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Tuan,

LAPORAN AKHIR GERAN PENYELIDIKAN UNIVERSITI PENYELIDIKAN (RU)
TAJUK PROJEK : FINANCIAL PERFORMANCE AND STABLILITY OF SME THROUGH ISLAMIC
BANKING: A STUDY ON NCER
NO. AKAUN : 1001 / PMGT / 816055

Dengan hormatnya perkara di atas dirujuk.

2. Terlebih dahulu saya mengucapkan terima kasih atas penghantaran laporan akhir Geran RU seperti tajuk di atas. Bersama-sama ini dilampirkan komen penilaian daripada Dekan Penyelidikan Pelantar Transformasi Sosial untuk perhatian tuan.

3. Memandangkan projek ini telah selesai, Pejabat ini akan menutup projek ini dan seterusnya pihak Jabatan Bendahari diminta untuk memproses penutupan akaun projek ini selepas semua urusan tuntutan dan bayaran dalam tempoh projek dijalankan diselesaikan.

4. Selanjutnya, tuan diminta untuk mengambil tindakan seperti dinyatakan di bawah:

   a) Merakamkan penghargaan kepada Universiti Sains Malaysia. Sila pastikan nama Universiti ditulis/ditaip dengan penuh/lengkap iaitu **'Universiti Sains Malaysia'**.
   b) Tiga salinan penerbitan berkaitan mesti dikirimkan ke Bahagian Penyelidikan dan Inovasi untuk tindakan selanjutnya.
   c) USM mempunyai opsyen pertama untuk menerbitkan bahan yang dihasilkan melalui projek ini. Ini akan dilakukan melalui Penerbit USM dan keputusan untuk menerbitkan bahan ini akan dibuat dalam tempoh enam bulan.
   d) Bahagian ini akan mengagihkan semula peralatan yang telah dibeli menggunakan peruntukan geran ini seandainya terdapat penyelidik lain yang memerlukan peralatan tersebut.

5. Bahagian ini mengucapkan tahniah di atas kejayaan tuan selaku Ketua Penyelidik menyelesaikan projek dengan jayanya. Tuan akan dihubungi oleh Pejabat Inovasi untuk perkembangan selanjutnya hasil/*outcome* daripada geran ini sekiranya terdapat harta intelek/pengkomersialan hasil geran yang boleh diketengahkan.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"
'Memastikan Kelestarian Hari Esok'

Yang menjalankan tugas,

(HAZLAN ABDUL HAMID)
Ketua Penolong Pendaftar
Pejabat Pengurusan & Kreativiti Penyelidikan
Bahagian Penyelidikan & Invovasi

LAPORAN AKHIR GERAN PENYELIDIKAN UNIVERSITI PENYELIDIKAN (RU)
TAJUK PROJEK : FINANCIAL PERFORMANCE AND STABLILITY OF SME THROUGH ISLAMIC BANKING: A STUDY ON NCER
NO. AKAUN   : 1001 / PMGT / 816055

s.k.   Dekan Penyelidikan
Pelantar Transformasi Sosial
Pejabat Pelantar Penyelidikan
Universiti Sains Malaysia

Dekan
Pusat Pengajian Pengurusan
Universiti Sains Malaysia

Pengarah
Pejabat Inovasi
Universiti Sains Malaysia

Timbalan Dekan
(Pengajian Siswazah & Penyelidikan)
Pusat Pengajian Pengurusan
Universiti Sains Malaysia

Ketua Pustakawan
Perpustakaan Hamzah Sendut
Universiti Sains Malaysia
} Disampaikan satu salinan akhir projek untuk simpanan Perpustakaan

Pemangku Timbalan Bendahari
Jabatan Bendahari
Universiti Sains Malaysia
} Sila ambil tindakan menutup akaun projek dan kemukakan satu salinan penyata kewangan terakhir ke Bahagian ini

Pegawai Sains
Pelantar Transformasi Sosial
Pejabat Pelantar Penyelidikan
Universiti Sains Malaysia

HAH/mss
Laporan Akhir – TajulAriffinMasron (U0284)

23 Jun 2011

Dr. Tajul Ariffin Masron
Pusat Pengajian Pengurusan

Tuan/Puan,

Maklumat Tambahan Laporan Akhir Projek Penyelidikan Universiti Penyelidikan USM

Tajuk projek : "Financial Performance And Stability Of SME Through Islamic Banking: A Study On NCER"

Dengan segala hormatnya perkara di atas dirujuk.

2.   Laporan akhir Tuan/Puan telah dinilai di peringkat Jawatankuasa Pelantar Penyelidikan Transformasi Sosial. Tuan/Puan diminta oleh panel penilai untuk memberikan maklumat tambahan sebelum laporan dimajukan ke Pejabat Pengurusan dan Kreativiti Penyelidikan (RCMO) untuk penutupan akaun projek . Sila rujuk komen daripada penilai yang dilampirkan bersama (Lampiran A).

3.   Sila majukan maklumat tambahan tersebut kepada pihak kami dengan kadar segera agar tindakan selanjutnya boleh diambil.

Sekian, saya ucapkan terima kasih di atas perhatian dan kerjasama Tuan/Puan. Sebarang pertanyaan sila hubungi kami di sambungan 3093/3037.

Yang menjalankan tugas,

"BERKHIDMAT UNTUK NEGARA"
"Memastikan Kelestarian Hari Esok"

Yang Menjalankan tugas,

[Muhammad Nasrul Abu Bakar]
Pegawai Sains

sk.   Prof. Badaruddin Bin Mohamed
        Dekan Penyelidikan
        Pelantar Penyelidikan Transformasi Sosial

        Timbalan Dekan
        Pusat Pengajian Pengurusan

        En. Hazlan Abdul Hamid
        Ketua Penolong Pendaftar
        Pejabat Pengurusan & Kreativiti Penyelidikan

D. Action to take [Tick the appropriate boxes]

Project to be reviewed once additional information has been obtained by the Project Leader [Please see section E]

E. **Additional information to be provided by the project leader**
-Researcher need to upgrade the conference paper to be a journal article.

F. **Additional Comments**

Prof. Badaruddin Mohamed,
Dekan Penyelidikan,
Pelantar Penyelidikan Tansformasi Sosial,
Universiti Sains Malaysia

19 Ogos 2011

Prof,

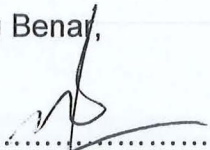**MAKLUMAN PENERBITAN TAMBAHAN**

Tajuk Projek: "Financial Performance and Stability of SME Through Islamic Banking: A Study on NCER"

Dengan segala hormatnya perkara di atas dirujuk.

2.   Merujuk kepada surat dari pihak tuan bertarikh 23 Jun 2011 yang meminta agar penerbitan di seminar di upgrade menjadi artikel jurnal, adalah dimaklumkan bahawa memandangkan seminar yang saya hadiri adalah seminar ISI, maka penganjur tidak membenarkan penerbitan semula dengan kandungan yang sama. Oleh kerana itu, saya terpaksa menyediakan satu kertas kerja baru yang berbeza untuk tujuan penerbitan. Alhamdulillah, satu kertas kerja yang baru yang saya yakini mempunyai kualiti yang jauh lebih baik dari kertas kerja di seminar tersebut telah dapat saya siapkan dan telah pun saya hantar ke Small Business Economics (ISI journal). Saya berkeyakinan bahawa kertas kerja ini mampu diterbitkan di mana-mana jurnal SCOPUS sekiranya gagal menembusi ISI journal seperti SBE. Diharap makluman penghantaran ke journal ini dapat memuaskan hati pihak tuan. Untuk menunggu sehingga keputusan akhir, ia selalunya mengambil masa yang lama dan oleh itu saya sangat berharap agar makluman penghantaran ini memadai. Ini bagi membolehkan saya memohon geran penyelidikan RU yang baru. Salinan kertas kerja ada dikepilkan sebagai rujukan.

Sekian, terima kasih.

Yang Benar,

....
(Dr Tajul Ariffin Masron)
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Editorial Manager(tm) for Small Business Economics: An Entrepreneurship Journal
Manuscript Draft

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Title: Firm's Characteristics and Capital Structure: Evidence from Firms in Northern Corridor Economic Region (NCER) of Malaysia

Article Type: Original Research

Keywords: Firm's Characteristics; Capital Structure; NCER; Malaysia

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Abstract: Study on capital structure of companies is abundant as it is reflecting the financial health of firm. Nonetheless, majority of them are either dealing with issues in developed countries or publicly listed companies only. We observed very limited studies on non-listed companies, including small and medium companies. Therefore, it is the objective of this study to examine the capital structure of companies in the northern region of Malaysia, comprising four states (Perlis, Kedah, Penang and Perak).

Firm's Characteristics and Capital Structure: Evidence from Firms in Northern Corridor Economic Region (NCER) of Malaysia

Tajul Ariffin Masron*, Abdul Hadi Zulkafli and Haslindar Ibrahim
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Abstract

Study on capital structure of companies is abundant as it is reflecting the financial health of firm. Nonetheless, majority of them are either dealing with issues in developed countries or publicly listed companies only. We observed very limited studies on non-listed companies, including small and medium companies. Therefore, it is the objective of this study to examine the capital structure of companies in the northern region of Malaysia, comprising four states (Perlis, Kedah, Penang and Perak).

Keywords: Firm's Characteristics; Capital Structure; NCER; Malaysia

JEL Classifications: G32

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Study on capital structure of companies is abundant as it is reflecting the financial health of firm. Nonetheless, majority of them are either dealing with issues in developed countries or publicly listed companies only. We observed very limited studies on non-listed companies, including small and medium companies. Therefore, it is the objective of this study to examine the capital structure of companies in the northern region of Malaysia, comprising four states (Perlis, Kedah, Penang and Perak).

Keywords: Firm's Characteristics; Capital Structure; NCER; Malaysia

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INTRODUCTION

The study on firm's capital structure has become an important topic and the most researched topic in the modern corporate finance area. The importance of research in capital structure has been stressed by several economists such as Simerly and Li (2000), Eriotis, Vasiliou, and Ventoura-Neokosmidi (2007) and Tang and Jang (2007). According to Simerly and Li (2000), appropriate structure of firm's capital is important for two reasons: (1) for maximization of interest of every stakeholder of that particular organization, and (2) for the organization to compete effectively and efficiently in its operating environment. Moreover, Eriotis et al. (2007) argued that the inappropriate selection of capital structure might be leading to two potential adverse consequences: (1) fall into financial distress, and (2) in the extreme situation, drag the organization into insolvency. On the positive note, Tang and Jang (2007) postulated that optimal choice of capital structure is important as it will help in creating value for the firm via the effect of tax, information asymmetry and agency cost. In summary, study on capital structure is expected to provide valuable in-deep information about firms' strategic decision in implementing investments and its implication on its value, which later on will be used to determine its position in the market.

