000 and less than RM10 million, or between 5 and 50 full-time employees	Sales turnover of between RM200,000 and less than RM1 million, or between 5 and 19 full-time employees
Medium	Sales turnover of between RM10 million and RM25 million, or between 51 and 150 full-time employees	Sales turnover of between RM1 million and RM5 million, or between 20 and 50 full-time employees
SME	Annual sales turnover not exceeding RM25 million, or workforce not exceeding 150 employees	Annual sales turnover not exceeding RM5 million, or workforce not exceeding 50 employees

Source: SME Annual Report 2005

### 3.3.2 Problems and Challenges

All business ventures, regardless of size, to some extent, and at certain points of time, experience setbacks or difficulties in running their business. In general, the problems and constraints confronting the Malaysian SMEs are similar to those faced SMEs in other countries. Despite their pivotal role as the backbone of the economy, the SMEs have been beset with problems, with some of the major



ones being inherent in their small size. Welsh and White (1981) state that small businesses suffer from a particular situation which they refer to as resource poverty. Resource poverty is an outcome of various conditions unique to small businesses. Some of the problems due to resource poverty include operating in a highly competitive environment, financial constraints, lack of professional expertise, and susceptibility to external forces. Due to their size, small enterprises do not benefit from the economies of scale enjoyed by their larger counterparts as listed by Holmes et al. (2003, p. 52):

- Longer production runs on larger and more technologically advanced plant and machinery
- Quantity discounts on input purchases
- Employing specialists
- More widespread advertising
- Access to more forms of finance on better terms and conditions
- More sophisticated information gathering
- Lower unit costs in complying with government regulations and reporting obligations

Schmitz (1982) in a study on the development of Asian small scale industries, reveals that lack of managerial and entrepreneurial skills acted as the major bottleneck for SMEs in developing countries. A study on small businesses in Western Australia reveals that the most prevalent problems were related to sales and marketing, human resources, and general management (Huang & Brown, 1999).

On the local setting, several studies have attempted to identify problems faced by the Malaysian SMEs. Mohd Kassim (1983) reports that there were many constraints faced by small scale industries. Some of the examples given were their inability to raise enough capital; limited access to institutional credit; lack of skilled workers and inability to attract and retain them; limited access to improved production technology; inability to acquire appropriate business premises; inadequate knowledge of markets; lack of knowledge in modern management and accounting methods; and inability to meet the government regulations. Some of the problems listed were actually overlapping and inter-related. Subsequently, Salleh (1990) analyses the problems of SMEs and divides them into four groups: lack of technical and managerial know-how; inadequate financial support; inadequate linkages with large industries; and limited market. Chee (1986a), on the other hand, points out that the more pressing problems were finance, inadequate land for building, shortage of labour and lack of raw materials. The findings by Shahadan et al. (1990) are not much different from previous studies. They reveal that the problems confronting the SMEs were lack of managerial and entrepreneurial skills; capital shortage; inaccessibility to raw materials; inaccessibility to markets; and production techniques. Mohd Jan et al. (1990) too classify the main hindrances that may prevent SMEs from contributing to national economy into problems related to finance, workforce, marketing, and technology.

Apart from the problems and constraints, the SMEs are confronted with several challenges that are changing the business environment, both domestically and globally. To remain competitive and resilient, the SMEs need to respond swiftly to these challenges. SMIDEC (2002) puts forward three

components that pose strong challenges to the Malaysian SMEs: intensified global competition; new emerging technologies; and lower production cost, particularly labour.

With globalisation of the Malaysian economy on the rise, and imminent competition due to the Asean Free Trade Area (AFTA) and the World Trade Organisation (WTO) agreements, SMEs must brace themselves for the onslaught of global competition. These multilateral and regional trade and investment liberalisation policies have made markets more accessible, which consequently intensify competition among producers. In order to avoid loss of markets arising from trade liberalisation, SMEs have to adapt to the new way of doing business and persistently explore for new trade opportunities.

As a consequence of severe constraints on financial resources and managerial skills, small businesses tend to face substantially more barriers to adoption of new technologies. However, it is a known fact that competitiveness is being increasingly determined by leading edge technologies (SMIDEC, 2002). Hence, it is crucial that SMEs take up the challenge and rapidly develop their capacity to adopt and adapt appropriate technologies to remain competitive.

Another challenge that SMEs have to deal with is the changing exports competitiveness due to lower production costs. Although Malaysia has made notable achievements in the export market, competition from other producers, especially from lower labour cost centres in the region, is expected to erode Malaysia's market shares.

### **3.3.3 Future Prospects**

The government's recognition of SMEs' substantial contribution to the country's economy has led to prominent featuring of strategies and initiatives in enhancing SME development in all of the government's economic development plans over the years. And for the foreseeable future, the Malaysian government is expected to continue exploring new sources of growth to diversify the economy. The focus now is mostly on services as there is untapped potential, and is said to be more resilient and has been able to absorb external shocks better. Looking forward, many opportunities in the service sector are expected to open up to Malaysian SMEs while a significant portion of existing leads in the manufacturing and agriculture are expected to remain.

The Ministry of Finance (2006), in its recent annual report, affirms that efforts continued to be focussed on accelerating the development of SMEs to enable them to become a catalyst of growth. A key initiative adopted recently by the NSDC to expedite SME development was the National SME Development Blueprint. The blueprint, a one-year action plan, provides a clear statement of the government's strategic intent and focus for SME development in 2006 and spells out key programmes and financial commitment as well as the specific ministries and agencies involved in implementing these programmes. The blueprint will make it easier for ministries and their related agencies to work together to achieve the best possible outcome for SME development, minimising incidences of duplication and maximising the effectiveness of programmes (National SME Development Council, 2006).

The figures from the banking sector are also giving some positive outlook, as reflected by the significant utilisation of existing SME specialised funds. Even more, the Bank Negara Malaysia has increased the size of funds for SMEs to have better access to financing. Apart from such funds, the commercial banks continue to support the needs of SMEs. As at end-June 2006, loans to SMEs accounted for 44.4 per cent of loans to the business sector and 17.7 per cent of total outstanding loans of the banking system (Ministry of Finance, 2006). In addition, the SME Bank, which started operations early October 2005, has been active in supporting the SMEs. Within three months of its operations, the bank has approved a total of 202 loan accounts, which amount to RM333.8 million (SME Bank, 2006) and during the first six months of 2006, it has approved loans amounting to RM861 million and disbursed RM606 million to SMEs (Ministry of Finance, 2006).

### **3.4 ORGANISATIONS INVOLVED IN THE DEVELOPMENT OF SMEs**

The government's emphasis on promoting the development of SME signifies the official recognition of the importance of SMEs in the national agenda. Although support for the development of SMEs started in 1950s, more aggressive steps began in the early 1970s. Since the adoption of the New Economic Policy in 1971, numerous government and semi-government agencies were involved in the implementation of policies and activities towards strengthening the SME sector. Some of the more prominent players are described in the following sub-sections.

### **3.4.1 Small and Medium Industries Development Corporation**

Small and Medium Industries Development Corporation (SMIDEC) was established in 1996 under the Ministry of International Trade and Industry (MITI) as a specialised agency responsible in promoting and enhancing growth and development of small and medium industries particularly in the manufacturing sector. SMIDEC carries out its functions by providing advisory services, fiscal and financial assistance, infrastructure facilities, market access and other support programmes.

Since its inception, SMIDEC has played a significant role in the progress of small and medium industries where specific developmental programmes have been formulated and implemented to enhance the capacity and capability of SMEs in providing quality services and products to large companies or multinational corporations (MNCs) and their operations worldwide. Some of the more eminent programmes include industrial linkage programme, global supplier programme and skills upgrading programme. Several initiatives were conducted by SMIDEC in efforts to forge industrial linkages between SMEs and large companies and MNCs as this will provide a captive market for SMEs through the supply of parts and components on a long-term basis. The SMEs are promoted and nurtured into becoming reliable as well as competitive manufacturers and suppliers through fiscal incentives, business matching and developmental programmes such as improvement of technological, financial and managerial capabilities. The global supplier programme explores the opportunities of building up industrial linkages between domestic SMEs with overseas corporations.

Skills upgrading programme aims at improving the skilfulness and competence of employees of SMEs particularly at the technical and managerial levels. The training initiatives are implemented in collaboration with skills development institutions, such as the German-Malaysian Institute, the Malaysia France Institute and Penang Skills Development Centre, just to name a few. In addition, SMIDEC has come up with an SME Expert Advisory Panel to strengthen technical advisory services to SMEs. The panel provides preliminary consultancy services to SMEs, and whenever necessary, gives on-site assistance as well, with most of the costs incurred borne by SMIDEC.

Meanwhile, in term of infrastructure facilities, SMIDEC together with several related agencies and state governments, has developed industrial estates all over the country to assist SMEs to operate in approved areas and premises. SMEs are encouraged to relocate their business to these designated areas to ensure that they have the foundation and the facilities to operate in the most conducive environment. In fact, many of these industrial sites are equipped with necessary common user facilities such as testing laboratories, waste disposal system and other basic infrastructure amenities.

#### **3.4.2 Malaysia External Trade Development Corporation**

Malaysia External Trade Development Corporation (MATRADE) was set up in 1993 as the external trade promotion arm of the Ministry of International Trade and Industry (MITI). The establishment of MATRADE was in recognition of the need for a specific unit to develop and further promote Malaysia's external trade. Operating as a point of reference to Malaysian exporters and foreign importers sourcing for trade related information, MATRADE, with its headquarter in Kuala

Lumpur, also maintains network offices located in major commercial cities worldwide. By offering market research information and international trade advisory services, MATRADE assists Malaysian exporters to enhance their products positioning in the highly competitive global markets.

In assisting the Malaysian SMEs to secure international business opportunities, MATRADE focuses on providing trade information, coordinating trade matching arrangements and organising export development programmes. Besides disseminating information on foreign trade opportunities, market trends, trade regimes and trade regulations to Malaysian exporters, MATRADE also provides facts and figures on Malaysian products and businesses to foreign buyers. In addition to trade directories, exporters' guidebooks, monthly trade bulletins, weekly trade leads and other related publications, the MATRADE library offers the business community a convenient means for conducting preliminary research on markets and products. MATRADE itself conducts trade research in ascertaining product and export market competitiveness in the traditional and new markets.

Another important role played by MATRADE in assisting Malaysian companies, including the SMEs, to increase international market shares is matching potential foreign buyers with suppliers of Malaysian export products and services. Trade related enquiries received by MATRADE overseas offices are disseminated to Malaysian manufacturers. In fact, a computerised database, which is updated on a regular basis, of Malaysian exporters and foreign buyers for business matching is maintained by MATRADE. Other means carried out by the agency in getting the sellers and buyers together include trade missions and



trade fairs. MATRADE organises trade missions overseas for manufacturers and arranges meetings with their counterparts in the countries visited. In addition, MATRADE also coordinates the participation of Malaysian companies in international trade fairs. Involvement in these trade fairs will showcase Malaysia's products and services, hence establish awareness of and further promote Malaysian products to the world.

With a view of progressing further in the global market, MATRADE is actively providing guidance and advice to SMEs that have the potential to market their products and services abroad. Seminars and workshops are regularly organised to nurture new exporters and update existing exporters on trade developments and business opportunities in international markets. In addition to advisory and consultancy services, MATRADE also provides grants to assist SMEs to undertake activities by themselves for the development of export markets. (443)

### **3.4.3 Credit Guarantee Corporation**

The Credit Guarantee Corporation (CGC), formed in 1972, is owned by the Bank Negara Malaysia (BNM) and a consortium of commercial banks and finance companies. Currently, the BNM holds 79.3% of the corporation while the remaining portion of the shares is held by commercial banks (<http://www.iguarantee.com.my>). CGC was set up to assist SMEs particularly those with inadequate collateral or without collateral or track record to obtain credit facilities from financial institutions by providing guarantee cover on such facilities. With such assurance, commercial banks are more confident to provide loans to small enterprises as it was felt that such a credit guarantee scheme

would make it possible to finance viable projects without collateral, something which was against commercial banking principles at that time.

The role of CGC is to formulate and manage viable credit guarantee scheme with the participation of the lending institutions, that is, the commercial banks. Essentially, the commercial banks provide the credit facilities and the CGC guarantees the repayment of the credit facilities in accordance with the terms and conditions of the guarantee schemes. Hence, by means of the network of numerous branches of commercial banks operating in the country, the CGC helps SMEs by providing guarantee cover for partly secured as well as unsecured credit facilities.

However, although its main function is to provide credit guarantee to the SMEs, the scope of operation of CGC may expand from time to time to cater for the changing needs of the businesses.

#### **3.4.4 The National SME Development Council**

The establishment of the National SME Development Council (NSDC) in 2004 marked an important event in the development of SMEs in Malaysia. Chaired by the Prime Minister, with the members comprising the ministers and heads of 18 key ministries and agencies involved in SME development, the NSDC is set to be the highest policy-making body to chart future direction and strategies for SME development. The commitment shown by the government signifies its seriousness and enthusiasm towards the growth and development of SMEs. The involvement of various ministries and agencies will generate more focused and

coordinated inter-agency efforts with minimising overlapping and duplication of developmental programmes.

In embarking on its activities, the NSDC is guided by its terms of reference formulated during its first meeting in August 2004. The terms of reference of the NSDC (2004) are as follows:

- I. Formulate broad policies and strategies to facilitate the overall development of SMEs across all sectors;
- II. To increase the focus of the roles and responsibilities of government ministries and agencies responsible for SME development;
- III. Enhance inter-ministries and agencies cooperation and coordination to ensure effective implementation of SME development policies and action plans; and
- IV. Encourage and strengthen the role of the private sector in supporting the overall development of SMEs.

Since its formation, the NSDC has implemented the government programmes designed to support the SMEs. Some of the notable achievements of the NSDC are the establishment of SME Bank, publication of SME Annual Report 2005, census on establishment and enterprise 2005, organising the SMIDEX 2006 and ASEAN + 3 SME Convention, just to name a few. The NSDC has also endorsed the National SME Development Blueprint 2006 (National SME Development Council, 2006). The blueprint provides the assessment of the implementation of key programmes to support SMEs in 2006, as well it identifies key programmes to be implemented in 2007. In January 2006, the NSDC

launched the SMEinfo Portal ([www.smeinfo.com.my](http://www.smeinfo.com.my)) that provides comprehensive information required by SMEs, including details on government programmes, financial products, training programmes, and tips how to start and manage a business (National SME Development Council, 2007a).

### **3.4.5 The SME Bank**

Mandated by the National SME Development Council (NSDC) in 2004, the SME Bank commenced operations on October 3, 2005 as a development financial institution to nurture and meet the unique needs of small and medium enterprises, which claimed to be underserved by commercial banks. Established as a result of a merger between two development banks owned by the government, namely the Development and Infrastructure Bank of Malaysia and the Industry and Technology Bank of Malaysia, the SME Bank complements the existing financial products and services provided by other commercial banking institutions. Its primary goal to be a one-stop financial centre responding to the funding and business growth needs of Malaysian SMEs is carried out through a comprehensive and integrated financial and business advisory services via its head office in Kuala Lumpur and 16 branches located in the major cities throughout the country.

The SME Bank was formed specifically to support the SME. Therefore, the products and services offered by the SME Bank are in response to SME requirements by industry, phases of business growth, and/or product and market potential. Although the core business centres around direct lending activities including funding of working capital, term loans, industrial hire purchase, leasing, factoring, and contract financing, the SME Bank may also guarantee loans

granted by banking institutions to SMEs and facilitate the securitisation of SME loans. Within three months of operations, the SME Bank has approved a total of 202 loan accounts, which amount to RM333.8 million (SME Bank, 2006). Apart from the financial products, the SME Bank also provides advisory services on financial and business management, marketing and other aspects of business development. These ancillary services, aimed at nurturing the SMEs, are delivered through the integrated network of service providers comprising the SME Bank employees, partners and third party experts, consultants and professionals.

### **3.5 THE NEED FOR THIS STUDY**

The previous section has elaborated on the roles of organisations that contribute towards the development of SMEs. The list is not exhaustive though. However, it is not the aim here to review all the government agencies and private institutions that contribute towards the development of the SMEs but to provide an insight to several organisations that play major roles and are commonly referred to by the SMEs. This, however, does not imply that other agencies and institutions such as the Malaysian Industrial Development Authority (MIDA), the Standards and Industrial Research Institute of Malaysia (SIRIM), the National Productivity Centre (NPC), and Federation of Malaysian Manufacturers (FMM), to name a few, are not relevant and unimportant. Each and every agency has its own task in steering the SME growth in tandem with the government's vision of a healthy and vibrant SME sector in Malaysia.

Nonetheless, quantity does not necessarily implicate quality. When there are too many players, sometimes wastage of resources occurs due to replication of duties. Looking through the functions and the programmes conducted by the

various supporting organisations, one could not fail to notice the lack of a holistic approach used by these organisations. Most of the supporting agencies described above tend to concentrate on programmes related to the marketing and promotion of SMEs' products and access to financing. Undeniably, these are prime concerns of the SMEs. However, there are other aspects seemed neglected. For example, in the past, the SMEs had been given access to financing by various agencies but there were no follow up actions to monitor or to provide guidance to the recipients on how to invest and manage the funds obtained. The financial advisory services provided by Bank Negara Malaysia, for example, there were 4,186 enquiries from SMEs seeking assistance from the bank. Of these, 77 percent were enquiries on special funds provided by the government and advice loan matters and the remainder 23 percent were requests for assistance, mainly for loan restructuring and rejections (National SME Development Council, 2007b). This indicates that both the agencies as well as the SMEs are more concerned with getting the financing but less emphasis was given to the management of the funds.

In other words, it could very well be that the problem for SMEs, in terms of financing, is not merely gaining access to funds but to effectively manage the funds that they have obtained. Perhaps the problem lies in managing the trade credit offered by SMEs to their customers. Therefore, this research study is a modest attempt to explore the potential problems that might lie in the SMEs' trade credit management practices.

Having said that, it might not be enough to merely identify the problems. Effective solutions to these problems must also be put forward. This effort would

require one to discover the factors that influence these problems. Hence, this research study also tries to identify some selected potential factors that might influence the SMEs' trade credit management practices.

### **3.6 SUMMARY**

This chapter has reviewed the development of small and medium-sized enterprises in Malaysia. The chapter began with a brief description of the demographic and geographical setting of Malaysia. Its historical background, particularly from the political and economic perspectives, has provided some insights into the scenario that gave rise to the importance of the SMEs.

There were two factors that have led to the government involvement in, and commitment to, the SME development efforts. Firstly, the need of transforming the economy from one relying mainly on the production and exports of primary commodities to a more broad-based structure, has triggered the government to design and initiate economic policies that enhance the diversification of the economic activities. The SME sector was then the catalyst in accelerating the implementation of the industrialisation programme with the manufacturing sector as the driving force. Secondly, the introduction of the New Economic Policy has breed numerous government and semi-government agencies, as well as private funding institutions, involved in the development of SMEs. The problems of coordination among these supporting bodies have led to the establishment of the National SME Development Council (NSDC). The fact that the Prime Minister chairs the council indicates the seriousness of the government's commitment towards promoting the development of competitive and resilient SMEs.

The chapter also discussed on definitions of an SME adopted by various researchers and government agencies. The inconsistency in defining small business is not new, and not only confined to Malaysia, but also elsewhere. The two common approaches employed in defining small business are based on qualitative and quantitative criteria. The former attempts to define an SME by looking at the attributes of the firm that characterised it as small. The latter, on the other hand uses some numerical measures such as the number of employees, the size of paid-up capital or annual sales turnover. For the case of Malaysia, there was no official definition until recently when the NSDC was formed in 2004. Since then, all the SME supporting agencies now subscribe to the definition adopted by the council in implementing their SME development programmes.

The chapter also deliberated on the problems of SMEs and the challenges that they need to address. The problems, however, are not very different from those faced by SMEs in other countries as some of the major ones are due to their smallness. Apart from these problems, the SMEs are also confronted with challenges that need to be tackled strategically. Hence, supports from the development agencies were beneficial in mitigating the situation. Some of the more important agencies were described in the last section of the chapter. The chapter ended with highlighting the need for this study in the light of this context.



## **Chapter 4**

### **RESEARCH METHODS**

#### **4.1 INTRODUCTION**

The previous chapter has thoroughly reviewed the development of SMEs in Malaysia, and has briefly described the settings under which SMEs operate. This fourth chapter of the thesis discusses aspects of research methodology applied in this study. The chapter begins with a recap of the research questions, the description of the research design, and the sampling process. Data collection and coding procedures are explained next. The section that follows concentrates on defining and measuring the variables. The chapter ends with the discussion of the methods of data analysis to be adopted.

#### **4.2 RESEARCH QUESTIONS**

As alluded to in Chapter 1, the intent of the study is to, first, to investigate and report findings on trade credit management practices of Malaysian SMEs in the manufacturing sector. Next, the study seeks to identify factors (company characteristics) that influence the trade credit management practices of the SMEs. The sections that follow will elaborate how these research questions would be answered.

### **4.3 RESEARCH DESIGN**

Research design is the science (and art) of planning procedures for conducting studies so as to get the most valid findings (Vogt, 1993). This is the stage where research methods that constitute the best way of gathering data are designed. In this section, the research designs that have been used are reviewed.

#### **4.3.1 Development of the Questionnaire**

A questionnaire is a preformulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives (Sekaran, 2003). Churchill, Jr. and Iacobucci (2002) assert that despite much progress having been made, designing questionnaire is still an art and not a science. Although there are methods proposed in designing a questionnaire, they are presented more as a guide or checklist.

Generally, the purpose of questionnaire design is to develop an instrument that is adequate and effective in addressing the research objectives, but at the same time, is respondent-friendly. Since the respondents for this study are the chief executive officers or managing directors of small and medium sized enterprises, the questionnaire should not be imposing too much time upon them. Additionally, it has been a well-known fact that SMEs are reluctant to respond to questionnaires. This is evident from the response rates obtained in previous studies on SMEs that used mail questionnaire (see Exhibit 4.2). Hence, for this study, the number of questions is kept to the minimum. As suggested by Hussey and Hussey (1997), questions that may be threatening or embarrassing to the participants are avoided. As a matter of fact, the questionnaire does not solicit

any financial data since many Malaysian SMEs consider the information as private and confidential.

Eventually, a three-page questionnaire consisting of twenty questions was developed with an estimated time to complete it of not more than 25 minutes. The questionnaire was designed to elicit information from the Malaysian SMEs in the manufacturing sector on their practices in trade credit management. Some of the questions used in the questionnaire were adopted from previous research (Goddard & Jay, 1981; Kirkman, 1977). Though dated, they are still applicable to current trade credit setting. Nonetheless, most of the questions were developed purposely to fulfil the needs of this research. Finally, space was provided at the end of the questionnaire for respondents to give comments on other aspects not covered in the questionnaire that, in their opinion, may contribute to best practices of trade credit management of SMEs.

The questionnaire was then pre-tested prior to the full-scale distribution. In its early stage, the questionnaire was given to several colleagues to read through. Though not in their area of interest, some did spot some glaring errors. The next stage involves pilot testing to small and medium enterprises that were not selected in the sampling process, but operating in the same locality of the researcher. The questionnaires were finalised and subsequently approved by the University of New England's Human Research Ethics Committee (see Appendix 1 & 2).

### **4.3.2 The Structure of the Questionnaire**

The questionnaire was structured with four main sections, each encompassing a different theme. The first section of the questionnaire concerns the identity of the company being studied. The questions solicit basic information on the SME such as the company's name and address, the respondent's name and position, and the industry sub-sector in which the company belongs. The following section of the questionnaire consists of a series of questions designed to obtain general information about the company, for instance age, number of full time employees, percentage of sales turnover transacted on credit, percentage exports to total sales, and whether the company is operating in a market dominated by a few large customers. The third section revolves around the trade credit practices of the company. Basically, the information request pertained to the administrative procedures of offering and managing trade credit resulting from credit sales to customers. Finally, the fourth section involves information related to the outsourcing of credit activities by the responding companies.

### **4.4 THE SAMPLING PROCESS**

Sekaran (2003) defines sampling as the process of selecting a sufficient number of elements from the population so that by studying the sample, and understanding the properties or the characteristics of the sample subjects, it would be possible to generalise the properties or characteristics to the population elements. The rationale of sampling is that, not only does it save time and money, but it is also more efficient and precise in conducting studies on a population (Fink, 1995). And for reasons of both economy and accuracy, a well-selected small sample is preferred to a large, poorly selected sample. The key

issue is that a sample must be representative of the population (Jackson, 2003). Hence, the need for selecting the right sample for a research investigation cannot be overemphasised.

Since sampling is an important part of a research method, it is essential that the process, from defining the population until the final selection of the elements, be undertaken in an appropriate, systematic manner conforming to certain acceptable standards. Several authors break down the process into a series of steps that researchers can follow when drawing a sample of a population (see, for example Churchill Jr. & Iacobucci, 2002; Davis & Cosenza, 1993; Jackson, 2003). The present study adopts some of the steps outlined by Churchill and Iacobucci (2002) and Davis and Cosenza (1993) in drawing a representative sample of the population.

#### **4.4.1 Defining the Population**

It is crucial that the population is meticulously defined before the sample design is considered. The use of the word 'population' in the sampling context is different from its general usage. A population refers to 'the entire group of persons (or institutions, events, or other subjects of study) that one wishes to describe or about which one wishes to generalise' (Vogt, 1993). For this study, the population would comprise all the small and medium-sized manufacturing companies operating within the Malaysian boundary. In Malaysia, business entities, irrespective of size, are required under the Companies Act 1965 to register with the Companies Commission of Malaysia (CCM), an autonomous body that functions as a one-stop centre for corporate information, regulation and development of conducive business environment. However, in reality, there are

some that do not comply with this ruling, particularly those businesses that are minute and operate in the remote parts of the country. Consequently, there is no comprehensive database that would comprise each and every SME in the country, and as a result, it would be practically impossible to collect data from them all. Hence, the study needs to identify a specific listing of the members of the population that can be the basis of the research.

#### **4.4.2 Identifying the Sampling Frame**

Cavana et al. (2001) defines the sampling frame as a listing of all the elements in the population from which the sample is drawn. Selection of the sampling frame is a critical step in the sampling process. Ideally, the list should include all or almost all members of the population. However, in practice, it is often not possible to get a complete and up-dated list of the population. Consequently, to enable a legitimate generalisation of the results of the study, the sampling frame should be representative of the population (Fink, 1995).

With reference to the present research, the elements are the manufacturing SMEs operating in Malaysia. As pointed out earlier, all companies, large and small, manufacturing or otherwise, are required to register with the CCM. The Small and Medium Industries Development Corporation (SMIDEC), a government agency responsible in the development of the small and medium industries, then picks from the CCM database, those that meet the SMEs criteria to be included in their directory of SMEs in Malaysia. Hence, for this study, the sampling frame comprises all the SMEs established in 1999 or earlier listed in the SMIDEC directory which is posted on their official website ([www.smidec.gov.my](http://www.smidec.gov.my)) as at end of December 2004. The SMEs formed after

1999 were omitted because the study utilises financial statements from 2001 through 2004. A review of the sampling frame indicates that there was a total of 11,449 SMEs categorised into the SMIDEC industry sectors shown in Exhibit 4.1.

**Exhibit 4.1**  
**Breakdown of the population by manufacturing industry sub-sectors**

Industrial Sub-sector	Frequency	Percent
Food, Beverages and Tobacco	641	5.6
Machinery and Engineering	2668	23.3
Chemical and Chemical Products	449	3.9
Paper and Printing	313	2.7
Plastic Products	448	3.9
Electric and Electronics	1188	10.4
Textile, Apparel and Leather	335	2.9
Rubber Products	424	3.7
Transport Equipment	954	8.3
Pharmaceutical Products	46	0.4
Non-metallic Mineral Products	284	2.5
Wood products	682	6.0
Palm oil-based Products	23	0.2
Metal Products	2994	26.2
<b>Total</b>	<b>11449</b>	<b>100.0</b>

#### 4.4.3 Choosing the Sample Design

The sample design is the method or approach that is used to select the units of analysis for the study (Davis & Cosenza, 1993). Although these methods can be classified on a variety of dimensions, the most usual breakdown of sample designs is into probability and non-probability sampling designs. The probability design involves a selection in which each element in the population has a known, non-zero chance of being selected for inclusion in the study sample. Non-probability designs are those methods where the chances of each element being selected are not known. More often, non-probability samples are chosen based

on judgement regarding the characteristics of the target population and the needs of the survey, or the selection made on the basis of ease or convenience.

Probability sampling designs would be more appropriate when the representativeness of the sample is of importance in the interest of wider generalisability (Sekaran, 2003). Hence, to be able to generalise the findings to the population of the Malaysian SMEs, the present study adopts the probability sampling design. However, since the population is categorised into groups based on the industry sub-sector, as shown in Exhibit 4.1, the stratified random sampling technique is deemed more suitable. Stratified random sampling is the process of obtaining a sample by separating the population into non-overlapping groups of elements, called strata, and then selecting a random sample from each stratum (Davis & Cosenza, 1993). Employing this approach will ensure that each subgroup will be represented in the sample. Stratification is an efficient research sampling design as it provides more information for a given sample size (Cavana et al., 2001).

#### **4.4.4 Determining the Sample Size**

The next step is to determine the number of the samples to be selected. The sample size refers to the number of units that need to be surveyed to get precise and reliable findings (Fink, 1995). In determining the size of the sample, many authors have discussed at length several approaches that can be employed (Cavana et al., 2001; Churchill Jr. & Iacobucci, 2002; Sekaran, 2003). One of the methods suggested by Churchill and Iacobucci (2002) that can be employed for the present study, is simply to use what others have used for similar studies in the past. It is reputed that SME owners/managers, particularly in Malaysia, are



reluctant to disclose information on the well-being of their business, hence, would not oblige to questionnaires from outsiders. Exhibit 4.2, extracted from Ismail's (2004) work, verifies the poor response rate attained by several researchers for studies conducted on SMEs in various countries. To generate an adequate number of usable responses for meaningful data analysis, the sample size for the present study was decided to be 1000.

**Exhibit 4.2**  
**Response rate of previous studies in selected countries**

Author	Response rate	Country researched
El Luoadi (1998)	24%	Canada
Bridge and Peel (1999)	21%	United Kingdom
Thong (1999)	14%	Singapore
Seyal et al. (2000)	38%	Brunei
Lesjak (2001)	15%	Slovenia
McMahon (2001)	32%	Australia
Hussin et al. (2002)	18%	United Kingdom
Ismail (2004)	27%	Malaysia

#### **4.4.5 Selecting the Elements**

The final part in the sampling process is selecting the elements that would be included in the study. How the selection is done depends on the sampling design chosen. Earlier, the present study has decided to adopt the stratified sampling since the population has been classified into different industry sectors. Once the selection of 1000 SMEs has been made, the addresses of the sample were compiled for data collection process.

## **4.5 DATA COLLECTION**

The data employed in the study are drawn from two sources. The first involved a survey questionnaire mailed to 1,000 small and medium sized manufacturing companies, and the second data source was the financial statements of the sampled companies. The purpose of obtaining accounting data from a different source, instead of requesting it from the SMEs through the survey, is to make the questionnaire as brief as possible. Furthermore, studies attempting to obtain financial information from respondents generally result in a very low response rate. By and large, small and private enterprises usually shun strangers enquiring matters pertaining to their financial affair. This approach, hopefully, would increase the respondents' motivation for completing the questionnaire.

