



Faculty of Economics and Business

**Dividend Payout and Distance to Default of Listed Companies in Bursa
Malaysia**

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**Master of Science
2019**

Dividend Payout and Distance to Default of Listed Companies in Bursa Malaysia

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A thesis submitted

In fulfillment of the requirements for the degree of Master of Science
(Finance)

Faculty of Economics and Business
UNIVERSITI MALAYSIA SARAWAK
2019

DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulation of Universiti Malaysia Sarawak. It is original and the result of my work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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DEDICATION

I dedicate this work to almighty Allah for His countless blessings upon me and my family.
The Prophet (PBUH) who taught us the purpose of life.

And

Every challenging work need self-effort as well as guidance of elders especially those who
are close to my heart. My humble effort, I dedicated to my sweet and living

Father and Mother

My Mother

A strong and gentle soul who taught me to trust Allah, believe in hard work and that so
much could be done with little.

My Father

For earning an honest living for us, supporting and encouraging me to believe in myself.

Parent's affection, love, encouragement and prayers of the day and night make me able to get
such success and honor.

Owais Khan

ACKNOWLEDGEMENT

I am highly thankful to almighty Allah who granted me courage, determination and potential to accomplish my research work. Numerous salutations are on the Holy Prophet Muhammad (PBUH), the city of knowledge, who has guided all the humanity to seek knowledge from cradle to grave. My parents are worthy of special thanks for their extraordinary efforts they made in bringing me up. They encountered all the troubles in this regard with the smiling face and went on the praying for me. I pray almighty Allah to have mercy upon them, give them happy and long life and sustain their shadow over my head forever.

I gracefully acknowledge the main supervision extended by Dr. Sophee Sulong Bin Balia, Faculty of Economics and Business, Universiti Malaysia Sarawak. It gives me an honour to value his vision explicitly at its most academic level and his supervision made it possible of this thesis. Every time, he guided me with humble, true spirit, honestly and leads me towards the right way. My teachers play a prominent role to reach this destination and are deserved to be thankful. I learned a lot from one of my best teacher Dr. Zeeshan Ahmed and Dr. Sardaraz Khan, who always encourage me and teach me to be a great human being. They are mans of spirit, enthusiastic, well-mannered and most importantly a great teacher. Every time they give me the right suggestion about my future and study. A worthy thanks to Sir Dr. Zeeshan Ahmed and Dr. Sardaraz Khan, for every kind of support. I am highly thankful to one of my sincere friends Ms Siti Majeedah Binti Haji Ali Asgar, Ms You Hui Wei and Ms Sally Ann Yap Yu Ing for always be there at every moment to guided me. I love you all my friends for your support. All friends and teachers who really help me in this journey and I am highly thanks to all of them.

ABSTRACT

Bonds and dividend payout have become an extensively accepted measure of a firm's business risk, and it is considered as an important issue in firms. The goal of this study is the corporate bonds' distance to default (DtD) for firms listed on the Bursa Malaysia, founded on data obtained from 297 issuing firms during ten years period from 2006 to 2015. In this study, the factors of dividends payout on bonds in the Malaysian sectors are investigated on the base of agency theory and signalling theory. This study employs the stata panel estimator for the experimental testing of the hypothesis that can investigate the financial behaviour of the firms. This study has used Bharath and Shumway (2008) DtD mixtures model, combining both accounting and market-based evidence to unravel the Malaysian corporate bonds DtD quality. The independent variable, dividends Payout, is the measure to check its relationship on distance to default (bonds). In addition, three control variables, leverage (*lev*), equity beta (*eβ*) and market to book (*mtb*) are examined to evaluate their influence on the Malaysian corporate bonds' riskiness. The results indicated that dividends payout have significant and positive relationship on the distance to default (DtD) (bonds). Additionally, three controlled variables *lev*, *mtb* and *eβ*, the two control variables *lev* and *mtb* and *eβ* significant effect on DtD.

Keywords: Distance to default, bonds, dividend payout, Bursa Malaysia, leverage, Market to Book, Equity Beta.

Pembayaran Dividen dan Jarak Ketidakupayaan Membayar Balik bagi Syarikat Tersenarai di Bursa Malaysia

ABSTRAK

Bon dan pembayaran dividen telah menjadi ukuran yang diterima secara meluas terhadap risiko perniagaan firma, dan ia dianggap sebagai isu penting dalam firma. Matlamat kajian ini ialah jarak korporat kepada syarikat ingkar (DtD) bagi syarikat-syarikat yang tersenarai di Bursa Malaysia, yang diasaskan pada data yang diperoleh daripada 297 firma yang dikeluarkan dalam tempoh sepuluh tahun dari 2006 hingga 2015. Dalam kajian ini, faktor-faktor pembayaran dividen bon di sektor Malaysia disiasat dengan model teori agensi dan teori isyarat. Kajian ini menggunakan penganggar panel stata untuk ujian eksperimen hipotesis yang boleh menyiasat tingkah laku kewangan firma. Kajian ini telah menggunakan model campuran Bharath dan Shumway DtD, yang menggabungkan kedua-dua ketepatan perakaunan dan berasaskan pasaran untuk membongkar kualiti DtD bon korporat Malaysia. Pembolehubah bebas, pembayaran dividen, adalah ukuran untuk memeriksa kesannya pada jarak ke mungkir (bon). Di samping itu, tiga pemboleh ubah kawalan, leverage (lev), beta ekuiti ($e\beta$) dan pasaran untuk buku (mtb) telah diperiksa untuk menilai pengaruh mereka terhadap risiko korporat bon korporat Malaysia. Hasilnya menunjukkan bahawa pembayaran dividen mempunyai positif dan kesan yang signifikan pada jarak ke lalai (DtD) (bon). Sebaliknya, daripada tiga pemboleh ubah terkawal lev, mtb dan $e\beta$, kedua-dua pemboleh ubah kawalan lev dan mtb mempunyai kesan ketara terhadap DtD, dan pembolehubah $e\beta$ terkawal yang ketiga mempunyai kesan yang signifikan terhadap DtD (bon).

Kata kunci: *Jarak ketidakupayaan membayar balik, bon, pembayaran dividen, Bursa Malaysia, Leverage, pasaran untuk buku, beta ekuiti*

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LIST OF ABBREVIATIONS

DPO	Dividend payout
DtD	Distance to Default
$e\beta$	Equity Beta
Lev	Leverage
MARC	Rating Authority Malaysia
mtb	Market to Book
OBG	Oxford Business Group
PD	Probability of Default
SA	Signaling Approach

CHAPTER 1

INTRODUCTION

1.1 Introduction

Bonds credit risk refers to the possibility that borrowers are unable to pay the required payments of loan. When a company issues bonds, it is obligated to make regular interest payments to bondholders and repay their principal investments once the bonds come due. Whenever a company fails to uphold its obligations to bondholders, whether it's in the form of a missed interest payment or a missed principal payment, it's considered a bond default, and should this occur the lenders may lose not only interest payments but the principal as well. (Khedher et al., 2016) noted that the bonds default is a key issue, which is being faced by the firms, and it leads them towards bankruptcy.