The study of capital structure in developing countries is relatively scarce. As been argued Booth, Aivazian, Demirguc-Kunt, and Maksimovic (2001), the issue of capital structures has mostly been derived from studies that devoted to developed countries. Booth et al. (2001) offered a study that focusing on developing countries' experiences as these countries are expected to have different set of institutional factors which might be able to question the validity of existing

capital structure model if the results are not consistent with the one derived from developed countries. In Malaysia, the study on capital structure is also not new but mainly focusing on large companies. Among the early studies for Malaysian case are such as Naidu (1984) and Mohamad (1995). Nonetheless, similar to the bulk of recent studies on this topic such as Suto (2003), Fraser, Zhang, and Derashid (2006), Ahmed and Hisham (2009), San and Heng (2011), and many more are all dealing with public listed companies which to some extent are having similar features as companies in developed countries. Hence, whether the theory of capital structure is applicable or not in the case of companies that are not listed in Bursa Malaysia, this study attempts to fill in the gap in the literature by devoting onto this uncovered area. In order to achieve this objective, this study employs a huge number of almost all companies located in the Northern region of Malaysia. The northern area is encompassing four states, namely Perlis, Kedah, Penang and Northern Perak.

The organization of this paper is as follows: Next section offers brief background of NCER. Section III reviews the past studies in order to find out gap as well as support to our modelling. Section IV discusses the methodology used in order to estimate the capital structure model. Section V analyzes the data and discusses the findings. Section VI concludes and offers suggestion for further research.

BACKGROUND STUDY

What is Northern Corridor Economic Region (NCER)?

Northern Corridor Economic Region (NCER) has been introduced by ex-Prime Minister Abdullah Ahmad Badawi during his leadership in order to accelerate regional economic development. This will ensure a more equitable income distribution. Although Penang state is well-known as high income region but the remaining three states have not been performing as impressive as Penang in that aspect. The primary objective is to achieve a world-class economic region by the year 2025 across the region. According to Northern Corridor Implementation Authority (NCIA)[1], NCER aims to become a sustainable economic region empowered by a population living a balanced lifestyle with a holistic approach to business. The rationale behind NCER is to increase the competitiveness of the country in order to facilitate improvement in the standard of living of the nation. Table 1 represents the disparity of income distribution across selected region, mainly in Peninsular Malaysia. What we can observe from the table is the fact that there is huge income disparity among the states in Malaysia. For instance, Federal Territory and Selangor are considered as well having above Malaysian average real GDP per capita since 1970. In addition, Penang in northern region and Terengganu in eastern region which were at lower average income level in 1970 but recorded impressive growth in income level to achieve more than average since 1980 and 1990, respectively. Conversely, Perak demonstrated a dismal performance from high (more than average) income earner in 1970 to low income earner since 1980. Similarly, Perlis and Kedah are also experienced declining income since 1970, while Kelantan relatively maintained its status as low income state around 40.

In summary, the idea of introducing NCER, alongside ECER, and SJEC in Peninsular Malaysia as well as SDC and SCORE in East Malaysia, is to boost economic development in northern

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[1] Extracted from http://www.ncer.com.my

region to grow exponentially[2]. Part of the strategies to further accelerate economic growth is to promote development of private companies to be the economic leader in the near future. The emphasis is basically more onto the development of local entrepreneurs that can be internationally competitive.

Table 1: Real GDP per capita for selected states in Malaysia (Malaysia = 100)

	1970	1980	1990	2000
Developed Region[a]				
Federal Territory	176	197	191	205
Selangor	148	156	142	124
Northern Region				
Penang	96	113	118	143
Perak	103	93	79	81
Perlis	72	60	66	66
Kedah	73	61	59	60
Eastern Region				
Terengganu	81	71	159	154
Pahang	93	79	82	67
Kelantan	44	60	38	42
Malaysia	100	100	100	100

Note: [a] Defined as achieving above average income since 1970.
Source: Extracted from Habibullah, Smith and Dayang-Afizzah (2008), Table 1, p. 8.

Special Characteristics of Companies in NCER

Penang, albeit its small size relative to other states in Malaysia, has a manufacturing economy that contributes for nearly half of the country's GDP. There are currently six different industrial parks in Penang to support Malaysian manufacturing industry. Through the Penang Development Corporation, Penang has developed significant investment for the past 20 years, primarily in electronics (Boulton, Pecht, Tucker, and Wennberg, 1997). However, the highly performing companies in Penang are mainly dominated by foreign multinational corporations (MNCs). There are only few local entrepreneurs that really become a big name in Penang.

On the other hand, Perlis, Kedah and Perak are not that successful in their efforts to attract MNCs. They did receive investment from MNCs, but relatively still too small. Hence, in these three states, the role of local entrepreneurs is more prevalent. Although it is good in one hand to have local talents to lead economic development, their capability, particularly financial capability is very much limited. Small and medium enterprises (SMEs) tend to dominate the states. Financial constraint may also due to the fact that local banks are not ready to take the risk in lending their money to SMEs who have low credit worthiness. Moreover, as family ownership is also another uniqueness that prevails in Malaysian private companies, they prefer to leverage their business on debt from banks, rather than open up for the public to join their business. Combining both facts, we can imagine how severe is the problem if banks reluctant to fund SMEs-related businesses.

Not denying that pecking order theory might be valid to explain Malaysian firms' capital structure, particular Penang. As Penang becomes among the major destinations of FDI, especially in manufacturing sector, its local entrepreneurs have been benefited a lot from the present of MNCs in the form of linkages or spillover effect and gradually, they grew big. Although many companies are initiated by a family but as they grow larger, family ownership may not be suitable. Amran and Che Ahmad (2010) identified several reasons of difficulty to

[2] ECER stands for Eastern Corridor Economic Region, SJER denotes Southern Johor Economic Region, SDC represents Sabah Development Corridor and finally SCORE stands for Sarawak Corridor of Renewable Energy.

preserve family ownership or to be inherited by family members. The first point is the hardship to find a competent family member who can take over the control. The second and contradicting to first point is despite having competency suitable to manage a company effectively, they are not willing to be in the management board owned by family. The third point is more pressing that it is hard to plan for succession[3]. Regardless of this emerging issue, companies in Northern region, especially other than Penang are still relatively small and therefore, succession issue is far from being too urgent to be addressed.

LITERATURE REVIEW

Capital structure is by definition is a mixture of debt to equity that a firm used to finance its operations. Several theories have been developed to explain the choice of capital structure such as life cycle theory, pecking order theory and agency costs. As for the sake of this study, these three theories seem to be able to provide the basis, we only discuss these three theories here[4]. Life cycle theory of capital structure hypothesizes that stage of development is the main factor in determining whether or not a firm should approach finance providers to finance its business. Firm that just enter the market normally has to depend on its own available money. This firm might be having difficult to convince financial institution or even public to jointly finance its business due to lack of evidences of business success. In other word, financial institutions and public will normally question new firm's business prospect. Among the proponents of this theory

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[3] There are also few reasons of this issue which summarized as follows: (1) sense of lifelong belonging (till death), (2) gender and birth order and (3) personality traits. The detail sources are available in Amran & Che Ahmad (2010). Some real cases can also be found in Amran & Che Ahmad (2010).
[4] Other theories developed to address the behavior of capital structure option are such as static trade-off theory (Modigliani and Miller (1958), information asymmetry theory (Ross, 1977; Myers, 1984), agency cost theory (Jensen, 1986) and capital structure life stage theory (Bender & Ward, 1993), among others.

are Chittenden, Hall, and Hutchinson (1996) and Berger and Udell (1998). Myers (1984), on the other note, argued that firm will rely on internal sources or anything internally generated funds (i.e. undistributed earnings) to finance its business in the early phase. Gradually, that firm will try to get access to debt from financial institution if the firm needs more fund beyond the internally available amount. Finally, if the firm still facing insufficient amount of fund to finance its project(s), it will resort to public or capital market by issuing equity to cover additional fund necessary to ensure the smooth running of the business.

Several empirical studies have identified a number of firm level characteristics in examining the capital structure. These include age of the firm, size of the firm, asset structure, profitability, growth and risk (see Naidu, 1984; Mohamad, 1995; Wald, 1999; Cassar and Holmes, 2003; Hall et al., 2004; Eriotis et al., 2007; Tang and Jang, 2007). Wald (1999) examined capital structure in France, Germany, Japan, the United Kingdom, and the United States. Wald (1999) found some significant policy implications of the findings, although mean leverage and firms' characteristics are observed as similar across countries under study. Simple correlation analysis did suggest that the choices of capital structure vary across countries as country's specific legal and institutional framework may influence the option. Nevertheless, none of them violate the theoretical explanation that links each firm's characteristic with capital structure or leverage option. Similar conclusion has also been drawn by earlier study of Naidu (1984). Naidu (1984) argued that each industry is characterized by the same level of business risk one would expect the firms in the same industry to adopt the same or similar capital structure(s) suited to their business-risk level. However, firms of the same industry group but operating in different countries are said to exhibit different capital structure norms because of the structural, institutional and political differences

in different nations. Eriotis et al. (2007) studied the effect of firm characteristics on capital structure for a sample of 129 Greek companies, corresponds to 63 percent of the listed companies, listed on the Athens Stock Exchange during 1997- 2001. The firm characteristics are hypothesized and analyzed as determinants of capital structure according to different explanatory theories. The findings of this study are in inline with the hypotheses given by various theoretical arguments. For instance, Eriotis et al. (2007) found that there is a negative relation between the debt ratio of the firms and their growth, their quick ratio and their interest coverage ratio. Meanwhile, size remains the only firm's characteristic that appears to have a positive impact. Moving from general companies, which normally referred as listed companies, Tang and Jang (2007) attempted to identify lodging firms' unique leverage behavior through a comparison to software firms, using a generalized least squares analysis. Employing 491 observations (or lodging firms) retrieved from the COMPUSTAT database, this study's findings indicate that fixed assets and growth opportunities are the significant long-term debt determinants of the lodging industry.

Recently, there is also growing research that aims at investigating capital structure of small and medium enterprises (SMEs). Among the studies are Hall et al. (2000), Cassar and Holmes (2003) and Abor and Biekpe (2007). Hall et al. (2000) investigated 3500 unquoted, UK SMEs in order to test various hypotheses concerning the determinants of SMEs' capital structure and to establish whether and how the relationship of these determinants to long- and short-term debt varied between industries. The findings suggest that long-term debt to be positively related to asset structure and size and negatively related to age. On short-term debt model, Hall et al. (2000) identified that short-term debt was related negatively to profitability, asset structure, size

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and age and positively to growth. More importantly, significant variation across industries was also found in most of the explanatory variables. Cassar and Holmes (2003) investigated the determinants of capital structure and use of financing for SMEs in Australia. Using the same set of explanatory variables, reflecting firm's characteristics which are supported by static tradeoff and pecking order arguments, the hypotheses developed are tested using a large Australian nationwide panel survey. The results generally support static trade-off and pecking order arguments proposed by theoretical models that that asset structure, profitability and growth are important determinants of capital structure and financing. While Hall et al. (2000) and Cassar and Holmes (2003) focused on SMEs in high income countries[5], Abor and Biekpe (2007) devoted themselves to get insight into SMEs in low income developing countries with Ghana became their targeted country. Considering that SMEs have been noted as important contributors to the growth of the Ghanaian economy, the issue of capital structure is very relevant. Applying the similar model of capital structure with firm's characteristics as primary independent variables, Abor andBiekpe (2007) highlighted the role played by firm's characteristics in determining the capital structure of SMEs in Ghana.