### **4.5.1 Data from the Questionnaire**

The questionnaires were mailed to Chief Executive Officers (CEOs) or Managing Directors (MDs) of the SMEs selected for the study. The CEOs and MDs were chosen to be the respondents to the survey because they were generally the owners or managers of the SMEs (Miller, Kets De Vries, & Toulouse, 1982; Mintzberg, 1979). Due to their size, it is reasonable to assume that the owners-managers are knowledgeable about their credit operations. Moreover, being small, many of these companies do not employ a specific person to take charge of the credit activities; instead, the owners/managers themselves perform the various business functions including financial and credit management activities.

To increase the response rate, a cover letter and a supporting letter accompanied the questionnaires sent out. A copy of the cover letter is reproduced in Appendix 3. The cover letter serves to introduce and explain the

purpose of the survey and highlights the importance of their participation to the study. Apart from promising anonymity and confidentiality of the respondents, the letter also spells out how the information obtained will be treated during and after the study. The respondents are also offered the opportunity to receive a free copy of the summary of the study. Contacts were also provided in the letter should the respondents wish to raise any matter related to the survey.

The supporting letter, illustrated in Appendix 4, was obtained from the Ministry of Entrepreneur Development and Cooperatives (MEDC). Signed by the Deputy Director of the Entrepreneur Development Department, the letter expresses the patronage of the ministry on the study and emphasizes the importance of the SMEs to participate in the survey. This supporting letter was sought in anticipation that it will motivate the SMEs' participation in completing and returning the questionnaire, as suggested by Bartholomew and Smith (2006). In their recent study, it was found that endorsement from the relevant trade association had a significant positive influence with the recipients of the endorsement letter being 1.4 times more likely to respond to the survey than those who did not receive an endorsement letter accompanying the survey. Finally, a pre-stamped self-addressed envelope was also enclosed to facilitate the respondents in mailing back their responses.

Two weeks subsequent to the initial mailing of the questionnaires, a postcard reminder was sent to all respondents irrespective whether or not a feedback has been received. The postcard, reproduced in Appendix 5, actually is a dual-purpose message of thanking those who have completed and returned the questionnaire and reminding those who have yet to respond (Dillman, 2000).

Then, two weeks later, another reminder was sent but only to those who have not responded. The letter notifies the non-responding SMEs that their questionnaire has not been received. In an effort to appeal for their participation in the survey, another copy of the questionnaire was enclosed. This second reminder is shown in Appendix 6.

Due to resources constraints, there was no further correspondence by post. Nevertheless, to complement the postal reminders described above, other initiatives were carried out. By surfing the internet, telephone numbers and e-mail addresses of the non-respondents were obtained. This, however, was limited to those SMEs that have websites. While e-mail reminder was sent to most of the non-respondents, a personal follow-up telephone call was made to a selected few, particularly those SMEs located in close geographic proximity to the researcher.

Despite various attempts that have been carried out to promote responses, the result, though sufficient for analysis, was not very encouraging. Of the 1000 questionnaires distributed, 323 were returned. Further scrutiny on the returned questionnaires revealed that only 214 were usable. Exhibit 4.3 details the breakdown of the non-usable responses. The exhibit showed that 67 of the questionnaires were returned unopened, with the envelope marked as either 'addressee has moved' or 'ceased operation'. Nineteen of the feedbacks declared that they were no longer categorised in the SME sector; 13 said that they have grown to the size that has exceeded the SME criteria, and another 6 stated that their core businesses have shifted from manufacturing to non-manufacturing concern such as trading and services-related activity. Feedbacks

from third parties, usually the law firms and liquidators, were also received on behalf of 12 SMEs that were under the process of liquidation. Another 11 respondents have left many of the questions unanswered. After excluding these respondents which totalled 109, and employing the calculation used by Churchill and Iacobucci (2002), which was adopted from CASRO (1982), the response rate for this survey was 24 percent.

**Exhibit 4.3**  
**Breakdown of unusable response**

	Frequency	Percentage
Returned unopened	67	61.5
Not SME	13	11.9
Non-manufacturing	6	5.5
Ceased operation	12	11.0
Incomplete	11	10.1
<b>Total</b>	<b>109</b>	<b>100</b>

#### **4.5.2 Data from Financial Statements**

As mentioned earlier, the second data source was the financial statements of the sampled companies. The financial statements could be drawn from the Companies Commission of Malaysia (CCM) in view of the fact that Section 167 of the Companies Act 1965 requires registered companies to file accounting records annually to the CCM. However, the main drawback of using the CCM data is that it is very basic and not in detail. Since the act does not specify the format of the accounts to be submitted, it is not uncommon to find the financial figures being summarised just to meet the minimum requirements. For example, the current assets components were frequently not presented separately into stocks, receivables and cash, but displayed as a single subtotal figure. Essentially, these

individual accounts of the current assets form the core ingredient of a study on liquidity and trade credit management practices of a company.

To overcome the limitation of the CCM database, detailed financial statements were sought from Business and Search Information Services (BASIS). BASIS, an independent and private credit information agency, had been managing and providing online credit information to financial institutions, stockbroking companies, legal firms, prominent multinational corporations and other corporate entities to assist credit decision makers in making sound credit decisions, thereby reducing their risks in extending credit. BASIS had the largest database in the private sector in Malaysia that comprises the credit records of 10.5 million individuals, more than 300,000 companies and businesses. They also obtain reports on foreign-based corporations through their international affiliates ([www.basis.com.my](http://www.basis.com.my)). Information is provided to clients by subscription.

The original source of business information compiled by BASIS is the CCM database. However, BASIS builds up and enriches its database by carrying out further research, cross referencing on the company and its director, credit checking, interviewing with the company's management, and obtaining suppliers' information on its payment records, clientele, operations, recent development and current investigations. Eventually, the brief financial record obtained from the CCM turned out to be a comprehensive financial statement that would allow detail analyses on a company to be conducted. Appendix 7 shows a sample financial statement of an undisclosed company provided by BASIS.

For the purpose of this study, BASIS has generously obliged in providing the necessary information needed. This study used the data extracted from the

annual financial statements, from 2001 through 2004, of 214 SMEs that had their questionnaires completed and returned. These statements of four years are then transformed into a single statement by averaging all the individual items of the financial statements. Financial figures tend to fluctuate from year to year. The financial variables derived from data for a single year may be influenced by some temporary unusual circumstances occurring in that year and they may not represent the true financial characteristics of the companies. Hence, instead of using the latest financial statement available, the financial data employed in this study are four-year averages. The time period is considered sufficient, as the use of averages for too long a time period would have disadvantages. Meric et al. (2004), for example, state that averages for longer period, say 10 years or more, would reflect some companies characteristics that prevailed long time ago, which may no longer exist. Consequently, each company would have a single financial statement that can be matched to the corresponding responses from the questionnaire.

#### **4.5.3 Non-Response Bias**

According to Dillman (2000), non-response error occurs when a significant number of people in the survey sample do not respond to the questionnaire and have different characteristics from those who do respond, when these characteristics are important to the study. Frequently, the mail survey has been denounced for non-response bias. It is a major problem associated with questionnaires, particularly those distributed by post, as it has implication on both quantity and quality of the data obtained (Diamontopoulos & Schlegelmilch, 1996; Hussey & Hussey, 1997). In dealing with the potential problem of non-response

bias, several approaches have been proposed. Lambert and Harrington (1990), for example, deal with the problem by sending a condensed version of the original questionnaire to non-respondent population. Likewise, Roberts (1999) compares between the respondents and non-respondents, but using firms characteristics such as size, location and industry. In addition, she also assesses the likelihood of non-response bias using late response as a surrogate for non-responses. Earlier studies by Armstrong and Overton (1977) and Wallace and Mellor (1988) too advocated similar concept and suggest that responses are analysed and compared by date of reply. Referred to as 'extrapolation method' by Armstrong and Overton, and as 'surrogate method' by Wallace and Mellor, the method is based on the assumption that subjects who respond late have similar characteristics to non-respondents. Hence, this approach is conducted by comparing the responses of early and late respondents. If there are no systematic differences between the responses of the two groups, it is assumed that the non-response bias is not a significant factor.

This study adopts similar approach in analysing the non-response bias whereby late responses are used as a proxy to non-responses. For this purpose, the first 30 and the last 30 responses received were identified and selected for analysis. Thirty elements were chosen for each group, as the number is considered large enough to be meaningful statistically. The middle majority was omitted to clearly separate between the early and late respondents. The two groups were then compared on some selected major variables, both from the questionnaire as well as from the financial statements.



The results of a chi-square test on the nominal variables selected, and a t-test on the continuous variables, are presented in Appendix 8. None of the variables tested produced significant differences at 5% level of significance between early and late respondent. The results imply that, even though if there exist some bias in the responses in the questionnaire tested, they are not a significant factor that could affect the conclusions about the variables being studied. Hence, it can be concluded that there is no difference between companies that respond and those that did not.

#### **4.6 DATA CODING**

Data coding involves the translation of the collected into codes, usually numerical codes, for the purpose of transferring the data to a data storage medium and subsequent computer analysis (Davis & Cosenza, 1993). The raw data collected, both from primary and secondary sources, need to be transformed to a format that is more suitable to perform a data analysis that will achieve the research objectives (Zikmund, 1991). Financial data and survey responses gathered from returned questionnaires are coded into a construct that is readable by the statistical package chosen to analyse the data. The computer software to be used in the present study is the SPSS Release12.0 for Windows.

Like other statistical packages, SPSS expects the data to be in numerical form. Hence, answers provided in the returned questionnaires that are non-numerical are assigned numbers to enable the responses to be analysed using the software package. For example, a “yes” or “no” answer can be numerically coded 1 = yes, 2 = no (Davis & Cosenza, 1993). Numeral answers are entered

directly into the SPSS data file as it recognises and can manipulate numeric values efficiently.

In addition, this study uses selected financial ratios as the independent variables. These ratios are derived from financial statements of the SMEs obtained from an independent credit information company. The relevant figures from the balance sheet and income statement of the SMEs are keyed in into the data file in their absolute values. The required ratios can be easily calculated using menu-driven commands featured in the software package.

Once all the data has been entered for all the respondents, a wide range of statistical tests can be performed. The choice of the methods of statistical analysis depends on the type of question to be answered, the number of variables, and the scale of measurement (Zikmund, 1991). The proceeding sections are devoted to measurement of variables that are considered in the analysis, and followed by methods of data analysis adopted for this research study.

#### **4.7 HYPOTHESIS**

In relation to the second research question, i.e. to identify company characteristics that influence companies' trade credit management practices, the broad null hypothesis can be expressed as follows:

*H<sub>0</sub>: Companies with different characteristics would have the same trade credit management practices.*

There are various trade credit management practice variables examined in this study. Hence, it would be tedious, repetitive and generally not very helpful to enumerate specific hypotheses at this stage. Therefore, the specification of more definite hypotheses is deferred until a sub-set of the trade credit management practices that would be examined further are selected in Chapter 6.

The broad hypothesis above implies that company characteristics are the independent variables whereas the trade credit management practices are the dependent variables. The measurements of these variables are specified below.

#### **4.8 MEASUREMENT OF VARIABLES**

The variables are grouped under two categories: company characteristics and credit management practices. As indicated earlier, the data sources are feedback from questionnaire as well as financial statements of the sample companies. Some of the variables, particularly those derived from financial statements, are expressed in more than one way, and are all described in the initial analysis in the next chapter. For example, the variable for liquidity is could be represented by current ratio, quick ratio or net working capital ratio. However, for further multivariate analysis, only one will be included, as they seem to be highly correlated. The following two sub-sections discuss the variables adopted for the empirical analyses.

##### **4.8.1 Factors Representing Company Characteristics**

In this section, variables depicting the attributes of companies are discussed. Some of these variables, which describe the profile of the companies, are the

responses obtained from the questionnaire. Variables that are financial in nature are derived from the financial data of companies, obtained from an independent credit information company, as indicated in the earlier section. The following sections are the description of variables or factors that represent company characteristics.

### ***Type of industry sub-sector (INDUSTRY)***

Companies within an industry, generally, have similar terms of credit. In a fairly competitive market, there will be no marked differences in the degree of managerial efficiency and technology among companies within an industry. A company may not be able to significantly deviate from the industry practice, as the outcome will result in either customer switching to competitors, or competitors may emulate the new terms introduced. Consequently, industry norms will develop to which most companies are expected to adhere. Hawawini et al. (1986) find that there exists a significant industry effect on companies' investment in working capital. A survey done on UK businesses, reveals that 40 percent of the firms surveyed stated that industry characteristics influence or determine their trade credit policies (CMRC, 2005).

### ***Company age (AGE)***

The number of years a company has been in operation can have ambiguous effects on trade credit practices. For example, age might proxy for access to formal sources of credit, and therefore older companies tend to offer more credit (Petersen & Rajan, 1997). Alternatively, if trade credit is perceived to function as a warranty for product quality, then older companies need not offer longer credit

because their own reputations will serve as a guarantee to product quality, thus, making trade credit unnecessary (Deloof & Jegers, 1996; Long et al., 1993).

### ***Company size (WORKERS, TURNOVER, TASSETS)***

Size may influence the way a company manages its trade credit. By and large, larger companies have greater resources, or better access to resources, that could be used in managing their trade credit. For example, larger companies with potentially greater access to external sources of financing might act as a financing channel by offering credit to their customers. In addition, with greater resources, these companies can put up with collection postponement to clients with financing difficulties. On the other hand, larger companies are more likely to be able to provide the resources and expertise to efficiently manage their receivables that will result in shorter collection period and reduced credit risks. Hence, with this contradictory argument, it would be meaningful to include company size as one of the explanatory variables.

Company size can be measured by using total assets (as employed by Delannay & Weill, 2005; Deloof & Jegers, 1999; Huyghebaert, 2006; Regupathi & Zainudin, 2003) or annual sales turnover (for example, Cheng & Pike, 2003; Eljelly, 2004; Padachi, 2006; Summers & Wilson, 2002). Another common measure for size of a company is based on the number of workers employed (Howorth & Reber, 2003; Peel et al., 2000). Although the market value of equity could also be a proxy to represent size, unlike larger firms whose shares are traded in the stock exchange, the value of equity for SMEs could not be easily determined. For the present study, information on the first three measures is available. Both the total assets and turnover data were extracted from the

financial statements, and the number of employees was obtained from the questionnaire responses. Although each of these will be describe in the next chapter, only one will be selected to be included in the final regression model.

### ***Credit sales (CRDTSALE)***

Credit extension to customers is not only a normal part of a company's day-to-day business transactions, but is now the essence of business deals. It is rare indeed to find a business that conducts its daily transactions purely on a cash basis, particularly in the case of small businesses where trade credit constitutes one of the major sources of finance. In fact, a recent survey in the UK reports that 89 percent of the customer base of small businesses surveyed has a credit account (CMRC, 2005).

It is obvious that the proportion of sales made on credit will determine the way a company manages its credit. Without credit sale, there will be no accounts receivable and thus, credit management is not required at all. The higher the portion of a company's credit transactions relative to cash sales, the more thorough would be its receivables management. For that reason, it can be expected that the volume of credit sales may have some effect on the credit practice of a company.

### ***Export sales (EXPORTS)***

Exporting goods to other countries comes with a greater amount of risk than doing business locally. In the domestic market, information is easier to obtain and risk can be quickly assessed. Nevertheless, the volume of goods being sent

around the world is increasing, and the ability to compete in a global marketplace has now become a necessity. Credit, which is granted frequently in most international cross-border transactions, is one of the main factors driving export growth. Samuels et al. (1992) find that 68 percent of the time export transactions are made on the basis of one form of credit or the other. Hence it is apparent that credit is a predominant practice in trade even for the smaller firms with a time lag between despatch and payment of between one and six months in 97.7 percent of the cases (Samuels et al., 1992).

### ***Asymmetric bargaining position (POSITION)***

Small and medium-sized companies that rely heavily on a few large customers tend to manage their receivables differently compared to those SMEs that do not. Their size often puts them in an asymmetric bargaining position such that the decision to grant credit and on what terms to offer are often driven by customer expectations or customer pressure (Wilson & Summers, 2002). Hence, it is not unusual for large dominant customers, though they may be financially sound, to be technically in default as they may simply use their competitive power to their advantage (Gallinger & Healey, 1991). These domineering purchasers, who dictate longer payment terms than economically or administratively justifiable, therefore weaken the balance sheets of the supplying SMEs. In another situation, Mian and Smith (1992) find that companies with a high reliance on a few large customers are less likely to outsource their credit management activities.

### ***Liquidity (CURRENT, QUICK, WORKCAP)***

Liquidity is another possible factor that might influence SMEs in managing their trade credit. A company that has higher liquidity has more liquid assets, and typically therefore, has less financial risk. The company can easily convert these assets to cash for meeting unexpected cash outlays, and is likely to depend less on the external credit market. Consequently, a company with higher liquidity would be expected to extend more trade credit to its customers as the company can afford to allow a greater portion of its sales proceeds to remain as receivables instead of cash.

Liquidity may be looked at in three different ways. Current ratio is one measure that expresses liquidity as the ratio of current assets to current liabilities. This ratio indicates the extent to which the claims of short-term creditors are covered by assets that are expected to be converted to cash fairly quickly. Hence, it is the most commonly used measure of short-term solvency (Ehrhardt & Brigham, 2003). Liquidity in terms of quick ratio is measured by dividing current assets net of inventory, by current liabilities. By omitting inventory, a more refined liquidity level is reflected. Inventory is often the least liquid current assets and its value is the least reliable as the quality is uncertain. Some of the inventory may later turn out to be damaged, obsolete, or lost (Ross et al., 2007). Still, another way to measure the firm's ability to satisfy short-term obligations is the net working capital ratio, which is simply the net working capital (current assets minus current liabilities) expressed as a proportion of total assets. This ratio roughly measures the company's potential reservoir of cash in relation to its total assets (Brealey, Myers, & Marcus, 2001). Altman (1968), in developing the Z-score model, selected this ratio as one of the variables used in the discriminant



function. Hutchinson and Ray (1986) choose the net working capital ratio to represent liquidity when analysing the financial profile of super growth small enterprises.

### ***Efficiency (TATOVER, FATOVER, INVTOVER)***

Efficiency is another potential factor that may affect credit practices of an SME. Efficiency, which indicates how well a company utilises its assets, is concerned with the ratios of outputs relative to inputs. These ratios are based on the relationship between the level of activity, represented by sales, and levels of various assets. Commonly, a company is said to be more efficient if it can generate relatively more sales turnover or revenue by using relatively less assets. This means that a more efficient company would be expected to manage all of its assets, including trade debtor, better. Some of the common ratios employed in evaluating company efficiency are total asset turnover, fixed asset turnover, inventory turnover, and receivables turnover. Meric et al. (2004) for example, use only two efficiency ratios, namely total assets turnover and inventory turnover, to represent the activity level of companies in their sample.

In this study, efficiency is described using the total assets turnover, fixed assets turnover and inventory turnover ratios. Total asset turnover ratio, measured as the ratio of annual sales to total assets, shows how efficient a company is at generating revenues for a given level of total assets. For example, a ratio of 1.0 would indicate that a company is generating RM1 of sales for every RM1 invested in fixed assets. Therefore, the higher is the ratio, the more efficient is the company. However, this ratio is trending lower, it may indicate that the company is making heavy investments in assets in anticipation of sales growth

that has not materialised (Robinson, Munter, & Grant, 2004). Accordingly, fixed asset turnover ratio is the proportion of annual sales to fixed assets, and represents the amount of sales made out of one ringgit investment in fixed assets. Inventory turnover however, indicates how many times inventory was acquired and then sold over the year. Total asset turnover is a broad measure, whereas fixed asset turnover and inventory turnover are specific measures for these particular asset categories.

### ***Profitability (OPERPROF, NETPROF, ROA)***

Profitability is another possible factor that could influence a company's management of trade credit. Typically, offering credit is unlikely to be a manufacturing company's mainstream activity because it is likely to obtain only a marginal profit from extending credit to its customers. Thus, arguably, only more profitable companies would be able and willing to offer more credit and extend longer credit period to their customers. For example, a more profitable company would be expected to have longer collection period. Conversely, it could be argued that companies would be more profitable if they collected their trade credit faster, thereby reducing opportunity and financing costs as well as bad debts. In other words, a company with a shorter collection period would be expected to have a higher profit. This later argument contends that trade credit collection influences profitability, rather than the opposite. Thus, to gain an insight into the actual relationship between trade credit practices and profitability, it must be determined empirically.

Profit, which reflects the excess of revenue over expenses, is a powerful measure of business performance (Broadbent, 1999). Although absolute profit is

a measure of performance, it must be linked to some measure of input to provide an indicator of financial accomplishment that is comparable. There are many ways to measure profitability. The widely used profitability ratios include net profit margin and return on assets. The former refers to the net profit stated as a percentage of sales revenue, while the latter is the net profit expressed as a percentage of total assets. Another important ratio that can be used to gauge financial performance is the operating profit margin. This ratio is simply the operating profit stated as a percentage of sales. This ratio shows the raw earning power of the company's assets, before the influence of taxes and leverage, and it is useful for comparing companies with different tax situations and different degrees of financial leverage (Ehrhardt & Brigham, 2003).

### ***Growth (GROWTH)***

Many earlier studies have observed the relationship of growth with company age, size, performance and liquidity (see for example Richard G.P McMahon, 2001; Wren & Storey, 2002). Other studies have indicated that growth is one of the determinants of capital structure (Chittenden, Hall, & Hutchinson, 1996; Hutchinson, 2004; Jordan, Lowe, & Taylor, 1998). Ray and Hutchinson (1983) report that rapid growth companies are consistently short of working capital and experience cash flow problems. Delannay and Weill (2005), in their study on trade credit in European transition countries, find that the relationship between accounts receivable ratio and sales growth is inconclusive. On the one hand, companies that experience growth lengthen terms of payments to their clients. On the other hand, these companies are less dependent on their clients, and can consequently influence the commercial negotiations to their favour by reducing

delays of payments. The study also highlights that companies experiencing negative growth have higher accounts receivable, probably due to their effort in curbing the sales decline by offering more favourable terms of payment.

McMahon (2001), as mentioned in Holmes et al. (2003), finds that experience of growth seems not to have influenced the return on investment, asset structure, financial structure, liquidity and solvency ratios of the Australian SMEs studied.

Holmes et al. (2003), while stating that the level of growth may be measured in different ways, identify a smaller growth enterprise as an owner-managed concern experiencing ongoing, significant and often rapid increases in some or all of the usual indicator of size, such as sales revenues, assets, profits and number of employees; and which may also be moving towards greater product, geographical or technological diversity. The variable for growth rate used in this study, however, is defined as the compound annual growth rate in the company's sales over the four-year period ending in 2004 (also used by Gupta, 1969; John, 1993; McMahon & Davies, 1994). The computation for growth uses the following equation:

$$g = \left( \frac{T_4}{T_1} \right)^{\frac{1}{3}} - 1$$

where  $g$  is the growth rate;  $T_1$  is the turnover for 2001; and,  $T_4$  is the turnover for 2004.

#### **4.8.2 Variables Reflecting Credit Management Practices**

What constitutes trade credit management practices? Talaga and Buch (1992) identify credit practice to include the extent of cross-national credit extension, the

sources of information used, the assessment criteria used, and the level of consistency in credit extension decisions. Hence, credit management practices are the habitual or customary actions or ways in managing the credit process. Mian and Smith (1992) considers credit-administration process that need to be undertaken in credit extension involves credit risk assessment, the credit-granting decision, financing of accounts receivable, credit collection, and the assumption of credit risk. Cole and Mishler (1998) state that credit management process includes assessment of credit risk, credit investigations, monitoring of accounts receivable and collection of debts. The following are some of the potential variables that might explain the way SMEs manage their trade debts.

### ***Credit manager (CRDTMGR)***

Many large corporations operate their own credit departments, headed by senior personnel and assisted by a team of supporting staff. However, small companies typically lack a formal set up or an organised division that oversees the credit management activity. It is not uncommon to have the owner or manager taking charge all the business functions, which include financial and credit management. In a more recent survey on the UK SMEs, it was revealed that on average, 45 percent of the respondent companies have a full-time credit officer (Poutziouris et al., 2005).

### ***Credit policy (CRDTPLCY)***

When a company manages its receivables without a credit policy, then it is operating on intuition. Customers are likely to receive inconsistent treatment as the sales staff, in the absence of a policy, may act differently at different time in

handling credit customers. This may lead to complaints from, and conflicts between, customers and staff, which will affect the efficiency of the credit function. Pike and Cheng (2001) observe that almost all (94 percent) of large UK companies have a credit policy manual, although, slightly more than half regard their credit policy as fully documented.

### ***Written credit policy (WRITPLCY)***

Having a credit policy is fundamental to any business. However, making sure that it is widely known and understood by all staff is equally important. An effective way to have the policy conveyed to the staff, and to make them aware of its existence is by having the policy documented. A written policy could be practically communicated to, and conveniently referred by, credit personnel as well as other departments within the business. Although a written policy enhances the management of receivables, the practice of having one is yet to be explored. Previous studies have proven that not all companies document their credit policy. Pike and Cheng (2001) observe that 54 percent of large UK firms regard their credit policy as 'fully documented'. For the SMEs in the UK, Wilson et al. (1995) find that 35 percent of them have their credit policy in written form. However, more recently, the number has increased to 52 percent (CMRC, 2005). Poutziouris et al. (2005) on the other hand discover and categorise the existence of a credit policy among UK SMEs this way: 36 percent: of them have a fully documented credit policy, with another 41 percent having a partially documented policy, in 21 percent of respondent SMEs, credit policy is either purely verbal or non-existence.

### ***Credit assessment (CHECKING)***

In essence, a company should never grant credit unless it is confident that it will get paid. To convince itself in making right credit decisions, the company needs to perform credit checking on potential customers. Obviously, credit assessment is a prerequisite to credit granting and it is expected that a rational creditor would carry out the procedure. Although it is found that more than 70 percent of the small firms indicated that they checked the creditworthiness of customers before granting credit (CMRC, 2005; Peel et al., 2000), the situation for manufacturing SMEs in Malaysia is unexplored.

### ***Sources of credit information (INFOSOS)***

To make credit decisions, companies that perform credit checking would obtain information about prospective customers that will permit an assessment of the likelihood of payment. Generally, the more information the seller obtains, the better the assessment is, but also the more costly. Hence sellers must decide where to trade off between accuracy of decisions and costs of information. In this study, the respondents were asked to indicate the various sources of credit information widely used in making credit decisions.

### ***Credit period (CRDTPRD)***

The credit period, one of the major components of the terms of sale, refers to the length of time customers are allowed to pay for their purchases. Although credit periods may vary widely from industry to industry, they tend to be fairly uniform within an industry. This is justified as follows. Generally, buyers are tempted to purchase from suppliers who offer the longest credit period. Hence, customers

may simply switch to the most generous supplier. Other suppliers will follow accordingly in an effort to retain their customers. Subsequently, the credit period will settle at a new level where most companies are expected to adhere to remain competitive. However, companies can and do lengthen their credit period to stimulate sales, or under some circumstances, provide longer period to some selected customers.

### ***Collection period (COLLPRD)***

Sometimes referred to as debtors days, days' sales outstanding (DSO), the average collection period (ACP), represents the average number of days for which a company has to wait before their receivables are converted into cash. It is the length of time, in days, taken by their customers to pay their trade debts. The ACP, or simply collection period, however, not only conveys the payment behaviour of the customers, but also reflects the company's credit management performance. Collection tasks are central to credit management activity. Hence, this variable is generally compared with the company's credit period to judge the efficiency of receivables management. Collection period therefore, is an important variable that characterises the credit management of a company.

### ***Overdue days (OVERDUE)***

Ideally, the collection period should equal the credit period offered to customers. However, more often than not, collection period exceed credit period as payments from credit customers are made after the due dates. This practice of late payment of trade debt has been cited as a major problem facing small and medium-sized businesses. It is a continuing problem for businesses across all



sectors in many countries, hence the introduction of laws in some countries to regulate credit activities. As indicated earlier, collection period does not necessarily indicate the collection performance of a company, as it has to be measured against the credit terms. The length of time collection period goes beyond the credit period is called overdue days (Cheng & Pike, 2003). This would be explored in this study.

### ***Cash discount (DISCOUNT)***

Companies generally offer cash discounts to induce customers to make prompt payments thereby speeding up the collection of receivables. The discount rate and the period during which it is available are reflected in the credit terms.

Offering cash discount tends to enhance sales if the customers perceive the discount is as price reduction. Concurrently, it may also reduce collection period as customers pay promptly to take advantage of the discount. However, offering discounts increases cost to the company, and this cost of discount needs to be weighed against the cost of having to wait for the settlement of the debts.

Consequently, not all companies provide cash discount in their terms of sale.

And for those companies that offer cash discounts, not all customers, for various reasons, are tempted to take up the offer.

### ***Late payment interest (INTEREST)***

Late payment of bills by customers can, and does, cause trade credit providers severe problems. Being relatively small, the SMEs are likely to be more affected, as their own sources of finance generally are very limited. To mitigate the effects of late payment, some business creditors stipulate in their terms of sale clauses a

form of words that will allow them to charge interest on overdue accounts. In the UK and EU, the rights to charge interest on late payments were legislated to overcome problems related to late payment. However, this government intervention has limited impact as shown by a survey (CMRC, Quarterly Review, 1999) as quoted in Wilson and Summers (2002). The survey found that only five percent of small firms had considered using the legislation. Fear of damaging customer relationships was cited as the main reason for not enforcing interest charge (Wilson & Summers, 2002). A more recent survey by the same group reveals that only 34 percent of large firms surveyed claimed to have conditions of sale that allow them to charge interest on overdue accounts. This compares with 54 percent of micro firms and 49 percent of small firms (CMRC, 2005).

In Malaysia, there is no specific law that is aimed at tackling the problems caused to small companies due to late payments of trade debt. However, there are no legal rulings that prevent trade creditors from charging interest on late payments. Accordingly, it is up to the business to decide whether or not to penalise customers who pay after the due date.

### ***Credit limit (CRDTLMIT)***

Unlike a bank term-loan, trade credit granted to a customer is not a one-time affair. Often a company would offer the facility on a continuous arrangement, supplying goods or providing services on a regular and recurring basis. The amount of credit allowed will normally depend upon the results of the credit assessment made on the potential customer. Besley and Osteryoung (1985) find that most firms use credit limit with the primary rationale being to control exposure to risk. Beranek and Scherr (1991) also find similar results where 92.7

percent of their survey participants said that credit limits are used for risk control. A more recent survey of the UK small firms indicates that 63 percent of all the firms set credit limits for all of their accounts and only 16 percent do not set limits for any of their accounts (CMRC, 2005).

### ***Special terms (SPECTERM)***

Most companies, albeit maintaining standard terms of sale, do allow some variations from the norms for some reasons. Occasionally, there will be situations when it is commercially expedient to deviate from the standard terms, and offer the customer special deals. A survey by Goddard and Jay (1981) reports that about 75 percent of textile companies and 80 percent of companies in the electronics industry offer special terms to some customers. Although their respondents gave several reasons, the main causes for granting special terms were concerned with obtaining large orders, though in some cases large customers dictated the terms of sale to the seller. A more recent study seems to concur with the finding. A survey on UK businesses reveals that slightly more than 20 percent of all companies said that they would be “not at all likely” to vary their credit terms, with only 12 percent of the manufacturing sector claims the same to be true (CMRC, 2005).