Bond market is a major source of financing in the rising world economy. The corporate sector and government both have active utilization of bonds as a key source for long term financing in strengthening the financial organization of the country and to decrease the vulnerabilities (Fabella & Madhur, 2003). Moreover, Hale (2007) noted that, bond market is capable to provide fund to corporations due to its flexibility and at a lower cost compared to banks and other financial institution loans.

This is partly because fee of checking is not required for bonds while banks forced extra cost for reserve and capital requirement, working, and observing expenses, which are usually passed through to their customers.

Malaysia suffered lack of well-balanced economic machine because of over dependence on bank's financing (Zainuddin, 2009).

Learning from the experience of the economic disaster in 2009 to 2011, the authorities of Malaysia have realized the significance of having a productive capital market

for quick monetary development, and have enhanced the strong improvement of the bond market so as to offer a competitive source of long-term financing to the economic system. Some literatures argue that the likelihood of corporate bonds default increases with firms leverage (Dennis and Mihov 2003) but at some time a high rate of leverage can arguably be an indicator of a good credit standing and borrowing capacity of firms. Moreover, firms with high leverage could have higher roll-over need and therefore may have greater demand of additional funding from corporate bonds markets.

Malaysia is an emerging market, yet its capital marketplace is greatly evolved than many other developing markets. Malaysia's capital market incorporates traditional and Islamic capital markets. Efficient and effective support by the government guide and the implementation of the Capital market master Strategy from (2000 to 2010) have facilitated the capital market to increase its size from of RM 717.5 billion (US\$239 billion) in 2000 to RM 2.0 trillion (US\$667 billion) in 2010 (Security Malaysia, 2013). Between 2000 and 2010, Malaysia's equity market rose by 11.1; percent each year, making it the 5th fastest-growing capital market in Asia (Security Malaysia, 2013). Malaysia's capital market capitalization has tripled within 10 years and is predicted to double in the next 10 years. In achieving the imaginative and prescient of Malaysia to end up a high-profits in 2020, Malaysia capital market is predicted to further boom to RM 5.8 trillion (US\$1.93 trillion) with an equity marketplace of RM 2.4 trillion (US\$800 billion) via 2020 (Security Malaysia, 2013).

The Malaysia capital market however is not without issues. The Rating Agency Malaysia (RAM, 2015) noted that Malaysian firms are face severe issues of bonds default. Rating agency Malaysia noted on their report that 2.6 percent of issuances went defaulted only in 2005. The default rate continued within the range of one to four percent till 2009,

where the situation got worst with highest default rate after the capital market received a negative and severe economic shock of crisis. Hence, 2009 was the vital year of default. 5.1 percent, 1.2 percent and 2.6 percent defaults occurred from 2009 to 2011 respectively. After 2011 the defaults percentages were getting less than two percent, but market was not even now completely improved, as evidenced by the small volume of total issuances from 2011 to 2015 (MARC 2015). Khinfer (2011) had described 2009 as the “default year” for the global bonds market as the year ended with at least 15 cases, and rising to at least 31 defaults as officially reported in early 2012 with the defaulted value amounting RM 6.848 billion in Malaysia market

Bonds default is a dominant factor in the corporate financing transactions that leads bankruptcy. The basic reason for default is that firms are highly levered with and showing inefficient. Moreover, they do not generate enough cash flow to meet their debt obligations that cause them towards default.

In the case of corporations, defaults usually occur when deteriorating business conditions have led to a decline in revenues sufficient to make scheduled repayments impossible. Which lead to a mismatch between cash inflow and outflow.

Similarly, countries are typically forced to default when their tax revenues are no longer enough to cover the combination of their debt servicing costs and ongoing expenses. In Greece, yields on 10-year government bonds reached 29% in early 2012, right before the country defaulted. Due to the Greece government-debt crisis, Greece failed to make a €1.6bn payment to the International Monetary Fund (IMF, 2015). due to high debt cost and inability to generate enough cash flows for repayment of their debts. Many other factors can affect the corporate bonds for example leverage, taxes, liquidity etc.

Keeping the situation in view, dividend payout is an important factor, and it is considered a major concern by the shareholders; yet such payments could be detrimental to the interest of bondholders.

Most of the investors in the market are concerned with the dividend payments of the firms. A large dividend payout indicates the organization's confidence about future cash flows. However, a reduction in dividends causes a severe market reaction, and investors as well as bondholder's shown low confidence on the market. Bondholders perceive the firm that are paying high dividends as less risky and requires low rate of returns. This dividend payout impacts the investor's perception of firm's risk. In line with this theory, corporations that pay larger dividend, indicate a positive view of their future cash flows.

Bondholders identify the positive indicator, and they offer a higher price of the bond. Thus, the positive indication in form of dividend payouts results in lower bonds risk. Dhillon and Johnson (1994) noted that the signal of dividend payout creates the conflict between the bondholder and shareholder in the financial market and increase the firm's bonds risk. Normally, firms pay dividends when they earn profit, and they can meet their obligations in due time. In this way, they have less chances of default, and have more sustainability power that increases the shareholders wealth.

On the contrary, dividends decrease the cash accessible to meet the predetermined corporation's financial obligations with principal and interest on debt financing. Furthermore, due to an adverse reaction of market participants upon reduction of dividends payment, firm borrows concerns more to avoid reducing the dividends. This extra leverage will increases the corporations risk with a subsequent decrease in bond prices and rise in default of debt.

Evidences have been generated by Floyd et al. (2012) and Acharya et al. (2011) that the corporations pay the dividend to shareholder, even though, they take the extra burden of debts. Bondholders see dividends announcement negatively and call for high rate of returns from the corporations paying high dividends. This yields a (Fridson and Garma, 1998; Guntay and Hackbarth, 2010; Mansietal, 2011; positive relation among the dividend payout and default of debt (Nejadmalayeri & Singh, 2004).

Firms go for debt financing, and they issues bonds in the market to increase the shareholders wealth. Bond prices affect the range to which bondholders see the risk related to the bond payment that are expropriated by the shareholders. Borrowers fail to meet their obligations on the specific time period according to the credit contract. In this situation, the creditor will be exposed to the risk of default. The greater the perceived risk, the high return is expected by the bondholders on their investments to compensate the additional risk. Hence, this yields a high-quality relation among dividends payouts and default of debt. The firms must manage these investors, keeping in view their risk profiles.