Study of capital structure in Malaysian case is also not new. Mohamad (1995) attempted to examine the determinants of firms' capital structure in Malaysia for the period between 1986 and 1990. Mohamad (1995) demonstrated that there are similarities between developed and less developed financial markets, involving the influences of firms' capital structure. However, in addition to firm's characteristics such as size, Mohamad (1995) had also identified industry class as playing a significant role in determining a firm's capital structure. Ahmed and Hisham (2009)

[5] Other studies are such as Michaelas, Chittenden, & Poutziouris (1998, 1999), Hall, Hutchinson & Michaelas (2000, 2004), among others.

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revisited the capital structure theory and tested pecking order theory and static order trade-off theory on Malaysian listed firms over a period between 1999 and 2002. The evidence from pecking order model suggests that the internal fund deficiency is the most important determinant that possibly explains the issuance of new debt in Malaysian capital market. However, the validity of this result is a bit suspicious because of lower predicting power. On the other hand, static trade-off-model is not valid to explain the issuance of new debt in Malaysian capital market. Nevertheless, both studies dealt with public listed companies and study that investigating capital structure of SMEs and/or non-public listed companies is still scarce.

METHODOLOGY

Model Specification

This study assumed a direct relationship between firm characteristic determinants (independent variables) and short-term debt (dependent variable). The relationship is tested based on the following empirical model and this model also employed by the previous studies such as Cassar and Holmes (2003), Hall et al. (2000, 2004), and Abor and Biekpe (2009). The only difference and could be treated as limitation of this study is the exclusion of age and risk variables, the one used in Hall et al. (2000), Abor and Biekpe (2009) and few others. The exclusion is purely because of unavailable information in the data taken from Companies Commission of Malaysia. We apply the same model as follows:

$$\ln STD_i = \beta_0 + \beta_1 \ln S\overset{+}{IZE}_i + \beta_2 \ln P\overset{-/+}{ROF}_i + \beta_3 \ln T\overset{-/+}{ANG}_i + \beta_4 \ln L\overset{-}{IQ}_i + \varepsilon_i \qquad (1)$$

where *STD* stands for short-term debt, *SIZE* denotes assets size, *PROF* represents profitability of firms, *TANG* stands for tangibility and *LIQ* represents liquidity. All variables enter in log form (or ln). Sign on top of each explanatory variable denotes expected sign. The detail explanation regarding the expected sign of each explanatory variable is given below.

SIZE

Generally, SIZE is theoretized as having positive association with capital structure. Several theories justify this direction of relationship. The first explanation could be that informational asymmetries between small firms and banks has resulted in smaller firms been offered less capital and normally at higher costs. In other words, transaction costs have made smaller firms to resort less to outside financiers, especially banks (Titman and Wessels, 1988; Wald, 1999; Cassar and Holmes, 2003). Or in a similar tone but in different form, the amount demanded by smaller firms tends to be out of scale range (particularly to get equity financing) or minimum "profitable" financing (to banks). Another possible explanation could be due to relative cost of bankruptcy risk as well as operating risk. Theoretically, both risks are inversely related to outside financing and since they have a tendency to be higher in smaller firms, size is expected to have a positive association with debt.

H0: Size is hypothesized as positively correlated with short-term debt.

PROFITABILITY

Theoretically, *PROF* can have both effects, although the negative effect could be the dominant strategy. The negative effect of *PROF* is based on pecking order theory (Myers, 1984) and the

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positive effect is based on Jensen's free cash flow theory. In pecking order theory, it is argued that if company earns higher return, that will in turn can be used to finance company's business plans. If company decides to utilize internally available retained earnings, pecking order theory is valid and there will be a negative association between *PROF* and debt. Conversely, if high return is exploited by that firm as a reflection of its high firm value (and credit worthiness), to get more external financing, the relationship between the two is negative. In essence, according to Jensen's theory, companies with high profitability, or free cash flow, will be more likely to be taken over and subsequently increased leverage. Therefore, companies that highly profitable will be using more debt.

H0: Profitability is predicted to significantly influence short-term debt.

TANGIBILITY

Titman and Wessels (1988) stressed the importance of asset structure as a determinant of the capital structure of a new firm. Availability of firm's assets will offer bigger liquidation value and subsequently be offered easier access to outside financing at lower cost. In other words, by pledging the firm's assets as collateral or arranging so that a fixed charge can be directly placed to existing tangible assets of that firm, we can expect that that firm to have a more adequate portion of external financing. Therefore, many empirical evidences suggest a positive relationship between asset structure and leverage for large firms (Michaelas,et al., 1999; Cassar and Holmes, 2003; Hall et al., 2004). Nonetheless, the relationship is hypothesized as negative in the case of short-term debt as been empirically proven by Booth et al. (2001)[6], Cassar and Holmes (2003), Hall et al. (2004) and Abor and Biekpe (2009). Cassar and Holmes (2003, p. 136) explained this contradicting finding by arguing on the basis that firms matching their duration of assets and liabilities.

H0: Tangibility is hypothesized to significantly affect short-term debt.

LIQUIDITY

A firm must manage its optimal balance between current assets and current liabilities. Too high liquidity level (current assets > current liabilities) may negatively signal to investors that funds are mainly tied to non-productive assets. In contrast, too low liquidity may pose threat of insolvency. According to Eriotis et al. (2007), which is in line with the trade-off theory[7] and pecking order theory, if a firm utilizes more its current assets, it will generate more cash inflows internally that later on can be mobilize to fund its business plans. Rao, Al- Yahyaee, and Syed (2007) provided another possible explanation that complements the earlier one by stating that it could be due to financial risk consideration. In other words, firms with high liquidity level may be able to maintain its level of current assets. This in turn reflects firms' ability to generate high cash inflows.

H0: Liquidity is predicted to negatively affect short-term debt.

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[6] Booth et al. (2001) found a negative association between tangibility and total debt and in some countries for tangibility vs long-term debt, albeit predicting a negative association for long term debt case.
[7] According to trade-off theory of capital structure, firms trade off the net cost of equity against debt. Therefore, any item(s), such as liquidity, that could lower the (net) cost of equity should be able to signal the advantage of using more equity, relative to debt.

In addition to equation (1), we also run the same equation by adding dummy of state and SME in two more equations as follows:

Equation with State Dummy:

$$\ln STD_i = \alpha_0 + \alpha_1 \ln SIZE_i + \alpha_2 \ln PROF_i + \alpha_3 \ln TANG_i + \alpha_4 \ln LIQ_i$$
$$+ \sum_{j=1}^{3} \alpha_{5j} DSTATE_j + \mu_i \qquad (2)$$

where DSTATE stands for state dummy. We add three more state dummies for Perak, Kedah and Perlis. Equation with SME Dummy:

$$\ln STD_i = \theta_0 + \theta_1 \ln SIZE_i + \theta_2 \ln PROF_i + \theta_3 \ln TANG_i + \theta_4 \ln LIQ_i$$
$$+ \theta_5 DSME_i + \eta_i \qquad (3)$$

Where DSME is dummy for firms fall under SME category based on the amount of assets that they posses. The dummy is set to be 1 if a firm fall under the category listed in Table 2 below. Of course, we only set the maximum in our equation, implying 1 for manufacturing companies that have turnover RM25 million (or below) and services companies that have turnover RM5 million (or below).

In this study, instead of studying capital structure of total companies, we believed that to investigate each sub-sector will be more meaningful and has significant contribution to the body of literature. We then segregated the data of firms into 10 sub-categories as in the Table 3. Finally, each variable is proxied as in Table 4:

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Table 2: Definition of SMEs based on sales turnover

	Micro enterprise	Small enterprise	Medium enterprise
Manufacturing, Manufacturing-Related Services and Agro-based industries	Sales turnover of less than RM250,000	Sales turnover between RM250,000 and RM10 million	Sales turnover between RM10 million and RM25 million
Services, Primary Agriculture and Information and Comm. Technology (ICT)	Sales turnover of less than RM200,000	Sales turnover between RM200,000 and RM1 million	Sales turnover between RM1 million and RM5 million

Source: Adapted from Haslindar and Masron (2011), Table 1.

Table 3: Business Types

Business Code	Category	Business Code	Category
100000 - 199999	Agriculture, Hunting, Forestry and Fishing	600000 – 699999	Wholesale and Retail Trade and Restaurant and Hotels
200000 - 299999	Mining and Quarrying	700000 – 799999	Transport and Communication
300000 - 399999	Manufacturing	800000 – 899999	Financing Insurance, Real Estate, Investment and Business Services
400000 – 499999	Electricity, Gas and Water	900000 - 999999	Community, Social and Personal Services
500000 - 599999	Construction		

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Table 4: Proxies for each variable

Variable	Proxy
Short-term debt (*STD*)	Total short-term debt. Transformed into positive value by the following equation[8]: $$z = x + \sqrt{(x^2+1)} \qquad (4)$$
Firm's size (*SIZE*)	Total assets of firm.
Profitability (*PROF*)	Profit before tax as a ratio of firm's asset. The non-positive value is transformed into positive value by using equation (4).
Tangibility (*TANG*)	Non-current assets divided by total assets.
Liquidity (*LIQ*)	Current assets divided by current liabilities.
State Dummy (*DSTATE*)	1 if belong to state j, 0 if belong to other state.
SME Dummy (*DSME*)	1 if categorized under SME, 0 if does not meet minimum amount of turnover for medium enterprise.

Estimation Procedure

Since we only collect the data for 2007, the statistical method used in this study is cross-sectional analysis. This approach is similar to those employed in Chittenden et al. (1996), Michaelas et al. (1999) and Hall et al. (2000, 2004). The cross-sectional procedure is used to estimate equation (1). We started estimating the equation by using simple OLS. Nonetheless, as firms are not homogenous, OLS estimation procedures, which does not adjust for firm-specific effect(s), would produce an omitted variables bias and a mis-specified model (Fraser, Zhang, and Derashid, 2006). OLS in this scenario may induce a spurious regression results.

In order to avoid this serious statistical issue, we overcome this by adjusting for these effects through the introduction of firm-specific intercept, capturing the unobserved and /or immeasurable firm-specific characteristics. However, to introduce so many dummies for each firm, it might not be a wise action as the estimation will face a serious problem of lack of degree

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[8] The formula is taken from Busse and Hafeker (2007) to transform non-positive value into positive value. This will in turn allowed us to log the variable.

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of freedom. We tackle this complicated issue by introducing state dummy as well as SME dummy. These two dummies, which are introduced in two separate equations, are expected to control for another immeasurable state-specific or SME-specific effect.

Scope and Data Collection

In this study, we employ data extracted in year 2007. Although we did mention in our title that we want to investigate capital structure of companies located in NCER, implying only northern Perak should be considered, due to difficulty to exactly trace and sort the location of each firm in our sample, we decided to include all companies in the list given to us. Data are collected from Companies Commission of Malaysia (CCM).