### ***Invoicing promptness (BGININVO)***

The primary purpose of an invoice is to ask a customer to pay his bill. Therefore, invoicing is an essential part of the collection process and it should be done at the time of purchase or delivery of the purchase or very soon after. The sooner an invoice is sent, the sooner the customer is notified of the amount billed.

Goddard and Jay (1981) find that 83 percent of the sample for the textile industry, and 63 percent of the electronic industry sample, A more recent survey in the UK reports that larger companies are more likely to send out statements immediately or within three days (CMRC, 2005). The situation for SMEs in Malaysia is yet to be explored.

### ***Collection commencement (BGINCOLL)***

When does collection activity begin? Ideally debtors should pay their accounts promptly without the need of reminders. In reality, not all debtors strictly adhere to the terms that they have initially agreed. Conversely, it would be unwise for a creditor to engage a solicitor or debt collector without first trying to collect the overdue account himself. Therefore, the creditor normally would be involved in the initial stage of collection.

### ***Standard collection procedures (COLLPROC)***

Collecting is an integral part of the credit operation. As long as there are credit sales made by a company to its customers, collection activities will never cease if the company is to survive. As collection becomes a routine chore for trade creditors, companies usually use standard procedures to facilitate the process. However, it is not unusual for companies to treat some customers, usually the larger and valued clients, more favourably.

### ***Outsourcing (OSOURCED)***

As credit management achieves a more pivotal role in the day-to-day running of a company, and pressure to reduce staff levels mounts, one inevitable consequence is that a number of traditional activities will be outsourced. This will enable more time to be spent on crucial issues and enable the expertise of specialists to be more readily utilised where it is really needed. For instance, it is becoming more common for a company to hand over its debtors' ledger at a certain point, say 60 days, to debt collection specialists who take it from there. There is no need to develop "in-house" collection software when outsourcing specialists already have reliable, proven, integrated systems available.

Basically, outsourcing is where a company gets an external resource to carry out a particular function on its behalf on a temporary or extended basis. In trade credit management, the activities that are frequently outsourced include financing of accounts receivable by way of factoring, credit risk assessment which entails the purchase of information from credit reporting agencies, credit collection function, and the assumption of credit risk by purchasing credit insurance (Lamminmaki & Guilding, 2004; Mian & Smith, 1992). The decision of the extent to which the company uses the services of external agents is a strategic issue and will have a bearing on its credit management practice (CMRC, 2005).

### **4.9 METHODS OF DATA ANALYSIS**

This section briefly discusses methods of data analysis that will be applied.

Statistics texts commonly draw a distinction between exploratory data analysis or descriptive statistics, which summarises or displays quantitative data, and

confirmatory data analysis or inferential statistics, which involves using quantitative data collected from a sample to draw conclusions about a population (Hussey & Hussey, 1997). According to Zikmund (1991), the choice of the methods of statistical analysis depends on the type of question to be answered, the number of variables, and the scale of measurement. For the present study, methods of data analysis are viewed from a different perspective, that is, by the number of variables analysed.

#### **4.9.1 Univariate Analysis**

Investigating trade credit management practices of SMEs is one of the objectives of this research study. To accomplish this, variables pertaining to the practices will be analysed and described one at a time. When nominal or ordinal measurements are involved, the data will be tabulated. For interval-ratio scores, in addition to the frequency tabulation, other distributional characteristics, which include measures of location, measures of dispersion, and measures of shape are also applied (Emory & Cooper, 1991). Further, normality of distribution of scale data will be examined.

#### ***Frequencies***

A useful first step in data analysis is to examine the frequency distribution of each variable. A frequency is a numerical value that represents the total number of observations for a variable under study. A frequency distribution is an array of the frequencies arranged in size order in a table, chart, graph or other diagrammatic form (Hussey & Hussey, 1997). For the present study, however,

considering the number of variables involved, the information is presented only in the form of frequency distribution tables.

### ***Measures of location***

The common measures of location, often called central tendency, include the mean, median, and mode (Emory & Cooper, 1991). Measures of location are used to enable the researcher to get an idea of the basic characteristics of the entire data set collected. The two measures used in this study, namely the mean and the median, portray where the data distribution is concentrated. The mean is the arithmetic average that takes into account all of the available information in computing the central tendency of a frequency distribution. It is computed by adding the values for all observations for a particular variable and dividing the resulting sum by the number of observations. The median is the middle score in a set of ranked scores. Both the mean and the median of a variable, together they also reflect the skewness of its distribution. If the mean and median are markedly different, the curve of the frequency distribution is skewed.

### ***Measures of spread***

The common measures of spread, alternatively referred to as dispersion, are the variance, standard deviation, range, interquartile range, and quartile deviation (Emory & Cooper, 1991). The measure of spread employed in this study is the standard deviation. It gives an indication of how spread or concentrated a data distribution is. The more widely the data are spread out, the larger the standard deviation. The standard deviation is based on the deviation of each observation from the mean of all the data. Those deviations are squared and then summed.

The sum is divided by total number of observation less one, and finally, the square root is taken as the standard deviation (Leech, Barret, & Morgan, 2005).

### ***Measures of shape***

The shape of the curve derived from the frequency distribution of each continuous variable is presented by the skewness and kurtosis ratio. Skewness is a measure of deviation from the symmetry of a distribution. A positively skewed distribution has relatively few large values and tails off to the right while a negative skewness ratio indicates that the distribution has relatively few small values and tails off to the left. Kurtosis refers to the peakedness or flatness of a distribution compared with a normal distribution (Hair, Anderson, Tatham, & Black, 1998). A positive kurtosis suggests that the distribution is relatively peaked and it is known as a leptokurtic distribution. Conversely, a negative kurtosis denotes a platykurtic distribution, which portrays a relatively flat distribution (Cooper & Schindler, 2001). Normality is assumed when the ratio of skewness and kurtosis lie between  $\pm 1.96$  at the critical value at alpha equals 0.05 (Kanji, 1993).

### ***Normality of distribution***

Testing for normality of distribution is also frequently performed using a goodness-of-fit test. The Kolmogorov-Smirnov test, used in this study, is among the more common techniques applied for this purpose. The Kolmogorov-Smirnov test of goodness-of-fit compares the cumulative probabilities of values in the data set with the cumulative probabilities of the same values in a specified theoretical distribution. If the discrepancy is sufficiently great, the test indicates the data are



not well fitted by the theoretical distribution (Kinnear & Gray, 2000). In other words, if the p-value is larger than .05, there is no evidence against the claim that the distribution is normal.

#### **4.9.2 Bivariate Analysis**

As mentioned earlier, univariate analysis is an initial or preliminary stage of a research process. Analysis of a single variable is unlikely to suffice in drawing a more meaningful conclusion. A researcher will probably be interested in the connection between that variable and each of a number of other variables. An analysis of two variables is known as bivariate analysis. Bivariate analysis is used for tests of association for the purpose of investigating relationships between two variables. For this study, the results will be reported on a correlation matrix that will assist the researcher to select variables to be used in multiple regression analysis. Taking into consideration the nature of the variables, the techniques employed in bivariate analysis include correlation analysis, chi-square, Mann-Whitney and Kruskal-Wallis tests.

#### ***Correlation analysis***

Correlation analysis assumes that the variables are interval or ratio variables. The analysis provides information about the relationship between two variables. The analysis shows both the strength of the relation and its direction (positive or negative). A correlation coefficient represents the strength of the linear relationship between two variables. A higher correlation coefficient, in absolute terms, means that the points in the scatter diagram lie closer to a straight line. Another important property of the correlation coefficient is that, in contrast to the

chi-square test for example, it also gives information on the direction of the relationship. Positive correlation means that if one of the variables increases, the other also increases (Huizingh, 2007).

### ***Chi-square test***

The chi-square test is used to determine whether two nominal variables are independent (unrelated). The chi-square test compares the observed frequency with the expected or theoretical frequency. Although it is used to detect if there is a significant association, and establish the level of association between the variables, the chi-square test gives little information on the strength or direction of the relation (Huizingh, 2007).

### ***Mann-Whitney test***

Mann-Whitney test is a test of the statistical significance of differences between two groups. It is used when the data for two samples are measured on an ordinal scale. The test compares the number of times a score from one of the samples is ranked higher than a score from the other sample. The SPSS output produced by this test gives the mean rank for each group, the number of cases on which the test is based, the Mann-Whitney  $U$  statistic, and the Wilcoxon  $W$ , the  $Z$  statistic and its significant level. If the p-value is greater than 0.05, the  $Z$  statistic is not significant, thereby indicating that there is no difference between the two groups (Bryman & Duncan, 2001). Mann-Whitney test is a non-parametric equivalent of the t-test. Although ordinal measures are used with the Mann-Whitney test, an underlying continuous distribution is assumed (Vogt, 1993).

### ***Kruskal-Wallis test***

The Kruskal-Wallis is non-parametric test of statistical significance used when testing more than two independent samples. It is an extension of the Mann-Whitney test (Vogt, 1993). It measures the strength of correlation. A non-parametric equivalent of the F-test, the Kruskal-Wallis procedure requires less stringent assumptions.

### **4.9.3 Multivariate Analysis**

Multivariate analysis refers to all statistical methods that simultaneously analyse multiple measurements on each individual or object under investigation (Hair et al., 1998). The analysis can be applied for predictive as well as explanatory purposes. For this study, only multiple regression and logistic regression will be utilised.

### ***Multiple regression***

Multiple regression analysis is a statistical technique that can be used to analyse the relationship between a single dependent variable and several independent variables. Multiple regression is the appropriate method of analysis when the research problem involves a single metric dependent variable presumed to be related to two or more metric independent variables (Hair et al., 1998). Here, of particular interest, are the statistics/tests that are described below:

- Adjusted  $R^2$  — an  $R^2$  adjusted to give a truer (smaller) estimate of how much the independent variables in a regression analysis explain the dependent

variable. The adjustment is made by taking into account the number of independent variables. The adjusted  $R^2$  is a measure of strength of association (Vogt, 1993).

- Durbin-Watson statistic — a test for autocorrelation, or serial correlation, in a time-series, OLS regression analysis. As autocorrelation increases, the Durbin Watson goes down. The larger the autocorrelation, the less reliable the results of the regression analysis (Vogt, 1993).
- F-statistic significance — this is an estimate of the between-group variance is compared with an estimate of the within-groups variance by dividing the former by the latter. If the value is higher, it implies that the differences between the means are unlikely to be due to chance (Bryman & Duncan, 2001).
- t-statistic significance — this is a test statistic that assesses the statistical significance between two groups on a single dependent variable (Hair et al., 1998).
- Unstandardised coefficient — the number of units of increase in the dependent variable caused by an increase of one unit in the independent variable (Huizingh, 2007).
- The collinearity statistics — these are measures of multicollinearity, that is, the extent to which a variable can be explained by other variables in the analysis. As multicollinearity increases, it complicates the interpretation of the variate because it is more difficult to ascertain the effect of any single variable, owing to their interrelationships. The two widely used approaches to measure the extent of multicollinearity are tolerance and variance inflation factor (VIF)

- Tolerance — a commonly used measure of collinearity or multicollinearity. The tolerance of variable  $I$  is  $1-R^2_{*I}$ , where  $R^2_{*I}$  is the coefficient of determination for the prediction of variable  $I$  by the other independent variables in the regression variate. As the tolerance value grows smaller, the variable is more highly predicted by the other independent variables (Hair et al., 1998).
- The VIF is directly related to the tolerance value. It is an indicator of the effect that the other independent variables have on the standard error of a regression coefficient. Large VIF values also imply a high degree of multicollinearity among the independent variables (Hair et al., 1998).

### ***Logistic regression***

Hosmer and Lemeshow (2000), state that logistic regression is analogous to multiple regression, except that the outcome variable is binary. Using categorical variables as dependent variable will violate the assumptions set for using the multiple regression technique, hence the use of logistic regression. Although discriminant analysis could also be applied when the dependent variable is categorical, logistic regression is considered more appropriate for the purpose of this study. The choice of logistic regression over discriminant analysis is based on the following reasons. Logistic regression is a more versatile model since it is applicable for any combination of discrete and continuous independent variables. In discriminant analysis, the application is limited to designs in which all the independent variables are continuous. Moreover, logistic regression requires fewer assumptions than discriminant analysis. Even when the assumptions for discriminant analysis are satisfied, logistic regression still performs well in

comparison (Afifi, Clark, & May, 2004; Hair et al., 1998; Pedhazur, 1997). The following statistics/tests are relevant in interpreting the results of logistic regression:

- -2LL — the likelihood value which used to measure how well a model fits. It is actually -2 times the log of the likelihood value where the change in the likelihood value is used to determine how the fit of a model changes as the variables are added or deleted from the model. A good model is the one which results in a small value of -2LL. If the model fits perfectly,  $-2LL = 0$  (Hair et al., 1998).
- Cox and Snell R square and Nagelkerke R square — these two measures, which are comparable to the  $R^2$  measure in multiple regression, are used to quantify the proportion of the explained variation in the logistic regression model. The Cox and Snell  $R^2$  measure operates the same manner, with higher values indicating greater model fit. However, this measure is limited in that it cannot reach the maximum value of 1, so Nagelkerke proposed a modification that had the range of 0 to 1 (Hair et al., 1998)
- Percentage of correct prediction — this value presents the number of cases that have been correctly predicted. This includes cases that were predicted to be true and they were actually true and those were predicted to be not true and they were actually not true (Leech et al., 2005).
- Wald statistic — this test is used to evaluate the statistical significance of each predictor variable in explaining the dependent variable. Its interpretation is like the  $F$  or  $t$  values used for the significance testing of regression coefficient (Hair et al., 1998).

- Beta (B) coefficient value — this is a regression coefficient for a sample expressed in standard deviation units. Specifically, the beta coefficient indicates the difference in a dependent variable associated with an increase or decrease of one standard deviation in an independent variable (Vogt, 1993).

#### **4.10 SUMMARY**

This chapter provides a detail description of the method employed in this study. The research design, the sampling and data collection procedures were elaborated. Specifically, a mail survey was employed in the collection of data concerning the practices of trade credit management of the sample. Data collected were transformed into more suitable format for analysis using the SPSS software. The corresponding financial data of the responding SMEs were obtained from a database of a credit information company. A comparison of early and late respondents was done and non-response bias did not appear to be a problem.

The chapter also discusses the variables that will be used in describing the trade credit management practices and characteristics of a company. Finally, the methods of data analysis were discussed. The study will utilise the univariate analysis in summarising and describing the credit management practices. The components deliberated include frequency tabulation and measures of location, spread and shape of the distribution. The bivariate analysis will be used to establish relationships between credit management practices and company characteristic variables for the purpose of identifying and selecting variables to be included in the multivariate analysis. The statistical tests that were discussed

include correlation, chi-square, Mann-Whitney and Kruskal-Wallis tests. The results of univariate and bivariate analyses will be presented in next chapter. Multiple regression and logistic regression were the two statistical techniques to be used in the multivariate analysis. Results of the analysis and findings will feature in Chapter 6.



## **Chapter 5**

### **CHARACTERISTICS AND TRADE CREDIT MANAGEMENT PRACTICES OF SMEs**

#### **5.1 INTRODUCTION**

This chapter presents an analysis of the data collected from the research sample of small and medium-sized manufacturing enterprises operating in Malaysia. The analysis, using descriptive statistics, forms a basis for understanding the characteristics and practices of those companies that have participated in the study.

The earlier section of the chapter presents company characteristics of manufacturing SMEs that responded to the survey. This section also includes the profile as well as financial characteristics of the responding SMEs. The second section discusses results of descriptive statistics concerning the respondents' trade credit management practices.

The results for the univariate analysis on the variables are summarised in a series of exhibits, displaying the frequency tables, and where the data is in metric scales, further description of the distribution of the variables are provided. The additional descriptive statistics for these variables would include the measures of location and spread, which include the mean, median and standard deviation. Further, normality tests for these variables are done descriptively by

exploring the skewness and kurtosis ratio, and are supported by the Kolmogorov-Smirnov test of goodness-of-fit.

## **5.2 COMPANY CHARACTERISTICS OF THE MANUFACTURING SMEs**

In Chapter 4 of the thesis it is indicated that a total of 214 usable responses were generated from a total of 1000 mailings. This section, which provides background information on the SMEs that responded to the survey, is divided into two sub-sections. Firstly, the general characteristics of the companies are examined. The later sub-section describes the financial characteristics of these companies.

### **5.2.1 General Characteristics**

In this sub-section, the description of the SMEs' is based on the responses provided by the respondents to the questionnaires distributed. The attributes described include the type of industry sub-sector, company age, company size, percentage of credit sales to total sales, and percentage of exports to total sales.

#### ***Type of industry sub-sector (INDUSTRY)***

Although the sample was drawn from the SMIDEC listing, their industry sector was not based on the classification made by the agency. Instead, when surveyed, these companies were asked to classify themselves based on their primary line of business, into an industry category adopted by SMIDEC. The reason for not using the SMIDEC's classification is because it is based on the core business of the company at the time of incorporation, which in many cases

took place long time ago. The business of some of these companies might have shifted into different sub-sector, probably as a result of acquisition or diversification. Therefore, it would be more reliable to use the respondents' classification in the identification of companies into the various industry sub-sectors.

**Exhibit 5.1**  
**SME distribution by industry sub-sector**

Industry Sub-sector	Frequency	Percent
Food, Beverages and Tobacco	16	7.5
Machinery and Engineering	22	10.3
Chemical and Chemical Products	23	10.7
Paper and Printing	11	5.1
Plastic Products	26	12.1
Electric and Electronics Products	21	9.8
Textile, Apparel and Leather	10	4.7
Rubber Products	9	4.2
Transport Equipment	13	6.1
Pharmaceutical Products	2	0.9
Non-Metallic Mineral Products	8	3.7
Wood Products	10	4.7
Palm Oil-based Products	3	1.4
Metal Products	40	18.7
<b>Total</b>	<b>214</b>	<b>100.0</b>

Exhibit 5.1 shows the breakdown of the sample based on the industry sub-sector. It is observed that the category with the largest percentage of companies is metal products sector (18.7 percent). Other major contributors are plastic products (12.1 percent), chemical and petrochemical products (10.7 percent), machinery and engineering (10.3 percent), and electric and electronics (9.8 percent).

The percentage of the various sub-sectors in the respondent sample display some glaring dissimilarities as compared to the population sample

illustrated in Exhibit 4.1 in the previous chapter. Hence, a chi-square test was performed to see if the proportion of companies in the analysis sample is similar to the proportion of companies in the intended total sample. The results, presented in Appendix 9, indicate that they differ significantly. The proportion of companies in the analysis sample is different from the total sample. Except for the electric and electronic sub-sector, all other sub-sectors are either being over or underrepresented. While sub-sectors for machinery and engineering, transport equipment, wood products, and metal products are being underrepresented; the remaining nine sub-sectors are over represented. Although this may not present any significant impact on the study, it would be prudent to exercise some caution in generalising the findings to all companies in the total population.

### ***Company age (AGE)***

The age of an enterprise is the length of time an enterprise has been in business. Information about the age of the sample companies was obtained from the questionnaire. Exhibit 5.2 presents the breakdown of the age of companies in the sample. Most SMEs that responded to the survey were established more than a decade ago. About 14 percent survived more than 20 years while more than half of the companies (57 percent) were between 11 and 20 years. The newer companies of less than ten years contributed about 29 percent of the sample.

**Exhibit 5.2**  
**Distribution of companies by age**

Company age		Frequency		Percent	
10 years or less		62		28.97	
11 – 20 years		122		57.01	
21 – 30 years		28		13.08	
Above 30 years		2		0.93	
<b>Total</b>		<b>214</b>		<b>100.0</b>	
Mean	14.68 years	Skewness	0.655	Kolmogorov-Smirnov Z	1.413
Median	14.00 years	Kurtosis	0.465	Asymp. Sig. (2-tailed)	.037
Std. dev.	5.552 years				

Looking over the distribution, the mean age of the enterprises seems to be quite close to the median. Both the skewness and kurtosis statistics are small and therefore normality may be assumed for the distribution. However, the p-value of the Kolmogorov-Smirnov test indicates otherwise.

### ***Company size***

Three common measures of company size were available for the sample. The number of employees (WORKERS) was provided by the respondents in the survey questionnaire while measures based on annual turnover (TURNOVER) and total assets (TASSETS) were obtained from the financial statements of the companies.

Exhibit 5.3 shows that the sample comprises manufacturing SMEs with a broad array of company size. It is observed that more than a third (38.32 percent) have 50 or fewer employees. These companies are considered small by the official government definition of small enterprises while the remaining companies are regarded as medium-sized since they hire more than 50 full-time employees. Of these, slightly more than 22 percent employ between 51 to 100

workers, about 13 percent have between 101 to 150 workers. Those SMEs with more than 150 workers make up about 27 percent of the sample.

**Exhibit 5.3**  
**Company size by number of employees**

No. of workers		Frequency		Percent	
50 or less		82		38.32	
51-100		48		22.43	
101-150		27		12.62	
151-200		15		7.00	
More than 200		42		19.63	
<b>Total</b>		<b>214</b>		<b>100.0</b>	
Mean	165.29	Skewness	3.706	Kolmogorov-Smirnov Z	3.894
Median	75.50	Kurtosis	15.789	Asymp. Sig. (2-tailed)	.000
Std. dev.	263.171				

Notice that companies that employ more than 150 workers are included in the sample although the upper limit for companies to be categorised as an SME is 150. This is so because the National SME Development Council considers businesses as an SME as long as they meet either the threshold set for annual sales turnover or in terms of number of full-time employees (National SME Development Council, 2006). Hence, these labour intensive companies fit into the SME classification probably due to their small annual turnover.

Correspondingly, similar situation emerged when measure of size is based on annual sales turnover. From Exhibit 5.4, it is observed that more than one-fifth of the SMEs generate annual turnover exceeding the upper limit cut-off point of RM25 million. It is likely that these high turnover achievers employ the number of workers that falls within the SME official definition.

**Exhibit 5.4**  
**Company size by annual turnover**

Annual turnover		Frequency	Percent
Less than RM1 million		6	2.80
More than RM1 million to RM5 million		44	20.56
More than RM5 million to RM10 million		55	25.70
More than RM10 million to RM15 million		31	14.49
More than RM15 million to RM20 million		17	7.94
More than RM20 million to RM25 million		15	7.01
More than RM25 million		46	21.50
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	RM29534496	Skewness 6.329	Kolmogorov-Smirnov Z 5.068
Median	RM10366197	Kurtosis 49.336	Asymp. Sig. (2-tailed) .000
Std. dev.	RM74657873		

Exhibit 5.5 shows the distribution of company size based on the total assets. Very few companies (3.74 percent) have total assets of less than one million ringgit. The majority belongs to categories of RM1 million to under RM5 million and of RM5 million to under 10 million with both categories contribute about 25 percent for each. Notice that about one-fifth of the sample has assets exceeding RM25 and yet are considered as an SME. Probably their number of employees or annual sales turnover did not reach the maximum threshold.

**Exhibit 5.5**  
**Company size by total assets**

Total assets		Frequency	Percent
Less than RM1 million		8	3.74
More than RM1 million to RM5 million		54	25.23
More than RM5 million to RM10 million		53	24.77
More than RM10 million to RM15 million		26	12.15
More than RM15 million to RM20 million		15	7.01
More than RM20 million to RM25 million		14	6.54
More than RM25 million		44	20.56
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	RM34818288	Skewness 13.198	Kolmogorov-Smirnov Z 6.154
Median	RM9497588.8	Kurtosis 185.007	Asymp. Sig. (2-tailed) .000
Std. dev.	RM173492323.538		

In summarising the size variable, the data for all the three measures of size does not seem to fit the normal distribution well. The large differences between the means and the medians, supported by high skewness and kurtosis statistics, verify that the distribution of size, measured by number of workers, annual turnover, and total assets, is quite different from a normal curve. The Kolmogorov-Smirnov tests performed on these data indicate that there is no evidence against the claim that these distributions are normal.

***Credit sales (CRDTSALE)***

Trade credit has become one of the most important forms of financing, particularly to the SMEs. As shown in Exhibit 5.6, almost three-quarter of the companies had at least 80 percent of their sales transacted on credit terms. Companies with 20 percent or less credit sales make up about 7.5 percent of the sample, while those with percentage of credit sales between 21 to 40 percent, between 41 to 60 percent, and between 61 to 80 percent, account for 4.7 percent, 5.1 percent and 6.5 percent respectively.

**Exhibit 5.6  
Percentage of credit sales to total sales**

Percentage of credit sales		Frequency	Percent
20% or less		16	7.48
21 – 40%		10	4.67
41 – 60%		11	5.14
61 – 80%		14	6.54
81 – 99%		95	44.39
100%		63	29.44
No response		5	2.34
<b>Total</b>		<b>214</b>	<b>100.0</b>
Mean	81.99%	Skewness	-1.752
Median	90.00%	Kurtosis	1.933
Std. dev.	26.207%	Kolmogorov-Smirnov Z	4.361
		Asymp. Sig.	.000



Since most of the companies provide credit to their customers, as indicated in Exhibit 5.6 above, the distribution is markedly skewed to the left. The negative skewness statistic suggests that the distribution has considerably few small values and tails off to the left. The Kolmogorov-Smirnov test also suggests that normality cannot be assumed for the distribution.

**Export sales (EXPORTS)**

Although developing the export markets provides a growth opportunity for them, the SMEs in Malaysia appear to be sluggish in their exporting activities. Despite various incentives and assistance programs introduced by the government to promote and stimulate the SME exporting activities, the penetration into the global markets is still very limited. The feedback provided by respondents on their export sales is illustrated in Exhibit 5.7. As far as exporting is concerned, hardly 15 percent of the responding SMEs export more than 80 percent of their sales. In fact, the largest group (45.33 percent of the sample) were those SMEs that have their export sales contribute 20 percent or less of their total turnover. The overall average indicates that only 38 percent of sales made by SMEs are being exported.

**Exhibit 5.7  
Percentage of exports to total sales**

Percentage of export sales		Frequency	Percent
20% or less		97	45.33
21 – 40%		23	10.75
41 – 60%		25	11.68
61 – 80%		28	13.08
More than 80%		31	14.49
No response		10	4.67
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	37.63%	Skewness	0.491
Median	30.00%	Kurtosis	-1.284
Std. dev.	35.464%	Kolmogorov-Smirnov Z	2.698
		Asymp. Sig. (2-tailed)	.000

Although the skewness ratio indicates that the distribution is quite balance around the mean, its negative kurtosis implies that the distribution is relatively flat with heavy tails. The Kolmogorov-Smirnov test, with its p-value is less than 0.05, verifies the observed distribution of the percentage of export sales is significantly differs from the normal distribution.

***Asymmetric bargaining position (POSITION)***

Being small compared to their large customers, SMEs are often placed in an awkward position. These customers, who are usually important to the supplying companies, are capable of dictating the terms of sale, especially in a competitive market. Exhibit 5.8 shows the response to a question if they are operating in a market dominated by a few large customers. The responses from the sample are roughly equally divided.

**Exhibit 5.8  
Company position in market**

<b>Operating in dominant market</b>	<b>Frequency</b>	<b>Percent</b>
No	109	50.93
Yes	104	48.60
No response	1	0.47
<b>Total</b>	<b>214</b>	<b>100.00</b>

**5.2.2 Financial Characteristics of SMEs**

The financial characteristics of the SMEs described in this section are derived from financial statements of the companies for 2001 to 2004. However, the purpose of this study is not to examine all variables but only discuss the more popularly used financial variables. Among the attributes that will be covered include the liquidity, efficiency, profitability as well as growth.

## **Liquidity**

Liquidity relates to the capacity of a company to meet its short-term obligations as they become due. In assessing the liquidity of the sample, the two most common liquidity ratios, namely the current ratio (CURRENT) and quick ratio (QUICK), are used. The net working capital ratio (WORKCAP) is also included in this study to supplement the two traditional ratios.

The results in Exhibit 5.9 show that most of the responding SMEs (about 70 percent) had moderate levels of liquidity with their current ratio lies between 0.51 and 1.50. Only 7.5 percent of the companies have low liquidity levels of 0.50 or less. About 20 percent of the sample companies recorded high liquidity with a current ratio of more than 1.50. Overall, the average current ratio for the sample is 1.41.

**Exhibit 5.9**  
**Liquidity levels measured by current ratio**

<b>Current ratio</b>		<b>Frequency</b>	<b>Percent</b>
0.50 or less		16	7.48
0.51 to 1.00		83	38.78
1.01 to 1.50		69	32.24
1.51 to 2.00		19	8.88
2.01 to 2.50		11	5.14
More than 2.50		16	7.48
<b>Total</b>		<b>214</b>	<b>100.0</b>
Mean	1.4076	Skewness 7.703	Kolmogorov-Smirnov Z 3.988
Median	1.0300	Kurtosis 73.365	Asymp. Sig. (2-tailed) .000
Std. dev.	1.94637		

By excluding inventory, the quick ratio focuses on the company's more liquid assets whose values are relatively certain. As expected, when assessed

by using a more stringent measure, the liquidity levels seem to decline. Exhibit 5.10 provides the number and percentage of companies at different levels of liquidity measured by the quick ratio. It is observed that the number of SMEs that has moderate levels of liquidity, i.e. with a quick ratio of 0.51 to 1.50, has reduced to 61 percent and only 14 percent had high liquidity with a quick ratio of more than 1.50. The number of companies that had low liquidity levels has increased to 25 percent.

**Exhibit 5.10**  
**Liquidity levels measured by quick ratio**

Quick ratio		Frequency		Percent	
0.50 or less		54		25.23	
0.51 to 1.00		102		47.66	
1.01 to 1.50		29		13.55	
1.51 to 2.00		12		5.61	
2.01 to 2.50		6		2.81	
More than 2.50		11		5.14	
<b>Total</b>		<b>214</b>		<b>100.0</b>	
Mean	1.0561	Skewness	7.943	Kolmogorov-Smirnov Z	4.162
Median	.7200	Kurtosis	76.357	Asymp. Sig. (2-tailed)	.000
Std. dev.	1.71379				

Exhibit 5.11 reports the distribution of the sampled companies in terms of net working capital ratio. On average, the SMEs have a negative net working capital ratio. About 46 percent of the sample has more current liabilities compared to their current assets. In other words, this percentage constitutes the companies that have a current ratio of less than one. This can be seen in Exhibit 5.10.

**Exhibit 5.11**  
**Liquidity levels measured by net working capital ratio**

Net working capital ratio		Frequency	Percent
-0.25 or less		31	14.48
-0.25 to 0.00		68	31.78
0.01 to 0.25		73	34.11
0.26 to 0.50		34	15.89
More than 0.50		8	3.74
<b>Total</b>		<b>214</b>	<b>100.0</b>
Mean	-.0214	Skewness	-4.897
Median	.0200	Kurtosis	42.757
Std. dev.	.43946	Kolmogorov-Smirnov Z	2.372
		Asymp. Sig. (2-tailed)	.000

The results from the three measures of liquidity indicate that SMEs in the sample maintain a relatively low level of liquidity. Note that an apparent low liquidity may not necessarily be a bad sign for a company. There may be other factors that allow them to remain at a low liquidity position.