Bond probably reflects the level to which bondholder perceive risk of expropriation through shareholder. Dividend payouts might create one such contrivance of expropriation by shareholder. The greater the observed expropriation risk, the higher is the return that the bondholders assume on their funding to reward for the additional risk (Handjinicolaou and Kalay, 1984; Woolridge, 1983; Jayaraman and Shastri, 1988; Maxwell and Stephens, 2003). The evidences to the results, generated by these conflicts, are mixed, and the argument still continues but the bond risk has not been discussed yet.

Thus, dividend payout can play a critical role in the default of corporate bonds. This is especially important for Malaysia, as Malaysian firms have been paying a large amount

of dividends. Malaysia is the second highest dividend payout country in Asia. The dividend payout is noted as 48.9% inside the Asia ex-Japan region.

This study explores the effect of dividend payouts on the bonds risk that reflected on the default of bonds. One approach is to inspect the bond market's reaction to dividend declaration. The study on the default of bonds is valuable under the specific context of the Malaysian corporate bonds market.

1.2 Background of the Study

1.2.1 Dividend Policy in Malaysia

Dividend policy is a crucial element in a business enterprise (Moradi et al., 2013). It increases the confidence of shareholder, particularly, of their payouts of capital receipt. The most efficient dividend policy is described as the policy that maximizes the stock prices of the corporation and is important determinants, which examine the shareholders 'wealth (Azhagaiah and Priyah, 2008). Dividend is usually used as gauging device financiers to point the future performance that increase the shareholders wealth (Malkawi et al., 2010). Shareholder capital is defined as the current worth of anticipated future profits (Brunzell et al., 2012).

There are no exact principles on the standard of profit strategy in Malaysia (Subramaniam and Devi, 2010). Based on the corporations Act 1965 (section 365), dividend ought to dispense with earnings, either taken the cutting-edge income, or amassed income. Further, in keeping with the corporations Act (1963), "Not anything in this phase will be taken to limit the charge of a dividend well declared with the aid of a company or the release of a liability lawfully incurred through it".

Corporation will decide a mark of dividend payout proportion and make modifications in line with the earning generated by the company (Lintner, 1956). Pandey (2003) noted that Malaysia's corporations, in all sectors, have proven a dividend balance, which they paid dividend as often as possible in any case how minor is the amount of dividend. He also argued that dividend payout ratios, by way of sectors, in Malaysia presented that plantation organizations are giving higher dividend than creation corporations, which giving minimal dividend in comparison to other areas. Moreover, buying and selling and services sectors also pay low dividend because of the low income got. In recent times, Malaysia is documented as the second major dividend payout inside the Asia ex-Japan location. The dividend payout is noted as 48.9% inside the Asia ex-Japan region. Essentially, Malaysian corporations have massive dividend payout because of the own family ownership business version, wherein minority investors act according to big investors (Yap, 2012).

The Bursa Malaysia Berhad has released last ten years data on the Malaysia dividend payouts of the Malaysian capital market. The data is shown in Table 1.1.

Table 0.1: Dividend Payouts in Malaysia capital market 2005 -2015

Years	Dividends per cent	Dividends	Dividend payouts %
2006	28	141543	96.3%
2007	85	443,668	184.38 %
2008	24.3	127,507	122.11 %
2009	19.1	100,650	56.68 %
2010	20	106,141	93.90 %
2011	26	138,187	94.55 %
2012	27	143,486	95.28 %
2013	52	276,919	160.00 %
2014	54	287,74	145.16 %
2015	34.5	184,197	92.74 %

Source: KLCI Bursa Malaysia (2016)

It is obvious from the data, offered in this table, that Malaysian capital market was paying dividend to shareholders each year. Since 2009 till 2011, the dividend payout ratios decreased because of the financial crisis.

Hence, 2009 was the vital year of payout. 56.6 percent, 93.90 percent and 94.55 percent payout happened from 2009 to 2011 respectively. After 2012, the dividend payout percentages increased, and the payout market completely improved, as evidenced by the larger volume of total payouts from 2011 to 2015 (KLCI Bursa Malaysia 2016). In short, the Malaysia capital market was lucrative with the number of dividend payouts touching hundred percent per year.

Conversely, some corporations no longer pay their shareholder dividend. These corporations are having similar features, which can be small profits, sturdy funding and comparatively small in length. As contrasted to year 1973, year 1977 had 0.33% of businesses paying dividend, while, year 1999 only have 3.7 percent corporations complete dividend payout. The motives of not paying dividend are low incomes made; keep high boom possibility, and additionally, presence of repurchase in year 1980. Similarly, corporation experiencing merger or delisting, additionally, prevent paying dividends. Aside from that, Distress Company, which produces negatively incomes, may also terminate dividend as well high growth. Organizations, generally, do not pay dividend to investor as they made decrease income, associated with dividend payer organizations.

Furthermore, corporations with high progress and funding possibility pay dividend at equal time will get worse income and investment made. Ultimately, dividend payer corporations are generally massive business enterprises. There is less proof of small corporation paying dividend (Fama and French, 2001). In line with tax preference theory,

tax is compulsory while organization distribute dividend to shareholders. In Malaysia, the tax obligatory on cash dividend is extra than tax obligatory on investment profits. Therefore, traders choose investment advantage as opposed to dividend (Zameer et al., 2013). Investors focus on after-tax profit, and it sooner, or later, increases the call for dividend. Furthermore, consequences of tax also disturb the dividend distribution, in which administration will increase retained profits to maximize investor capital (Malkawi et al., 2010).

Given the significance of dividend coverage, a top-rated dividend choice is vital. In addition to rival hypothetical stances on dividend coverage, earlier research have stated that dividend choice might be suffering from different issues, which includes profits, investment opportunities, firm size, cash flows and lagged dividend. Over time, academic examination has thoroughly tested the reasons influencing dividend payout policy. Regardless of the abundance of examination in this trouble, the proof mentioned remains inconclusive. Furthermore, the studies have in most cases been executed in the context of advanced countries (Charitou, 2000; Al-Malkawi, 2007; Ramli, 2010; Appannan and Sim, 2011; Hashemi and Zadeh, 2012).

Malaysia is an emerging country; however, its capital market place is greatly evolved than several other developing markets. Malaysia's capital market incorporates traditional and Islamic capital markets. Non-stop government guide and the usage of the Capital market end-all strategy from 2000 to 2010 have helped the capital market develop from a market length of RM 717.5 billion (US\$239 billion) in 2000 to RM 2.0 trillion (US\$667 billion) in 2010 (security Malaysia, 2013). Among 2000 and 2010, Malaysia's equity market developed by 11.1 according to cent each year, making it the fifth quickest developing business sector in Asia (security Malaysia, 2013). Malaysia's capital market

capitalization has tripled within 10 years, and is anticipated to twofold in the following 10 years. In accomplishing the imaginative and prescient of Malaysia to end up a high-profits in 2020, the capital market is anticipated to additionally boom to RM 5.8 trillion (US\$1.93 trillion) with an equity marketplace of RM 2.4 trillion (US\$800 billion) till 2020 (security Malaysia, 2013).