RESULTS AND DISCUSSION

We started our analysis by discussing the summary of statistics of each variable under study. After identifying companies with full information, necessary to be in the analysis we end up with only 15,420 companies. As shown in Table 4, wholesale and retail trade and restaurant and hotels (code = 600,000), business services (code = 800,000) and manufacturing (code = 300,000) are three dominant sectors in NCER with 5627, 3251 and 2869 companies respectively. At the same time, these sectors are also the most leveraged sectors. The sector's average value of short-term debt is RM6.89 million for manufacturing and RM10.16 million for business services. Moreover, we also observed huge dispersion of short-term debt usage among companies in these two sectors. For instance, in manufacturing sector, the standard deviation recorded the second highest value with minimum amount of short-term debt of RM10,000 relative to the highly

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leveraged company that owing short-term debt amounted to RM699 million![9] Sector electricity, gas and water (EGW, code = 400,000) is represented by the least number of companies (48) but is highly capital intensive. EGW ranked second after business services sector.

Another interesting point to note is the most profitable sector, as far as 2007 is concerned, is the traditional sector. Agriculture, hunting, forestry and fishing (AHFF, code = 100,000) is the sector that demonstrated the highest average profit after tax as a ratio of firm's size of 0.08. AHFF is also the sector that having average fixed asset (as a ratio of total assets) higher than the other sector with the ratio of 0.42 percent, followed by and community, social and personal services (0.34) and manufacturing (0.31). Finally, as expected financing insurance, real estate, investment and business services sector (code 800,000) is the sector that overwhelmingly liquid sector with the ratio of current asset against current liabilities is more than 90. It is then followed by manufacturing (9.45) and AHFF (6.77) sector. However, huge gap can be observed between the firm with highest liquidity and the lowest liquidity, implying that within the same business services sector, there are firms that having a problem of liquidity and may be easily fall into liquidity trap should their businesses failed.

Before we precede to the regression analyses, we discuss the preliminary bilateral interaction among the variables under study. The results of correlation analysis are presented in Table 5 below. It is apparent from the table that we failed to observe a high degree of first order collinearity between the explanatory variables. Checking the extent of multicollinearity between

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two variables is important in order to confirm the validity of OLS as in the presence of multicollinearity, OLS will produces estimates that are inefficient, albeit unbiased.

Table 4: Summary of Statistics

		Sector 100000					Sector 200000			
	STD	SIZE	PROF	TANG	LIQ	STD	SIZE	PROF	TANG	LIQ
Mean	323.13	862.53	0.08	0.42	6.77	36.10	662.8	0.05	0.29	2.37
Median	96.94	245.46	0.06	0.37	1.07	2.59	225.2	0.03	0.21	1.19
Max	11800	21900.	1.65	1.00	602.13	362.0	7511	1.19	0.84	24.95
Min	0.50	1.67	-1.95	0.00	0.00	0.00	6.89	-0.74	0.00	0.08
Std. Dev.	819.35	2079.95	0.29	0.31	33.56	76.49	1252	0.19	0.23	3.95
Obs.		457					102			
		Sector 300000					Sector 400000			
Mean	689.47	1654.06	0.02	0.31	9.94	553.45	2138.88	-0.05	0.28	2.10
Median	114.35	212.17	0.03	0.27	1.07	32.97	50.34	0.01	0.17	1.11
Max	69900	169000	8.07	1.00	7305.99	18100	78200	0.35	0.96	21.15
Min	1.00	0.0445	-26.32	0.00	0.00	1.16	4.49	-2.57	0.00	0.04
Std. Dev.	2817.75	8208.73	0.73	0.25	174.04	2668.18	11600	0.40	0.27	3.61
Obs.		2869					48			
		Sector 500000					Sector 600000			
Mean	364.16	927.69	0.004	0.18	3.45	315.33	567.55	0.48	0.25	2.58
Median	75.35	117.66	0.024	0.10	1.13	77.08	119.32	0.02	0.17	1.05
Max	56300	456000	2.78	0.99	373.06	106000	192000	2539.50	1.00	843.01
Min	0.12	0.19	-26.33	0.00	0.01	0.21	0.0002	-38.02	0.00	0.00
Std. Dev.	2172.23	13500	0.79	0.21	17.62	1903.92	3701.95	34.08	0.24	15.45
Obs.		1263					5627			
		Sector 700000					Sector 800000			
Mean	208.01	460.91	0.004	0.31	3.05	1016.97	2345.43	0.10	0.27	92.58
Median	68.22	96.51	0.021	0.2	1.03	92.27	202.21	0.04	0.17	1.16
Max	8755.17	67600	20.17	0.99	392.96	222000	737000	26.80	1.00	187972.9
Min	0.15	0.21	-9.69	0.00	0.00	0.04	0.12	-26.50	0.00	0.00
Std. Dev.	611.23	2787.24	0.83	0.28	16.53	5991.68	19600	1.10	0.28	3355.62
Obs.		857					3251			
		Sector 900000								
Mean	277.41	670.36	0.02	0.34	4.35					
Median	0.3558	70.26	0.05	0.27	1.06					
Max	58200	15700	12.06	0.99	317.62					
Min	0.37	0.09	-20.79	0.00	0.005					
Std. Dev.	2499.39	6435.80	0.91	0.29	17.23					
Obs.		946								

Note: Figures for STD and SIZE are in '10,000.

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[9] At this stage, we would like to raise our concern regarding the quality of data taken from CCM. We noticed at least two problems that may reduce the reliability of data provided. Firstly, there are negative values observed for items such as debt and asset. Secondly, some companies are having unbelievably high short-term debt.

Table 5: Correlation Analysis

	lnSTD	lnSIZE	lnPROF	lnTANG	lnSTD	lnSIZE	lnPROF	lnTANG
	Panel 1: Sector 100000				Panel 2: Sector 200000			
lnSTD	1.000				1.000			
lnSIZE	0.306	1.000			0.400	1.000		
lnPROF	-0.037	0.048	1.000		-0.057	0.064	1.000	
lnTANG	0.270	0.2941	-0.074	1.000	-0.077	-0.115	0.116	1.000
lnLIQ	-0.014	0.170	0.126	-0.211	-0.336	0.233	0.235	0.368
	Panel 3: Sector 300000				Panel 4: Sector 400000			
lnSTD	1.000				1.000			
lnSIZE	0.325	1.000			0.411	1.000		
lnPROF	-0.005	0.058	1.000		0.169	0.241	1.000	
lnTANG	0.133	0.199	-0.004	1.000	0.459	0.350	0.147	1.000
lnLIQ	-0.408	0.105	0.063	-0.260	-0.353	-0.208	0.057	-0.310
	Panel 5: Sector 500000				Panel 6: Sector 600000			
lnSTD	1.000				1.000			
lnSIZE	0.462	1.000			0.346	1.000		
lnPROF	0.010	0.088	1.000		-0.026	-0.050	1.000	
lnTANG	0.056	0.068	-0.021	1.000	0.102	0.142	-0.011	1.000
lnLIQ	-0.309	-0.048	0.058	-0.284	-0.414	0.056	0.011	-0.321
	Panel 7: Sector 700000				Panel 8: Sector 800000			
lnSTD	1.000				1.000			
lnSIZE	0.414	1.000			0.351	1.000		
lnPROF	0.045	0.178	1.000		-0.027	0.020	1.000	
lnTANG	0.197	0.223	-0.018	1.000	0.428	0.520	-0.023	1.000
lnLIQ	-0.334	-0.037	0.067	-0.372	-0.508	0.107	0.048	-0.174
	Panel I: Sector 900000							
lnSTD	1.000							
lnSIZE	0.311	1.000						
lnPROF	-0.065	0.060	1.000					
lnTANG	0.098	0.108	0.018	1.000				
lnLIQ	-0.272	0.179	0.065	-0.382				

Generally, the correlation coefficients tend to suggest low level of multicollinearity. Although this may induce inefficiency in our analysis, and hence the validity of our results, our huge sample size may minimize the inefficiency issue providing sufficient degrees of freedom. This is reflected in low standard errors in our results.

Our first regression results of equation (1) are presented in Table 6. We did control for heterogeneity problem by estimating the equation with *White standard error* adjustment process. The estimated model is also free from any serial autocorrelation problem as demonstrated by the *Durbin-Watson (DW)* statistics. The stability test is conducted by using *CUSUM test* and the results found to be supporting the validity of all estimated models. Given the fact that there is no violation of underlying assumptions, we are now able to interpret the results which are presented in Table 6. Overall, the model is well defined with high *adjusted-R^2*, *low standard error* and highly significant *F-statistics*.

The effect of *SIZE* on *STD* seems to be in line with the theory as *SIZE* enters significantly in all sub-sectors' equations and almost unilaterally elastic. This could be explained by the fact that relatively bigger firms are more capable to diversify and hence expected to face lower risk level relative smaller firms. With more firms' value or confidence created, they are also more capable to attract debt provider (Abor and Biekpe, 2009). In contrast, firms which are smaller normally face serious information asymmetry problem and thus, difficult to convince their potential lenders to lend their hand.

Another result which is consistent with theory is for *LIQ*. *LIQ* is found to be significantly and negatively affecting *STD* in all 9 sub-sectors, similar as finding in Eriotis et al. (2007). According to Eriotis et al. (2007), the negative association between the two signifies the validity of pecking order theory in explaining the financing pattern of companies. For *PROF*, with exception to Sector 2 and 6, the results are generally consistent with the theory which predicted a negative sign. The negative sign implies that less profitable firms are more likely to require

external debt financing than more profitable firms. As we already discussed, the profitability level of companies in NCER is not that impressive and therefore, unlikely they can survive or expand their business (should they observe prospective business niche) without resorting to external financing. this evidence also provide another support to the existing efforts by Malaysian government to further push banks to be more lenient and helpful to local entrepreneurs who facing financial constraint.

Table 6: Regression Results

	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7	Sector 8	Sector 9
Panel I: Regression Output (Dep. Var. = lnSTD)									
C	1.56***	-1.90***	5.04***	1.91***	5.26***	0.17	4.20***	4.20	4.08***
	[5.017]	[-27.66]	[5.51]	[6.38]	[13.04]	[0.07]	[8.92]	[1.09]	[13.30]
lnSIZE	0.95***	0.99***	0.95***	0.93***	0.96***	0.93***	0.92***	0.98***	0.93***
	[72.18]	[28.38]	[16.35]	[39.83]	[44.43]	[16.91]	[7.55]	[14.45]	[8.56]
lnPROF	-1.14*	0.01	-0.99***	-0.05	-1.10***	0.49	-0.89***	-0.79**	-0.67***
	[-1.89]	[1.27]	[-3.59]	[-0.27]	[-9.12]	[0.79]	[-4.74]	[-2.70]	[-6.18]
lnTANG	-2.29***	2.85***	-1.84***	-1.66***	-1.57***	-1.65***	-1.67***	-0.07***	-2.06***
	[-19.05]	[32.80]	[-29.38]	[-6.59]	[-24.80]	[-4.77]	[-9.51]	[-20.16]	[-5.51]
lnLIQ	-1.31***	-1.00***	-1.33***	-1.38***	-1.34***	-1.40***	-1.41***	-1.22***	-1.37***
	[-44.79]	[-16.06]	[-54.11]	[-19.68]	[-55.43]	[-9.32]	[-7.51]	[-9.45]	[-8.69]
Panel II: Model Criteria									
Obs.	457	102	2869	48	1263	5627	857	3251	946
R²	0.83	0.85	0.84	0.80	0.82	0.81	0.85	0.82	0.84
Adj. R²	0.83	0.85	0.84	0.80	0.82	0.81	0.85	0.82	0.84
S.E.	0.44	0.46	0.54	0.50	0.42	0.50	0.64	0.58	0.48
AIC	1.23	-2.59	0.71	-0.19	-0.14	0.46	0.69	1.75	0.91
F-stat	1523***	1332***	1852***	922***	1847***	3538***	4725***	1034***	3897***
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
D-W	1.95	1.97	1.96	2.10	1.96	2.01	2.0	1.93	1.94

Note: Asterisks *, ** and *** denote significant at 10%, 5% and 1%, respectively.