The analyses also reveal that the distribution for all three liquidity measures demonstrate a non-normality characteristics. The figures for the mean and median of the variables do not coincide, and the skewness and kurtosis statistics indicates that the curve is quite different from a normal curve. Finally, the Kolmogorov-Smirnov test of goodness-of-fit was performed and there is no evidence to support that the observed data are normally distributed.

***Efficiency***

Efficiency signifies the ability of the company employing its assets in generating revenues. In essence, this ratio is based on the relationship between the sales volume and levels of various assets. Three measures of efficiency that are

computed for the analysis are total asset turnover (TATOVER), fixed asset turnover (FATOVER), and inventory turnover (INVTOVER).

The total asset turnover ratio indicates how many ringgits in sales the company squeezes out of each ringgit it has invested in assets. The ratio for the sampled companies is presented in Exhibit 5.12. It appears that the efficiency of utilising total assets of SMEs in the sample is relatively low. The mean total asset turnover of 1.28 times suggests that on average, the companies produce RM1.28 of sales from a ringgit investment in assets. In fact, about 45 percent of the SMEs have a total asset turnover of one or less, while 42 percent has a total asset turnover ratio of between one and two times. Only 13 percent of the companies have their total asset turnover ratio of more than two times.

**Exhibit 5.12**  
**Efficiency measured by total asset turnover ratio**

Total asset turnover		Frequency		Percent	
0.50 time or less		16		7.48	
0.51 to 1.00 times		80		37.38	
1.01 to 1.50 times		65		30.37	
1.51 to 2.00 times		25		11.68	
2.01 to 2.50 times		12		5.61	
More than 2.50 times		16		7.48	
<b>Total</b>		<b>214</b>		<b>100.0</b>	
Mean	1.2836	Skewness	3.267	Kolmogorov-Smirnov Z	2.415
Median	1.0900	Kurtosis	19.062	Asymp. Sig. (2-tailed)	.000
Std. dev.	.87000				

Fixed asset turnover ratio measures the efficiency with which fixed assets are employed. A high ratio denotes a high level of efficiency in fixed asset utilisation and a low ratio suggests inefficient use of those assets. Exhibit 5.13 shows the fixed asset turnover for the sampled SMEs. It is observed that about 35 percent of the companies had a fixed asset turnover of less than two times, 31

percent between two to four times, and 34 percent had their fixed asset turnover of more than four times. Although the average fixed asset turnover is 9.3 times, the median turnover for the SMEs is only 2.7 times.

**Exhibit 5.13**  
**Efficiency measured by fixed asset turnover ratio**

Fixed asset turnover		Frequency		Percent	
1 time or less		15		7.01	
1.01 to 2.00 times		60		28.04	
2.01 to 3.00 times		41		19.16	
3.01 to 4.00 times		26		12.15	
4.01 to 5.00 times		14		6.54	
More than 5.00 times		58		27.10	
<b>Total</b>		<b>214</b>		<b>100.0</b>	
Mean	9.2712	Skewness	10.571	Kolmogorov-Smirnov Z	5.817
Median	2.7250	Kurtosis	125.222	Asymp. Sig. (2-tailed)	.000
Std. dev.	35.39305				

The inventory turnover ratio is supposed to measure the efficiency of inventory management. The ratio indicates how many times inventory was acquired and then sold over the year. Generally, the higher the ratio, the faster is the inventory moving, hence the more efficient inventory management. For the sampled SMEs, the inventory turnover ratio is presented in Exhibit 5.14. About 23 percent of the companies had an inventory turnover of five times or less, 34 percent between five to 10 times, and 17 percent belongs to the 10-15 times category. Almost a quarter seems to have inventory turnover of more than 15 times. Although the mean inventory turnover is 17.7 times, the middle point is only 8.6.

**Exhibit 5.14**  
**Efficiency measured by inventory turnover ratio**

Inventory turnover	Frequency	Percent			
5 time or less	50	23.37			
5.01 to 10 times	73	34.11			
10.01 to 15 times	37	17.29			
15.01 to 20 times	19	8.88			
20.01 to 25 times	11	5.14			
More than 25 times	21	9.81			
Unavailable information	3	1.40			
<b>Total</b>	<b>214</b>	<b>100.0</b>			
Mean	17.7021	Skewness	11.382	Kolmogorov-Smirnov Z	5.723
Median	8.6400	Kurtosis	140.958	Asymp. Sig. (2-tailed)	.000
Std. dev.	63.21630				

As indicated earlier, these ratios are based on the relationship between the level of activity, represented by sales (or cost of goods sold), and levels of various assets. The total asset turnover, as displayed above, shows that the ratio is relatively low. However, the reasonably high fixed asset turnover signifies that the low overall turnover ratio might have been caused by inefficient utilisation of current assets. The inventory turnover ratio, however, does not seem to indicate such claim. It is therefore necessary to examine another component of the current assets, which is the accounts receivable.

Previous studies on trade credit management, as have been reviewed in Chapter 2, have indicated that the sizeable proportion of accounts receivable in the balance sheet substantiate the need of efficient receivable management. For that reason, this study also reports the proportion of accounts receivable to total assets for Malaysian manufacturing SMEs. The results are displayed in Exhibit 5.15. The findings reveal that on average, accounts receivable make up about 29 percent of a company's assets, with two-third of the sample having the receivables constituting more than 20 percent of total assets. This justifies the



importance of credit management to the SMEs because managing the accounts receivable means the management is dealing with almost a third of the company's assets.

**Exhibit 5.15**  
**Accounts receivable as a percentage of total assets**

Percentage of receivables to TA		Frequency	Percent
10% and below		23	10.75
Between 10% and below 20%		47	21.96
Between 20% and below 30%		50	23.36
Between 30% and below 40%		37	17.29
Between 40% and below 50%		34	15.89
Between 50% and below 60%		15	7.01
More than 60%		8	3.74
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	29.45%	Skewness	.653
Median	27.77%	Kurtosis	.399
Std. dev.	16.34762%	Kolmogorov-Smirnov Z	.923
		Asymp. Sig. (2-tailed)	.362

Except for the proportion of receivables to total assets, all the distributions for the efficiency ratios are different from the normal curve. The skewness and kurtosis statistics as well as the Kolmogorov-Smirnov tests all give the same indication. Accounts receivable as a percentage of total assets, however, demonstrate some normal distribution characteristics. The median is fairly close to the mean and both the skewness and kurtosis statistics are between  $\pm 1$ . The output for the Kolmogorov-Smirnov test of goodness-of-fit indicates that the significance level is more than 0.05, which means that it cannot reject the null hypothesis that observed distribution is comparable with a normal distribution.

## **Profitability**

Three measures of company profitability have been employed: the operating profit margin (OPERPROF), the net profit margin (NETPROF), and the return on assets (ROA). All these measures were obtained from the financial statements of the sample companies.

Exhibit 5.16 shows the operating profit margin of the sampled SMEs. It is observed that more than a fifth is suffering operating losses. The majority, about 62 percent, had an operating profit margin of not more than 10 percent. Another 12 percent is making operating profit between 10 and 20 percent while only 5.6 percent achieved a profit margin of more than 20 percent. The mean operating profit margin is just above one percent while the median is four percent.

**Exhibit 5.16**  
**Profitability measured by operating profit margin**

Operating profit margin		Frequency	Percent
Less than -10%		16	7.48
-10% to 0%		28	13.08
0.01% to 10.00%		132	61.68
10.01% to 20.00%		26	12.15
More than 20%		12	5.61
<b>Total</b>		<b>214</b>	<b>100.0</b>
Mean	1.08%	Skewness -11.335	Kolmogorov-Smirnov Z 5.297
Median	4.00%	Kurtosis 148.799	Asymp. Sig. (2-tailed) .000
Std. dev.	34.95%		

As expected, poorer results would be obtained when profitability is measured using the net profit margin. After deducting the interest and taxes, the profit figure would reduce. Exhibit 5.17 indicates that close to a quarter of the companies reported negative net profit margin. The same number of companies (about 62 percent) realised a net profit margin of less than 10 percent. Eleven percent registered a net profit margin between 10 to 20 percent while slightly

above three percent recorded a net profit margin of more than 20 percent. The average net profit margin is almost zero and the median value is just three percent.

**Exhibit 5.17**  
**Profitability measured by net profit margin**

Net profit margin		Frequency	Percent
Less than -10%		15	7.01
-10% to 0%		36	16.82
0.01% to 10.00%		132	61.68
10.01% to 20.00%		24	11.22
More than 20%		7	3.27
<b>Total</b>		<b>214</b>	<b>100.0</b>
Mean	0.11%	Skewness -11.589	Kolmogorov-Smirnov Z 5.387
Median	3.00%	Kurtosis 153.282	Asymp. Sig. (2-tailed) .000
Std. dev.	34.63%		

When profitability is measured by return on total assets, the results are somewhat similar. Exhibit 5.18 shows that more than a fifth of the companies had a negative return on assets. About 63 percent recorded a net profit margin of less than 10 percent, 14 percent between 10 to 20 percent while another 2.3 percent managed to reach above 20 percent net profit margin. The mean and the median return on assets are four and 3.4 percent respectively.

**Exhibit 5.18**  
**Profitability measured by return on assets**

Percentage return on assets		Frequency	Percent
Less than -10%		12	5.61
-10% to 0%		33	15.42
0.01% to 10.00%		134	62.62
10.01% to 20.00%		30	14.02
More than 20%		5	2.33
<b>Total</b>		<b>214</b>	<b>100.0</b>
Mean	4.01%	Skewness -.018	Kolmogorov-Smirnov Z 2.076
Median	3.35%	Kurtosis 7.067	Asymp. Sig. (2-tailed) .000
Std. dev.	8.65%		

All the three measures of profitability used above seem to indicate similar results. The majority of the SMEs fall in the zero to 10 percent profit array with the mean and median values in the lower part of the scale. All the distributions for the three profitability variables appear to be asymmetrical. The negative skewness statistics show that distributions are skewed to the left skewed and the kurtosis statistics indicate that the distributions are relatively more pointed compared with the normal distribution. The Kolmogorov-Smirnov tests were conducted on these observed distributions and the results indicate that they do not fit to the normal curve.

### ***Growth (GROWTH)***

As indicated in Chapter 4, growth is measured by the growth rate of turnover between 2001 and 2004. Exhibit 5.19 shows the growth status of SMEs during the four years. About 27 percent experienced a negative growth, four percent did not show any significant growth and the rest registered a positive growth rate. Twenty-nine percent of the SMEs recorded a growth rate of less than 10 percent, 19 percent between 10 to 20 percent and about one-fifth of the SMEs exceeded the 20 percent mark. The average growth rate of 13.5 percent and its median rate of 5.5 percent reveal that the variable is not normally distributed. The skewness statistic indicates that the distribution is markedly skewed to the left and the kurtosis statistic signifies that it is more peaked than the normal curve. When the Kolmogorov-Smirnov test was applied, the variable does not match the normal distribution.

**Exhibit 5.19**  
**Company growth rate measured by annual turnover**

Growth rates		Frequency	Percent
-10% or less		16	7.48
-10.01% to -0.01%		42	19.63
0%		9	4.20
0.01% to 10%		62	28.97
10.01% to 20%		41	19.16
More than 20%		44	20.56
<b>Total</b>		<b>214</b>	<b>100.0</b>
Mean	3.49%	Skewness 4.748	Kolmogorov-Smirnov Z 3.389
Median	5.52%	Kurtosis 32.727	Asymp. Sig. (2-tailed) .000
Std. dev.	34.43%		

### 5.2.3 Summary of Company Characteristics

After analysing the responses from the manufacturing SMEs in the sample, and based on the information obtained from the financial statements of these SMEs, the company characteristics of SMEs can be outlined as follows:

- There is a wide difference in term of number among the various sub-sectors within the manufacturing industry. The companies were mainly from the (1) metal products; (2) plastic products; (3) chemical and petrochemical products; (4) machinery and engineering; and (5) electric and electronics sub-sectors.
- More than 70 percent of the companies have survived the first decade of their operations.
- About 20 percent of the companies are large whether size is measured by number of workers, total assets or annual turnover. These companies however, are categorised as SME because of the official definition that has been adopted by the government.

- The fact that almost a quarter of the SMEs in the sample had at least 80 percent of their sales transacted on credit highlights the importance of trade credit management.
- Despite the global market prospects, Malaysian SMEs are still slow in responding to exporting opportunities. In about 45 percent of the SMEs, exports only accounted for 20 percent or less of sales.
- About half of the companies rely a great deal on a few large customers.
- In terms of liquidity, almost 46 percent of companies had negative or zero net working capital ratio; 25 percent and eight percent of companies had quick ratio and current ratio, respectively, of 0.5 or less. These imply that almost half of the SMEs had more current liabilities than current assets, and that significant portion of their current assets were tied up as inventory.
- As for efficiency, almost 90 percent of companies had total assets turnover of two or less, but only 35 percent had fixed asset turnover of two or less. These imply that a significant number had poor total asset turnover as a large bulk of their total assets were from current assets. In fact, on average, about 30 percent of the companies' total assets were tied up as accounts receivable.
- More than a fifth of companies had negative operating profit margins, and almost a quarter had negative net profit margins. Likewise, more than a fifth had negative return on assets. These imply that a significant proportion of companies had weak profitability.
- More than 27 percent of the companies had negative growth rates. The overall average growth rate, however, was 13.5 percent.

### 5.3 DESCRIPTIVE FINDINGS OF TRADE CREDIT MANAGEMENT PRACTICES

This section of the chapter provides a descriptive analysis of the trade credit management practised by small and medium-sized manufacturing enterprises. Throughout this section, responses to the questionnaire are reported in the form of frequency tables, and where applicable, descriptions on the distributions are presented.

#### ***Credit manager (CRDTMGR)***

Exhibit 5.10 shows that almost 50 percent of the sample does not employ a person with overall responsibility specifically for credit management.

**Exhibit 5.20  
Presence of credit manager**

<b>Credit manager</b>	<b>Frequency</b>	<b>Percent</b>
Do not have	106	49.53
Have	108	50.47
<b>Total</b>	<b>214</b>	<b>100.00</b>

#### ***Credit policy (CRDTPLCY) and written credit policy (WRITPLCY)***

Having a sound credit policy is fundamental to any commercial organisation that provides credit to its customers. It is the blueprint to managing trade credit. In addition, it is important that the policy is widely known and understood by all staff. Distressingly, as shown in Exhibit 5.21, it is found that almost 37 percent of the sample does not have a credit policy. And of the remaining companies that have a policy, about 44 percent of them do not have them documented. In other words, within the sample, it is found that below 36 percent of SMEs has a written credit policy.

**Exhibit 5.21  
Existence and documentation of credit policy**

<b>Credit policy</b>	<b>Frequency</b>	<b>Percent</b>	
Do not have	79	36.92	
Have – unwritten	59	27.57	63.08
Have – written	76	35.51	
<b>Total</b>	<b>214</b>	<b>100.00</b>	

***Credit assessment (CHECKING)***

Carrying out essential checks on the credit histories of potential customers before offering them credit might require effort and expense on the part of the selling company. However, this can mean the difference between getting paid and not. Hence, it can be expected that most companies, if not all, would perform the necessary assessment on their potential clients. Nevertheless, from Exhibit 5.22, it is found that slightly less than 12 percent of the sample is neglecting the essential credit checks. These SMEs tend to automatically offer credit to new customers while the majority (more than 88 percent) does investigate new applicants prior to making credit offer. Peel et al. (2000) also find similar results for the small firm sector in the UK where 70.7 percent of the small firms participating in the survey indicated that they checked the creditworthiness of customers before granting credit.

**Exhibit 5.22  
Credit assessment routine**

<b>Credit checking</b>	<b>Frequency</b>	<b>Percent</b>
Did not check	25	11.68
Checked	189	88.32
<b>Total</b>	<b>214</b>	<b>100.00</b>



### **Sources of credit information (INFOSOS)**

In vetting the creditworthiness of prospective customers, most of the SMEs utilise two or more sources of credit information. It can be expected that the use of multiple sources of customer information might have some effect on levels of confidence of granting credit as information from several sources will likely supplement and complement overall credit profile of the customer. Exhibit 5.23 presents the breakdown of the usage of credit information sources.

**Exhibit 5.23**  
**Number of sources of credit information used**

<b>Number of sources used</b>	<b>Frequency</b>	<b>Percent</b>
None	25	11.68
One source only	25	11.68
2 – 3 sources	76	35.51
4 – 5 sources	72	33.65
More than 5 sources	16	7.48
<b>Total</b>	<b>214</b>	<b>100.00</b>

A wide range of possible credit information sources is available to companies when checking the credentials of new customers. Exhibit 5.24 shows the various sources of information used by responding companies. Most SMEs surveyed stated that they mostly gathered credit information directly from the customers themselves, followed by their own sales force. These top two widely used sources indicate that most SMEs rely on their own resources in acquiring information from customers. Other major information sources include other suppliers and trade references provided by the customer.

**Exhibit 5.24  
Sources of credit information employed**

<b>Sources of credit information</b>	<b>Number of companies using</b>	<b>Percentage</b>
Customer	161	75.23
Company's salesmen	128	59.81
Business reference	103	48.13
Competitors	99	46.26
Bank reference	59	27.57
Credit information agencies	52	24.30
Trade associations	47	21.96

***Credit period (CRDTPRD)***

Most companies (92.5 percent) cited specific credit period granted to their customers as shown in Exhibit 5.25. About 31 percent of the respondents offer a credit period of 30 days or less while 45 percent allows between 31 to 60 days and another 11 percent has a credit period between 61 to 90 days. Slightly above four percent of the responding SMEs provide a credit period exceeding three months. In addition, there were eleven companies that quoted terms that do not explicitly specify the actual period allowed. Some of these companies used 'net monthly' terms, which requires payment to be made at the end of the month following the date of the sale. Others merely stated 'depends' when asked for credit terms offered to their customers. Upon further enquiry, it is learned that these companies offered different terms to different category of customers, depending on the credit worthiness of the buying companies and risks associated to the credit transactions.

**Exhibit 5.25**  
**Credit period offered**

Credit period		Frequency	Percent
1 – 30 days		66	30.84
31 – 60 days		96	44.86
61 – 90 days		24	11.21
91 – 120 days		9	4.21
More than 120 days		3	1.40
Miscellaneous terms		11	5.14
No response		5	2.34
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	54.32 days	Skewness	1.430
Median	60.00 days	Kurtosis	3.110
Std. dev.	25.745 days	Kolmogorov-Smirnov Z	3.248
		Asymp. Sig. (2-tailed)	.000

Exhibit 5.25 also presents the mean and median of the credit period, which are 54 and 60 days respectively. The skewness statistic indicates that the curve is quite different from a normal curve. The distribution is more peaked than the normal curve as it has positive kurtosis. In fact, the Kolmogorov-Smirnov test of goodness-of-fit was performed and there is no evidence against the claim that the distribution is normal.

***Collection period (COLLPRD)***

The collection period of the companies surveyed is summarised in Exhibit 5.26. Analysis on the results indicates that the collection period for manufacturing SMEs is relatively long. Both the mean and median, 106.73 and 90.81 days respectively, suggest that the SMEs take more than three months to collect their trade debts. Furthermore, about a third of the sample tolerates an average collection period beyond four months. Note that, as discussed in Zainudin (2008), caution is essential in using the mean to interpret the collection period as this ratio might have been exaggerated by companies that do not regularly write

off uncollectible old debts which would amplify the receivables, which subsequently will worsen the collection period. All the same, the median does verify that the SMEs are slow in their trade credit collection. The median of 91 days reveals that 50 percent of the companies collect within three months and the other 50 percent collect after three months.

**Exhibit 5.26**  
**Average collection period**

Average collection period		Frequency	Percent
1 – 30 days		17	7.95
31 – 60 days		32	14.95
61 – 90 days		58	27.10
91 – 120 days		36	16.82
More than 120 days		71	33.18
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	106.73 days	Skewness 3.825	Kolmogorov-Smirnov Z 2.289
Median	90.81 days	Kurtosis 24.009	Asymp. Sig. (2-tailed) .000
Std. dev.	84.221 days		

The above exhibit also presents the statistics that describe distribution of the collection period. The skewness statistic signifies that the curve deviates from a normal curve. The positive kurtosis reveals that the distribution is more pointed and peaked. The Kolmogorov-Smirnov test was conducted and the result could not support the assertion that the variable is normally distributed.

***Overdue days (OVERDUE)***

Overdue days is the number of days a debtor exceeds the credit period allowed in fulfilling his or her debt obligation. It is the difference between the average collection period, calculated from the financial statement, and the credit period, which was obtained from the questionnaire response. The results, shown in Table 5.27, reveal that only 16 percent of the respondents receive payment on or

before the due date, while most of them experience late payment by their trade debtors. Among them, 23 percent collected within the first month beyond the credit period and 21 percent during the second month after the due date. Further, another 15 percent of the SMEs were paid between 61 to 90 days following the end of the credit period while just above nine percent of the SMEs had their overdue days stretched more than four months. Result for sixteen companies were not computed since five of them did not provide the credit period in their questionnaire response and another eleven provided unspecified credit term as mentioned earlier.

**Exhibit 5.27  
Overdue days**

Overdue days	Frequency	Percent			
Collected on or before due date	34	15.89			
1 – 30 days	49	22.90			
31 – 60 days	44	20.56			
61 – 90 days	33	15.42			
91 – 120 days	18	8.41			
More than 120 days	20	9.34			
No response	16	7.48			
<b>Total</b>	<b>214</b>	<b>100.00</b>			
Mean	53.29 days	Skewness	3.712	Kolmogorov-Smirnov Z	2.306
Median	41.08 days	Kurtosis	23.483	Asymp. Sig. (2-tailed)	.000
Std. dev.	85.158 days				

The mean overdue days for the SMEs is 53 days while the median is 41 days. This is expected because overdue days is the difference between the average collection period and the credit period allowed. Since the companies are experiencing long collection period, then it is expected that it will affect the overdue days. The skewness and kurtosis statistics reveal that the variable is not

normally distributed. When the Kolmogorov-Smirnov test is carried out, the distribution of the variable does not match the normal distribution.

### ***Cash discount (DISCOUNT)***

The cash discount is an incentive for the credit customer to pay ahead of maturity. It is a deduction allowed from the invoice amount if the buyer pays within a specified period of time. However, as illustrated in Exhibit 5.28, responses from the questionnaire indicate that cash discounts are not well received by customers. More than half (about 54 percent) of the respondents either does not offer any cash discount, or none of their customers took up the discounts when offered. About 34 percent of the companies have up to 25 percent of their customers taking advantage of the cash discounts. The poor response to cash discounts is also reflected by the statistics that measure the central tendency of the distribution. The mean indicates that roughly only about 11 percent of the customers take up the discount offer, and the zero median, which is the middle score, verified the earlier statement that says more than 50 percent of the companies.

**Exhibit 5.28  
Percentage of customers taking discount**

<b>Percentage of customers taking discount</b>		<b>Frequency</b>	<b>Percent</b>
None		115	53.74
Between 1 – 25%		73	34.11
Between 26 – 50%		10	4.67
Between 51 – 75%		2	0.94
Between 75 – 100%		13	6.07
No response		1	0.47
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	10.59%	Skewness	2.782
Median	0%	Kurtosis	6.774
Std. dev.	23.597%	Kolmogorov-Smirnov Z	5.044
		Asymp. Sig. (2-tailed)	.000

The skewness and kurtosis values suggest that the distribution of this variable does not fit to the normal curve. The Kolmogorov-Smirnov test too seems to concur to the claim.

***Late payment interest (INTEREST)***

In Malaysia, unlike the UK or the EU, there is no specific act to regulate trade creditors in charging interest on late payment of trade debtors. Nevertheless, as illustrated in Exhibit 5.29, slightly above 14 percent of the respondent companies presently charge interest on overdue payments.

**Exhibit 5.29  
Charging of interest on late payment**

<b>Charge interest</b>	<b>Frequency</b>	<b>Percent</b>
No	182	85.05
Yes	31	14.48
No response	1	0.47
<b>Total</b>	<b>214</b>	<b>100.00</b>

***Credit limit (CRDTLMIT)***

A good trade credit practice would be to apply a credit limit to new customers and adjust it when trading experiences prove the customer to be trustworthy.

However, for the Malaysian manufacturing SMEs, it is observed that almost 30 percent of the sample surveyed did not employ any form of credit limit to any of their customers, and 52 percent of them applied some limits to some of their customers, while 18 percent assigned limit to all customers — see Exhibit 5.30.

**Exhibit 5.30**  
**Percentage of customers to whom credit limits are imposed**

Credit limit imposed		Frequency	Percent
No credit limit at all		64	29.91
Limits assigned up to 25% of customers		29	13.55
Limits assigned to 26 – 50% of customers		29	13.55
Limits assigned to 51 – 75% of customers		11	5.14
Limits assigned to 76 – 99% of customers		41	19.16
Limits assigned to all customers		39	18.22
No response		1	0.47
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	46.29%	Skewness	0.096
Median	50.00%	Kurtosis	-1.730
Std. dev.	41.657%	Kolmogorov-Smirnov Z	3.024
		Asymp. Sig. (2-tailed)	.000

The mean and median of the distribution of this variable is 46 percent and 50 percent respectively. The dissimilarity of these two measures of location, the skewness and kurtosis statistics, supported by the Kolmogorov-Smirnov test, all point towards the non-normality of the distribution.

***Special terms (SPECTERM)***

Generally, companies would have standard credit terms for their credit customers. However, there are times, under certain circumstances, when these terms are violated. This is normal and practised by most of the responding companies. Exhibit 5.31 shows that the majority of the SMEs (almost 65 percent) do vary their credit terms. Goddard and Jay (1981) who find similar results, also provide that the main reasons for granting special terms were concerned with obtaining large orders, though in some cases large customers dictated the terms of sale to the seller.



**Exhibit 5.31  
Offer of special terms**

<b>Offer special terms to special customers</b>	<b>Frequency</b>	<b>Percent</b>
No	75	35.05
Yes	138	64.48
No response	1	0.47
<b>Total</b>	<b>214</b>	<b>100.00</b>

***Invoicing promptness (BGININVO)***

It is necessary that invoices be despatched immediately after goods are supplied or very soon afterwards because delays in invoicing are likely to result in delays in payment by customers. Exhibit 5.32 shows how quickly after the delivery of goods invoices were sent out in the sample companies. More than 80 percent of the sample sends out their invoices within the first week after goods were despatched. This includes more than ten percent that sent out their invoices immediately, and another 70 percent within a week. It is interesting, however, to note that in this age of advanced information and communication technology, there are still companies that take very long in despatching their invoices.

**Exhibit 5.32  
Promptness of invoicing**

<b>Invoicing</b>		<b>Frequency</b>	<b>Percent</b>
Immediately upon delivery		23	10.75
Within 1 <sup>st</sup> week after delivery		149	69.63
Within 2 <sup>nd</sup> week after delivery		15	7.01
Within 3 <sup>rd</sup> week after delivery		3	1.40
Within 4 <sup>th</sup> week after delivery		0	0
Within 5 <sup>th</sup> week after delivery		13	6.07
In the 6 <sup>th</sup> week or later		3	1.40
On month end		4	1.87
No response		4	1.87
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	6.64 days	Skewness	3.228
Median	3 days	Kurtosis	12.552
Std. dev.	9.778 days	Kolmogorov-Smirnov Z	4.594
		Asymp. Sig. (2-tailed)	.000

On average, the SMEs are fairly quick in sending their invoices. The mean and median length of time they take to invoice their customers are about seven and three days respectively. The distribution of this variable however, does not seem to fit the normal curve, as shown by their skewness and kurtosis statistics as well as the results of the Kolmogorov-Smirnov test presented in the exhibit above.

### ***Collection commencement (BGINCOLL)***

As soon as the agreed time for payment has elapsed, collection activities should be initiated, be it in the form of a reminder note or a phone call. It is a known fact that the longer a debt remains outstanding, the more difficult it becomes to collect. Surprisingly, only about 55 percent of companies in the study sample commenced their collection activities within the first week after the due date. Nineteen percent started to notify their overdue customers in the second and third week. Worse still, 22 percent of the companies only began collection pursuit after their debtors were overdue for more than a month. Exhibit 5.33 reveals current practice of manufacturing SMEs in the promptness of initiating their collection activity.

The SMEs spend slightly longer before they begin their collection activities on overdue accounts. The mean and median number of days taken are 15 days and seven days respectively. Similar to most other credit practices data, the distribution of this variable does not seem to fit the normal curve as indicated by the skewness and kurtosis statistics. The Kolmogorov-Smirnov test of goodness-of-fit verifies the non-normality characteristic of the distribution of this variable.

**Exhibit 5.33**  
**Promptness of initiating collection activity**

Collection activity		Frequency	Percent
On or before the due date		9	4.21
Within 1 <sup>st</sup> week after due date		108	50.47
Within 2 <sup>nd</sup> week after due date		35	16.35
Within 3 <sup>rd</sup> week after due date		6	2.80
Within 4 <sup>th</sup> week after due date		0	0
Within 5 <sup>th</sup> week after due date		33	15.42
In the 6 <sup>th</sup> week or later		14	6.54
No response		9	4.21
<b>Total</b>		<b>214</b>	<b>100.00</b>
Mean	14.68 days	Skewness	2.375
Median	7.00 days	Kurtosis	6.409
Std. dev.	17.431 days	Kolmogorov-Smirnov Z	3.785
		Asymp. Sig. (2-tailed)	.000

***Standard collection procedures (COLLPROC)***

From Exhibit 5.34, it is observed that about 43.5 percent of the sample does not have any standard procedure in conducting their trade debt collection. And, of those that have standard collection procedures, about three-quarter of them have the flexibility of allowing some form of exceptions to large important customers.

**Exhibit 5.34**  
**Standard collection procedures**

Standard collection procedure	Frequency	Percent	
No standard procedure	93	43.46	
Have – no exception	31	14.49	56.54
Have – allow exception	90	42.05	
<b>Total</b>	<b>214</b>	<b>100.00</b>	

***Outsourcing (OSOURCED)***

As mentioned in Chapter 4, trade credit management activities that are frequently outsourced include financing of accounts receivable by way of factoring, credit risk assessment which entails the purchase of information from credit reporting

agencies, credit collection function, and the assumption of credit risk by purchasing credit insurance. The SMEs surveyed were asked if they have outsourced any of these four activities. Exhibit 5.35 provides the feedback on the level of usage of outsourcing services. Although it has been around for years, outsourcing is not extensively used by the Malaysian SMEs. About 47 percent of the sample did not outsource any of their credit management activities and slightly above 38 percent do outsource but only one activity. Just about 15 percent of the SMEs outsource two or more credit activities.

**Exhibit 5.35**  
**Level of outsourcing of credit activities**

<b>Level of outsourcing</b>	<b>Frequency</b>	<b>Percent</b>
None	100	46.73
One activity outsourced	82	38.32
Two or more activities outsourced	32	14.95
<b>Total</b>	<b>214</b>	<b>100.00</b>

The responses on outsourcing practices also reveal the degree to which each of the four credit functions is outsourced. Exhibit 5.36 shows that financing of accounts receivable is the most frequently outsourced trade credit management activity. Out of those SMEs that outsourced at least one of their credit activities, two-thirds of them utilise factoring services provided by financial institutions. The second most outsourced credit activity is credit risk assessment where the companies seek credit information and credit analyses on potential customers from credit reporting agencies. Next most outsourced activity is the assumption of credit risk, which requires the companies to purchase credit insurance policies. Finally, only 13 companies use professional debt collectors to collect their accounts receivables.