Dividend choice is a major corporate finance problem because of its large effect on funding and financing selections. If a corporation chooses not to pays smaller amount dividends, the company may have greater inside earnings, hence dropping its shareholders confidence on external income. However, if a company pays great dividends, it will bring about quite a lesser amount of internal incomes, and therefore, it will develop company's need on obligation or other outside financing. This means that the choice to elevate budget is straight linked to dividend policy. Ultimately, as dividend policy impacts the capital shape of a corporation, it will also have an effect at the funding choice and cost of capital of the organization (Lee et al., 2010).

1.2.2 Bonds Issuance and Default in Malaysia

Among a mixed income performance around the international sphere in 2015, Malaysian capital market unimpressively showed modest growth over the year 2015. The area grew by 2.1% in 2015, according to the Securities Commission Malaysia, the capital market controller, to reach USD 698 billion by the end of the year, (OBG, 2017). Almost 60% of this growth was due to the stock market of Bursa Malaysia, the Malaysian stock exchange. Stock market showed total market capitalization of USD 420.8 billion, while outstanding debt issuances made up the USD 277.2 billion (OBG, 2017). This follows on from more than a decade of steady evolution in many Malaysian capital market areas including fund management and sharia-compliant financing tools particularly. The

Scouring Authority Malaysia has released last fifteen years data on the defaults in capital market. The data is presented in Table 1.2.

Table 0.2: Bonds Issuances and Bonds defaults in Malaysian Capital Market 2001-2015

Year	Issuances	High Rating Bonds Defaults (percent)	High Yield Bonds Defaults (percent)	Total Bonds Default (percent)
2001	23	0	33.3	4.3
2002	42	0	0	0
2003	50	0	0	0
2004	57	0	0	0
2005	78	2.8	0	2.6
2006	91	1.2	0	1.1
2007	98	2.2	33.3	4.1
2008	98	1.1	0	1
2009	98	3.4	22.2	5.1
2010	82	1.4	0	1.2
2011	78	1.4	12.5	2.6
2012	64	0	7.1	1.3
2013	60	1.8	0	1.6
2014	64	0	11.1	1.7
2015	64	0	0	1.56
Aggregate	1047	1	9	2.3

Source: (Malaysian Rating Corporation Berhad, 2015)

The Rating Authority Malaysia has divided the default rates into two subcategories high grade defaults and high yield defaults as shown in Table 1.2. High grade defaults means the number of defaults cases arising in firms that were previously given higher investment grades to the total number of defaults, and high yield defaults refers to number of defaults cases arising in firms that were offering high returns to the investments before defaulting to the total number of defaults.

It is obvious from the data offered in this table that market was peaceful with no defaults in early years of the century, but, getting economic contagious of default explosion in 2005, it was thrown into a series of defaults. 2.6 percent of total issuances

went defaulted only in 2005. While, the previous consecutive three years value of the default rate was ideally at zero percent. The default rate continued within the range of one to four percent till 2009, where the situation got worst with highest default rate after the capital market received a negative and severe economic shock of crisis.

Hence, 2009 was the vital year of default, 5.1 percent, 1.2 percent and 2.6 percent defaults occurred from 2009 to 2011 respectively. After 2011 the defaults percentages were getting less than two percent, but, market was not even now completely improved, as evidenced by the small volume of total issuances from 2011 to 2015 (MARC 2015).

In short, capital market was lucrative with the number of issuances touching nearly hundred per year before crisis. However, once disturbed by the defaults, it was not able to be back in its full swings. The annual issuances dropped down with a steep decline, and they range from 60 to 64 within the time span of 2011 to 2015. To better understand the trend in the defaults and issuances Figure 1.1 and Figure 1.2 have been drawn.