Finally, TANG is found to be contradicting to the existing theory that predicted a positive link between TANG and debt. However, this finding is still consistent and lends another support to several studies such as Cassar and Holmes (2003), Hall et al. (2004) and Abor and Biekpe (2009) in which they found a negative impact of TANG on short-term debt. In explaining the likely weird result, Cassar and Holmes (2003) counter-argued that this negative effect is on the basis that firms matching their duration of assets and liabilities. The detail explanation given by Cassar

and Holmes (2003) seems to be the most appropriate to explain the result of TANG. Out of four variables, TANG has the largest impact (or highly elastic). It may inform us that local financiers are putting huge emphasis on the asset structure of firms in NCER. Firms facing lower growth but high risk apparently will be asked for more valuable collateral and with not be easily satisfied by investigating on accounting information (Cassar and Holmes, 2003). Subsequently, firms will be having low debt level. Another possible explanation regarding the high demand for valuable collateral by financiers to small firms is because of the stronger assets substitution effect relative to big companies. Whilst the face value might be easily measured but the owner could be having difference consideration regarding the value of existing fixed assets. The owners of small firms tend to value them higher than their face value as they represent the pillar of their business. Should these assets gone, no more business and this situation is part of strong characteristics of local entrepreneurs in NCER.

In addition to model (1), we also tested the second and third model which consisting additional dummy variables. In Table 7, we present the result of second model in which we added state dummy. This state dummy is very important as the four states are not similar in several obvious features such as land structure and size, leading political party, location, infrastructure and so on. As shown in Table 7, the results do not change significantly. This implies that the above discussion is remained valid. Nonetheless, significant improvement in adjusted R^2 and standard errors might be suggesting the important state specific characteristics to be included in the future study. One obvious regression results that we observed is the effect of TANG is significantly now negative in all sub-sectors. This could be another justification on the importance of state information to be in the model to get better insight of capital structure chosen in certain area. The

F-statistic of DSTATE (*H0: DSTATE1=DSTATE2=DSTATE3=0*) also demonstrated that they cannot be omitted from the model.

Table 7: Regression Results – WITH STATES DUMMY

	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7	Sector 8	Sector 9
	Panel I: Regression Output (Dep. Var. = lnSTD)								
C	-4.33***	-2.75***	-1.35*	-1.96***	-9.79***	-2.00***	-6.10***	-4.22	-3.48***
	[-4.20]	[-3.33]	[-1.65]	[-4.59]	[-11.34]	[-4.83]	[-6.12]	[-0.59]	[-8.23]
lnSIZE	0.85***	0.44***	0.21***	0.34***	0.39***	0.45***	0.51***	0.46***	0.12***
	[5.96]	[5.76]	[9.43]	[4.33]	[3.05]	[3.65]	[4.11]	[4.08]	[6.22]
lnPROF	-0.47**	0.44***	0.38	-0.51***	-0.69***	-0.61*	-0.29**	-0.56	-0.62***
	[-2.52]	[3.27]	[0.02]	[-2.83]	[-3.39]	[1.67]	[-2.27]	[-0.38]	[-2.86]
lnTANG	-2.59**	-1.63***	-1.77***	-1.18***	-1.97***	-1.18***	-1.81***	-2.49***	-1.61****
	[-2.32]	[-4.05]	[-3.72]	[-3.20]	[11.10]	[-8.13]	[-5.58]	[-9.14]	[-6.80]
lnLIQ	-0.30*	-0.33	-0.370***	-0.23**	-0.48***	-0.13***	-0.23***	-0.52***	-0.25*
	[-2.72]	[0.99]	[-2.92]	[-2.47]	[-3.27]	[-4.15]	[-3.99]	[-4.47]	[-1.93]
	Panel II: Model Criteria								
Obs.	457	102	2869	48	1263	5627	857	3251	946
R²	0.89	0.86	0.85	0.88	0.86	0.85	0.85	0.89	0.85
Adj. R²	0.89	0.86	0.85	0.88	0.86	0.85	0.85	0.89	0.85
S.E.	0.40	0.08	0.38	0.20	0.22	0.30	0.35	0.49	0.36
AIC	1.21	-0.51	0.41	0.10	0.59	0.45	0.68	1.71	0.86
F-stat (overall)	951***	1646***	9152***	738***	8616***	2667***	4449***	7059***	3008***
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
F-stat (dstate)	20.66***	259.5***	62.77***	10.26***	18.35***	113.4***	16.05***	49.96***	16.54***
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
D-W	1.95	1.98	1.97	2.02	1.90	2.00	1.94	1.98	1.95

Note: Asterisks *, ** and *** denote significant at 10%, 5% and 1%, respectively.

Finally, we tested the model with SMEs dummy. As presented in Table 4, there is huge size gap in every sub-sector. Omitting this information from the model might be creating bias in the estimation. Therefore, in order to investigate whether this omission will have a significant effect on short-term debt or not, we add in equation (1) SMEs dummy. The results are presented in Table 8 below. Similar to the second model with state dummy, model with SMEs dummy is also seemed to be outperformed the original model. This is particularly true as far as adjusted R^2, standard error and F-statistics (DSME) are concerned. This implies that for future research, it is recommendable that separate research to be conducted for SMEs and large companies. By doing

so, it is expected to provide better hint regarding the need for and type of financing by every segment of companies in NCER.

Table 8: Regression Results – WITH SMEs Dummy

	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7	Sector 8	Sector 9
	Panel I: Regression Output (Dep. Var. = lnSTD)								
C	4.40***	-4.65***	7.60***	6.63***	5.88*	-5.18	4.96****	6.86	5.83***
	[5.38]	[-4.34]	[3.00]	[4.56]	[1.80]	[-1.07]	[5.79]	[1.34]	[8.29]
lnSIZE	0.80***	0.91***	0.97*	0.95***	0.97***	0.94***	0.94***	0.99**	0.95***
	[5.98]	[8.53]	[1.85]	[5.92]	[4.09]	[7.33]	[8.67]	[2.90]	[4.82]
lnPROF	-0.55**	0.03	-0.33***	-0.46	-0.40***	-0.52*	-0.95***	-0.77**	-0.73***
	[-2.42]	[1.28]	[-3.52]	[-0.16]	[-8.57]	[-1.78]	[-4.13]	[-3.63]	[-5.72]
lnTANG	-1.79**	2.41***	-1.01***	-1.15***	-1.06**	-1.09***	-1.98***	-1.45***	-1.31***
	[-2.36]	[11.94]	[-10.93]	[-3.97]	[-2.63]	[-5.89]	[-11.71]	[-11.24]	[-4.39]
lnLIQ	-1.15***	-0.93***	-1.15***	-1.36***	-1.25***	-1.00***	-1.33***	-1.10***	-1.24***
	[-2.97]	[-7.71]	[-5.54]	[-3.98]	[-9.26]	[-4.82]	[-9.38]	[-5.68]	[-8.69]
	Panel II: Model Criteria								
Obs.	457	102	2869	48	1263	5627	857	3251	946
R²	0.87	0.82	0.84	0.85	0.88	0.85	0.830	0.87	0.85
Adj. R²	0.87	0.81	0.84	0.84	0.87	0.85	0.83	0.87	0.85
S.E.	0.43	0.32	0.34	0.33	0.73	0.33	0.30	0.37	0.47
AIC	1.06	1.23	1.05	1.78	1.95	1.94	1.94	1.12	1.84
F-stat (overall)	1432.51**	1632***	1229***	910***	1722***	2464***	3393***	1307***	3680***
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
F-stat (DSME)	4.54***	1.99*	2.78***	1.30***	1.89***	4.85***	2.01**	5.08***	2.77***
	[0.00]	[0.05]	[0.00]	[0.00]	[0.00]	[0.00]	[0.04]	[0.00]	[0.00]
D-W	1.97	1.99	1.93	2.30	1.99	1.95	2.03	1.92	2.14

Note: Asterisks *, ** and *** denote significant at 10%, 5% and 1%, respectively.

CONCLUSION

In this study, we conduct our analysis in order to investigate how some specific firm characteristics determine the firm's capital structure. We use the panel data derived from the financial statements of more than 15,000 Malaysian companies located in the northern region or NCER. With very limited information can be extracted from the data collected from CCM for the year 2007, we did restrict our model to have four independent variables only.

`Our finding did suggest that generally the choice of capital structure in NCER is also consistent with the standard prediction of the existing theory pertinent to capital structure. Nonetheless several additional important implications are also found. First, TANG has been the most important determinant, regardless of which model. This implies that potential financiers are very much concern about the risk facing each companies in NCER, the area in which the record firms generally enjoying low growth but facing high risk. Hence, more valuable collateral in the form of fixed assets is normally required. Second, state characteristics may also be playing significant role to capital structure as it found to be the better model. Third, as SME dummy has proven as significantly affect capital structure model, it is important to segregate the data into two separate group of companies – SME and large companies as they may have different set of impact. For instance, the impact of TANG is strongly being suggested as positive for large firms but negative in our case. This is not too strange as majority of companies in NCER is small to medium size.

Their dominant presence could have an impact on the results. This can be further confirmed if we can conduct two different analyses, rather than pooling them into single analysis.

ACKNOWLEDGEMENT

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Ruj. Kami : 2008/448 (U0284)
Tarikh : 16 Mac 2011

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Profesor Badaruddin Mohamed
Dekan Penyelidikan
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11800 USM
PULAU PINANG
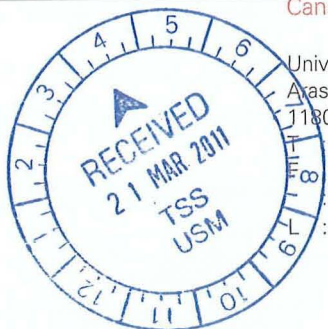
Tuan,

PENILAIAN LAPORAN AKHIR GERAN UNIVERSITI PENYELIDIKAN

Dengan hormatnya perkara di atas dirujuk.

2.   Adalah dimaklumakan bahawa projek penyelidikan di bawah seliaan Dr. Tajul Ariffin Masron yang bertajuk **"Financial Performance And Stablility Of SME Through Islamic Banking: A Study On NCER"** telah selesai. Sehubungan itu, kerjasama puan dipohon untuk menilai laporan akhir seperti tajuk di atas.