**Exhibit 5.36**  
**Credit activities outsourced**

<b>Credit activities outsourced</b>	<b>No. of companies</b>	<b>Percentage*</b>
Financing of accounts receivable	76	66.67
Credit risk assessment	49	42.98
Assumption of credit risk	19	16.67
Trade debt collection	13	11.40

\* The percentage is based on the number of companies that exercise outsourcing of at least one activity.

***Summary of Trade Credit Management Practices***

In summary, the results of the survey have provided an insight into the credit management practices of manufacturing SMEs with empirical evidence from Malaysia. Descriptive findings of trade credit management practices are summarised as follows:

- In general, about half of the SMEs do not engage any person to specifically manage the credit operation of the company.
- About 63 percent of the SMEs sampled stated that they have a credit policy. However, out of these, 44 percent do not have them documented.
- Most (more than 88 percent) SMEs assessed the creditworthiness of their customers before granting trade credit facilities. When checks were carried out, more than three-quarter of the companies used two or more sources of credit information. The credit information is mostly sourced from the customers themselves, followed by their own sales people and business references.
- More than 30 percent of the companies offered a credit period of 30 days or less, and 45 percent allowed customers to defer payment between 31 to 60

days. Meanwhile, the mean credit period offered is 54 days. However, the collection period is a great deal longer. The overall average collection period is 107 days with only eight percent of the SMEs collected their trade debts in the first 30 days, and 15 percent received payments from their trade debtors in the second month. As a result, most companies experienced late payment from their customers. Only 16 percent of the SMEs collected their receivables on or before the due date.

- Offering cash discount is not a common practice among the SMEs. Less than half of the sampled companies offered the discount to customers. And, the customers too are not very receptive of the offer. The mean percentage of customers taking up the discount is only 11 percent.
- The majority of the SMEs do not penalise overdue accounts. Only slightly above 14 percent of the companies charge interest on late payment of trade debt. As it is now, Malaysia does not have any regulation on the issue of late payment.
- While 30 percent of the SMEs did not impose any form of credit limit to their customers, 18 percent assigned limit to all customers. The remaining companies some limits to some of their customers.
- Despite having a standard credit terms, it is quite common for SMEs to depart from the terms. About 64 percent of the companies admitted offering special terms at times. There will be circumstances when it is commercially expedient to deviate from those standard terms, and offer the customers special deals.

- Although most companies were prompt in sending out their invoices to customers, they are slower in initiating collection activities on overdue accounts. On average, the SMEs took less than a week to dispatch the invoices but they take two weeks before they begin to remind past due accounts.
- Quite a large proportion of the sampled companies did not have standard collection procedures. Among those that have standard procedures, about three-quarter of them allowed some flexibility.
- Outsourcing of credit management activities are not widely practiced by since 47 percent of the companies survey did not outsource any of the credit operation activities, and another 38 percent of the companies outsourced only one activity. To the companies that outsourced one or more activities, the most outsourced activity is financing of receivables by way of factoring.

#### **5.4 SUMMARY**

The purpose of this chapter was to provide statistical descriptions of the key variables of interest in the study. The variables were divided into two categories. First, the variables that represented company characteristics were examined. These variables provide the general characteristics as well as their financial attributes of the SMEs. The second group of variables characterised the trade credit management practices of the SMEs. This category comprised variables reflecting the process of trade credit management. In all, descriptive findings have been detailed for a total of 40 study variables categorised as follows:

- General characteristics — 8 variables featuring the general attributes such as industry, age, size, percentages of sales and exports, and its bargaining position in the market.
- Financial characteristics — 11 variables portraying the financial position of the companies in terms of liquidity, efficiency, profitability and growth.
- Credit management practices — 21 variables representing matters in managing trade receivables.

Descriptive statistics were applied to investigate and describe company characteristics and trade credit management practices of SMEs in the sample. Frequency distribution and percentage distribution were used as a form of summarising data. Where applicable, the means, median and standard deviation of scale variables were provided. The shape of the distribution of these variables were also described using the skewness and kurtosis statistics, supported by the Kolmogorov-Smirnov test of goodness-of-fit.

In relation to the first research objective, i.e. to investigate and report findings on trade credit management practices of Malaysian SMEs in the manufacturing sector, the result of data analysis as presented in this chapter has provide a broad picture of the practices carried out by SMEs in managing trade receivables. In the next chapter, all these variables will be further analysed. The first analysis will explore existence of significant bivariate associations between company characteristics and credit management practices. Subsequently, based on the results of the bivariate analysis, variables that render significant relationships will be analysed further using the multivariate approach.



## **Chapter 6**

### **FACTORS INFLUENCING TRADE CREDIT MANAGEMENT PRACTICES**

#### **6.1 INTRODUCTION**

The previous chapter presented descriptive findings of company characteristics and trade credit management practices of the sampled manufacturing SMEs. In this sixth chapter of the thesis, further statistical analyses are performed. The main theme of the chapter is to explain why some companies have different trade credit management practices. More specifically, it attempts to identify the factors (company characteristics) that might influence companies' trade credit management practices.

In the earlier section, bivariate associative analysis is carried out to establish relationships between companies' characteristics and their trade credit management practices. The later section covers the multivariate associations between companies' characteristics and their trade credit management practices (regression analyses).

#### **6.2 BIVARIATE ASSOCIATIVE ANALYSIS**

The previous chapter profiled the characteristics of the responding companies and their practices in managing receivables. This section is concerned with knowing how the company's characteristics are related to their trade credit management practices. Beyond looking at the means, the medians, the standard

deviation and other statistics of the distribution, it is imperative to understand the nature, direction, and significance of the bivariate relationships of these variables. In addition, the bivariate analysis will enable the researcher to identify potential variables to be included in further analysis.

Skimming the data, there appear to be another issue of concern that has to be tackled prior to the analysis. As already indicated, there are 14 sub-sectors of the manufacturing industry included in the study, which need to be collapsed. Collapsing or combining categories of a variable is a common data transformation that reduces the number of categories (Zikmund, 1991). The main reason for collapsing has to do with the statistical significance of the result. When there are too many categories, the number of cases in each cell is likely to be too small, resulting in the test not likely to be significant. Even if the result is significant, it is difficult to make any meaningful inference or conclusion.

For the purpose of this study, the industry sub-sector classification has been collapsed into four categories based on similar characteristics that are common among the different sub-sectors. Exhibit 6.1 displays the reclassification of the various sub-sector of the manufacturing SMEs included in the study. The first group, labelled as 'consumer goods', comprises food, beverage and tobacco, electric and electronic products, and textile, apparels and leather products. These sub-sectors are put together as the products are basically consumer goods. The second group includes machinery and engineering, transport equipments, non-metallic mineral products, and metal products. Referred to as heavy industries, the products of this group are mainly for industrial use. The third group consists of chemical and petrochemical products, plastic products,

rubber products, pharmaceuticals, and palm oil-based products. Finally, wood and wood products, and paper and printing are the components of the fourth group. While the third group is chemical-based, the fourth is a wood-based cluster.

**Exhibit 6.1**  
**Reclassification of industry sub-sectors**

Categories	Sub-sectors grouping	Frequency	Percent
Consumer goods	Food, beverage & tobacco Electric & electronic Textile, apparels & leather	47	21.96
Heavy industries	Machinery & engineering Transport equipment Non-metallic mineral products Metal products	83	38.79
Chemical-based	Chemicals & petrochemical Plastic products, Rubber products Palm oil-based products Pharmaceuticals	63	29.44
Wood-based	Paper & printing Wood products	21	9.81
<b>Total</b>		<b>214</b>	<b>100.00</b>

In statistical analyses that will be discussed later in this chapter, these industry sub-sector categories are represented by dummy variables. As a general rule, to put up with  $k$  categories of a nominal variable,  $k - 1$  dummy variables are needed (Afifi et al., 2004). Therefore, to represent the four categories of industry sub-sectors, only three dummy variables are needed. Here the three variables represent CONS, CHEM and WOOD respectively. For example, the indicator variable CONS equals 1 if the companies belong to consumer goods sub-sector and zero otherwise; CHEM = 1 for companies in chemical-based sub-sector and zero otherwise; and WOOD =1 if the companies are in the wood-based sub-sector and zero otherwise. The other group, HEAVY, representing companies in the heavy industries sub-sector, has a value of zero

on each of the three dummy variables. The HEAVY group is taken as the referent group to which all the others are compared. Afifi et al. (2004) suggest that the chosen referent group should have a fairly large sample size, hence the choice of HEAVY, the group with the most number of companies. The representation of the industry sectors by the dummy variables is shown in Exhibit 6.2.

**Exhibit 6.2**  
**Dummy variables for industry sub-sectors**

Sub-sector category	Dummy variables		
	CONS	CHEM	WOOD
Consumer goods (CONS) <i>(Food, beverage &amp; tobacco, Electric &amp; electronic, Textile, apparels &amp; leather)</i>	1	0	0
Heavy industries (HEAVY) <i>(Machinery &amp; engineering, Transport equipment, Non-metallic mineral products, Metal products)</i>	0	0	0
Chemical-based (CHEM) <i>(Chemicals &amp; petrochemical, Plastic products, Rubber products, Palm oil-based products, Pharmaceuticals)</i>	0	1	0
Wood-based (Hill, Wood, & Sorenson) <i>(Paper &amp; printing, Wood products)</i>	0	0	1

Subsequent to the regrouping of the industry sub-sector variable, bivariate analysis is then carried out. Note that the univariate results discussed in the previous chapter have indicated that almost all variables were found not distributed normally. Hence, non-parametric tests are employed in the analysis. The statistical techniques to be used in the bivariate analyses depend on the nature of the data. The Mann-Whitney test will be employed when a continuous variable is tested against a dichotomous variable. The chi-square test is used when the variables are dichotomous or categorical. If a bivariate relationship between a categorical data and a continuous variable is to be determined, the

Kruskal -Wallis test is more appropriate. The Spearman's rank correlation is applied when both variables are continuous. These tests were mentioned in Chapter 4.

Exhibit 6.3 provides a matrix that indicates the existence of statistically significant relationships between the trade credit management variables and the companies' characteristic variables. A plus (+) sign denotes the existence of a positive association between the variables referred to. On the other hand, a minus (-) would signify the presence of a negative relationship. A tick (√) is designated to relationships that do not illustrate a specific direction due to the categorical nature of a variable. Only those trade credit practices that demonstrate significant relationships with the factors will be discussed further. The bivariate statistical results (SPSS outputs) are presented in Appendix 10. Note that the appendix also only provides tests that are found to be significant.

Based on the bivariate association matrix between the list of trade credit management practices and the list of company characteristics presented above, the trade credit management practices of the manufacturing SMEs are described and explained in the following sequence: (1) those that are not associated with any of the company characteristics; (2) those that are associated with one company characteristic; and (3) those that are associated with more than one company characteristics.

**Exhibit 6.3  
Bivariate association matrix**

Trade Credit Management Variables \ Company Characteristic Variables	INDUSTRY	AGE	WORKERS	TURNOVER	TASSETS	CRDTSALE	EXPORTS	POSITION	CURRENT	QUICK	WORKCAP	NETPROF	OPERPROF	ROA	TATOVER	FATOVER	INVTORER	GROWTH	
CRDTMGR			+									-	-						
CRDTPLCY		+		+	+														
WRITPLCY	√		+	+	+														
CHECKING																			
INFOSOS																			
CRDTPRD							-								-		-		
COLLPRD	√		-	-			-							-	-	-			
OVERDUE			-	-			-							-	-	-			
DISCOUNT						-													
INTEREST			+	+	+														
CRDTLMIT																			
SPECTERM		+				-											-		
BGININVO						-													
BGINCOLL																			
COLLPROC																			
EXCEPTN								+											
OSOURCED	√						+											-	
		Mann-Whitney test												Kruskal-Wallis test					
		Correlations												Chi-square test					

### **6.2.1 Credit management practices that are not associated with any company characteristics**

The results of the bivariate analysis presented in Exhibit 6.3 reveal that no association was detected between some of the credit management practice variables with any of the company characteristics. These non-associative variables include credit assessment (CHECKING), sources of information (INFOSOS), credit limit (CRDTLMIT), collection commencement (BGINCOLL), and standard collection procedures (COLLPROC). These variables will not be

considered for further multivariate analysis. Probably there are other variables, not covered in this study, maybe some behavioural factors, that can explain these variables.

### **6.2.2 Credit management practices that are associated with one company characteristic**

This sub-section briefly discusses those credit management practice variables that display significant association with only one of the company characteristic variables. The credit management practices that will be discussed below are cash discount, late payment interest, invoicing promptness, and exception to standard collection procedures.

#### ***Cash discount (DISCOUNT)***

It appears that cash discount (DISCOUNT) is negatively correlated to credit sales (CRDTSALE). It is somewhat puzzling that the findings indicate that a company with a lower percentage of customers taking cash discount is more likely to have a high proportion of credit sales. A partial interpretation of this finding could be due to the tradition or convention of classifying cash sales to include sales that are paid within the discount period. It is not uncommon for supplier to allow, especially to bulk purchasers to defer payment to enable the buyer to verify that goods are delivered to specification. When payment is made, usually several days after of the transaction, the supplier considers that the customer is taking up the discount offer, but at the same time recorded the transaction as cash sales.

### ***Late payment interest (INTEREST)***

The bivariate analysis shows that the variable representing late payment interest (INTEREST) is found to be positively related to all three measures of size, i.e. the number of workers (WORKERS), total turnover (TURNOVER) and total assets (TASSET). This means that the larger the size of a company, the more likelihood it will charge interest on late payment. There is a possibility that a larger company, due to its size, may be more likely to have the bargaining power and can therefore charge interest on overdue accounts. Another possible reason is that probably size approximates the ability to adopt more sophisticated or complex trade credit management practices, e.g. charging interest on overdue credit.

### ***Invoicing promptness (BGININVO)***

Another significant relationship appears to exist between practice of prompt invoicing and percentage of credit sales to total sales. A negative association between these two variables indicates that the higher the percentage of credit sales, the faster the company sends out their invoices.

A high proportion of credit sales will usually result in sizeable accounts receivable. The investment tied up in these receivables need to be liquidated as the revenues from the collection will be reinvested to acquire new stocks. Therefore, to speed up collection, companies would issue invoices as soon as possible. On the other hand, companies with lower percentage of credit sales can afford to delay invoicing their credit customers, as the amount is less substantial.



### ***Exception to standard collection procedures (EXCEPTN)***

Companies that are operating in a dominant market tend to provide exceptions to the standard collection procedures. This finding seems to match Mian and Smith's (1992) finding that companies that have high reliance on a few large customers tend to apply a flexible approach to credit management.

By operating in a dominant market, a company usually tends to be in a weaker bargaining position. The company may at times breach the standard procedures to live up to the demand of domineering, but large and valued customers. Hence, the presence of dominant customer will have some influence over the likelihood of the company in allowing flexibility or giving exceptions to customers.

### **6.2.3 Credit management practices that are associated with more than one company characteristics**

There are several credit management practice variables that demonstrate significant relationships with more than one company characteristic variables. These variables include credit manager (CRDTMGR), credit policy (CRDTPLCY), written credit policy (WRITPLCY), credit period (CRDTPRD), collection period (COLLPRD), overdue days (OVERDUE), special terms (SPECTERM), and outsourcing (OSOURCED). These bivariate analysis results will not be dwelled upon because they will be re-examined in a multivariate setting in the next section which should provide a more solid conclusion.

### **6.3 MULTIVARIATE ASSOCIATION BETWEEN COMPANY CHARACTERISTICS AND TRADE CREDIT MANAGEMENT PRACTICES**

Although bivariate relationships are a good starting point when analysing data, the research questions require the investigation of simultaneous effects of company characteristics identified earlier on some selected trade credit management practices. The bivariate associative analysis in the preceding section has distinguished some credit management practice variables that had significant relationships with some of the factors that represent company characteristics. In view of time constraint, only those variables that had associations with more than one factor would be examined further in a multivariate setting to obtain more robust findings.

Prior to running the multivariate analysis, several procedures and requirements need to be observed. Therefore, this section is organised as follows: (1) selection and refinement of variables to be included in the model; (2) specific hypotheses development; (3) multiple regression analysis; and (4) logistic regression analysis.

#### **6.3.1 Selecting and refining dependent and independent variables**

In the multivariate analysis, there are two types of variables involved: dependent and independent variables. According to Sekaran (2003), a dependent variable is the variable of primary interest to the researcher. This is the variable that the researcher tries to understand and describe by finding out what other variables influence it. Sekaran (2003) refers an independent variable as one that influences the dependent variable in either a positive or a negative way. In relation to the research objectives, trade credit management practices would be

the dependent variable as they are the primary theme of the study. The company characteristics are the independent variables that may have some influence on how the SMEs manage their trade credit.

### ***Dependent variables***

Based on the bivariate analysis in the previous section, several variables representing the credit management practices that have indicated relationships with many factors, have been selected for further analyses. These will be the dependent variables in the multivariate analysis. The variables are credit manager, credit policy, written credit policy, credit period, collection period, overdue days, special terms, and outsourcing. These chosen variables are, however, renamed to better reflect what they stand for. They are: (1) presence of credit manager; (2) existence of credit policy; (3) existence of written credit policy; (4) credit period; (5) collection period; (6) overdue days; (7) offer of special terms; (8) use of outsourcing.

Notice that some of the dependent variables are dichotomous while the others are continuous. For regression analysis, multiple regression will be used for continuous variables while logistic regression will be applied to dichotomous variables. The analyses will be discussed in later sub-sections.

### ***Independent variables***

The independent variables are the company characteristics. However, notice that many of these variables have some common elements and measure the same concepts. For example, company size was estimated using three ways:

the number of workers employed, annual sales turnover, and total assets. In addition, three different ratios were used to represent each of the liquidity, efficiency and profitability variables. It would be redundant and often confusing to employ more than one ratio as a proxy to an attribute. Hence, only one will be selected to represent each characteristic.

Many previous research utilised annual sales turnover and/or total assets to represent company size (for example, Eljelly, 2004; G. C. Hall, Hutchinson, & Michaelas, 2004; Huyghebaert, 2006; Moss & Stine, 1989; Petersen & Rajan, 1997; Regupathi & Zainudin, 2003). Still, many others used number of employees as a proxy to size (Howorth & Reber, 2003; Neale & Shipley, 1985). However, the concern of the study is on receivables management, which is less likely affected by the number of workers in a company. A financial variable is a more appropriate proxy. Eljelly (2004) observes that there exists a strong highly positive correlation between total assets and sales which show that they are substitute measures of size. For this study, annual sales turnover is chosen over total assets because it is an element that relates to accounts receivable, the crux component of this research study. A company with a high sales volume, for example, would have a larger accounts receivable, which requires greater attention from the management. For that reason, annual sales turnover is preferred. However, similar to Deloof (2003), the variable is computed as the natural logarithm of annual sales turnover..

In terms of liquidity, current ratio and quick ratio are among the common measures used by many researchers (Davidson & Dutia, 1991; Lamberson, 1995; Moss & Stine, 1989). Another traditional measure of liquidity is the working

capital ratio (Altman, 1968; Zainudin, 2006). In the development of the Z-score model, Altman (1968) uses the working capital to total assets ratio as one of the variables used in the discriminant function. Essentially, he claims that this ratio proved to be the most valuable compared to the other two conventional liquidity measures (namely, the current ratio and the quick ratio) as it showed greater statistical significance both on a univariate and multivariate basis. For the purpose of this study, the working capital ratio is chosen as a proxy to liquidity.

Efficiency or activity ratio is considered as one of the variables to determine the financial characteristics of a company. The more common measures used in previous research (e.g. Meric et al., 2004) are total assets turnover, fixed assets turnover, inventory turnover and receivables turnover. This study uses total asset turnover because the ratio reflects overall efficiency of asset management of the company. Turnover ratio of individual asset limits the interpretation of efficiency to the management of that particular asset.

Profitability can be measured in many ways. In computing the profitability ratio, the numerator is almost always either the net profit or the operating profit. The denominator, however, is more varied. The divisor could be sales, as in net profit margin (also termed as return on sales), or total assets, to give return on assets, or even equity that will give return on equity. For example, Hutchinson et al. (1988) use return on sales and return on equity in measuring profitability. Davidson and Dutia (1991) and Meric et al. (2004) employ operating profit margin, return on assets, and return on equity. Notwithstanding which approach is more suitable, the measurement of profitability employed generally depends

upon one's own purposes. This study uses the net profit margin to represent the profitability variable.

In summary, in this research study, the set of independent variables, i.e., specific company characteristics are: (1) types of industry sub-sector; (2) age; (3) natural log of total assets for company size; (4) percentage of credit sales; (5) percentage of export sales; (6) net working capital ratio for liquidity; (7) net profit margin for profitability; (8) total assets turnover for efficiency.

### **6.3.2 Developing specific hypotheses**

Recall in Chapter 4, a general hypothesis was stated as:

*H<sub>0</sub>: Companies with different characteristics would have the same trade credit management practices.*

Here, once we have identified the specific dependent and independent variables, we can now specify the detail/specific hypotheses. These are presented in Exhibit 6.4.

**EXHIBIT 6.4**  
**Hypotheses matrix**

DEPENDENT VARIABLES	INDEPENDENT VARIABLES									
	INDUSTRY	AGE	SIZE	CRDTSALE	EXPORTS	POSITION	LIQUIDITY	PROFITABILITY	EFFICIENCY	GROWTH
<b>CRDTMGR</b>	H <sub>1,1</sub> : Companies in different industry sub-sectors have the same likelihood of employing a credit manager	H <sub>1,2</sub> : A company's age does not influence the company's likelihood of employing a credit manager	H <sub>1,3</sub> : A company's size does not influence the company's likelihood of employing a credit manager	H <sub>1,4</sub> : A company's percentage of credit sales does not influence the company's likelihood of employing a credit manager	H <sub>1,5</sub> : A company's percentage of export sales does not influence the company's likelihood of employing a credit manager	H <sub>1,6</sub> : A company's asymmetric bargaining position does not influence the company's likelihood of employing a credit manager	H <sub>1,7</sub> : A company's liquidity does not influence the company's likelihood of employing a credit manager	H <sub>1,8</sub> : A company's profitability does not influence the company's likelihood of employing a credit manager	H <sub>1,9</sub> : A company's efficiency does not influence the company's likelihood of employing a credit manager	H <sub>1,10</sub> : A company's growth does not influence the company's likelihood of employing a credit manager
<b>CRDTPLCY</b>	H <sub>2,1</sub> : Companies in different industry sub-sectors have the same likelihood of having a credit policy	H <sub>2,2</sub> : A company's age does not influence the company's likelihood of having a credit policy	H <sub>2,3</sub> : A company's size does not influence the company's likelihood of having a credit policy	H <sub>2,4</sub> : A company's percentage of credit sales does not influence the company's likelihood of having a credit policy	H <sub>2,5</sub> : A company's percentage of export sales does not influence the company's likelihood of having a credit policy	H <sub>2,6</sub> : A company's asymmetric bargaining position does not influence the company's likelihood of having a credit policy	H <sub>2,7</sub> : A company's liquidity does not influence the company's likelihood of having a credit policy	H <sub>2,8</sub> : A company's profitability does not influence the company's likelihood of having a credit policy	H <sub>2,9</sub> : A company's efficiency does not influence the company's likelihood of having a credit policy	H <sub>2,10</sub> : A company's growth does not influence the company's likelihood of having a credit policy
<b>WRITPLCY</b>	H <sub>3,1</sub> : Companies in different industry sub-sectors have the same likelihood of having a written credit policy	H <sub>3,2</sub> : A company's age does not influence the company's likelihood of having a written credit policy	H <sub>3,3</sub> : A company's size does not influence the company's likelihood of having a written credit policy	H <sub>3,4</sub> : A company's percentage of credit sales does not influence the company's likelihood of having a written credit policy	H <sub>3,5</sub> : A company's percentage of export sales does not influence the company's likelihood of having a written credit policy	H <sub>3,6</sub> : A company's asymmetric bargaining position does not influence the company's likelihood of having a written credit policy	H <sub>3,7</sub> : A company's liquidity does not influence the company's likelihood of having a written credit policy	H <sub>3,8</sub> : A company's profitability does not influence the company's likelihood of having a written credit policy	H <sub>3,9</sub> : A company's efficiency does not influence the company's likelihood of having a written credit policy	H <sub>3,10</sub> : A company's growth does not influence the company's likelihood of having a written credit policy
<b>CRDTPRD</b>	H <sub>4,1</sub> : Companies in different industry sub-sectors offer the same credit period	H <sub>4,2</sub> : A company's age does not influence the company's offered credit period	H <sub>4,3</sub> : A company's size does not influence the company's offered credit period	H <sub>4,4</sub> : A company's percentage of credit sales does not influence the company's offered credit period	H <sub>4,5</sub> : A company's percentage of export sales does not influence the company's offered credit period	H <sub>4,6</sub> : A company's asymmetric bargaining position does not influence the company's offered credit period	H <sub>4,7</sub> : A company's liquidity does not influence the company's offered credit period	H <sub>4,8</sub> : A company's profitability does not influence the company's offered credit period	H <sub>4,9</sub> : A company's efficiency does not influence the company's offered credit period	H <sub>4,10</sub> : A company's growth does not influence the company's offered credit period

<b>COLLPRD</b>	H <sub>5,1</sub> : Companies in different industry sub-sectors have the same collection period	H <sub>5,2</sub> : A company's age does not influence the company's collection period	H <sub>5,3</sub> : A company's size does not influence the company's collection period	H <sub>5,4</sub> : A company's percentage of credit sales does not influence the company's collection period	H <sub>5,5</sub> : A company's percentage of export sales does not influence the company's collection period	H <sub>5,6</sub> : A company's asymmetric bargaining position does not influence the company's collection period	H <sub>5,7</sub> : A company's liquidity does not influence the company's collection period	H <sub>5,8</sub> : A company's profitability does not influence the company's collection period	H <sub>5,9</sub> : A company's efficiency does not influence the company's collection period	H <sub>5,10</sub> : A company's growth does not influence the company's collection period
<b>OVERDUE</b>	H <sub>6,1</sub> : Companies in different industry sub-sectors have the same overdue days	H <sub>6,2</sub> : A company's age does not influence the company's overdue days	H <sub>6,3</sub> : A company's size does not influence the company's overdue days	H <sub>6,4</sub> : A company's percentage of credit sales does not influence the company's overdue days	H <sub>6,5</sub> : A company's percentage of export sales does not influence the company's overdue days	H <sub>6,6</sub> : A company's asymmetric bargaining position does not influence the company's overdue days	H <sub>6,7</sub> : A company's liquidity does not influence the company's overdue days	H <sub>6,8</sub> : A company's profitability does not influence the company's overdue days	H <sub>6,9</sub> : A company's efficiency does not influence the company's overdue days	H <sub>6,10</sub> : A company's growth does not influence the company's overdue days
<b>SPECTERM</b>	H <sub>7,1</sub> : Companies in different industry sub-sectors have the same likelihood of offering special terms	H <sub>7,2</sub> : A company's age does not influence the company's likelihood of offering special terms	H <sub>7,3</sub> : A company's size does not influence the company's likelihood of offering special terms	H <sub>7,4</sub> : A company's percentage of credit sales does not influence the company's likelihood of offering special terms	H <sub>7,5</sub> : A company's percentage of export sales does not influence the company's likelihood of offering special terms	H <sub>7,6</sub> : A company's asymmetric bargaining position does not influence the company's likelihood of offering special terms	H <sub>7,7</sub> : A company's liquidity does not influence the company's likelihood of offering special terms	H <sub>7,8</sub> : A company's profitability does not influence the company's likelihood of offering special terms	H <sub>7,9</sub> : A company's efficiency does not influence the company's likelihood of offering special terms	H <sub>7,10</sub> : A company's growth does not influence the company's likelihood of offering special terms
<b>OSOURCED</b>	H <sub>8,1</sub> : Companies in different industry sub-sectors have the same likelihood of outsourcing credit management activities	H <sub>8,2</sub> : A company's age does not influence the company's likelihood of outsourcing credit management activities	H <sub>8,3</sub> : A company's size does not influence the company's likelihood of outsourcing credit management activities	H <sub>8,4</sub> : A company's percentage of credit sales does not influence the company's likelihood of outsourcing credit management activities	H <sub>8,5</sub> : A company's percentage of export sales does not influence the company's likelihood of outsourcing credit management activities	H <sub>8,6</sub> : A company's asymmetric bargaining position does not influence the company's likelihood of outsourcing credit management activities	H <sub>8,7</sub> : A company's liquidity does not influence the company's likelihood of outsourcing credit management activities	H <sub>8,8</sub> : A company's profitability does not influence the company's likelihood of outsourcing credit management activities	H <sub>8,9</sub> : A company's efficiency does not influence the company's likelihood of outsourcing credit management activities	H <sub>8,10</sub> : A company's growth does not influence the company's likelihood of outsourcing credit management activities



### **6.3.3 Multiple Regression Analysis**

Multiple regression analysis is used in this study to examine the relationship between a single dependent variable and a set of independent variables. Earlier, eight dependent variables have been identified. However, only three will be discussed in this section as the other five dependent variables, being dichotomous in nature, will be using logistic regression, which will be discussed in the next sub-section. The dependent variables that will be analysed here are credit period, collection period, and overdue days.

#### ***Credit period***

Initially the regression model for credit period (CRDTPRD) was run using the mode "ENTER" on SPSS version 12.0 for Windows. However, the p-value for F-statistic test of 0.072 implies that there is insufficient evidence to reject the null hypothesis that at least one of the factors' (independent variables) coefficients is significantly different from zero. This means that there is no indication that shows any of these factors are useful in explaining the credit period, even though the individual t-test for factor coefficients show that efficiency, represented by total assets turnover (TATOVER), might negatively affect or influence credit period.

Consequently, the model is rerun, using the backward elimination method. The backward method removes the variable from the equation one by one if they meet the criterion for elimination. This process is continued until a variable no longer satisfies the criterion for elimination or all variables have been removed (Huizingh, 2007). The summary of the result is presented in Exhibit 6.5.

**Exhibit 6.5**  
**Multiple regression output for credit period**

Model Summary							
R	R Square	Adjusted R Square	Std. Error of the Estimate		Durbin-Watson		
.277	.077	.061	25.153		1.836		
ANOVA							
	Sum of Squares	df	Mean Square	F	Sig.		
Regression	9645.822	3	3215.274	5.082	.002		
Residual	116410.66	184	632.667				
Total	126056.48	187					
Coefficients							
	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	25.098	22.270		1.127	.261		
CONS	-11.176	4.450	-.183	-2.511	<b>.013*</b>	.948	1.055
LnTOVER	2.442	1.401	.128	1.743	.083	.924	1.082
TATOVER	-5.679	2.142	-.193	-2.651	<b>.009*</b>	.949	1.054

The model summary table of the output in Exhibit 6.5 shows that the multiple correlation coefficient (R), using all the independent variables simultaneously, is .28 ( $R^2 = .08$ ) and the adjusted  $R^2$  is .06, denoting that only six percent of the variance in the collection period can be explained from all the independent variables combined. The Durbin-Watson test statistic of 1.84 indicates that there is no problem with autocorrelation. Huizingh (2007) states that a value close to 2 indicates that there is no autocorrelation, while values less than 1 or greater than 3 signal that the assumption of independent residuals is not met. The ANOVA table shows that the  $F = 5.082$  and the significance level is 0.002, suggest that it is extremely improbable that the multiple correlation coefficient in the population is zero.