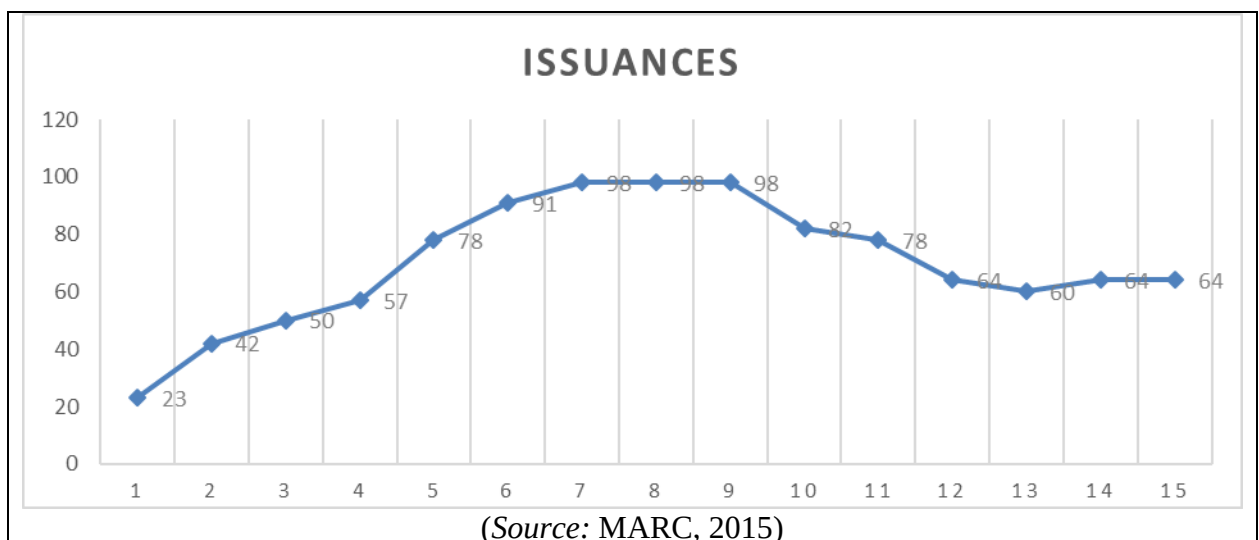


Figure 0.1: Bonds Issuances per year 2000-2015

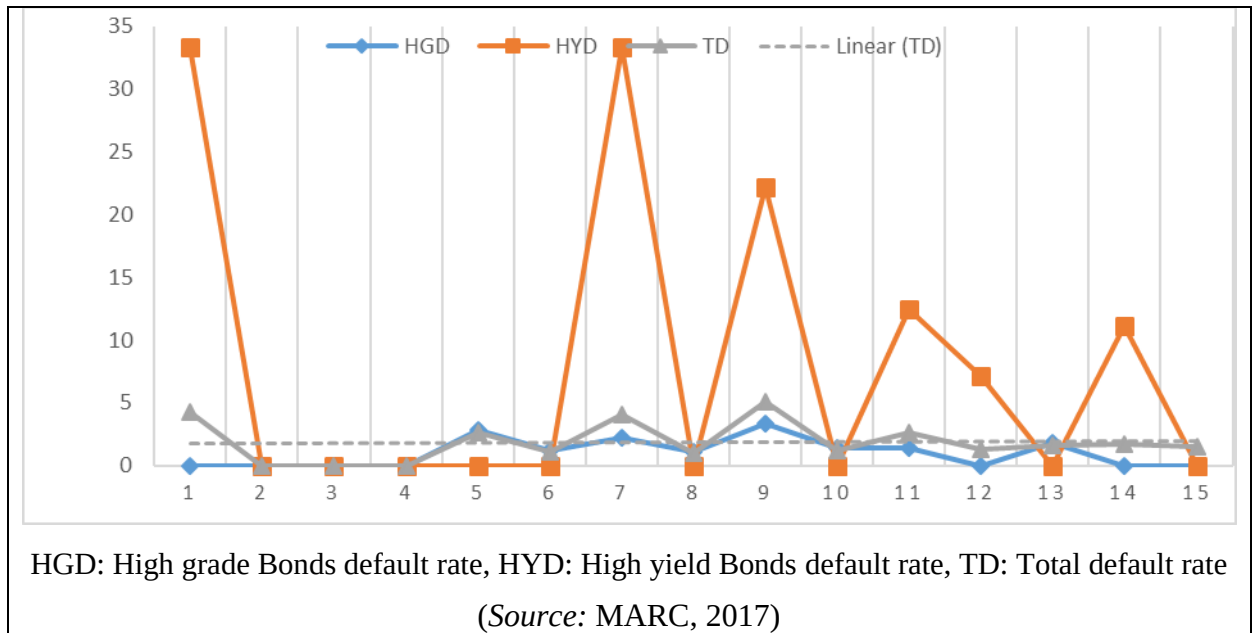


Figure 0.2: Bonds Default rates per year 2000-2015

Analysts of Oxford Business have opined in their report of 2016 that this drop-down in growth rate was a consequential phenomenon of current market scenario. In their view, the foremost cause could be the capital flight out from Malaysian investments. They cite the security commission data that five percent of the foreign investments have taken an exit from Malaysian capital market in 2015. Furthermore, the reasons to this capital flight of USD 2.7 billion were the inflation and decreasing value of the Malaysian ringgit, since these factors render the investments no more lucrative after considering the exchange rates.

The CEO of Capital Markets Malaysia, Azhar Zabidi, (MARC, 2015) has also expressed his concerns over the current non-optimal condition of Malaysian markets in the following words “Among the many challenges we face when talking to foreign investors is around the longer-term direction of the ringgit, especially given the continued volatility in oil prices”.

Taking the notice to these negative circumstances, the Malaysian authorities took some steps in managing the capital market. By 2015, the Securities commission of Malaysia has laid down new regulations for the capital market entrants. By the new regulations, named “lodge and launch”, the authorities have tried to speed up this approval process to less than previously required time.

Another move was taken by Malaysian authorities in the mid of 2015 to make the industry at ease by augmenting the competitive efficiency of the fund managements. To increase the number of players in the segment of fund management, the entry barrier was relaxed. Fund managing institutes are now required to maintain a capital of USD 123,768 in their paid up account. This amount was previously heavier with paid up capital equal to USD 495,070. Fund management industry was relaxed with less burdensome requirements to let it play a better part in the improvement of capital market. The support of authorities has made this industry a fastest growing constituent of overall capital market. It has grown by 2010 to 2015 from USD 83.4 billion to USD 163.9 billion with an impressive growth rate of 96.52 percent (MARC, 2015).

To mitigate the negative impacts that the foreign investors are losing interest in Malaysian capital markets, the security commission has given certain amendments to Capital Market and Services Act and Securities Commission Act. These amendments have the objectives to make local financial laws aligned to the investment principles of International Organization of Securities Commissions. This is hoped that this phenomenon would help in bringing the international investors’ confidence back to Malaysian capital markets because of the guidelines of International Organization of Securities Commissions, which can guarantee the quality of risk management at an internationally accepted standard.

Malaysian policy makers are also hopeful that it will be instrumental in the achievement of greater authenticity and trust in the financial regulations. These amendments have further increased the supervisory powers of the authorities to ensure the transparency and honor of capital markets. Authorities are now under their extended power and authority, and are able to supervise and raise the governance and audit quality of market players (MARC, 2015).

Another most likely significant cause of contraction in the bonds issuance had been the defaults. The defaults were observed rising simultaneously to the withering of bonds. It was seen in the capital market history of Malaysia that the high quality defaults have become zero, but total defaults were with 1.5 percent value by 2015. In preceding years, the long history of defaults renders the average default rate of 2.3, and even a high quality investment on average can default by one percent probability. Linear curve of default line is still showing the chances of default, and hence, it is a significant concern for market.

These rates manifest that the corporate defaults are not mere oblivion and the risk of default has not been fully wiped out of the market and yet it is an issue of concern for the market players. Literature also has brought the evidence of down swing in the investors' confidence after defaults (Young and Ernest, 2010). Researchers have produced the evidences that the banks failures, if had been predicted a little ago to the crisis and defaults of 2009, the market would have been better. Hence, for the bonds industry at Malaysia, it deems indispensable to gauge their distance to default. The bonds, after entering into consolidation phase in 2015 with lowered issuances become an interesting subject for the study of distance to default. The motivation to gauge the distance to default also comes from a published interview of Julie Ng, the head of data and analytics at RAM ratings.

She mentions that the market forces are uncertain and changing rapidly. In such environment, the defaults are the result of company specific issues mostly rather than market or macro specific. The rating agencies usually quote the investment grades heavily upon the basis of macroeconomic environment. She adds that the defaults are most likely caused by the banking operational environment. The ratings are assigned a batter after the bank guarantee to an investment is received, but these guarantees are contingent and so sensitive to the company specific issues that this bank guarantee may not work fully at the financial distress of the companies taking them to default. Hence, the defaults may erupt especially in small manufacturing firms (Dhesi, 2015).

Keeping in view of the studies mentioned above, identification of default situation of bond and their measurement method is very important. The pioneering work of black and Scholes-Merton option price theory has led the scholarly discussion on credit risk changes in financial assets. Under the theory, corporate bonds prices also reflect publicly available information. Therefore, following credit risk rating opining made by rating on the general creditworthiness of a corporate bond, the market is expected to react to the credit ratings, although, only to the extent of the unanticipated component of the credit rating opinion. This occurs because the part of the credit rating that expected by the market would have already been included in the rating announcement. In other words, an announcement that contains only information already known to the market is considered to have no information content. Therefore, no reaction to the credit rating is expected. An unanticipated change in credit risks, therefore, is expected to saddest market reaction. This study suggests that the extent of the change in corporate bonds price caused by such unexpected change in credit risk level is implied by the Distance to Default (DtD).