3.   Bersama-sama ini disertakan deraf borang penilaian berserta laporan akhir projek untuk tindakan tuan selanjutnya. Untuk makluman puan borang penilaian yang disertakan belum dimuktamadkan oleh Jawatankuasa Pengurusan Penyelidikan (JKPP). Buat masa ini Pejabat ini akan menggunakan deraf borang penilaian tersebut.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"
'Memastikan Kelestarian Hari Esok'

Yang menjalankan tugas,

(HAZLAN ABDUL HAMID)
Ketua Penolong Pendaftar
Pejabat Pengurusan & Kreativiti Penyelidikan
Bahagian Penyelidikan & Inovasi

s.k.   Dr. Tajul Ariffin Masron
         Pusat Pengajian Pengurusan
         Universiti Sains Malaysia

HAH/aihat
My/Doc/Surat Penilaian Laporan Akhir – TajulAriffinMasron

UNIVERSITI SAINS MALAYSIA

**RESEARCH UNIVERSITY GRANT
FINAL REPORT ASSESMENT FORM**
Borang Penilaian Laporan Akhir
Geran Universiti Penyelidikan

A.	**TITLE OF RESEARCH:** *Tajuk penyelidikan:*	

B.	**PERSONAL PARTICULARS OF RESEARCHER /** *Maklumat Penyelidik:*	
	(i)	**Name of Research Leader:** *Nama Ketua Penyelidik:*	
	(ii)	**School/Institute/Centre/Unit:** *Pusat Pengajian /Institut/Pusat/Unit:*	
	(iii)	**Research Platform:** *Pelantar Penyelidikan:*	

C.	**SUMMARY OF ASSESSMENT** *(Tick (√) the appropriate box. Also, provide additional comments in Section F)*	Inadequate		Acceptable	Very Good	
		1	2	3	4	5
1.	**Achievement of Project Objectives**	☐	☐	☐	☐	☐
2.	**Quality of Output**	☐	☐	☐	☐	☐
3.	**Quality of Impacts**	☐	☐	☐	☐	☐
4.	**Technology Transfer / Commercialization Potential**	☐	☐	☐	☐	☐
5.	**Quality and Intensity of Collaboration**	☐	☐	☐	☐	☐
6.	**Overall Financial Expenditure**	☐	☐	☐	☐	☐
7.	**Overall Assessment of Benefits**	☐	☐	☐	☐	☐

D.	ACTION TO BE TAKEN *(Tick (√) the appropriate boxes)*

☐ **Project file to be closed.** *(For financial and administration purposes)*

☐ **Project to be Reviewed Once Additional Information Has Been Obtained by the Project Leader** *(Please see section E)*

Forward to Innovation Office for Consideration:

☐ Patent ☐ Commercialisation ☐ Technology Transfer

☐ Others *(Please specify):* _____

☐ **Forward to Division of Industry & Community Network (DICN)**

☐ Others *(Please specify):* _____
   (E.g.: Formations of teams or cluster etc.)

E. Additional information to be provided by the Project Leader:

F. Endorsement & Comments/Suggestions of Research Dean:

Signature: _____   Date: _____

UNIVERSITY RESEARCH GRANT
FINAL REPORT
Geran Penyelidikan Universiti
Laporan Akhir

UNIVERSITI SAINS MALAYSIA
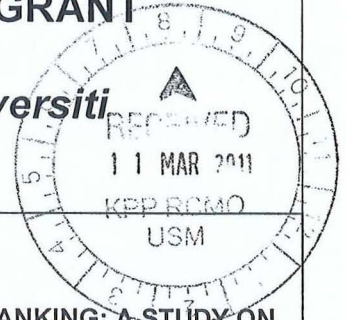
A.	TITLE OF RESEARCH: *Tajuk penyelidikan:* FINANCIAL PERFORMANCE AND STABILITY OF SME THROUGH ISLAMIC BANKING: A STUDY ON NCER
B.	PERSONAL PARTICULARS OF RESEARCHER / *MAKLUMAT PENYELIDIK:*
(i)	**Name of Research Leader:** *Nama Ketua Penyelidik:* **DR TAJUL ARIFFIN MASRON**
	Name of Co-Researcher *Nama Penyelidik Bersama:* **DR ABDUL HADI ZULKAFLI**
(ii)	**School/Institute/Centre/Unit :** *Pusat Pengajian /Institut/Pusat/Unit :* **PENGURUSAN**

C. **Research Platform (Please tick (/) the appropriate box):**
Pelantar Penyelidikan (Sila tanda (/) kotak berkenaan):

☐	A.	**Life Sciences** *Sains Hayat*
☐	B.	**Fundamental** *Fundamental*
☐	C.	**Engineering & Technology** *Kejuruteraan & Teknologi*
X	D.	**Social Transformation** *Transformasi Sosial*
☐	E.	**Information & Communications Technology (ICT)** *Teknologi Maklumat & Komunikasi*
☐	F.	**Clinical Sciences** *Sains Klinikal*
☐	G.	**Biomedical & Health Sciences** *Bioperubatan Sains Kesihatan*

D.	**Duration of this research :**
	Tempoh masa penyelidikan ini :
	—
	*Duration : 2 years
	Tempoh :
	From : Feb 18, 2008 **To** : Feb 17, 2010
	Dari: *Ke* :

E.	**ABSTRACT OF RESEARCH**

This study examines the determinants of capital structure of small and medium enterprises (SMEs) by utilizing the data of 15,323 companies only for the year 2007 covering the northern area of Peninsular Malaysia such as the state of Perak, Penang, Kedah and Perlis. By conducting cross-sectional data analysis, this study found that the determinants factor such as size, profitability and tangible asset is significantly related to long term debt. Size and tangible assets have a persistent and consistent negative and significant relationship with long term debt. Further, profitability is found to be significantly and positively related to long term debt. However, the study found that the liquidity has no impact on long term debt in SMEs.

Abstrak Penyelidikan

Kajian ini menguji penentu-penentu struktur modal untuk syarikat-syarikat kecil dan sederhana (SMEs) dengan menggunakan 15,323 syarikat-syarikat bagi tahun 2007 meliputi bahagian utara Semenanjung Malaysia seperti di negeri Perak, Pulau Pinang, Kedah dan Perlis. Dengan melakukan analisis data "cross-sectional", kajian ini mendapati bahawa faktor-faktor seperti saiz, keuntungan dan aset boleh lihat mempunyai kesan yang signifikan terhadap hutang jangka panjang. Saiz dan aset boleh lihat mempunyai kesan negatif ke atas hutang jangka panjang. Sebagai tambahan, keuntungan didapati sebagai mempunyai hubungan positif yang signifikan dengan hutang jangka panjang. Walaubgaimanapun, kajian ini mendapati tiada kesan kecairan ke atas hutang jangkan panjang kepada SMEs.

F.	**SUMMARY OF RESEARCH FINDINGS**
	Ringkasan dapatan Projek Penyelidikan

This study investigates firm characteristic determinants of capital structure which is long term debt of SMEs in the northern corridor of Economic Region (NCER) in Malaysia. We have conducted the cross-sectional analysis of 15,323 SMES companies for only the year period of year 2007. The research findings of the study provide significant evidence that the larger the firm, the higher the SMEs to employ the amount of debt than small firms. Conversely, SMEs with higher profitability significantly to choose to finance less long term in their financing structure decision.

Moreover, we have observed in the data collection, more than half of 15,323 companies did not choose long term debt in their financial structure. In addition, the study also found that SMEs are intended to use more long term debts when the proportion of fixed asset in their companies is increased. The limitations can be addressed here are each variable is dictated by different measures used in previous studies which can lead inconsistent results and also the data period used is very short period. Thus, the findings of this study on the capital structure decision have important implications for policy makers and also entrepreneurs of SMEs in Malaysia.

COMPREHENSIVE TECHNICAL REPORT
Laporan Teknikal Lengkap
Applicants are required to prepare a comprehensive technical report explaining the project.
(This report must be attached separately)
Sila sediakan laporan teknikal lengkap yang menerangkan keseluruhan projek ini.
[Laporan ini mesti dikepilkan]

List the key words that reflectour research:
Senaraikan kata kunci yang mencerminkan penyelidikan anda:

English	Bahasa Malaysia
SMEs	IKS
Capital Structure	Struktur Modal
Northern Corridor Economic Region	Wilayah Pembangunan Koridor Utara

H.　a)　**Results/Benefits of this research**
　　　Hasil Penyelidikan

No. *Bil:*	Category/Number: *Kategori/ Bilangan:*	Promised	Achieved
1.	**Research Publications (Specify target journals)** *Penerbitan Penyelidikan (Nyatakan sasaran jurnal)*	2	1
2.	**Human Capital Development**		
	a.　Ph. D Students	1	0
	b.　Masters Students	2	0
	c.　Undergraduates (Final Year Project)	0	0
	d.　Research Officers	0	0
	e.　Research Assisstants	1	1
	f.　Other: Please specify	-	-
3.	**Patents** *Paten*	-	-
4.	**Specific / Potential Applications** *Spesifik/Potensi aplikasin*	-	-
5.	**Networking & Linkages** *Jaringan & Jalinan*	-	-
6.	**Possible External Research Grants to be Acquired** *Jangkaan Geran Penyelidikan Luar Diperoleh*	-	-

- Kindly provide copies/evidence for Category 1 to 6.

　b)　**Equipment used for this research.**
　　　Peralatan yang telah digunakan dalam penyelidikan ini.

Items *Perkara*	Approved Equipment	Approved Requested Equipment	Location
Specialized Equipment Peralatan khusus	-	-	-
Facility Kemudahan	-	Laptop	School of Management
Infrastructure Infrastruktur	-	-	-

- Please attach appendix if necessary.

I.   BUDGET / *BAJET*

Perbelanjaan :Expenditure

Project Account No.   : 1001/PMGT/816055

Total Approved Budget   : RM 17,627.40
Total Additional Budget   : RM -
Grand Total of Approved Budget   : RM 17,627.40

Yearly Budget Distributed

Year 1	: RM 17,627.40
Year 2	: RM -
Year 3	: RM -

Additional Budget Approved

Year 1	: RM -
Year 2	: RM -
Year 3	: RM -

Total Expenditure   : RM 18,818.38
Balance   : - RM 1,190.98

- **Please attach final account statement from Treasury**

Signature of Researcher
Tandatangan Penyelidik
DR. TAJUL ARIFFIN MASRON
Pensyarah
Pusat Pengajian Pengurusan
Universiti Sains Malaysia
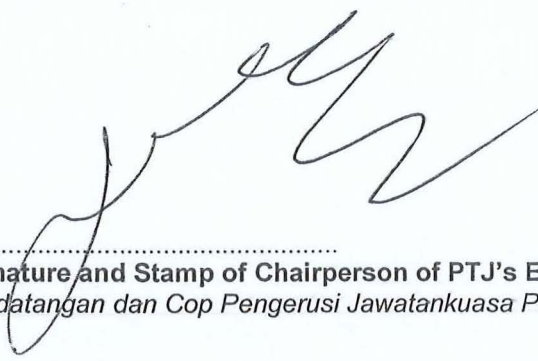11800 USM Pulau Pinang
Tel: 04-6533888 samb. 2896
6158

21 FEB 2011

Date
Tarikh

H.	**COMMENTS OF PTJ'S RESEARCH COMMITTEE** *KOMEN JAWATANKUASA PENYELIDIKAN PERINGKAT PTJ*

General Comments:
Ulasan Umum:

Penyelidikan berjalan dengan sempurna

PROF. MADYA DATO' DR. ISHAK ISMAIL
DEKAN
PUSAT PENGAJIAN PENGURUSAN
UNIVERSITI SAINS MALAYSIA

Signature and Stamp of Chairperson of PTJ's Evaluation Committee
Tandatangan dan Cop Pengerusi Jawatankuasa Penilaian PTJ

Date : 7/3/11
Tarikh :

Signature and Stamp of Dean/ Director of PTJ
Tandatangan dan Cop Dekan/ Pengarah PTJ

Date : ....
Tarikh :...................................