In terms of multicollinearity, no apparent collinearity problem exists, as the tolerance for all the independent variables is greater than 0.1 and the variance inflation factor (VIF) is less than 10. For analysis of regression, acceptable values of collinearity are considered from the tolerance value of more than 0.10 or the VIF value of less than 10 (Hair et al., 1998).

When backward elimination method was applied, there were evidence to reject only two of the ten hypotheses for this model ( $H_{4,1}$  to  $H_{4,10}$ ). In other words only the two following hypotheses can be rejected:

- $H_{4,1}$ : Companies in different industry sub-sectors offer the same credit period
- $H_{4,9}$ : A company's efficiency does not influence the company's offered credit period

Therefore, these mean that companies in different industry sub-sectors offered different credit period (CRDTPRD), and a company's efficiency (TATOVER) appeared to influence its offered credit period. In fact, the results indicate that the companies in the consumer goods sub-sector (CONS) had offered lower credit period compared to other sub-sectors. The results also suggest that the higher a company's efficiency, the lower its offered credit period.

Companies in the consumer goods sub-sector offer shorter credit periods, compared to those in other sub-sectors, perhaps because the goods have shorter shelf life and are used, in turn by their customers, to generate relatively immediate income or to be consumed immediately. More efficient companies

tend to offer shorter credit periods, as they would try to reduce the amount of fund tied up as receivables in generating sales.

### **Collection period**

Multiple regression was also conducted to assess whether the set of independent variables significantly influence the collection period of a company. The model was analysed using the mode “ENTER”. The output of the analysis is presented in Exhibit 6.6.

**Exhibit 6.6  
Multiple regression output for collection period**

Model Summary							
R	R Square	Adjusted R Square	Std. Error of the Estimate		Durbin-Watson		
.580	.337	.294	70.659		2.235		
ANOVA							
	Sum of Squares	df	Mean Square	F	Sig.		
Regression	473877.496	12	39489.791	7.909	.000		
Residual	933639.799	187	4992.726				
Total	1407517.295	199					
Coefficients							
	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	205.710	64.408		3.194	.002*		
CONS	-28.080	13.850	-.141	-2.027	.044*	.735	1.361
CHEM	-18.384	12.455	-.100	-1.476	.142	.774	1.292
WOOD	-42.332	18.722	-.144	-2.261	.025*	.870	1.150
AGE	2.750	.981	.180	2.804	.006*	.859	1.165
LnTOVER	-4.994	4.504	-.081	-1.109	.269	.666	1.502
CRDTSALE	.021	.210	.006	.099	.921	.892	1.121
EXPORTS	-.455	.152	-.192	-3.000	.003*	.863	1.159
POSITION	6.728	10.402	.040	.647	.519	.923	1.083
WORKCAP	-14.148	12.842	-.076	-1.102	.272	.746	1.341
NETPROF	-91.655	15.369	-.390	-5.964	.000*	.828	1.207
TATOVER	-23.880	6.663	-.245	-3.584	.000*	.759	1.318
GROWTH	-1.647	14.823	-.007	-.111	.912	.916	1.092

The model summary output in Exhibit 6.6 shows that the multiple correlation coefficient (R), using all the independent variables simultaneously, is .58 ( $R^2 = .34$ ) and the adjusted  $R^2$  is .29. For this model, 29 percent of the variance in the collection period can be explained from all the independent variables collectively. The Durbin-Watson statistic of 2.24 indicates that there is no autocorrelation. The F test generated is significant indicating that at least one of the variables in the set of independent variables of the model explains the collection period. In addition, the tolerance levels and the VIF values for all the independent variables indicate that multicollinearity is unlikely.

Based on the output of the multiple regression analysis on collection period, there were evidence to reject five of the ten hypotheses ( $H_{5,1}$  to  $H_{5,10}$ ) on this model. The hypotheses that may be rejected are:

- $H_{5,1}$ : Companies in different industry sub-sectors have the same collection period
- $H_{5,2}$ : A company's age does not influence the company's collection period
- $H_{5,5}$ : A company's percentage of export sales does not influence the company's collection period
- $H_{5,8}$ : A company's profitability does not influence the company's collection period
- $H_{5,9}$ : A company's efficiency does not influence the company's collection period

The results indicate that companies in different industry sub-sectors offered different collection period (COLLPRD), and a company's age (AGE), percentage of export sales (EXPORTS), profitability (NETPROF), and efficiency (TATOVER) seemed to influence its collection period. In particular, the findings suggest that companies in the consumer goods (CONS) and wood-based (Hill et al.) sub-sectors experienced shorter collection period compared to the other two sub-sectors. The results also suggest that the younger the company, the lower is its collection period, and the higher a company's percentage of export sales, profitability, and efficiency, the less time taken to collect their trade debts.

Companies in consumer goods sub-sector are prompter, probably due its short shelf life, discussed earlier. For companies in wood-based sub-sector, they are prompter in collection compared to those in other sub-sectors, perhaps because it is more supply-driven rather than demand-driven, as the demand for wood is global, strong, and not dominated by a limited number of buyers.

Older companies are less prompt, perhaps due to their reduced assessment of customer default risk arising from their accumulated years of experience in dealing with various groups of customers. Companies that export more are prompter perhaps because export receivables are more likely than domestic receivables to turn uncollectible if their collection is delayed. More profitable and efficient companies are prompter probably because reducing the amount of funds tied up as receivables increase both their efficiency as well as their profitability.

### Overdue days

Similar regression model for overdue days (OVERDUE) was carried out. The results of the analysis are provided in Exhibit 6.7.

**Exhibit 6.7**  
**Multiple regression output for overdue days**

Model Summary							
R	R Square	Adjusted R Square	Std. Error of the Estimate		Durbin-Watson		
.559	.312	.265	72.610		2.127		
ANOVA							
	Sum of Squares	df	Mean Square	F	Sig.		
Regression	419121.56	12	34926.797	6.625	.000		
Residual	922629.73	175	5272.170				
Total	1341751.3	187					
Coefficients							
	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	172.418	67.961		2.537	.012*		
CONS	-15.839	14.757	-.079	-1.073	.285	.718	1.392
CHEM	-20.858	13.213	-.113	-1.579	.116	.768	1.302
WOOD	-46.071	19.811	-.156	-2.326	.021*	.869	1.151
AGE	2.439	1.045	.158	2.333	.021*	.853	1.173
LnTOVER	-6.152	4.753	-.099	-1.294	.197	.669	1.494
CRDTSALE	-.089	.228	-.026	-.391	.696	.894	1.119
EXPORTS	-.431	.161	-.181	-2.685	.008*	.868	1.152
POSITION	10.817	11.018	.064	.982	.328	.927	1.079
WORKCAP	-15.939	13.316	-.087	-1.197	.233	.743	1.345
NETPROF	-93.194	15.837	-.406	-5.884	.000*	.826	1.210
TATOVER	-18.264	6.928	-.190	-2.636	.009*	.756	1.323
GROWTH	-3.709	15.395	-.016	-.241	.810	.920	1.087

The output generated for this model indicated that the multiple correlation coefficient (R), using all the independent variables at the same time, is .58 and the adjusted R<sup>2</sup> is .27, implying that 27 percent of the variance in the overdue days can be explained from all the independent variables together.

Autocorrelation does not pose a problem, as the Durbin-Watson statistic is 2.13. With the F test of 6.625 and the significance level is 0.000, the model suggests that at least one of the variables in the set of independent variables of the model explains the overdue days. The tolerance and VIF values of all the independent variables give an indication of no evident problem of multicollinearity in the multiple regression model.

The results of the multiple regression analysis on overdue days show that there were evidences to reject five of the ten hypotheses ( $H_{6,1}$  to  $H_{6,10}$ ) on this model. The hypotheses that may be rejected include:

- $H_{6,1}$ : Companies in different industry sub-sectors have the same overdue days
- $H_{6,2}$ : A company's age does not influence the company's overdue days
- $H_{6,5}$ : A company's percentage of export sales does not influence the company's overdue days
- $H_{6,8}$ : A company's profitability does not influence the company's overdue days
- $H_{6,9}$ : A company's efficiency does not influence the company's overdue days

The results suggest that companies in different industry sub-sectors offered different collection period, and a company's age (AGE), percentage of export sales (EXPORTS), profitability (NETPROF), and efficiency (TATOVER) seemed to influence its overdue days (OVERDUE). Specifically, the results imply that companies in the wood-based (Hill et al.) sub-sector managed to collect sooner compared to the other sub-sectors. The results also suggest that the younger the company, the lower is its collection period, and the higher a



company's percentage of export sales, profitability, and efficiency, the less time taken to collect their trade debts.

The arguments for the results for this regression are similar to those discussed earlier.

#### **6.3.4 Logistic regression analysis**

As discussed in Chapter 4, logistic regression is useful when the variables are dichotomous. The application of logistic regression in this study is more towards finding out the likelihood of a set of independent variables, comprising company characteristics, influencing the dependent variables, that is the credit management practices. The five dependent variables that will be analysed are: (1) presence of credit manager; (2) existence of credit policy; (3) existence of written credit policy; (4) offer of special terms; and (5) use of outsourcing.

##### ***Presence of credit manager***

Logistic regression was run, also on SPSS version 12.0 for Windows, to assess whether the 12 independent variables significantly influence the likelihood of a company having a credit manager (CRDTMGR). The results presented in Exhibit 6.8 show that all the variables fail to predict the presence of a credit manager whether used alone or separately, or together with other predictors. This is somewhat puzzling because presence of credit manager, when analysed in the bivariate setting, showed significant relationships with number of workers, net profit margin, and operating profit margin. Subsequently, the variable was again analysed using both the backward and forward elimination methods but the analysis did not produce significantly different results.

**Exhibit 6.8**  
**Logistic regression output for credit manager**

Omnibus Tests of Model Coefficient									
			Chi-square	df	Sig.				
Step 1	Step		5.635	12	.933				
	Block		5.635	12	.933				
	Model		5.635	12	.933				
Model Summary									
Step		-2 Log likelihood	Cox & Snell R Square		Nagelkerke R Square				
1		271.604 <sup>a</sup>	.028		.037				
<sup>a</sup> Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.									
Classification Table <sup>a</sup>									
Observed			Predicted			Percentage Correct			
			CRDTMGR						
			0	1					
Step 1	CRDTMGR	0	52	47	52.5				
		1	38	63	62.4				
Overall Percentage					57.5				
<sup>a</sup> The cut value is .500									
Variables in the Equation									
		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
								Lower	Upper
Step 1 <sup>a</sup>	CONS	.212	.398	.282	1	.595	1.236	.566	2.698
	CHEM	.075	.356	.044	1	.833	1.078	.536	2.166
	WOOD	.000	.534	.000	1	1.000	1.000	.351	2.851
	AGE	.027	.028	.893	1	.345	1.027	.972	1.086
	LnTOVER	.094	.130	.525	1	.469	1.099	.852	1.417
	CRDTSALE	-.002	.006	.069	1	.793	.998	.987	1.010
	EXPORTS	.003	.004	.516	1	.473	1.003	.995	1.012
	POSITION	-.004	.299	.000	1	.990	.996	.555	1.789
	WORKCAP	-.019	.407	.002	1	.963	.981	.442	2.178
	NETPROF	.189	.464	.166	1	.683	1.209	.486	3.002
	TATOVER	-.285	.205	1.938	1	.164	.752	.503	1.123
	GROWTH	.030	.429	.005	1	.943	1.031	.444	2.392
	Constant	-1.601	1.858	.743	1	.389	.202		
<sup>a</sup> Variables entered on step 1: CONS, CHEM, WOOD, AGE, LnTOVER, CRDTSALE, EXPORTS, POSITION, WORKCAP, NETPROF, TATOVER, GROWTH.									

The significance level of the omnibus tests of model coefficients of 0.933 indicates that, when all the independent variables were considered together, the model or equation is not significant. Consequently, it can be deduced that there is no factor examined here, that seems to be conditionally associated with the companies' likelihood of having a credit manager.

### Existence of credit policy

The logistic regression was again performed to analyse if the independent variables significantly influence the likelihood of a company having a credit policy.

The output of the analysis is presented in Exhibit 6.9.

**Exhibit 6.9**  
**Logistic regression output for credit manager credit policy**

Omnibus Tests of Model Coefficient										
		Chi-square	df	Sig.						
Step 1	Step	25.953	12	.011						
	Block	25.953	12	.011						
	Model	25.953	12	.011						
Model Summary										
Step	-2 Log likelihood		Cox & Snell R Square		Nagelkerke R Square					
1	234.241 <sup>a</sup>		.122		.167					
<sup>a</sup> Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.										
Classification Table <sup>a</sup>										
Observed			Predicted				Percentage Correct			
			CRDTPLCY							
			0	1						
Step 1	CRDTPLCY	0	27	44			38.0			
		1	18	111			86.0			
	Overall Percentage						69.0			
<sup>a</sup> The cut value is .500										
Variables in the Equation										
		B	S.E.	Wald	Df	Sig.	Exp(B)	95.0% C.I. for EXP(B)		
								Lower	Upper	
Step 1 <sup>a</sup>	CONS	.166	.437	.145	1	.703	1.181	.501	2.783	
	CHEM	.041	.384	.011	1	.915	1.042	.491	2.211	
	WOOD	.490	.653	.563	1	.453	1.632	.454	5.867	
	AGE	.084	.033	6.415	1	<b>.011*</b>	1.088	1.019	1.161	
	LnTOVER	.217	.140	2.403	1	.121	1.243	.944	1.019	
	CRDTSALE	.006	.006	.960	1	.327	1.006	.994	1.006	
	EXPORTS	-.003	.005	.468	1	.494	.997	.988	1.012	
	POSITION	-.637	.331	3.698	1	.054	.529	.276	3.847	
	WORKCAP	.452	.457	.982	1	.322	1.572	.642	5.127	
	NETPROF	.401	.629	.406	1	.524	1.493	.435	1.183	
	TATOVER	-.269	.223	1.453	1	.228	.764	.494	2.245	
	GROWTH	-.063	.445	.020	1	.887	.939	.392		
	Constant	-3.895	2.014	3.741	1	.053	.020			
<sup>a</sup> Variables entered on step 1: CONS, CHEM, WOOD, AGE, LnTOVER, CRDTSALE, EXPORTS, POSITION, WORKCAP, NETPROF, TATOVER, GROWTH.										

The omnibus tests of model coefficients registered the level of significance of 0.011. This means that when all the independent variables were considered collectively, the model is significant. Next, the model summary table includes two different ways of estimating  $R^2$ , namely the Cox and Snell  $R^2$  and Nagelkerke  $R^2$ . For this analysis, the statistics indicate that approximately 12 percent or 17 percent (depending which one of the Cox and Snell  $R^2$  and Nagelkerke  $R^2$  approach is used) of the variance in the likelihood of a company having credit policy can be explained by the set of company characteristic variables.

Based on the output of the logistic regression analysis on the existence of credit policy, there were evidence to reject only one of the ten hypotheses ( $H_{2,1}$  to  $H_{2,10}$ ) on this model. The hypothesis that may be rejected is:

- $H_{2,2}$ : A company's age does not influence the company's likelihood of having a credit policy

The results suggest that a company's age seemed to influence the likelihood of the company having a credit policy. In particular, the results imply that older companies are more likely to have a credit policy possibly because their accumulated years of experience allows them to formulate the policy.

### ***Existence of written credit policy***

Similar analysis was carried out to observe if the company characteristic variables significantly influence the likelihood of a company having a written credit policy. The results are shown in Exhibit 6.9.

**Exhibit 6.10**  
**Logistic regression output for written credit policy**

Omnibus Tests of Model Coefficient									
		Chi-square	df	Sig.					
Step 1	Step	28.717	12	.004					
	Block	28.717	12	.004					
	Model	28.717	12	.004					
Model Summary									
Step	-2 Log likelihood		Cox & Snell R Square		Nagelkerke R Square				
1	148.367 <sup>a</sup>		.200		.267				
<sup>a</sup> Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.									
Classification Table <sup>a</sup>									
Observed			Predicted				Percentage Correct		
			WRITPLCY		0	1			
Step 1	WRITPLCY	0	39	18			68.4		
		1	15	57	79.2				
Overall Percentage					74.4				
<sup>a</sup> The cut value is .500									
Variables in the Equation									
	B	S.E.	Wald	Df	Sig.	Exp(B)	95.0% C.I. for EXP(B)		
							Lower	Upper	
Step 1 <sup>a</sup>	CONS	-.015	.545	.001	1	.978	.985	.338	2.868
	CHEM	-1.389	.510	7.417	1	<b>.006*</b>	.249	.092	.677
	WOOD	-1.609	.688	5.479	1	<b>.019*</b>	.200	.052	.770
	AGE	.000	.039	.000	1	.996	1.000	.926	1.079
	LnTOVER	.568	.220	6.671	1	<b>.010*</b>	1.765	1.147	2.716
	CRDTSALE	-.008	.009	.753	1	.386	.992	.974	1.010
	EXPORTS	.002	.006	.080	1	.778	1.002	.990	1.014
	POSITION	-.061	.421	.021	1	.885	.941	.412	2.146
	WORKCAP	-.038	.831	.002	1	.963	.952	.189	4.910
	NETPROF	-3.731	2.221	2.821	1	.093	.024	.000	1.864
	TATOVER	.087	.335	.067	1	.796	1.091	.565	2.104
	GROWTH	-.504	.599	.706	1	.401	.604	.187	1.956
	Constant	-7.754	3.250	5.691	1	<b>.017*</b>	.000		
<sup>a</sup> Variables entered on step 1: CONS, CHEM, WOOD, AGE, LnTOVER, CRDTSALE, EXPORTS, POSITION, WORKCAP, NETPROF, TATOVER, GROWTH.									

The significance level 0.004, provided in the omnibus tests of model coefficients table, signifies that when all the independent variables were included simultaneously, the model is significant. The statistics given in the model summary table indicate that approximately 20 percent or 27 percent of the

variance in the likelihood of a company having written credit policy can be explained by the set of company characteristic variables.

Based on the output of the logistic regression analysis on the existence of written credit policy, there were evidence to reject two of the ten hypotheses ( $H_{3,1}$  to  $H_{3,10}$ ) on this model. The hypotheses that can be rejected are:

- $H_{3,1}$ : Companies in different industry sub-sectors have the same likelihood of having a written credit policy
- $H_{3,3}$ : A company's size does not influence the company's likelihood of having a written credit policy

The results suggest that companies in different industry sub-sectors have different likelihood of having a written credit policy (WRITPLCY), and a company's size (lnTOVER) seemed to influence the likelihood of the company having a written credit policy. In other words, given that a company has a credit policy, it is less likely to be written if the company is (1) smaller, and (2) in the chemical-based (CHEM) or wood-based (Hill et al.) sub-sectors.

Among companies that have a credit policy, those in the wood-based or chemical-based sub-sectors (compared to others in other sub-sectors) are less likely to have the policy written. In wood-based sub-sector, as surmised earlier, there is less urgency for a written policy as it is more of a supplier-dominant market. In chemical-based sub-sector too there is less need for a written policy may be because the sub=sector is more stable, self-regulated with more unchanging trade terms.

Among companies that have a credit policy, bigger companies are more likely to have the policy written. This is probably due to their greater resources or access to resources.

### **Offer of special terms**

The logistic regression was again conducted to analyse whether the independent variables significantly influence the likelihood of a company offering special terms to its customers. Exhibit 6.11 provides the results output of the analysis.

**Exhibit 6.11  
Logistic regression output for special terms**

Omnibus Tests of Model Coefficient									
		Chi-square	df	Sig.					
Step 11 <sup>a</sup>	Step	-2.197	1	.138					
	Block	7.667	2	.022					
	Model	7.667	2	.022					
<sup>a</sup> A negative Chi-squares value indicates that the Chi squares value has decreased from the previous step.									
Model Summary									
Step	-2 Log likelihood		Cox & Snell R Square	Nagelkerke R Square					
11	252.805 <sup>a</sup>		.038	.052					
<sup>a</sup> Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.									
Classification Table <sup>a</sup>									
Observed			Predicted			Percentage Correct			
			SPECTERM						
			0	1					
Step 11	SPECTERM	0	6	66	8.3				
		1	5	122	96.1				
Overall Percentage					64.3				
<sup>a</sup> The cut value is .500									
Variables in the Equation									
	B	S.E.	Wald	Df	Sig.	Exp(B)	95.0% C.I. for EXP(B)		
Step 1 <sup>a</sup>	AGE	.065	.029	5.016	1	.025*	1.068		
	CRDTSALE	-.010	.006	2.595	1	.107	.990		
	Constant	.508	.673	.570	1	.450	1.662		
<sup>a</sup> Variables entered on step 1: CONS, CHEM, WOOD, AGE, LnTOVER, CRDTSALE, EXPORTS, POSITION, WORKCAP, NETPROF, TATOVER, GROWTH.									

The omnibus tests of model coefficients table shows that the significance level is 0.022, suggesting that when all the independent variables were included simultaneously, the model is significant. The statistics given in the model summary table indicate that 4 percent or 5 percent of the variance in the likelihood of a company offering special terms to customers can be explained by the set of independent variables.

Based on the output of the logistic regression analysis on the existence of written credit policy, there were evidence to reject one of the ten hypotheses ( $H_{7,1}$  to  $H_{7,10}$ ) on this model. The hypothesis that may be rejected is:

- **H<sub>7,2</sub>**: A company's age does not influence the company's likelihood of offering special terms

The results indicate that a company's age (AGE) seemed to influence the likelihood of the company offering special terms to its customers. Saying it differently, older companies were more likely to offer special terms to their customers. Perhaps this is due to their greater experience allows them greater ability to temper standard terms with discretion.

### ***Use of outsourcing***

The logistic regression was carried out to find out if the independent variables significantly influence the likelihood of a company outsourcing its credit management activities. The results are presented in Exhibit 6.12.



**Exhibit 6.12**  
**Logistic regression output for outsourcing**

Omnibus Tests of Model Coefficient										
		Chi-square		df		Sig.				
Step 1	Step	27.705		12		.006				
	Block	27.705		12		.006				
	Model	27.705		12		.006				
Model Summary										
Step		-2 Log likelihood		Cox & Snell R Square		Nagelkerke R Square				
1		248.573 <sup>a</sup>		.129		.173				
<sup>a</sup> Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.										
Classification Table <sup>a</sup>										
Observed			Predicted				Percentage Correct			
			OSOURCED							
			0	1						
Step 1	OSOURCED	0	54	39			58.1			
		1	32	75			70.1			
Overall Percentage							64.5			
<sup>a</sup> The cut value is .500										
Variables in the Equation										
		B	S.E.	Wald	Df	Sig.	Exp(B)	95.0% C.I. for EXP(B)		
								Lower	Upper	
Step 1 <sup>a</sup>	CONS	-1.545	.437	12.490	1	.000*	.213	.091	.502	
	CHEM	-.755	.377	4.014	1	.045*	.470	.225	.984	
	WOOD	-1.428	.583	5.986	1	.014*	.240	.076	.753	
	AGE	-.038	.030	1.583	1	.208	.963	.908	1.021	
	LnTOVER	.152	.139	1.192	1	.275	1.164	.886	1.529	
	CRDTSALE	-.015	.007	4.993	1	.025*	.985	.972	.998	
	EXPORTS	.006	.005	1.504	1	.220	1.006	.997	1.015	
	POSITION	.323	.318	1.033	1	.310	1.381	.741	2.574	
	WORKCAP	.420	.411	1.045	1	.307	1.522	.680	3.405	
	NETPROF	-.072	.512	.020	1	.888	.930	.341	2.538	
	TATOVER	.126	.206	.375	1	.540	1.135	.757	1.701	
	GROWTH	-.254	.437	.338	1	.561	.775	.329	1.826	
	Constant		-.281	1.970	.020	1	.887	.755		
	<sup>a</sup> Variables entered on step 1: CONS, CHEM, WOOD, AGE, LnTOVER, CRDTSALE, EXPORTS, POSITION, WORKCAP, NETPROF, TATOVER, GROWTH.									

The omnibus tests of model coefficient table indicates that the significance level is 0.006. This implies that when all the company characteristic variables were included collectively, the model is significant. The Cox and Snell R<sup>2</sup> and the Nagelkerke R<sup>2</sup> were 0.13 and 0.17. This indicates that approximately 13 percent or 17 percent of the variance in the likelihood of a company outsourcing its credit

management activities can be explained by the set of company characteristic variables.

Based on the results output of the logistic regression on the likelihood of a company outsourcing its credit management activities, there were evidence to reject two of the ten hypotheses ( $H_{3,1}$  to  $H_{3,10}$ ) on this model. The hypotheses that can be rejected are:

- $H_{8,1}$ : Companies in different industry sub-sectors have the same likelihood of outsourcing credit management activities
- $H_{8,4}$ : A company's percentage of credit sales does not influence the company's likelihood of outsourcing credit management activities

The results suggest that companies in different industry sub-sectors have different likelihood of outsourcing its credit management activities, and a company's percentage of credit sales appear to influence the likelihood of the company outsourcing its credit management activities. Specifically, the results imply that a company is less likely to outsource its credit management activities, if (1) its percentage of credit sales is higher, and (2) it is in the wood-based or chemical-based sub-sectors.

Companies with higher credit sales are less likely to use outsourcing because the relative cost of outsourcing becomes higher with the increase in credit sales volume. In other words, it is relatively cheaper to internalise (rather than outsource) trade credit management activities.

Companies in the two sub-sectors, compared those in other sub-sectors, are less likely to outsource probably because, as suggested earlier, competitive pressure in these sub-sectors is possibly less intense, and therefore, the additional cost of not outsourcing (as in the wood-base sub-sector) or to be accepted as a norm by all companies (as in the chemical-based sub-sector).

#### **6.4 SUMMARY OF FINDINGS**

This sub-section attempts to summarise the findings based on the bivariate and multivariate analyses conducted on trade credit management practices and company characteristics. Initially, bivariate associations were examined on the variables, and later, variables that exhibit relationships were analysed further using multiple regression and logistic regression analyses. The findings are summarised as follows:

- There is no significant association observed between five trade credit management practice variables, which include credit assessment, sources of information, credit limit, collection commencement, and standard collection procedures, with any of the company characteristics.
- All the ratios that represent liquidity, as well as the growth variable did not exhibit any relationship with any of the credit management practices.
- There were four trade credit management practices that are significantly associated to one company characteristic. The relationships that exist are:  
(1) A company with a higher percentage of credit sales tends to have a lower percentage of its customers taking up the offered cash discount; (2) A larger company is more likely to charge its customers interest on the overdue credit

amount; (3) A company with a higher percentage of credit sales is more likely to take less time to send out its invoices; and (4) A company that deals with few large customers is more likely to allow exceptions from its standard collection procedures for its customers.

- More efficient companies offer shorter credit period. Companies in the consumer goods sub-sector, compared to those in other sub-sectors, offer shorter credit period.
- Older companies take longer to collect their credit. Companies with greater percentage of export sales collect their credit sooner. More profitable companies collect their credit sooner. More efficient companies collect their credit sooner. Companies in the consumer goods and wood-based sub-sectors, compared to those in other sub-sectors, collected their credit sooner.
- Older companies take longer to collect their overdue credit. Companies with greater percentage of export sales collect their overdue credit sooner. More profitable companies collect their overdue credit sooner. More efficient companies collect their overdue credit sooner. Companies in the wood-based sub-sector, compared to those in other sub-sectors, collected their overdue credit sooner.
- Older companies were more likely to have a credit policy.
- Given that a company has a credit policy, it is less likely to be written if the company is (1) smaller, and (2) in the chemical-based or wood-based sub-sectors.
- Older companies were more likely to offer special terms to their customers.

- A company is less likely to use credit management outsourcing, if (1) its percentage of credit sales is higher, and (2) it is in the wood-based or chemical based sub-sectors.

## **6.5 SUMMARY**

In relation to the second objective of the research study, this chapter has presented the bivariate and multivariate analyses of trade credit management practices and company characteristic variables. Initially, bivariate associative analysis was conducted on all the variables of trade credit management practices against the company characteristics using the Mann-Whitney test, Spearman's rank correlation, Kruskal-Wallis test, and chi-square test. The use of a variety of techniques was due to the nature of the variables. The results of the analysis were then classified into three groups based on the number of significant relationships associated trade credit management practice variable. The first group comprises those trade credit management practices that did not demonstrate any significant relationship with any of the company characteristic variables. These variables are therefore, were not included in further analysis. The second group includes the credit management variables that exhibited significant relationship with only one company characteristic variable. These variables were also omitted. The variables in the third group are the trade credit management practices that displayed significant association with two or more company characteristics. These variables were selected to be the dependent variables in the multivariate analyses.

For the multivariate setting, a set of hypotheses was developed. These hypotheses were tested using the multiple regression and logistic regression.

The dependent variables were the credit management practices that were selected based on the bivariate analysis. The results indicate that some of the factors do have a certain degree of influence over the trade credit management practices. Discussions on the outcome of the analysis were also presented in the chapter. Based on the analyses carried out in this chapter, the implications, recommendations and contributions of the results will be the main theme of the next chapter.

## **Chapter 7**

### **SUMMARY AND CONCLUSIONS**

#### **7.1 INTRODUCTION**

The previous two chapters discussed data analyses used in answering the research objectives. Chapter 5 was devoted to the univariate analyses on the variables representing trade credit management practices and company characteristics. In Chapter 6, all these variables were analysed further in bivariate and multivariate settings. This final chapter of the thesis presents the summary and conclusions to the study. The chapter begins with a general summary of the study's findings on the trade credit management practised by Malaysian small and medium-sized manufacturing enterprises, followed by a review on the company characteristics that might possibly affect the credit management practices. Next, the implications of the results will be deliberated and some recommendations are put forward. The following section will discuss on the contributions to the body of knowledge as well as to the stakeholders. The limitations to the study are then presented followed by suggestions for future research.

#### **7.2 SUMMARISING FINDINGS OF THE STUDY**

As highlighted in Chapter 1, the aims of this research study were to investigate and report findings on trade credit management practices of Malaysian SMEs in the manufacturing sector, and to identify company characteristics that influence

those practices. To accomplish these goals, variables representing trade credit management practices were identified and analysed in a univariate setting. Then, associations between these variables and company characteristics are examined. Subsequently, multivariate analyses were carried out on those practices that exhibit significant relationships with company characteristics. This section of the chapter will summarise what have been discovered from analyses. The first part will briefly present the practices adopted by SMEs in managing their trade receivables. Then, the results of the associative and regression analyses on these practices will be summarised.

### **7.2.1 Trade Credit Management Practices**

Recall that the descriptive findings and discussions on trade credit management practices were presented in Chapter 5. This sub-section will recap the practices to provide a broad picture of credit management practices. The following points highlight the trade credit management activities of the Malaysian manufacturing SMEs:

- In general, almost half of the SMEs do not engage any person to specifically manage the credit operation of the company. The situation is more critical when more than a third did not have a credit policy: and of those that claimed to have one, almost half did not have it documented.
- A large majority undertake credit assessment on their customers before granting them trade credit. In addition, more than three-quarter of the companies used two or more sources of credit information. The credit information is mostly sourced from the customers themselves, followed by their own sales people, and next is business references.