The DtD measures how many standard deviations the asset value needs to drop to meet the debt value, which triggers default. Thus this study suggests that the DtD is therefore also the estimated relationship between the unexpected portion of a firms asset returns and its total debt level. Hence, it implies that lower DtD translates into higher chances of default.

The construct validity of theoretical determinants of DtD and relationship among empirical are not fully known. It remains important therefore to keep testing and analyzing the determinants of DtD under different settings and different environments. Emerging markets seem to experience earnings fluctuations and market volatility as often and severely, if not more, than developed countries. However, there is a relative paucity of research on DtD determinants in emerging markets. The drivers of DtD and their relative influence in such markets are little known and the literature on the subject is not well developed. It is the aim of the study to fill the gap in part, at least as it pertains to Malaysia corporate bonds.

1.3 Problem Statement

Credit risk is the financial loss resulting from the failure of counterparty in meeting its obligations (Jorion, 2009), and currently, it has become severe, in American corporations like General Motors Corporation in 2009. Moody's Investors Service has withdrawn its ratings of General Motors Corporation (GM), and approximately, \$40 billion of debt has been affected. On September 15, 2008, Lehman Brothers filed for bankruptcy because of the \$619 billion of debt. The primary reason of this distress risk and default is due to high leverage and poor performance of the firms operating in the industry (Nejadmalayeri, A., and Jiraporn, P. 2013).

Malaysia is an emerging market, and the listed firm are experiencing financially distressed. These firms have higher tendency to violate their debt covenants and fail to meet their financial obligations (Singh, M., and Jiraporn, P. 2013). Moreover, firms have the worst earning experiences, and they don't have enough profits to meet their contractual obligations. Investors have a great concern with dividends, but due to the loss and low level of profits, they decrease firm's abilities to distribute the dividends and in meeting their obligations. These conditions increase the firm's credit risk and cause the worst experience of default on their Bonds (Mathur et al., 2013).

As an emerging market and developing country, bonds are very crucial that decreases the confidence of financiers to invest in Malaysia. According to Bank Negara Malaysia (BNM) (2008), a complete measurement of corporate area has a great effect on the constancy of an economic system in a country. Based on this report, the bankruptcy cases increased in Malaysia, and credit risk reached to an alarming situation. The Rating Agency Malaysia (2015) released the data of last fifteen years, bonds defaults in Malaysian capital market shows the average of 2.3 % of total bond default in fifteen years. Moody's reports that default rates touched 3.0 % in 2017, in the U.S., 2.54%, in Europe, and 1.96% and 0.18% in the developing markets, which is a "statistically extreme (2009)". In the past 30 years, the regular default rate was only 1.2%. Possibly, firms fail to pay their debt due to decrease in cash flows because of dividend payment.

Malaysia is noted as the second biggest dividend payout with in Asia ex-Japan. The dividend payout is documented as 48.9% within the Asia ex-Japan region (Yap, 2012). Besides, the Rating Authority Malaysia released last fifteen years data on the bonds defaults in capital market. In accordance with this report, 5.1 percent, 1.2 percent and 2.6 percent defaults occurred from 2009 to 2011. After 2011, the default percentage reached to

less than two percent, but market had not been even completely improved from 2011 to 2015 (MARC, 2015). The bond market has emerged in the market, and regulatory body provides the order and suggestions to the parties involved in Malaysian capital market. Moreover, bond market keeps the businesses away from the banks. Several public indexed companies met escalating difficulties about their performance as well as their profits. Under these conditions, a firm faces difficulty in dividend payment, increases the investor risk aversion and tightens credit conditions that adversely affect the financing.

From 2009, the issuances rate of bonds dropped down, and at the end of 2015, the issuances shrink to moderate 64 points from 98 points due to default. It shows that once the bond market was disturbed by defaults, it was unable to get its progress of issuances again. Hence, it is crucial for the firms to be cautious of their potential defaults, since it can severely impact their capital fund raising, and for Malaysian perspective, there are 2.3 percent chances of defaults eruption (MARC, 2015). The reason of this default is that firms issued high yield bonds that led to high cost on those bonds. Moreover, firms are not operating well and the profits are not enough to pay the bonds at maturity. This situation leads the firms to go towards default, as they are unable to meet their obligations (MARC, 2015).

One important element of these defaults is the cost of firm debt, which creates the conflict between bondholder–shareholder, and this conflict leads to agency problems (Maxwell and Stephens, 2003). Shareholder receives dividends, and bondholder receives the fixed interest payments. These shareholders enjoy the benefits at the expense of bondholders that causes the under investment or over investment problems. Under these circumstances, the bond prices assume to go to the point, where bondholders perceive the expropriation of risk through bondholders. The more the perceived expropriation risk, the

higher is the profit that the bondholders assume on their investment to reward for the extra risk.

Bondholders, shareholders and regulators observe the credit risk management of the firm on their corporate debt performance. In Malaysia, several corporate bonds defaults have brought corporate bonds failure to the forefront of the investment community. On the other hand, conflicting views exist concerning the determining factors of credit risk model. Literature explains that many factors can deteriorate the firms' credit profile leading to the final result of credit default and bankruptcy (Balcaen and Ooghe, 2006). Hence, it is necessary for the firms to check and improve their credit risk management (RAM, 2015).

High dividend payouts influence the reputation of outside financial investors, as well as lower organization issues and data asymmetries (Grossman and Hart, 1980). The high payout ratio alleviates agency conflicts between dividend and credit risk (Farooq and Jabbouri, 2015). Moreover, the impact of dividend payout on corporate debt remains unclear. This research questions the payout policy related to dividend payments, which significantly affect firm's credit risk and estimate via capital budgeting and corporate financing decisions (Wei, Truong and Do, 2016). Dividends could have a detrimental effect on bondholder wealth, because it eliminates the cash available for debt servicing (Kalay, 1982).

Keeping in view the above situation, Malaysian firms are categorized as high dividend paid to the shareholders. This study is going to examine dividend as the factor in the default of the firms listed on Bursa Malaysia. This study checks the distance to default on the Malaysian corporate bonds, Moreover, our study also adds a novel variable of dividend payout as a determinant of DtD.

1.4 Research Objectives

In general this research investigated the impact of dividend payout on distance to default of Malaysia corporate bonds default. In specific terms, this study aim to:

- i. To measure the distance to default of bonds of non-financial firms listed on Bursa Malaysia.
- ii. To examine the relationship between dividend payout and distance to default (Bonds risk) of non-financial firms listed on Bursa Malaysia.