YB Prof Asma Ismail,
Timbalan Naib Canselor
(Penyelidikan dan Inovasi),
Universiti Sains Malaysia,
11800 Minden,
Penang.   21 Februari 2011

Prof,

Per: KELEWATAN LAPORAN GERAN RU 1001/PMGT/816505

Merujuk kepada perkara di atas, dan juga surat dari pihak Prof bertarikh 1 Feb 2011, saya dengan ini ingin memaklumkan kepada pihak Prof bahawa laporan telah saya hantar kepada jawatankuasa penilai di peringkat pusat pengajian dan insya-Allah akan dihantar kepada pihak Prof selepas penilaian selesai.

2.   Untuk maklumat pihak Prof, projek ini pada awalnya adalah diketuai oleh Dr Abdul Hadi. Walaubagaimanapun, Dr Abdul Hadi mengambil keputusan untuk meninggalkan USM kerana masalah keluarga. Dekan, Prof Madya Dr Ishak Ismail kemudiannya telah mengarahkan saya agar mengambilalih menjadi ketua penyelidik. Oleh itu, projek ini telah bergerak sedikit lewat daripada tarikh asal penerimaan geran. Sedikit masalah juga kami hadapi kerana kelewatan penerimaan data dari pihak Suruhanjaya Syarikat Malaysia (SSM). Kami terpaksa menunggu lebih 6 bulan sebelum data sampai kepada kami. Alhamdulillah, akhirnya berjaya juga mendapatkan data tersebut.

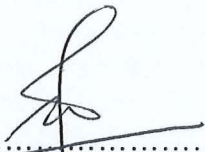3.   Untuk pengetahuan pihak Prof, ahli panel penilai luar geran RU telah mencadangkan:
   a. dalam penilaian kedua (Julai 2009) agar arah tuju penyelidikan ditukar kepada kajian struktur modal yang umum memandangkan tiada maklumat berkenaan sumber pembiayaan Islam di dalam data yang diperolehi dari SSM. Oleh kerana itu, selaras dengan cadangan panel penilai, kajian telah dialihkan kepada melihat struktur model IKS sahaja.
   b. dalam penilaian ketiga (Jun 2010), satu kertas kerja telah saya siapkan dan oelh itu, pihak penilai luar telah menyatakan kepuashatian terhadap hasil geran penyelidikan ini. Keputusan yang dicadangkan ialah geran ini ditutup dengan tugasan dianggap selesai. Walaubagaimanapun, di saat kami ingin menghantar ke satu jurnal antarabangsa untuk dibentangkan (seperti yang saya janjikan sewaktu pembentangan), kami tiba-tiba menyedari satu isu baru berkenaan data dan terpaksa mengambil sedikit masa lagi untuk memastikan maklumat yang kami berikan (dan seterusnya analisis yang kami buat) adalah bertepatan dengan merujuk kembali permasalah berkaitan data itu kepada SSM. Hanya di awal tahun ini perkara ini telah dapat diatasi dan kami mengambil keputusan untuk membentangkannya terlebih dahulu bagi mencari ruang penambahbaikan. Kertas kerja ini telah diterima untuk pembentangan di International Conference on Economics, Trade and Development (ICETD) 2011, 1-3 April 2011 di Bali, Indonesia. Ianya diklasifikasikan sebagai ISI conference dan kertas kerja ini akan

diterbitkan diprosiding seminar ini. Kami sebenarnya bercadang untuk menghantar pada masa yang sama kertas kerja ini ke mana-mana jurnal tetapi memandangkan seminar ini ialah ISI seminar, kami hanya akan berbuat demikian selepas mendapatkan kebenaran penganjur. Salinan kertas kerja tersebut dan surat penerimaan kertas kerja ada dilampirkan.

4. Terdapat sedikit defisit dalam budget dan saya telah memohon agar jumlah defisit ini dipindahkan daripada geran jangka pendek yang baru saya terima. Permohonan telah dibuat menggunakan borang HEPG.

Diharap permohonan ini akan mendapat pertimbangan sewajarnya dari pihak Prof.

SEkian, terima kasih,

....
(TAJUL ARIFFIN MASRON)
DR. TAJUL ARIFFIN MASRON
Pensyarah
Pusat Pengajian Pengurusan
Universiti Sains Malaysia
11800 USM Pulau Pinang
Tel: 04-6533888 samb. ~~2896~~
5158

Notification of Acceptance of the ICETD 2011

1-3, April 2011, Bali, Indonesia

http://www.icetd.org/

IEEE   IEDRC.org

Paper ID : D00021

Paper Title : Capital Structure and the Firm Determinants: Evidence from Small and Medium Enterprises (SMEs) in Malaysia

Dear Haslindar Ibrahim and Tajul Ariffin Masron,

First of all, thank you for your concern. International Conference on Economics, Trade and Development – ICETD 2011 review procedure has been finished. We are delighted to inform you that your manuscript has been accepted for presentation at International Conference on Economics, Trade and Development – ICETD 2011, Bali, Indonesia. Your paper was tripling blind-reviewed and, based on the evaluations. The reviewers' comments are enclosed.

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Yours sincerely

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Capital Structure and the Firm Determinants: Evidence from Small and Medium Enterprises (SMEs) in Malaysia

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Abstract

We examine the determinants of capital structure of small and medium enterprises (SMEs) by utilizing the data of 15,323 companies only for the year 2007 covering the northern area of Peninsular Malaysia such as the state of Perak, Penang, Kedah and Perlis. By conducting cross-sectional data analysis, we found that the determinants factor such as size, profitability and tangible asset is significantly related to long term debt. Size and tangible assets have a persistent and consistent negative and significant relationship with long term debt. Further, profitability is found to be significantly and positively related to long term debt. However, the study found that the liquidity has no impact on long term debt in SMEs.

Keywords: Capital Structure, SMEs, Long-term debt

I. INTRODUCTION

The small and medium enterprises (SMEs) play a vital role in the development of the Malaysian government's economic growth. According to Dr Zeti Akhtar Aziz, Governor of the Central Bank of Malaysia, in her speech during the 7th Conference of Asia-Pacific Economic Cooperation (APEC) Financial Institutions Dealing with SMEs on July 16, 2010, she urged the important of development of the SMEs can be as the driver of the economic growth process directly would achieve a more balanced growth. She also mentioned about the contribution of SMEs to Malaysian economy, which is the SMEs constitute 99% of all businesses, 57% of total employment, 35% of gross domestic product (GDP) and 20% of total exports.

Based on these economic indicators, we can say that the SMEs as important contributors to the growth of the Malaysian economy and this experience have been agreed by Hamilton and Harper [8]. Therefore, we would like to investigate further the way of SMEs choose their financing preference or how they manage their capital structure in order to run their businesses and remain being competitive advantage locally and globally.

The optimal capital structure theories as explained by Modigliani and Miller [14] to discuss on the capital structure or financing preferences that is focusing only on large listed firms. Therefore, there are an issues have been raised by the previous researchers whether that findings are valid to be used for other firms mainly small firm such as SMEs and this issues have been received limited attention [1].

Thus, this article intends to investigate the relationship between firm characteristic determinants (size, profitability, liquidity and tangibility) with long-term debt of SMEs in the northern corridor of Economic Region (NCER) in Malaysia. There are nine sectoral classifications made in this study. This paper is structured as follows: Section II provides the background of SMEs in Malaysia. Section III reviews the previous studies on the determinants of capital structure and the data collection, methodology and empirical models used in analyzing the data is described in Section IV. Section V discusses the findings of the study and finally, Section VI concludes and explains the limitation of the research.

II. SMEs IN MALAYSIA

The Small Medium Enterprises (SMEs) in Malaysia can be classified into activity, turnover, and size and the SMEs is the major sources of employment. Generally, the term of an enterprise itself is considered as SME with regards to the annual sales turnover or number of full-time workers. Table 1 explains in details the SME's definition in Malaysia basically categorized based on the sales turnover and total number of full-time employees [10]).

Table 1: Definition of SMEs based on Sales Turnover and Number of Full-time Employees in Malaysia

Category	Micro-enterprise	Small enterprise	Medium Enterprise
1. Manufacturing, manufacturing-related services and agro-based industries	Sales turnover of less than RM250K / fewer than 5 full-time employees	Sales turnover between RM250K and RM10 Mil / between 5 to 50 full-time employees	Sales turnover between RM10 Mil and RM25 Mil / between 51 and 150 full-time employees
2. Services, primary agriculture and information and communication technology (ICT)	Sales turnover of less than RM200K / fewer than 5 full-time employees	Sales turnover between RM200K and RM1 Mil / between 5 and 19 full-time employees	Sales turnover between RM1 Mil and RM5 Mil / between 20 and 50 full-time employees

(Source: SMIDEC [20])

According to Dr Zeti [22], the Malaysian government has established the National SME Development Council (NSDC) in 2004 to formulate broad policies and strategies which its aims in creating and enabling environment for SMEs development across all sectors. In order to achieve this mission, SMEs development programs under three broad strategic thrusts of strengthening the enabling infrastructure, enhancing SMES capacity and capability and enhancing access to financing was introduced and organized by the SME Corporation Malaysia in October 2009. Therefore, 354 programs with financial commitment of RM6.02 billion are being employed to build up high performance and resilient SMEs in Malaysia.

The SMEs can be a competitive advantage in emerging market because it has greater flexibility and ability to adjust to changes in the market and it has a potential to raise productivity and performance. In addition, the government and financial sectors (banks) give full support in the development of SMEs locally and globally. Due to these advantages, we have initiated to evaluate the determinants which influence the SMEs to decide their optimal capital structure in running their businesses.

III. LITERATURE REVIEW

The theory of capital structure was initiated by Modigliani and Miller since 1958 discussing on the effect of capital structure on the firm value by concluding their work that the "capital structure is irrelevance" which means that the firm value was not influenced by the financial structure. Modigliani and Miller [15] also explain about the tax shield when firms can pay lower taxes if equity financing and encourage firms to use all debt financing for tax purposes because interest is deductible. Therefore, firms can attain optimal capital structure by practicing this tax saving activities and firms with higher profitability would choose to have high debt to gain tax benefits. However, Myers [16] and Myers and Majluf [17] in their hypothesis of pecking order or asymmetric information, claim that firms prefer internal financing to debt to equity. Therefore, firms with higher profitability will use higher retained earnings and less debt and this is consistent with the study done by Abor and Biekpe [1] in Ghana. They find there is a significantly negative relationship between profitability (as calculated by profit before tax to total asset) with long term debt.