- Three quarter of the SMEs offered a credit period of not more than 60 days. However, the collection period is a great deal longer. The overall average collection period is 107 days with about half collected later than 90 days. A large majority collected significantly later than the stipulated credit period.
- More than half of the sampled companies did not offer cash discount to customers. And, from the experience of companies that offer discount, the proportion of customers taking up the discount offer is very small. At the same time, most SMEs did not charge any interest on overdue accounts.
- More than a quarter imposed no limits on any of their customers.
- More than a third offered the same credit terms to all their customers.
- Although most companies sent out their invoices without significant delay, almost half of the SMEs started their collection activity late, i.e. a week or more after the due date. In performing their collection activities, almost half of the SMEs did not have standard collection procedures. Among those that have standard procedures, most of them provide exceptions.
- Almost half of the SMEs did not outsource any of their credit management activity. Information from those companies that outsourced their credit activities suggests that the most outsourced activity is the financing of receivables by way of factoring.

The above findings provide a general view of trade credit management practices adopted by the SMEs. The results bear implications that have some effect on the stakeholders. The implications will be presented in a later section, together with some recommendations that might benefit the stakeholders.

### **7.2.2 Factors that Influence Credit Management Practices**

This sub-section summarises the results of the bivariate and regression analyses described in detailed in the previous chapter, which are deemed to influence trade credit management practices. Based on the bivariate associative analysis between the list of trade credit management practices and the list of company characteristics, five of the practices were not associated with any of the company characteristics; four of the practice variables were associated with only one company characteristic; and the eight remaining variables seemed to be significantly related to more than one company characteristics

Trade credit management practices that portray significant relationships with only one company characteristic include the following: (1) percentage of customers taking up cash discount is negatively correlated to percentage of credit sales; (2) late payment interest is positively correlated to company size; (3) invoicing promptness is negatively correlated to percentage of credit sales; and (4) exception to standard collection procedures is positively related to asymmetric bargaining position

The last group of associations were examined further in a multivariate setting to obtain more robust findings. The trade credit management practices that have significant relationships with more than one company characteristic variables were selected to be the dependent variables — a sub-set of trade credit management practices. They are: (1) presence of credit manager; (2) existence of credit policy; (3) existence of written credit policy; (4) credit period; (5) collection period; (6) overdue days; (7) offer of special terms; (8) use of outsourcing. The results of the multivariate analysis are summarised below:

- Credit period — More efficient companies offer shorter credit period.  
Companies in the consumer goods sub-sector, compared to those in other sub-sectors, offer shorter credit period.
- Collection period — Older companies take longer to collect their credit.  
Companies with greater percentage of export sales collect their credit sooner.  
More profitable companies collect their credit sooner. More efficient companies collect their credit sooner. Companies in the consumer goods and wood-based sub-sectors, compared to those in other sub-sectors, collected their credit sooner.
- Overdue days — Older companies take longer to collect their overdue credit.  
Companies with greater percentage of export sales collect their overdue credit sooner. More profitable companies collect their overdue credit sooner. More efficient companies collect their overdue credit sooner. Companies in the wood-based sub-sector, compared to those in other sub-sectors, collected their overdue credit sooner.
- Presence of credit manager — No factor, examined here, seems to be conditionally associated with the companies' likelihood of having a credit manager.
- Existence of credit policy — Older companies were more likely to have a credit policy.
- Existence of written credit policy — Among companies that had a credit policy, larger companies were more likely to have a written credit policy.  
However, among companies that had a credit policy, those in the chemical-

based and wood-based sub-sectors, compared to those in the other sub-sectors, were less likely to have a written credit policy.

- Offer of special terms — Older companies were more likely to offer special terms to their customers.
- Use of outsourcing — Companies with higher percentage of credit sales were less likely to outsource at least one of their credit management activities. Moreover, companies in the chemical-based and wood-based sub-sectors, compared to those in other sub-sectors, were less likely to outsource at least one of their credit management activities.

### **7.3 IMPLICATIONS AND RECOMMENDATIONS**

This section of the final chapter presents the implications resulting from the outcomes of the research study. Following that, some recommendations will be suggested in response to the implications put forward.

#### **7.3.1 Implications of the Research Study**

The findings on trade credit management practices, as summarised in the previous section, reveal some issues that deserve some concern for the SMEs. These issues, if not resolved prudently, might jeopardise the long-term success and survival of the SMEs. Some of the points that should interest the SMEs are discussed below:

- One of the practices that can affect the SMEs in the long run is the failure of the SMEs to employ a full-time manager. As indicated by the survey, almost half of the SMEs did not have a specific person responsible to handle trade credit offered to customers. The finding, however, did not reveal if the

absence was due to the lack of financial ability or lack of awareness to the importance of the credit function that necessitate the presence of a credit manager. There is a possibility that the owner-manager himself manages the tasks related to credit. Generally, this would not pose any problem at the initial phase of a company's life cycle. However, as the company enters into a more advanced stage, greater attention is required to cope with the increase in trade receivables.

- The findings also reveal that the SMEs are unaware of the usefulness of a credit policy, or unaware of the content and formulation of the credit policy. This was, perhaps, resulted from the absence of a credit manager in the company. When the owner-manager himself carries out the credit function, he can make the credit decision by himself. He does not need any guideline or procedure as he consistently does the task. This as well could be the reason why a written policy is perceived not to be essential by many of the SMEs. In a situation where someone else performs the credit management activity, a written credit policy is necessary as it will provide guidelines as to how the owner-manager wants credit management function to be run. Further analysis uncovered that older companies were more likely to have a credit policy. This possibly implies that older companies, with their accumulative years of experience were more able to formulate the policy. In addition, among those companies that have a credit policy, bigger companies are more likely to have the policy written. This is possibly due to their greater resources or access to resources. And, of those SMEs that have a credit policy, companies in the wood-based and chemical based sub-sectors are less likely to have the policy written. In wood-based sub-sector, as surmised earlier,

there is less urgency for a written policy as it is more of a supplier-dominant market. In chemical-based sub-sector too there is less need for a written policy may be because the sub-sector is more stable, self-regulated with more unchanging trade terms.

- There seemed to be no problems in credit assessment. A large majority of the SMEs undertook evaluation before granting credit.
- Most SMEs offered a credit period of less than 60 days. Though this does not seem out of the ordinary, further analysis indicated that more efficient companies and companies in the consumer goods sub-sector offered lower credit period. These are not surprising because, first, more efficient companies would be expected to offer shorter credit period to reduce the funds tied up as receivables. Second, companies in the consumer goods sub-sector offer shorter credit periods, compared to those in other sub-sectors, perhaps because the goods have shorter shelf life and are used, in turn by their customers, to generate relatively immediate income or to be consumed immediately.
- In line with the lack of concern shown over the credit policy, the SMEs seemed to be unaware of the considerations needed in setting the discount rate and the discount period. Possibly the SMES were not well-informed of the benefits from offering cash discount as more than half of those surveyed did not offer any discount to their customers.
- The SMEs seemed to be tardy in collecting their accounts. The collection period was found to be substantially exceeding the credit period offered. Some of the findings from the study provided hints as to why collection is

slow. Although the SMEs are efficient in sending out their invoices, almost half of them started their collection activity late. This implies the lack of ability to monitor and manage collection. Perhaps, these companies are shackled by their inability to process or to effect the collection earlier. When examined further, collection period was found to be influenced by company age, percentage of export sales, profitability, efficiency and industry sub-sector. Older companies are less prompt, perhaps due to their reduced assessment of customer default risk arising from their accumulated years of experience in dealing with various groups of customers. Companies that export more are prompter perhaps because export receivables are more likely than domestic receivables to turn uncollectible if their collection is delayed. More profitable and efficient companies are prompter probably because reducing the amount of funds tied up as receivables increase both of their efficiency as well as their profitability. Companies in consumer products and wood-based sub-sectors were prompter compared to those in other sub-sectors. Shorter collection period was expected in the consumer products sub-sector, perhaps as explained earlier, the goods have shorter shelf life and they were consumed immediately. Those in the wood-based sector is prompter, possibly because it is more supply-driven rather than demand-driven, as the demand for wood is global, strong and not dominated by a limited number of buyers.

- A significant minority did not impose any credit limits on their customers. This is possibly acceptable if the SMEs sell on credit in small amounts to a large number of customers. In other words, this would diversify their default risk. However, it would be detrimental to the companies if they sell large amount to

a single customer and the customer defaults. Perhaps the companies are unaware of their exposure to their customers' default risk.

- A sizeable percentage of the SMEs offering the same, rigid credit terms to all their customers implies that their credit management process lacks flexibility, and further investigation reveals that older companies are more likely to offer special terms to their customers. This is, perhaps, due to their greater experience that allows them greater ability to temper standard terms with discretion.
- The presence of a dominant customer appears to be linked to a higher likelihood of allowing flexibility in the standard collection procedure to the dominant customer. This possibly demonstrates that a customer company's market dominance can influence its ability to extract concessions from the SMEs.
- Outsourcing was not widely used by SMEs in managing their credit activities, as almost half of them did not outsource any of their credit management activity. This implies that there is lack of awareness among the SMEs on the benefits of outsourcing. The low usage level of outsourcing could also be due to the perceived high cost of outsourcing. Further investigation reveals that companies with higher credit sales were less likely to use outsourcing, possibly because the relative cost of outsourcing becomes higher with the increase in credit sales volume. In other words, it is relatively cheaper to internalise (rather than outsource) trade credit management activities when volume of receivables increases. Analysing the industry sub-sector, it is found that companies in the two sub-sectors, compared those in other sub-



sectors, are less likely to outsource probably because, as suggested earlier, competitive pressure in these sub-sectors are possibly less intense, and therefore, the additional cost of not outsourcing can be passed on to the customers (as in the wood-based sub-sector) or to be accepted as a norm by all companies (as in the chemical-based sub-sector).

### **7.3.2 Recommendations Arising from the Study**

Many of the findings imply that the management of the small and medium-sized enterprises are not able to perform certain credit activities up to the mark either due to constraints in financial or manpower resources, or maybe they are not aware of the importance of those activities. Financial constraints could be overcome by providing better access to capital. This has been one of the primary areas that have been focused by the government in the development of SMEs. Much emphasis and actions had been initiated in ensuring that the development of SMEs is not held back because of the lack of financial capital. Besides multiple sources of funds provided by various government agencies, commercial banks were also persuaded by the government to allocate a substantial percentage of their lending portfolio to the SMEs. In fact, the SME Bank was established to complement the financial infrastructure in support of the SME development.

Problems related to manpower constraints could be due to perceived prohibitive expenditures to hire skilled staff and support workers, or may be due to their ignorance of the importance of the various credit management functions. Inadequacy of capital can be addressed by providing greater access to financing. The unawareness of the roles of each credit activities needs to be dealt with by

way of education and training. Since many of the implications discussed in the previous sub-section point towards the unawareness of the SMEs towards trade credit management activities, it is recommended that more attention should be focused on education and training, not only to address the lack of knowledge in credit management skills but also to enhance their understanding and the significance of every step in the credit management process.

Training for SMEs, as pointed out by this research, should address the following issues:

- Multi-tasking skills for owner-managers — specifically for companies that could not afford to employ a specific person for the credit management tasks.
- Formulation of credit policy — as many companies do not have a formal or written policy. In particular, training should provide a standard credit policy that can then be adapted and adopted by the SMEs.
- Devising credit terms — specifically cash discount, discount period and interest on late payment. This is because many of the SMEs do not offer cash discount and a discount period. Besides that, they do not charge interest on their customers' late payments. Training should address the financial implications including trade-off in setting these credit term elements. The SMEs should be made aware that at present there is no legal restriction on the charging of interest on late payment.
- Collection strategies — because many companies do not collect early or on time. If this is due to unawareness of collection strategies, then training should address this aspect. On the other hand, if this is due to the inability to

collect arising from personnel shortage, then training should create awareness on aspects of collection that can be automated.

- Standard collection procedures — since many SMEs do not have standard procedures. Training should provide a standard collection procedure that can then be modified to suit individual SMEs. However, SMEs must also be made aware of the importance of incorporating flexibility in their procedures to accommodate unexpected contexts.

Some of the problems faced by the SMEs could be due to the lack of human resources. In such cases, automation of some aspects of credit management could be useful. Some of the potential aspects that can be automated are as follows:

- Assessment — automation may help substitute man hours used in performing credit scoring and initial vetting exercises.
- Monitoring credit limit — management support system may help in monitoring and alerting SME owner-managers when they are overexposed to a particular customer account.
- Billing — computerisation and integration of billing to sales would be able to expedite the despatch of invoices or statements to customers.
- Reminders — integrated support system should be able to produce and despatch reminders and follow-up reminders to customers once they fail to either settle their accounts or to respond positively to these reminders.

The lack of human resources in SMEs can be periodically solved on a rolling basis by allowing diploma and undergraduate students to undertake practical or apprentice programme in the SMEs. This study implies that SMEs can utilise students majoring in such fields as computing, accounting, finance, and banking to enhance their credit management practices. The students can be used as affordable consultants for the SMEs. Probably, at the same time, the students can enhance their learning by applying their knowledge to solve real problems.

One of the ways that may help SMEs in terms of outsourcing might be to get the SMEs to pool their resources together and work as a team, perhaps, in the form of a cooperative. This cooperative for SMEs could offer services, particularly trade credit management services, to their members. Apart from the SMEs themselves, other agencies, for example SMIDEC, SME Bank and others, could initiate or operate these outsourcing activities for the SMEs. Since SMEs are small and diverse, perhaps, an agency that has governmental support, both financial and manpower, and also persuasive influence could instigate the formation of this sort of cooperation. Since it is not profit oriented, the cooperative will be able to charge a nominal fee, lower than those currently charged by private and specialised outsourcing agents. This, probably, will increase the awareness and encourage the usage of outsourcing services among the SMEs. Consequently, more time and effort could be devoted to other more pressing issues.

## **7.4 CONTRIBUTIONS OF THE RESEARCH STUDY**

It is hoped that the results of this research study have made practical and academically meaningful contributions to the knowledge of financial management for small and medium-sized enterprises, particularly trade credit management in the manufacturing sector. Generally, the contributions of this study can be view from two perspectives, academic and practical. The sub-sections below elaborate on the contributions of the study.

### **7.4.1 Academic Contributions**

Theoretically, this study has strengthened previous research findings related to trade credit management. As indicated in Chapter 2, studies on credit management practices and financial characteristics of SMEs around the world are numerous. However, most of these studies involved SMEs in the developed countries, while findings involving SMEs in the developing countries are rare. Therefore, research findings in this study expand the literature of financial management in general, and trade credit management in particular, especially for SMEs in Malaysia.

In the local context, this study provides details of relationships between trade credit management practices and company characteristics of SMEs. Many of the studies conducted on SMEs focus on other areas of management but very little attention on financial management. Most studies on SMEs that are related to finance were more inclined towards the financing needs of the SMEs and not on the managerial aspects of the finances. Hence, this study supplements the gap in the empirical knowledge in trade credit management to a certain extent, by

investigating the trade credit practices as well as the association between these practices and company characteristics.

Unlike previous studies, this study has focused on a larger number of dependent variables (credit management practices). This in itself is a contribution to the body of knowledge. Apart from that, it also incorporates a reasonable number of independent variables (company characteristics) to help explain the credit management practices.

#### **7.4.2 Managerial Contributions**

From the practical aspect, this study has managed to draw the credit management practices that would benefit the stakeholders in one way or another. The findings of the study will enlighten the stakeholders, such as the SME owner-managers, support agencies, regulators and policymakers, fund providers, and training institutions on the current credit management practices of the SMEs. With better understanding on the SMEs in terms of managing its assets in general, and receivables in particular, the stakeholders would be able to play their part better towards a more business-friendly environment. The following sub-sections look at how the findings of this study contribute to the interest of the various groups.

##### ***Contributions to the SME owner-manager***

The owner-manager of SMEs obviously would benefit from the findings of this study. The research results may help them to appreciate the profile and diversity of current practices in reality. More crucially, from this study the SMEs would be

informed of the various weaknesses in trade credit management, and this should help them in overcoming these weaknesses.

### ***Contributions to support agencies***

In carrying out the research, it was found that some of the support agencies procedures and database were lacking details that inhibit research. For example, SMIDEC does not have a financial database of SMEs despite being the main government agency in charge of SME development. Apart from this, there were some errors in categorising the SMEs into the various sub-sectors, as previously mentioned in Chapter 5.

CCM on the other hand, only had financial statements with aggregated items. For instance, only total current assets data was available without the breakdown of receivables, inventory, and others, which was not very helpful for this research. Besides this, CCM does not make use of the SIC codes, which would otherwise be useful in categorising the SMEs into the correct industry sub-sectors.

As this study highlights these shortcomings, it would be proper for these agencies to address them. This can help research studies involving SMEs.

### ***Contributions to regulators and policymakers***

One of the recommendations arising from this study highlighted the need for the creation of a cooperative for the SMEs. Effectively, this can be initiated by the MECD or SMIDEC because it is unlikely to materialise if the formation is left to the SMEs because they are dispersed and lack coordination. By nature, the

SMEs tend to think of self-interest, and on a micro basis, but are less able to think of collective interest on a macro basis. Therefore, the intervention of the ministry (ministries) is required to moot this cooperative entity. By the way, it might be more effective if SMIDEC sits under MECD rather than MITI. The Malaysian Cabinet may want to consider this.

### ***Contribution to fund providers***

Perennially, the financial problems of SMEs have been associated with the lack of financing. This may be true. However, this study underlines the weaknesses in SMEs managing their trade credit. In fact, more effective management of trade credit would, partially at least, reduce the SMEs need for financing. Thus, fund providers should also help SMEs in managing their receivables rather than merely dishing out funds. They can either assess the SMEs credit management credentials prior to granting loans, or grant loans with the provision that they be allowed access to help the SMEs to better manage their receivables.

### ***Contributions to training institutions***

Findings on trade credit management practices of SMEs provide teaching and training organisation personnel to understand the practices that have been adopted by the SMEs and identify more specific areas in credit and collection that require training and enhancement. The enhancement of understanding of the dynamics of trade credit management in SMEs will enable the trainers to develop and design more appropriate programs for owners and managers of SMEs. Training, however, should not only focus on the mechanics of carrying out the



credit function, but also to increase the understanding and awareness of important trade credit management concepts and principles.

## **7.5 LIMITATIONS OF THE STUDY**

Notwithstanding the effort put, this research study is restrained by several limitations. This section discusses some of the prevailing constraints that were encountered, and should be taken into consideration in generalising the findings.

As in most surveys, the data gathered for this research study are subject to various errors such as company's misunderstanding of the questions, or simply erroneous reporting. Podsakoff and Organ (1986) point out that social desirability bias, that is when the respondents, consciously or unconsciously, wishes to create a favourable impression, is a common problem in self-reporting questionnaire. In other situations, the respondents tend to implicate the negative aspects of others, such as the environment, the regulations, or other external factors beyond their control, as opposed, perhaps, to their own weaknesses or managerial incompetence. This self-reporting bias is one of the common problems when collecting data from managers about their organisations or any managerial matters directly related to them. In addition to social desirability bias, Zikmund (1991) indicates that agreement bias, where the respondents tend to agree with all questions, and deliberate falsification are common types of respondent error in survey studies.

Another methodological limitation that is of concern to the study is related to the matching of the mail questionnaire responses provided by the sampled companies, to their respective financial data. The survey, conducted during the

second half of 2005, is cross-sectional, as it is a snapshot at one specific point in time. The financial data, on the other hand, comprised annual financial statements for 2001 through 2004, is longitudinal. In order to appropriately match the financial statements to the questionnaire responses, the four-year statements were collapsed to become a single statement by averaging them. Hence, this study is more appropriate in correlational rather than causal analysis.

There are also a number of limitations on the sample used in the study. The sample population was disproportionate to the manufacturing industry in Malaysia. The sample frame was based on the SMIDEC directory. However, quite frequently, the placing of SMEs into the various manufacturing sub-sectors by SMIDEC seemed not to agree with the classification declared by the SMEs themselves. Nevertheless, the study uses the classification indicated by the respondent as it is assumed that the companies know better about themselves. The following is an example that illustrates an error made in classifying the SMEs. A company bearing the words “plastic mould” in its name was classified under plastic product sub-sector in the directory, whereas it is actually producing a mould for manufacturing of a plastic product and therefore, should be categorised under metal products sub-sector. Although this may not cause any serious implication to the study, it would be necessary to exercise some prudence in generalising the findings to all companies in the population.

There are other potential problems with regard to the sample which are inevitable. Even if the study selects the sample according to random probability sampling, a random probability error is unavoidable (Zikmund, 2000). For example, the sample may have been biased if some of the SMEs are subsidiaries

of the same organisation, whereby similar responses would be expected. Unlike publicly listed companies, information on ownerships of privately held companies is not publicly accessible, thereby making it difficult in establishing the ownership status of the SMEs.

Another potential limitation of this study is related to the generalisability of the findings. As previously stated, the sample was selected from the SMIDEC's directory of SMEs. At the time when the list was generated, SMIDEC's definition of SMEs included only registered companies (excluding sole-proprietorship and partnership business entities) operating in manufacturing and manufacturing related sector. The directory, therefore excluded other small and medium-sized retailers and wholesalers, services providers and other non-manufacturing SMEs. Hence, caution is necessary in generalising the findings to all SMEs as they apply specifically to the manufacturing sector. Nonetheless, as indicated in the beginning chapter of the thesis, manufacturing sector forms the bulk of the SME segment.

Despite the limitations discussed above, the results of this research study provide a useful insight into the trade credit management practices of Malaysian manufacturing SMEs. In addition, the findings would provide a starting point or as a basis for future research in the area of trade credit management.

## **7.6 SUGGESTIONS FOR FUTURE RESEARCH**

This study only provides a broad picture of the trade credit management practices in Malaysian SMEs in the manufacturing sector. Nonetheless, the limitations of this study, discussed in the previous section, suggest further

research for more in-depth investigation, using case studies and other research methods, to expand and supplement specific areas of trade credit management practices that were not captured in this research. In addition, this study could be used as the basis for further research, particularly in the Malaysian context, to explore, develop and test many findings observed in this study. The importance of trade credit management to the value of the company would seem to justify greater research activity in the field. Additional suggestion for future research could include the following:

- **Dependent variables** — Previous studies had concentrated on a few credit practices as the dependent variables. Among the practices that were more frequently examined include credit period, late payment, and credit terms. Other practices of credit management need to be explored.
- **Factors affecting credit practices** — The present study has identified some factors that had significant relationships with trade credit practices. However, it has not considered all possible antecedents factors. Other company characteristic not covered in this study could be included in future research.
- **Linkages between practices** — Some of the areas that future research should seek empirical validation include understanding the association between the credit practices.
- **Methodology** — The study's methodological approaches applied are among the many available research techniques. There are other methods, e.g. multinomial logistic regression, that could be employed in future research to produce more accurate overall picture of trade credit management practices.

- Expansion of scope — The scope of the current study is limited to only the manufacturing industry. Future research should examine these relationships by comparing results across various industries. Besides manufacturing, other industries should be considered in future extension of this study.
- Further investigation of recommendations — For example, future research may explore the opinions of SMEs about cooperatives.

## **7.7 SUMMARY**

This closing chapter of the thesis presents the summary and conclusions to the study. The first section has sought to recap the findings of the study in a nutshell. The following section discussed on the implications of the findings, as well as recommendations suggested. Next, the contributions of the study were described. Limitations encountered in the process of writing this thesis were also highlighted. Finally, suggestions for future research were presented to conclude the chapter.

The findings of the study highlighted the practices of the manufacturing SMEs in managing their trade receivables. This has answered the first research question of the thesis where the profile of manufacturing SMEs' trade credit management practices were compiled and investigated. The results also have responded to the second research question by identifying the company characteristics that influenced the SMEs' trade credit management practices.

Generally, the results reveal that trade credit management practices were not very sophisticated. Probably due to their size, some of the problems encountered by the SMEs were related to the lack of financial and manpower

resources. Nonetheless, some of the reasons for the lack of sophistication were due to their unawareness of the significant contribution of efficient credit management.

In response to this, the study laid down some recommendations to overcome or mitigate problems related to trade credit management. One of the suggestions is the provision training for SMEs' owner-managers, not only to enhance their managerial skills but also to increase their understanding and appreciate the importance of the credit function of the business. The study also suggested the establishment of a cooperative for SMEs, specifically to serve as a centre for outsourcing of credit activities. Apart from the implications and recommendations, the study also drew attention to the contributions that would benefit the stakeholders.

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## Appendix 1

# QUESTIONNAIRE

<b>TRADE CREDIT PRACTICES OF MALAYSIAN SMALL AND MEDIUM-SIZED ENTERPRISES (SMEs) IN THE MANUFACTURING SECTOR</b>
--

### COMPANY DETAILS

Name of company : .....

Address : .....

..... Post code: .....

Person responding : .....

Position of person responding : .....

Which classification most closely describes your company? (please tick one)

- |  |  |
|--|--|
| <input type="checkbox"/> Food, Beverage and Tobacco          | <input type="checkbox"/> Rubber Products               |
| <input type="checkbox"/> Machinery and Engineering           | <input type="checkbox"/> Transport Equipments          |
| <input type="checkbox"/> Chemical and Petrochemical Products | <input type="checkbox"/> Pharmaceutical                |
| <input type="checkbox"/> Paper and Printing                  | <input type="checkbox"/> Non-Metallic Mineral Products |
| <input type="checkbox"/> Plastic Products                    | <input type="checkbox"/> Wood and Wood Products        |
| <input type="checkbox"/> Electric and Electronics            | <input type="checkbox"/> Palm Oil-Based Products       |
| <input type="checkbox"/> Textile, Apparels and Leather       | <input type="checkbox"/> Metal Products                |

### GENERAL OPERATIONS

- 1 How many years has this company been in operation? ..... years
- 2 How many full-time employees does your company have during your last financial year? .....
- 3 Roughly what percentage of your company's turnover was represented by credit sales in your last financial year? ..... %
- 4 Please estimate the percentage of your company's production that was exported during your last financial year. .... %
- 5 Is your company operating in a market dominated by a few large customers?  Yes  
 No

## TRADE CREDIT PRACTICES

- 6 Does your company employ a person with overall responsibility for credit management?  Yes  
 No
- 7 (a) Does your company have an overall credit policy?  Yes  
 No
- (b) If it does, is the policy documented (in written form)?  Yes  
 No
- 8 (a) Does your company check the creditworthiness of prospective (new) customers before granting credit to them?  Yes  
 No
- (b) If YES to the previous question, do you use the following sources of information? (for each item, please tick the appropriate boxes)
- |                               | Yes                      | No                       |
|-------------------------------|--------------------------|--------------------------|
| From the customer (applicant) | <input type="checkbox"/> | <input type="checkbox"/> |
| Trade reference               | <input type="checkbox"/> | <input type="checkbox"/> |
| Bank reference                | <input type="checkbox"/> | <input type="checkbox"/> |
| Trade associations            | <input type="checkbox"/> | <input type="checkbox"/> |
| Your own sales people         | <input type="checkbox"/> | <input type="checkbox"/> |
| Other suppliers (competitors) | <input type="checkbox"/> | <input type="checkbox"/> |
| Credit reporting agencies     | <input type="checkbox"/> | <input type="checkbox"/> |
- (c) If you use sources of information other than those listed above, please specify.

- 
- 9 What is the normal credit terms offered by your company?  
(e.g. *net 30* specifies that full payment is due within 30 days after delivery; *2/10 net 30* indicates a two-percent discount for payment within 10 days and a net period ending on day 30)

- 
- 10 If you offer a discount, roughly what percentage of your customers takes up the offer? \_\_\_\_\_ %
- 11 Does your company apply interest charges to overdue accounts?  Yes  
 No
- 12 For what percentage of your credit customers does your company establish credit limits? \_\_\_\_\_ %
- 13 Does your company offer special terms to individual customers?  Yes  
 No

- 14 How many days after delivery of goods are invoices usually sent out? \_\_\_\_\_ days
- 15 How many days after the due date are collection activities normally initiated? \_\_\_\_\_ days
- 16 (a) Does your company operate standard procedures for collecting overdue accounts?  Yes  
 No
- (b) If you have standard collection procedures, do you make exceptions for large important or valued customers?  Yes  
 No

### OUTSOURCING OF CREDIT ACTIVITIES

- 17 Does your company factor its accounts receivable?  Yes  
 No
- 18 Does your company use information from credit reporting agencies in evaluating the customers' credit standing?  Yes  
 No
- 19 Does your company employ debt collection agencies in collection of trade debtors?  Yes  
 No
- 20 Does your company insure against bad debts for domestic sales?  Yes  
 No

Please provide comments on other aspects not covered in the questionnaire that, in your opinion, will contribute to best practices of trade credit management of SMEs.

**Please return the completed questionnaire using the self-addressed envelope enclosed at your earliest possible convenience. Thank you for spending your precious time answering the questionnaire. Your contribution to this study is highly appreciated.**

## Appendix 2

Dear Prof P Hutchinson and N Zainudin

HREC has given approval for the following.

### **Trade Credit Practices and Liquidity of Malaysian and Medium Sized Enterprises (SMEs) in the Manufacturing Sector**

Your HREC approval number is: **HE06/078 valid from 28<sup>th</sup> June 2006 to 28<sup>th</sup> September 2007**

The Human Research Ethics Committee may grant approval for up to a maximum of three years. For approval periods greater than 12 months, researchers are required to submit an application for renewal at each twelve-month period. All researchers are required to submit a Final Report at the completion of their project. The Renewal/Final Report Form is available at the following web address: [http://rs-nt-10.une.edu.au/Home/V\\_2\\_1/ecforms.html](http://rs-nt-10.une.edu.au/Home/V_2_1/ecforms.html)

The NHMRC National Statement on Ethical Conduct in Research Involving Humans requires that researchers must report immediately to the Human Research Ethics Committee anything that might affect ethical acceptance of the protocol. This includes adverse reactions of participants, proposed changes in the protocol, and any other unforeseen events that might affect the continued ethical acceptability of the project.

In issuing this approval number, it is required that all data and consent forms are stored in a secure location for a minimum period of five years. These documents may be required for compliance audit processes during that time. If the location at which data and documentation are retained is changed within that five-year period, the Research Ethics Officer should be advised of the new location.