1.5 Significance of the Study

The corporate bonds are high important to Malaysia corporate market, in the absence of provisions to control increases in credit risk. The lender charges the expected credit risk on the interest rate set for the loan. Both lender and borrower are impacted by high credit risk of the borrower. For example, Altman and Stonberg (2006) defined that the huge increase in prices of existing default bonds in 2003 and within the prices of newly defaulted bonds, particularly in 2004 and 2005, the market value level of the index at year-end 2005 was actually higher than the level in 2002 and approximately the same as in 2003 after record return in the year. Simply, the lender suffers increased credit risk ends the life of the borrower form high interest rates (Demerian and Ross, 2007).

Based on a few marker reports, Milne (2013) has documented that the pre-assessment of riskiness, prior to contagious default eruptions, can lessen the economic losses of default. Milne (2013) asserts that the investors must be given the correct information of market riskiness to rightly price the bond. Moreover, the DtD measure, Milne (2013) proves, can work well for this risk assessment, and the DtD efficiency can be augmented by coupling the default analysis with financial ratios. On the other hand, MARC (2015) has issued the market data that on the basis of past trend, there exists 2.3

percent chances of default in Malaysian capital market. Under the wake of this market circumstance, there is contribution in rightly and timely digging out the current position on default closeness of Malaysian bond with respect to their calculation of DtD. The rating organization remains in a down to dusk search for variables, significantly, predicting the bond default. This study has its own importance because it will establish the relative significance of dividend payout in bond's default risk.

The study aims to determine the effect of dividend payouts on the bonds risk. Bond purchasers must assess the default risk for different bond investments. Risk assessment is crucial for bond purchasers, because it is reflected in the bond pricing. This assessment becomes even more important due to risk keeping in view the nature of bond purchases. By establishing this relation, the market players in general, and potential bond purchases in specific, can assess the riskiness of dividend paying corporates.

This study investigation attempts to overcome any issues of the body of knowledge and offers explanations on the effect of dividend payouts empirical DtD model on Malaysia corporate bonds credit riskiness estimation. The weaknesses of past studies are hereby examined by way of comparing performance of firms in various industrial sectors.

This study contributes to existing literature in credit risk in numerous aspects. First, this study offers insight into the specific idea of DtD of Malaysia corporate bonds. This study highlights credit risk factors and its explanatory strength towards DtD premia of Malaysia corporate bonds and the capital market. This study also affords brief knowledge of Malaysia corporate bonds and dividend payouts as well as a perception into the credit risk modeling that progresses economic risk management. Second, through empirical result, this study delivers proof on the significance of credit risk compliant to the

shareholders' wealth creation volumes of the companies. The empirical finding on the DtD study also presented that the companies with excessive asset intangibility promise DtD like corporations with higher asset tangibility, which experience negative unusual return in the long run.

In essence this study is relevant and important to dispel various disputable notions and conflicting views on developed market credit risk modeling applicability in emerging market. This study also offers renewed empirical explanations for Malaysia corporate bonds characteristics and the firm's financial leverage and market to book ratio influences firms credit riskiness to create more shareholder wealth and distribute wealth through consistent coupon payments.

On the basic the background of the study that Malaysia corporate bonds continuously default from 2001- 2015 as show in the table 1.2 (page 11, Malaysian Rating Corporation Berhad, 2015). Other hand Malaysia capital market pay high dividend to their shareholder continuously as show in the table 1.1. Malaysia is the second highest dividend payout country in the Asia. The dividend payout is noted as 48.9%. Both of variable is so important factor for corporates or firms and there is a good chance that this study right in finding that a relationship exists between two variables.

1.6 Scope of Study

The focus of the study is to explore the impact of dividend payout on bonds default risk of non-financial firms listed on Bursa Malaysia. For this purpose, the non-financial firms that issued the dividend during the sample period have been selected. The Bursa Malaysia Stock Exchange is the main stock Exchange operating in Malaysia, and most of the firms are listed in this stock exchange. Firms pertaining to last one decade and issuing

dividends as well as facing the risk of default or credit risk, are selected for empirical analysis. Therefore, the data pertaining to this stock exchange is selected for empirical analysis of this study over the period 2006-2015.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This study delivers review of the literature linked to credit risk (distance to default) bonds (DtD) estimation, dividend payout policy and connection between them. The aspects of dividend are related with distance to default of obligor. Section 2.1 Introduction, 2.2 Bond Risk, 2.3 Dividend Payout, 2.4 Dividend Payout and Bonds Risk, 2.5 Signaling Theory 2.6 Agency Theory.

The little experiential work has been complete on credit risk in context of corporate bond issuance in developing countries. In this regard, notable exceptions are formulated (Altman et al., 2005; Durbin and Ng, 2005; Cavallo and Valenzuela, 2007). Altman et al, (2005) in a study presented the evidence that fixed effects for countries and firms, company specific characteristics (profitability, size, etc), bond features, sovereign risk and worldwide elements all explain the stock. They implement a set of emerging market scoring (EMS) model on emerging market corporate bond estimations. Their study emphases on the pricing performance of EMS based on Z-score model. They also indicate two asymmetries. According to Borensztein et. al., 2006, the first asymmetries is consistent with the developing of bond spread was the sovereign largest “lite”. Calvo 1999, and Calvo and Mendoza 2000, stated that the second view is consistent with the belief that the often panic view of emerging markets where trader information is less and is particularly easier to grazing or herding.

Durbin and Ng (2005) examined the connection among corporate sovereign ranges on overseas bond in emerging market economies using a broad cross section of corporations from different international locations. Peter and Grandes (2005) study the

effect of sovereign risk on company default premia controlling for firm-specific factors of company risk. Cavallo and Valenzuela (2007) used option adjustment spreads to classify developing market corporate bond spreads, and explored the factors affecting business bonds in emerging market economies.

Following those studies, the substantial empirical work has emerged on company bonds. This work can be classified according to the theoretical structure it relies on. One common method is to use what are known as standard approach model. Those models exogenously assume the dynamics of DtD and use market data to recover the parameters required to value credit sensitive rights. However, these models have been exposed to be flexible in practical applications, they remain fairly silent on the theoretical determinates of the rate of the default able securities.

2.2 Bonds Risk

In finance literatures, risk can be defined as the uncertainty of achieving the expected returns. According to Chen and Pan (2012) bonds risk is the mark of instabilities in value of debt devices and derivatives because of change in the underlying credit value of debtors and counterparties. Coyle (2000) explains bonds risk as inability to pay the creditors in due time. In sum, bonds risk is the prospective that a debtor or counterparty fails to meet its debts in accordance with fixed terms and conditions. It is caused by the change in credit worthiness if debtors and counterparty engaged in transactions are failed to make obligated payments. Borrowers are unable to pay the creditors on stipulated time, which leads them to credit default risk.

Most previous studies measure the bonds default risk through distance defaults. It is widely worn proxy to define bonds risk by industry practitioners and academic research related to financial research. Distance to default is extensively used in corporate

applications to identify the bonds risk and default risk (Crosbic and Bhon, 2003; Oder, Dacorogna and Jung, 2003; Kealhofer, 2003; Vassalou and Xing, 2004; Gropp and Moerman, 2004; Demirovic and Thomas, 2007).