Cosh and Hughes [4] explain that SME owners try to use and meet their financing needs based on a pecking order theory as follows: firstly, using their "own" money (personal savings and retained earnings); secondly, short-term borrowings; thirdly, longer term debt; and finally least preferred of all, from the introduction of new equity investors that represents the maximum intrusion. In the nutshell, the pecking order theory suggests that the relationship between leverage and profitability will be negatively correlated because the more profitable the firm, the less need it has to borrow either long-term or short-term.

Rajan and Zingales [19] construe that large firm are likely to be more diversified and are expected to employ higher amount of debt than small firms. This statement has also been supported by other studies which say that smaller firms tend to use less long term debt and more short term debt due to shareholder-lenders conflict [1][13][21].

In term of liquidity, Manos, Murinde and Green [12] indicate that liquidity ratio reflects firms' ability to pay creditors in the short term. It is expected that liquidity and leverage to have a negative relationship as firms tend to use the extra cash to finance their investment instead of incurring interest costs [5]. Additional debt would deteriorate the current ratio further and makes the firm's financial standing weak [6].

However, the different theories of capital structure contributed different attributes which can lead the companies to make a decision on how they can choose for the debt financing. Tangible assets also play a vital role and act as collateral and provide security to lenders in the event of financial distress. According to Jensen and Meckling [9], collaterality is very important and act as the protection to lenders from moral hazard problem when there is a conflict between shareholder and lenders. Abor and Biekpe [1] find there is a significantly positive relationship between asset structure (as measured by fixed asset divided by total asset) and long term debt. In addition, other previous empirical studies also find a positive relationship between tangibility and long term debt, however negative relationship between tangibility and short term debt [18][2][21].

IV. METHODOLOGY

This study assumed a direct relationship between firm characteristic determinants (independent variables) and long term debt (dependent variable). The relationship is tested based on the following empirical model and this model also employed by the previous studies such as Abor and Biekpe [1], Hall et al. [7], and Cassar and Holmes [3].

$$LDEBT_i = \beta_0 + \beta_1 SIZE_i + \beta_2 PROFIT_i + \beta_3 LIQUIDITY_i + \beta_4 TANGIBLE_i + \varepsilon_i$$

where:

LDEBT	= long-term debt
SIZE	= total asset
PROFIT	= return on assets before tax
LIQUIDITY	= current assets divided by current liabilities
TANGIBLE	= fixed asset divided by total assets
ε	= random error
β_i	= parameters to be estimated

In this study, we conduct cross-sectional data analysis after controlling all the important exogenous factors such as state, then by using ordinary least square (OLS) technique, we run the analysis. The data are mainly taken from Companies Commission of Malaysia (CCM). Originally, there are 16,550 SME companies in the list. However, after deleting all missing information, we are left with only 15,323 companies. The data are only for the year 2007 covering SMEs in the northern area of Peninsular Malaysia such as the state of Perak, Penang, Kedah and Perlis.

We have also developed 4 models to determine which model is more superior or appropriate (goodness of fits) for this study. Model 1 and Model 3 based on the data at level and log form respectively, however in Model 2 (level) and Model 4 (log from), we included dummy variable for nine sectoral classifications. Basically, Model 1 and Model 2 is used an indicator of confirming the direction sign between independent and dependent variables. Further, the findings of Model 4 were found to be more superior and results of analysis in Model 4 are used for further discussion of the study.

V. RESULTS AND DISCUSSIONS

Table 2 reported the descriptive statistics of all variables in the study. Long term debt as dependent variable has a mean value of 1,664,671. Meanwhile, the independent variables as denoted by SIZE, PROFIT, LIQUIDITY and TANG exhibit mean value of 12,256,915, -0.1795, 20.02328, and 0.283 respectively.

Table 2: Descriptive Analysis

	LDEBT	SIZE	PROFIT	LIQUIDITY	TANG
Mean	1664671.0	12256915	-0.1795	20.02328	0.282558
Median	18333.00	1481737.	0.0296	1.083539	0.210966
Max	2.06E+09	7.37E+09	2539.500	187972.9	1.000000
Min	0.000000	0.000000	-3947.279	0.000000	0.000000
Obs.	15323	15323	15323	15323	15323

We have conducted a correlation analysis by using the data at level and also in a log form in order to investigate the possible degree of multi-collinearity among the variables as shown in Table 3 and Table 4. The results of correlation analysis remain the same indicating all variables are not related to each other or there is no multi-collinearity problems exist among the variables used in this study.

Table 3: Correlation Analysis – Long-Term Debt (Level)

	LDEBT	SIZE	PROFIT	LIQUIDITY
LDEBT	1			
SIZE	0.3213	1		
PROFIT	0.1257	0.4521	1	
LIQUIDITY	0.0007	0.0259	0.0396	1
TANG	0.0555	0.0512	0.0074	-0.0120

Table 4: Correlation Analysis – Long-Term Debt (Log Form)

	lnLTDEBT	lnSIZE	lnPROFIT	lnLIQUIDITY
lnLTDEBT	1			
lnSIZE	0.4863	1		
lnPROFIT	0.3495	0.0269	1	
lnLIQUDITY	0.0087	0.1221	0.0223	1
lnTANG	0.0290	0.1004	-0.0037	-0.2887

Table 5 reported the regression results for Model 1, Model 2, Model 3 and Model 4. Model 2 and Model 4 have taken into consideration the dummy variable of nine sectoral classifications in SMEs as classified by the Malaysia Standard Industrial Classification 2000 (MSIC 2000)[11].

Table 5: Results of Analyses – Long-Term Debt Model

	Model 1	Model 2	Model 3	Model 4
	Level		Logarithmic Form	
Panel A: Estimated Model				
C	676.570***	321.638	-18.5851***	-18.6132***
	(3.8143)	(0.6735)	(-4.6284)	(-4.3026)
SIZE	0.0864***	0.0862***	0.9651***	0.9766***
	(4.6649)	(4.4831)	(6.8999)	(6.9259)
PROF	-0.1275***	-0.1274***	1.2066***	-1.2530***
	(-8.8868)	(-8.8808)	(2.9705)	(3.0932)
LIQ	-104.54	-115.13	0.2292	0.2525
	(-0.2903)	(-0.3197)	(0.6295)	(0.6954)
TANG	1715.07	1653.31	3.9633***	3.9665***
	(1.2258)	(1.1812)	(4.9465)	(4.1554)
Dummy Var:				
DS1	-	1.7948	-	-0.8983***
		(0.1627)		(-5.6920)
DS2	-	-5.7968	-	-0.5829*
		(-0.2738)		(-1.9339)
DS3	-	8.1608	-	0.1015
		(0.1282)		(1.1083)
DS4	-	4.6525	-	0.9809**
		(1.3804)		(2.0446)
DS5	-	-4.8240	-	0.0083
		(-0.0006)		(0.0734)
DS6	-	-7.9688	-	-0.0321
		(-0.1407)		(-0.3985)
DS7	-	4.4344	-	0.0113
		(0.4824)		(0.0867)
DS8	-	1.3120**	-	-0.4785***
		(2.1063)		(-5.3765)
DS9	-	1.7871**	-	0.1503
		(2.0287)		(1.1911)
Panel B: Model Criteria				
Obs.	15323	15323	15323	15323
Adj. R²	0.3196	0.5199	0.6101	0.7142
AIC	3.6663	3.6663	5.1390	5.1337
F-stat	563.1689** *	174.4486** *	1856.586***	582.7466***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)

***significant at 5% level

We have chosen the results of analyses in Model 4 for further discussion due to the more superior model as compared to others. The results signifies that the size is significantly positively related to long term debt and this findings is conformed with those of previous such as Rajan and Zingales [19] and Abot and Biekpe [1]. This results can further explained that the larger the firm the more diversified and these firms are also having lower risk as compared to smaller firms.

In relation to the profitability, there is a statistically significant negative relationship with the long term debt and it is confirmed in that SMEs finance their activities following the financing pattern as suggested by the pecking order theory [1]. This findings also indicate that the SMEs with less profitable are more likely to apply the external debt financing than SMEs with more profitable in the business.

The study also finds that the tangibility as measured by fixed asset divided by total assets has a positive and

significant related to long term debt indicating that non-current assets are important and act as the protection to lenders from moral hazard problem [9]. This result is also consistent with the findings of Pindalo, Rodrigues, and de la Torre [18], Chittenden, Hall and Hutchinson [2] and Stohs and Mauer [21]. However, there is no significant evidence relationship is found between liquidity and long term debt.

VI. CONCLUSION AND LIMITATIONS

This study investigates firm characteristic determinants of capital structure which is long term debt of SMEs in the northern corridor of Economic Region (NCER) in Malaysia. We have conducted the cross-sectional analysis of 15,323 SMES companies for only the year period of year 2007. The research findings of the study provide significant evidence that the larger the firm, the higher the SMEs to employ the amount of debt than small firms. Conversely, SMEs with higher profitability significantly to choose to finance less long term in their financing structure decision.

Moreover, we have observed in the data collection, more than half of 15,323 companies did not choose long term debt in their financial structure. In addition, the study also found that SMEs are intended to use more long term debts when the proportion of fixed asset in their companies is increased. The limitations can be addressed here are each variable is dictated by different measures used in previous studies which can lead inconsistent results and also the data period used is very short period. Thus, the findings of this study on the capital structure decision have important implications for policy makers and also entrepreneurs of SMEs in Malaysia.

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PENYATA PERBELANJAAN PADA 31 MEI 2010

NAMA PROJEK :

THE FINANCIAL PERFORMANCE AND STABILITY OF SME THROUGH ISLAMIC
BANKING: A STUDY ON NCER
TEMPOH:
KETUA PENYELIDIK: DR ABDUL HADI ZULKAFLI
PUSAT PENGAJIAN PENGURUSAN

AKAUN	PTJ	PROJEK	DONOR	PERUNTUKAN PROJEK	PERBELANJAAN TERKUMPUL SEHINGGA THN LALU	PERUNTUKAN SEMASA	TANGUNGAN SEMASA	BAYARAN SEMASA	BELANJA SEMASA	BAKI PROJEK
111	PMGT	816055		16,865.64	8,437.38	8,428.26	0.00	0.00	0.00	8,428.26
221	PMGT	816055		0.00	1,585.00	-1,585.00	0.00	0.00	0.00	-1,585.00
223	PMGT	816055		261.76	0.00	261.76	0.00	0.00	0.00	261.76
227	PMGT	816055		500.00	1,434.00	-934.00	0.00	0.00	0.00	-934.00
229	PMGT	816055		0.00	2,862.00	-2,862.00	0.00	0.00	0.00	-2,862.00
335	PMGT	816055		0.00	4,500.00	-4,500.00	0.00	0.00	0.00	-4,500.00
				17,627.40	18,818.38	-1,190.98	0.00	0.00	0.00	-1,190.98

SENARAI JUMLAH-JUMLAH KECIL :

110	EMOLUMEN			16,865.64	8,437.38	8,428.26	0.00	0.00	0.00	8,428.26
220	PERKHIDMATAN DAN BEKALA[			761.76	5,881.00	-5,119.24	0.00	0.00	0.00	-5,119.24
330	ASET			0.00	4,500.00	-4,500.00	0.00	0.00	0.00	-4,500.00
				17,627.40	18,818.38	-1,190.98	0.00	0.00	0.00	-1,190.98