Best Wishes,  
Belinda

~~~~~  
Belinda Ackling  
Acting Research Ethics Officer  
Researcher Services  
University of New England  
Armidale NSW 2351  
Ph: 02 6773 3449  
Fax:02 6773 3543  
Email: [Ethics@une.edu.au](mailto:Ethics@une.edu.au)

## Appendix 3

### 1<sup>st</sup> Cover Letter

Date

Chief Executive Officer / Managing Director  
Name of Company  
Address

Dear Sir/Madam

#### **SURVEY ON TRADE CREDIT PRACTICES OF MALAYSIAN SMALL AND MEDIUM-SIZED ENTERPRISES IN THE MANUFACTURING SECTOR**

I am a lecturer from the Universiti Utara Malaysia (UUM) who is currently pursuing a doctoral programme at the University of New England (UNE), Australia, under the supervision of Professor Patrick Hutchinson from New England Business School, UNE. As part of this study, I am conducting a survey on trade credit practices of Malaysian SMEs in the manufacturing sector. Being in the business community where trade credit is part and parcel of business activities, your response will provide invaluable input to the success of this study.

Hence, I would very much appreciate your consenting to complete this questionnaire. I would anticipate the maximum amount of time to complete the questionnaire should not be more than 20 minutes. Please be assured that all information obtained would be treated with strict confidence. Your responses will be coded into electronic form secured in my personal laptop. During the study, the questionnaires will be placed in a locked drawer within a locked office at the Faculty of Finance and Banking, UUM, after which it will be destroyed after the study is completed. Subsequently, your name or the name of your company will not be used when compiling the report on the research findings.

Please return the completed questionnaire using the self-addressed envelope provided. If you have any questions about this survey, please feel free to contact either myself (012-4089030, [nash@uum.edu.my](mailto:nash@uum.edu.my)), or my supervisor Professor Patrick Hutchinson ([phutchin@une.edu.au](mailto:phutchin@une.edu.au)). A summary report on the study will be provided to participants upon request.

Finally, in complying with the UNE's Code of Conduct for Research, I would like to inform you that this project has been approved by the Human Research Ethics Committee of the UNE (Approval No. Valid to ). Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address:

Research Services  
University of New England  
Armidale NSW 2351  
Telephone: (02) 6773 3449; Facsimile: (02) 6773 3543  
Email: [ethics@une.edu.au](mailto:ethics@une.edu.au)

Thank you for your assistance.

Yours sincerely,

**NASRUDDIN ZAINUDIN**



## Appendix 4



KEMENTERIAN PEMBANGUNAN USAHAWAN DAN KOPERASI  
(Ministry of Entrepreneur and Co-operative Development)  
PEJABAT TIMBALAN KETUA SETIAUSAHA (USAHAWAN)  
ARA 14, BLOK MENARA  
LOT 2G6, PRESINT 2  
PUSAT PENTADBIRAN KERAJAAN PERSEKUTUAN  
62100 PUTRAJAYA  
Tel : 03-88805025 / Faks : 03-88805030



MECD:TKSU(U)/20/703/1

23<sup>RD</sup> February 2006

### To Whom It May Concern

#### **SURVEY ON TRADE CREDIT PRACTICES OF MALAYSIAN SMALL AND MEDIUM- SIZED ENTERPRISES IN THE MANUFACTURING SECTOR**

We refer to the above matter.

This letter is to introduce Mr. Nasruddin Zainudin, a lecturer from the Universiti Utara Malaysia. Currently, Nasruddin is undertaking a study on SMEs business practices, particularly on the management of credit activities. This effort is important, as the results would provide us a better understanding on our SMEs. Accordingly, he is conducting a survey on the trade credit practices of Malaysian SMEs in the manufacturing sector.

We fully support Nasruddin's initiatives as research in small business sector is lacking. The findings would contribute towards our effort in promoting and developing the small and medium scale industries. Therefore, we would like to ask you to participate and give full cooperation in completing and returning the questionnaire which is enclosed with this letter. Your answers are very important to the accuracy of this study. The researcher has assured me that utmost confidentiality will be observed in using the given information. Your name or the name of your company will not be mentioned in the report on the research findings.

Thank you for spending a small amount of your valuable time to respond to his survey. Your contribution to the study is highly appreciated.

Yours Sincerely,

(ADZIM BIN ABDULLAH)  
Deputy Secretary General (Entrepreneur)  
Ministry of Entrepreneur And Co-Operative Development

*"Keusahawanan Kerjaya Pilihan"*

## Appendix 5

**This reminder will be send to all respondents**

### **POSTCARD REMINDER**

Last week, I have mailed you questionnaire seeking information about your company's trade credit practices. If you have already completed and returned it to me, please accept my sincere gratitude. If no, could you please complete and return it as soon as possible. Your answers are very important to the significance of this study. All information given is confidential and no names or information that might identify you will be used in any publication arising from the research.

If by some chance you did not receive the questionnaire, or it got misplaced, please email or call me (email: [nash@uum.edu.my](mailto:nash@uum.edu.my); mobile: 012-4089030) and I will get another one in the mail today.

Sincerely,

**NASRUDDIN ZAINUDIN**  
Faculty of Finance and Banking  
Universiti Utara Malaysia  
06010 UUM Sintok, Kedah

## Appendix 6

### 2<sup>nd</sup> Cover Letter

Date

Chief Executive Officer / Managing Director  
Name of Company (non-responding ones)  
Address

Dear Sir/Madam

#### **SURVEY ON TRADE CREDIT PRACTICES OF MALAYSIAN SMEs IN THE MANUFACTURING SECTOR**

About a month ago I wrote to you seeking information on trade credit practice of your company. As of today I have yet to receive your completed questionnaire. I understand that your busy schedule and priorities might have pushed aside the survey temporarily.

Nevertheless, I am writing to you again because of the significance each questionnaire has to the usefulness of this research. In order for the results of this study to be justifiably representative of all manufacturing firms in Malaysia it is essential that each firm in the sample return their questionnaire. As mentioned in my previous letters, the information obtained will be treated with strictest confidence and will be used in such a way as to preserve complete anonymity.

In the event that your questionnaire has been misplaced, a replacement is enclosed. Your cooperation is greatly appreciated.

Yours sincerely,

**NASRUDDIN ZAINUDIN**  
Faculty of Finance and Banking  
Universiti Utara Malaysia  
06010 UUM Sintok, Kedah  
Email: [nash@uum.edu.my](mailto:nash@uum.edu.my)  
Mobile: 012-4089030

## Appendix 7

| <b>PROFIT LOSS ACCOUNT</b>                         |             |             |             |             |
|----------------------------------------------------|-------------|-------------|-------------|-------------|
| For the Year Ended 31/12/2004                      |             |             |             |             |
| XXXXXX MANUFACTURING SDN BHD                       |             |             |             |             |
|                                                    | 12/31/2001  | 12/31/2002  | 12/31/2003  | 12/31/2004  |
|                                                    | RM          | RM          | RM          | RM          |
| TURNOVER                                           | 13,881,053  | 15,338,170  | 20,365,424  | 23,635,015  |
|                                                    | =====       | =====       | =====       | =====       |
| PROFIT/(LOSS) FROM OPERATIONS                      | 6,235,412   | 6,977,189   | 9,039,260   | 9,781,073   |
| Taxation                                           | <1,844,000> | <1,915,717> | <1,949,508> | <2,746,395> |
|                                                    | -----       | -----       | -----       | -----       |
| PROFIT/(LOSS) BEFORE EXTRAORDINARY ITEMS           | 4,391,412   | 5,061,472   | 7,089,752   | 7,034,678   |
|                                                    | -----       | -----       | -----       | -----       |
| PROFIT/(LOSS) ATTRIBUTABLE TO SHAREHOLDERS         | 4,391,412   | 5,061,472   | 7,089,752   | 7,034,678   |
| RETAINED PROFIT/(ACCUMULATED LOSS) BROUGHT FORWARD |             |             |             |             |
| As previously reported                             | 8,497,973   | 12,289,385  | 16,750,857  | 23,840,609  |
|                                                    | -----       | -----       | -----       | -----       |
| PROFIT AVAILABLE FOR APPROPRIATIONS                | 12,889,385  | 17,350,857  | 23,840,609  | 30,875,287  |
| DIVIDENDS - Ordinary (paid & proposed)             | <600,000>   | <600,000>   | -           | <1,500,000> |
|                                                    | -----       | -----       | -----       | -----       |
| RETAINED PROFIT/(ACCUMULATED LOSS) CARRIED FORWARD | 12,289,385  | 16,750,857  | 23,840,609  | 29,375,287  |
|                                                    | =====       | =====       | =====       | =====       |
| RETAINED BY: The Company                           | 12,289,385  | 16,750,857  | 23,840,609  | 29,375,287  |
|                                                    | -----       | -----       | -----       | -----       |
|                                                    | 12,289,385  | 16,750,857  | 23,840,609  | 29,375,287  |
|                                                    | =====       | =====       | =====       | =====       |
| INTEREST EXPENSE (as per notes to P&L)             |             |             |             |             |
| Term loan                                          | -           | 137,127     | 31,817      | 26,693      |
| Bank overdraft                                     | -           | 778         | 1,320       | 1,777       |
| Bank charges                                       | -           | 30,061      | 33,946      | 61,577      |
|                                                    | -----       | -----       | -----       | -----       |
|                                                    | -           | 167,966     | 67,083      | 90,047      |
|                                                    | =====       | =====       | =====       | =====       |

|                                       |            |            |            |            |
|---------------------------------------|------------|------------|------------|------------|
|                                       |            |            |            |            |
| <b>BALANCE SHEET</b>                  |            |            |            |            |
| As At 31/12/2004                      |            |            |            |            |
|                                       |            |            |            |            |
| XXXXXX MANUFACTURING SDN BHD          |            |            |            |            |
|                                       | 12/31/2001 | 12/31/2002 | 12/31/2003 | 12/31/2004 |
|                                       | RM         | RM         | RM         | RM         |
| ASSETS EMPLOYED:                      |            |            |            |            |
|                                       |            |            |            |            |
| FIXED ASSETS                          | 5,305,998  | 5,617,178  | 9,020,170  | 8,985,839  |
|                                       |            |            |            |            |
| LONG TERM INVESTMENTS/OTHER ASSETS    |            |            |            |            |
| INTANGIBLE ASSETS                     |            |            |            |            |
|                                       | -----      | -----      | -----      | -----      |
| TOTAL LONG TERM ASSETS                | 5,305,998  | 5,617,178  | 9,020,170  | 8,985,839  |
|                                       |            |            |            |            |
| CURRENT ASSETS                        |            |            |            |            |
| Stocks                                | 985,468    | 1,974,787  | 2,615,407  | 921,945    |
| Trade debtors                         | 8,286,337  | 9,314,397  | 10,422,532 | 15,720,747 |
| Other debtors, deposits & prepayments | 1,938,176  | 2,197,788  | 144,546    | 1,152,306  |
| Short term deposits                   | 700,566    | 1,350,566  | 850,566    | 9,051,770  |
| Amount due from related companies     | -          | 1,597,908  | 1,597,908  | 1,597,908  |
| Cash & bank balances                  | 1,525,161  | 1,271,736  | 3,268,979  | 726,221    |
|                                       | -----      | -----      | -----      | -----      |
| TOTAL CURRENT ASSETS                  | 13,435,708 | 17,707,182 | 18,899,938 | 29,170,897 |
|                                       |            |            |            |            |
| CURRENT LIABILITIES                   |            |            |            |            |
| Trade creditors                       | 847,566    | 1,065,898  | 1,010,629  | 827,618    |
| Other creditors & accruals            | 102,875    | 517,426    | 389,999    | 233,131    |
| Short term borrowings/Term loans      | 434,852    | 507,480    | 861,203    | -          |
| Provision for taxation                | 1,896,678  | 1,686,334  | 117,668    | 850,000    |
| Dividends payable/proposed            | 600,000    | -          | -          | -          |
| revolving credit                      | -          | -          | -          | 4,938,700  |
|                                       | -----      | -----      | -----      | -----      |
| TOTAL CURRENT LIABILITIES             | 3,881,971  | 3,777,138  | 2,379,499  | 6,849,449  |
|                                       |            |            |            |            |
| NET CURRENT ASSETS/(LIABILITIES)      | 9,553,737  | 13,930,044 | 16,520,439 | 22,321,448 |
|                                       | -----      | -----      | -----      | -----      |
| TOTAL NET ASSETS                      | 14,859,735 | 19,547,222 | 25,540,609 | 31,307,287 |
|                                       | =====      | =====      | =====      | =====      |
|                                       |            |            |            |            |
|                                       |            |            |            |            |

|                                                     |            |            |            |            |
|-----------------------------------------------------|------------|------------|------------|------------|
|                                                     |            |            |            |            |
| FINANCED BY:                                        |            |            |            |            |
|                                                     |            |            |            |            |
| SHARE CAPITAL                                       |            |            |            |            |
| Ordinary share capital                              | 1,000,000  | 1,000,000  | 1,000,000  | 1,000,000  |
|                                                     | -----      | -----      | -----      | -----      |
| TOTAL SHARE CAPITAL                                 | 1,000,000  | 1,000,000  | 1,000,000  | 1,000,000  |
|                                                     |            |            |            |            |
| RESERVES                                            |            |            |            |            |
| Retained profit/(Accumulated loss) carried forward  | 12,289,385 | 16,750,857 | 23,840,609 | 29,375,287 |
| Proposed Dividend                                   | -          | 600,000    | -          | -          |
|                                                     | -----      | -----      | -----      | -----      |
| TOTAL RESERVES                                      | 12,289,385 | 17,350,857 | 23,840,609 | 29,375,287 |
|                                                     | -----      | -----      | -----      | -----      |
| SHAREHOLDERS' FUNDS/EQUITY                          | 13,289,385 | 18,350,857 | 24,840,609 | 30,375,287 |
|                                                     |            |            |            |            |
| LONG TERM & DEFERRED LIABILITIES & PROVISIONS       |            |            |            |            |
| Long term loans                                     | 1,254,350  | 811,365    | -          | -          |
| Deferred taxation                                   | 316,000    | 385,000    | 700,000    | 932,000    |
|                                                     | -----      | -----      | -----      | -----      |
| TOTAL LONG TERM & DEFERRED LIABILITIES & PROVISIONS | 1,570,350  | 1,196,365  | 700,000    | 932,000    |
|                                                     | -----      | -----      | -----      | -----      |
|                                                     | 14,859,735 | 19,547,222 | 25,540,609 | 31,307,287 |
|                                                     | =====      | =====      | =====      | =====      |

## Appendix 8

### Results of Mann-Whitney test between early and late respondents

| Variables                  | Mann-Whitney<br>U | Asymp. Sig.<br>(2-tailed) | Significance<br>at 95% level |
|----------------------------|-------------------|---------------------------|------------------------------|
| Annual sales turnover      | 411.0             | 0.564                     | Not significant              |
| Operating profits          | 403.0             | 0.487                     | Not significant              |
| Trade debtors              | 370.0             | 0.237                     | Not significant              |
| Trade creditors            | 436.0             | 0.836                     | Not significant              |
| Total assets               | 387.0             | 0.352                     | Not significant              |
| Company age                | 365.0             | 0.208                     | Not significant              |
| Number of worker           | 345.0             | 0.172                     | Not significant              |
| Percentage of credit sales | 416.0             | 0.770                     | Not significant              |
| Dominant market            | 405.0             | 0.440                     | Not significant              |
| Credit checks              | 420.0             | 0.305                     | Not significant              |
| Credit terms               | 401.0             | 0.583                     | Not significant              |
| Collection start           | 362.5             | 0.260                     | Not significant              |
| Standard procedure         | 345.0             | 0.072                     | Not significant              |
| Outsourcing                | 447.0             | 0.962                     | Not significant              |

## Appendix 9

### SUB-SECTOR \* SAMPLE Cross tabulation

|            |      |                | SAMPLE  |          | Total   |
|------------|------|----------------|---------|----------|---------|
|            |      |                | TOTAL   | ANALYSIS |         |
| SUB-SECTOR | FOOD | Count          | 641     | 16       | 657     |
|            |      | Expected Count | 644.9   | 12.1     | 657.0   |
|            | MACH | Count          | 2668    | 22       | 2690    |
|            |      | Expected Count | 2640.6  | 49.4     | 2690.0  |
|            | CHEM | Count          | 449     | 23       | 472     |
|            |      | Expected Count | 463.3   | 8.7      | 472.0   |
|            | PAPE | Count          | 313     | 11       | 324     |
|            |      | Expected Count | 318.1   | 5.9      | 324.0   |
|            | PLAS | Count          | 448     | 26       | 474     |
|            |      | Expected Count | 465.3   | 8.7      | 474.0   |
|            | ELEC | Count          | 1188    | 21       | 1209    |
|            |      | Expected Count | 1186.8  | 22.2     | 1209.0  |
|            | TEXT | Count          | 335     | 10       | 345     |
|            |      | Expected Count | 338.7   | 6.3      | 345.0   |
|            | RUBB | Count          | 424     | 9        | 433     |
|            |      | Expected Count | 425.1   | 7.9      | 433.0   |
|            | TRAN | Count          | 954     | 13       | 967     |
|            |      | Expected Count | 949.3   | 17.7     | 967.0   |
|            | PHAR | Count          | 46      | 2        | 48      |
|            |      | Expected Count | 47.1    | .9       | 48.0    |
|            | NONM | Count          | 284     | 8        | 292     |
|            |      | Expected Count | 286.6   | 5.4      | 292.0   |
|            | WOOD | Count          | 682     | 10       | 692     |
|            |      | Expected Count | 679.3   | 12.7     | 692.0   |
|            | PALM | Count          | 23      | 3        | 26      |
|            |      | Expected Count | 25.5    | .5       | 26.0    |
|            | META | Count          | 2994    | 40       | 3034    |
|            |      | Expected Count | 2978.3  | 55.7     | 3034.0  |
| Total      |      | Count          | 11449   | 214      | 11663   |
|            |      | Expected Count | 11449.0 | 214.0    | 11663.0 |

### Chi-Square Tests

|                              | Value                | df | Asymp. Sig.<br>(2-sided) |
|------------------------------|----------------------|----|--------------------------|
| Pearson Chi-Square           | 105.504 <sup>a</sup> | 13 | .000                     |
| Likelihood Ratio             | 81.379               | 13 | .000                     |
| Linear-by-Linear Association | 1.819                | 1  | .177                     |
| N of Valid Cases             | 11663                |    |                          |

a. 2 cells (7.1%) have expected count less than 5. The minimum expected count is .48.



## Appendix 10

This appendix contains the bivariate association matrix, which was presented earlier in Chapter 6, and the detail output of the bivariate analyses:

Bivariate association matrix

| Company Characteristic Variables<br>Trade Credit Management Variables | INDUSTRY | AGE               | WORKERS | TURNOVER | TASSETS | CRDTSALE | EXPORTS | POSITION | CURRENT             | QUICK | WORKCAP | NETPROF | OPERPROF | ROA | TATOVER | FATOVER | INVTORER | GROWTH |  |
|-----------------------------------------------------------------------|----------|-------------------|---------|----------|---------|----------|---------|----------|---------------------|-------|---------|---------|----------|-----|---------|---------|----------|--------|--|
| CRDTMGR                                                               |          |                   | +       |          |         |          |         |          |                     |       |         | -       | -        |     |         |         |          |        |  |
| CRDTPLCY                                                              |          | +                 |         | +        | +       |          |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| WRITPLCY                                                              | √        |                   | +       | +        | +       |          |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| CHECKING                                                              |          |                   |         |          |         |          |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| INFOSOS                                                               |          |                   |         |          |         |          |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| CRDTPRD                                                               |          |                   |         |          |         |          | -       |          |                     |       |         |         |          |     | -       |         | -        |        |  |
| COLLPRD                                                               | √        |                   | -       | -        |         |          | -       |          |                     |       |         |         |          | -   | -       | -       |          |        |  |
| OVERDUE                                                               |          |                   | -       | -        |         |          | -       |          |                     |       |         |         |          | -   | -       | -       |          |        |  |
| DISCOUNT                                                              |          |                   |         |          |         | -        |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| INTEREST                                                              |          |                   | +       | +        | +       |          |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| CRDTLMIT                                                              |          |                   |         |          |         |          |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| SPECTERM                                                              |          | +                 |         |          |         | -        |         |          |                     |       |         |         |          |     |         |         | -        |        |  |
| BGININVO                                                              |          |                   |         |          |         | -        |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| BGINCOLL                                                              |          |                   |         |          |         |          |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| COLLPROC                                                              |          |                   |         |          |         |          |         |          |                     |       |         |         |          |     |         |         |          |        |  |
| EXCEPTN                                                               |          |                   |         |          |         |          |         | +        |                     |       |         |         |          |     |         |         |          |        |  |
| OSOURCED                                                              | √        |                   |         |          |         |          | +       |          |                     |       |         |         |          |     |         |         |          | -      |  |
|                                                                       |          | Mann-Whitney test |         |          |         |          |         |          | Kruskal-Wallis test |       |         |         |          |     |         |         |          |        |  |
|                                                                       |          | Correlations      |         |          |         |          |         |          | Chi-square test     |       |         |         |          |     |         |         |          |        |  |

**Mann-Whitney Tests:**

Ranks

|          | CRDTMGR | N   | Mean Rank | Sum of Ranks |
|----------|---------|-----|-----------|--------------|
| WORKERS  | 0       | 106 | 95.65     | 10139.00     |
|          | 1       | 108 | 119.13    | 12866.00     |
|          | Total   | 214 |           |              |
| NETPROF  | 0       | 106 | 116.44    | 12342.50     |
|          | 1       | 108 | 98.73     | 10662.50     |
|          | Total   | 214 |           |              |
| OPERPROF | 0       | 106 | 116.40    | 12338.00     |
|          | 1       | 108 | 98.77     | 10667.00     |
|          | Total   | 214 |           |              |

Test Statistics<sup>a</sup>

|                        | WORKERS   | NETPROF   | OPERPROF  |
|------------------------|-----------|-----------|-----------|
| Mann-Whitney U         | 4468.000  | 4776.500  | 4781.000  |
| Wilcoxon W             | 10139.000 | 10662.500 | 10667.000 |
| Z                      | -2.774    | -2.097    | -2.086    |
| Asymp. Sig. (2-tailed) | 0.006     | 0.036     | 0.037     |

<sup>a</sup> Grouping Variable: CRDTMGR

Ranks

|          | CRDTPLCY | N   | Mean Rank | Sum of Ranks |
|----------|----------|-----|-----------|--------------|
| AGE      | 0        | 79  | 86.87     | 6863.00      |
|          | 1        | 135 | 119.57    | 16142.00     |
|          | Total    | 214 |           |              |
| TURNOVER | 0        | 79  | 94.61     | 7474.00      |
|          | 1        | 135 | 115.04    | 15531.00     |
|          | Total    | 214 |           |              |
| TASSETS  | 0        | 79  | 94.29     | 7449.00      |
|          | 1        | 135 | 115.23    | 15556.00     |
|          | Total    | 214 |           |              |

Test Statistics<sup>b</sup>

|                        | AGE      | TURNOVER | TASSETS  |
|------------------------|----------|----------|----------|
| Mann-Whitney U         | 3703.000 | 4314.000 | 4289.000 |
| Wilcoxon W             | 6863.000 | 7474.000 | 7449.000 |
| Z                      | -3.736   | -2.330   | -2.387   |
| Asymp. Sig. (2-tailed) | 0.000    | 0.020    | 0.017    |

<sup>b</sup> Grouping Variable: CRDTPLCY

Ranks

|          | WRITPLCY | N   | Mean Rank | Sum of Ranks |
|----------|----------|-----|-----------|--------------|
| WORKERS  | 0        | 59  | 58.26     | 3437.50      |
|          | 1        | 76  | 75.56     | 5742.50      |
|          | Total    | 135 |           |              |
| TURNOVER | 0        | 59  | 60.02     | 3451.00      |
|          | 1        | 76  | 74.20     | 5639.00      |
|          | Total    | 135 |           |              |
| TASSETS  | 0        | 59  | 60.05     | 3543.00      |
|          | 1        | 76  | 74.17     | 5637.00      |
|          | Total    | 135 |           |              |

Test Statistics<sup>c</sup>

|                        | WORKERS  | TURNOVER | TASSETS  |
|------------------------|----------|----------|----------|
| Mann-Whitney U         | 1667.500 | 1771.000 | 1773.000 |
| Wilcoxon W             | 3437.500 | 3541.000 | 3543.000 |
| Z                      | -2.549   | -2.089   | -2.080   |
| Asymp. Sig. (2-tailed) | 0.011    | 0.037    | 0.037    |

<sup>c</sup> Grouping Variable: WRITPLCY

Ranks

|          | INTEREST | N   | Mean Rank | Sum of Ranks |
|----------|----------|-----|-----------|--------------|
| WORKERS  | 0        | 182 | 103.23    | 18787.00     |
|          | 1        | 31  | 129.16    | 4004.00      |
|          | Total    | 213 |           |              |
| TURNOVER | 0        | 182 | 103.08    | 18760.00     |
|          | 1        | 31  | 130.03    | 4031.00      |
|          | Total    | 213 |           |              |
| TASSETS  | 0        | 182 | 102.57    | 18667.00     |
|          | 1        | 31  | 133.03    | 4124.00      |
|          | Total    | 213 |           |              |

Test Statistics<sup>d</sup>

|                        | WORKERS   | TURNOVER  | TASSETS   |
|------------------------|-----------|-----------|-----------|
| Mann-Whitney U         | 2134.000  | 2107.000  | 2014.000  |
| Wilcoxon W             | 18787.000 | 18760.000 | 18667.000 |
| Z                      | -2.167    | -2.251    | -2.544    |
| Asymp. Sig. (2-tailed) | 0.030     | 0.024     | 0.011     |

<sup>d</sup> Grouping Variable: INTEREST

Ranks

|          | SPECTERM | N   | Mean Rank | Sum of Ranks |
|----------|----------|-----|-----------|--------------|
| AGE      | 0        | 75  | 95.66     | 7174.50      |
|          | 1        | 138 | 113.16    | 15616.50     |
|          | Total    | 213 |           |              |
| CRDTSALE | 0        | 74  | 120.91    | 8947.00      |
|          | 1        | 134 | 95.44     | 12789.00     |
|          | Total    | 208 |           |              |
| INVTOVER | 0        | 74  | 118.53    | 8771.00      |
|          | 1        | 136 | 98.41     | 13384.00     |
|          | Total    | 210 |           |              |

Test Statistics<sup>e</sup>

|                        | AGE      | CRDTSALE  | INVTOVER  |
|------------------------|----------|-----------|-----------|
| Mann-Whitney U         | 4324.500 | 3744.000  | 4068.000  |
| Wilcoxon W             | 7174.500 | 12789.000 | 13384.000 |
| Z                      | -1.984   | -2.973    | -2.292    |
| Asymp. Sig. (2-tailed) | 0.047    | 0.003     | 0.022     |

<sup>e</sup> Grouping Variable: SPECTERM

**Kruskal-Wallis test:**

Ranks

|          | INDUSTRY | N   | Mean Rank |
|----------|----------|-----|-----------|
| COLLPRD  | 1        | 47  | 81.60     |
|          | 2        | 83  | 123.73    |
|          | 3        | 63  | 109.06    |
|          | 4        | 21  | 96.62     |
|          | Total    | 214 |           |
| OSOURCED | 1        | 47  | 93.86     |
|          | 2        | 83  | 126.39    |
|          | 3        | 63  | 101.67    |
|          | 4        | 21  | 80.83     |
|          | Total    | 214 |           |

Test Statistics<sup>a,b</sup>

|             | COLLPRD | OSOURCED |
|-------------|---------|----------|
| Chi-Square  | 14.620  | 17.203   |
| df          | 3       | 3        |
| Asymp. Sig. | 0.002   | 0.001    |

<sup>a</sup> Kruskal Wallis Test

<sup>b</sup> Grouping Variable: INDUSTRY

**Chi-Square Tests:**

Crosstab

|          |                |                | WRITPLCY |       | Total |
|----------|----------------|----------------|----------|-------|-------|
|          |                |                | 0        | 1     |       |
| INDUSTRY | 1              | Count          | 9        | 22    | 31    |
|          |                | Expected Count | 13.5     | 17.5  | 31.0  |
|          | 2              | Count          | 17       | 34    | 51    |
|          |                | Expected Count | 22.3     | 28.7  | 51.0  |
|          | 3              | Count          | 22       | 14    | 36    |
|          |                | Expected Count | 15.7     | 20.3  | 36.0  |
|          | 4              | Count          | 11       | 6     | 17    |
|          |                | Expected Count | 7.4      | 9.6   | 17.0  |
| Total    | Count          | 59             | 76       | 135   |       |
|          | Expected Count | 59.0           | 76.0     | 135.0 |       |

Chi-Square Tests

|                              | Value               | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square           | 12.423 <sup>a</sup> | 3  | 0.006                 |
| Likelihood Ratio             | 12.539              | 3  | 0.006                 |
| Linear-by-Linear Association | 10.512              | 1  | 0.001                 |
| N of Valid Cases             | 135                 |    |                       |

<sup>a</sup> 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.43.

Crosstab

|          |                |                | EXCEPTN |       | Total |
|----------|----------------|----------------|---------|-------|-------|
|          |                |                | 0       | 1     |       |
| POSITION | 0              | Count          | 21      | 35    | 56    |
|          |                | Expected Count | 14.3    | 41.7  | 56.0  |
|          | 1              | Count          | 10      | 55    | 65    |
|          |                | Expected Count | 16.7    | 48.3  | 65.0  |
| Total    | Count          | 31             | 90      | 121   |       |
|          | Expected Count | 31.0           | 90.0    | 121.0 |       |

Chi-Square Tests

|                                    | Value              | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|------------------------------------|--------------------|----|-----------------------|----------------------|----------------------|
| Pearson Chi-Square                 | 7.721 <sup>b</sup> | 1  | .005                  |                      |                      |
| Continuity Correction <sup>a</sup> | 6.604              | 1  | .010                  |                      |                      |
| Likelihood Ratio                   | 7.801              | 1  | .005                  |                      |                      |
| Fisher's Exact Test                |                    |    |                       | .007                 | .005                 |
| Linear-by-Linear Association       | 7.657              | 1  | .006                  |                      |                      |
| N of Valid Cases                   | 121                |    |                       |                      |                      |

<sup>a</sup> Computed only for a 2x2 table.

<sup>b</sup> 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.35.

**Nonparametric Correlations:**

Correlations (Spearman's rho)

|          |                                                 | WORKERS               | TURNOVER               | CRDTSALE               | EXPORTS                | ROA                   | TATOVER                | FATOVER                | INVTOVER               | GROWTH                |
|----------|-------------------------------------------------|-----------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|-----------------------|
| CRDTPRD  | Correlation Coefficient<br>Sig. (2-tailed)<br>N |                       |                        |                        | -.144*<br>.047<br>191  |                       | -.164*<br>.021<br>198  |                        | -.194**<br>.006<br>195 |                       |
| COLLPRD  | Correlation Coefficient<br>Sig. (2-tailed)<br>N | -.169*<br>.013<br>214 | -.284**<br>.000<br>214 |                        | -.241**<br>.001<br>204 | -.148*<br>.031<br>214 | -.410**<br>.000<br>214 | -.178**<br>.009<br>214 |                        |                       |
| OVERDUE  | Correlation Coefficient<br>Sig. (2-tailed)<br>N | -.151*<br>.034<br>198 | -.316**<br>.000<br>198 |                        | -.171*<br>.018<br>191  | -.156*<br>.029<br>198 | -.358**<br>.000<br>198 | -.155*<br>.029<br>198  |                        |                       |
| DISCOUNT | Correlation Coefficient<br>Sig. (2-tailed)<br>N |                       |                        | -.243**<br>.000<br>208 |                        |                       |                        |                        |                        |                       |
| BGININVO | Correlation Coefficient<br>Sig. (2-tailed)<br>N |                       |                        |                        | -.163*<br>.021<br>201  |                       |                        |                        |                        |                       |
| OSOURCED | Correlation Coefficient<br>Sig. (2-tailed)<br>N |                       |                        |                        | .140*<br>.046<br>204   |                       |                        |                        |                        | -.151*<br>.027<br>214 |

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).