Moreover, the distance to default (DtD) is measured as the distinction between the company's asset value and its debt face value and scaled by the volatility of the company's assets. This distance to default shows how many standard deviations the firm is far from default value. Consistent with Crosbie and Bohn (2003), Oderda, Dacorogna and Jung (2003) and Kealhofer (2003) noted the predictive capability of distance to default linked to credit rating and determined that the DtD measure predicts rating changes well in early of the rating change. Also, Chan-lau, Jobert and Kong (2004) reveal this matter in developing market, DtD seems to be a valuable measure for forecasting a reduction in ratings.

Other hand distance to default has been determined the power in predicting deteriorating financial strength at a point in time through corporations. (Vassalou and Xing 2004) reported that default distance is powerful estimate to predict default. They also suggest that advantage of distance to default is that it pools evidence about volatility facts and stock return and hence is more of an indicator of default risk than simple stock price-based signs. Additionally, a study by (Gropp and Moerman 2004) they argue that the aptitude of distance to default to compute risk isn't affected by the existence of a clear protection networks.

The distance to default is an attractive model. Different approximations have been used in its application like the market value substitution method (Brockman and Turtle, 2003) and transformed data determined likelihood technique (Duan, 2009). Crosbie and Bohn (2003) define the method required to evaluate “how far” a company default, i.e. how

to probabilistically assess probability of default. Jessen and Lando (2015) support this evaluate, as a technique, technology, ranking companies by how far they are from actual defaults. They indicate that although distance to default computes are based on simplified assumptions, it revealed to be a good default analyst and a powerful to model error specifications.

Jessen and Lando (2015) agreed with the concept that distances to default are a strong measure that can make companies rank in line with their respective default risks. In an examination between financial stability reports, Cihak (2006) shows that distance to default is the most commonly used market-based risk indicators. (Gropp, Vesala and Vulpes 2006) show that DtD is powerful in evaluating financial institutions fragility. Furthermore, market-based indicators such as DtD include market participants' forward-looking assessments (Demirovic and Thomas 2007).

Moody's KMV model is arguably the most documented model for bonds risk. The first Credit risk model was originally presented by Robert Merton in 1974. In this approach default is careful to occur when the value of firm's assets decreases lower the liabilities of the company. This approach was slightly modified and is applied by following defined 'distance to default' methodology of KMV Corporation one of the most popular models used in the repetition. In principle, Moody's KMV is defined for the measure of the distance-to-default (Crosbie and Bohn, 2003).

Default risk is another influencing factor where creditors need from debtors a spread finished the risk-free rate i.e risk premium. This spread is a growing function of the probability of default of Individual Corporation (Madan, Bakshi and Zhang, 2004). A considerable part of corporate bond credit spread might be explained by influences that are

usually used to model risk premiums for commonplace stocks. Most of the creditors require high credit spread on corporate bond due to default risk (Longstaff, Mithal and Neis, 2005). Default risk has a linear relationship with credit spread on corporate bonds and it varies across rating (Amato and Remolona, 2005). Zhang (2008) further suggest that default risk premium plays a significant role for credit spread when default risk is moderate but its impact declines when default becomes extremely high.

A linkage between default risk and credit spread is also spotted. Default risk is itself a component of total credit spread (Elton et al., 2001). Default risk's approaches such as, volatility and leverage are identified to contribute significantly when changes in credit-spread are accounted (Collin-Dufresne, Goldstein, and Martin, 2001). Acharya and Carpenter (2002) highlighted that volatility and tangibility measurements impact corporate bond's recovery rates. furthermore, another important factor identified is the credit rating, a possible influencer of credit spread (Collin-Dufresne et al., 2001; Chen et al., 2007). A high default risk is the main reason of high credit spread required by the creditors and it affect the credit spread adversely. A greater credit risk is expected to be positively related with credit spread that leads the firms towards default risk.

Credit-pricing models and risk management applications bring an attention to the systematic risk mechanisms of credit risk, as these are the only ones that entice risk-premier. Credit risk models usually expected unmeasured variables to be dependent on individual features that do not reply to systematic factors and to be independent of PD (Altman, Resti and Sironi, 2003).

Merton (1974) and Black and Scholes (1973) contributed a simple method for calculating corporate bond and stock as corporate assets' derivative. Merton (1974) gave a

structural model for pricing of business bond and default forecasting. Assumptions were made related to company's equity and it is observed as company's asset alternative as shareholders enjoys the privilege to attain the residual value of company once the total debt is paid. The limitation of Marton model's assumptions are offered by several other highly recommended models, these models reduced the application of Marton Model.

The literature observed on default desires encouraged the application of original model. While using Marton model three factors are focused which are asset value, asset volatility and expected return on assets. The most repeated and simplest method available in literature is equation system approach. In this method, the two factors are explained by equation system and third one is independent. The system of equation is introduced primarily by, Jones et al. (1984) and Ronn and Verma (1986). Whereas, recently it is used by Campbell et al. (2008).

Campbell et al (2008) and Bharath and Shumway (2008) include a hazard modeling method that was 1st proposed by Shumway (2001) and use together accounting as well as market variables in the valuation. They find that the DtD measure has relatively little explanatory strength over the other variables they include in the model.

Duan (1994) recognized a different approach of maximum likelihood (ML). Structural credit risk models are applied this approach. An illustrative example can be of Ericsson and Reneby (2005) estimation of all three parameters jointly. Another feature of this document is the hybrid model, which adds accounting variables to structural models (Agarwal and Taffler, 2008, Wu, Gaunt and Gray, 2010, Li and Miu, 2010, Bauer and Agarwal, 2014).

Bharath and Shumway (2008) evaluated the DtD as a measure of defaults and found that the DtD delivered useful supervision for structuring a default predictive model. In summary, this means that using DtD as a dependent variable makes this research straight valid to the preparation of financial robustness analysis.

Moreover, Bharath and Shumway (2008) model advice a version of DtD measure that lost sophistication. A separation of informational advantage was done in BSM model. Hence, their simple DtD pointers retain option pricing's functional form, but latent factors are passed which at the same time estimates the BSM Functional Requirements. Bharath and Shumway (2008), considers debt and equity fluctuations to combine as a weighted average to form company's volatility. Total liabilities' book value (TL) is used a proxy to total liabilities market value. By using percentage, point of five, debt fluctuations shows a stable structure and settles to variation of stock by 25%. They used these variables to explain their DtD measurement.

Bharath and Shumway (2008) established that BSM method was not as good as their naïve approach. Whereas difference between the two methods are identified by Agarwal and Taffler (2008). Hence Simple BS metrics is more effective than complex BSM model.

Bharath and Shumway (2008) assess the Merton DtD model and discover that it does not create enough statistics for the possibility of default. They build a naive probability of default as a substitute to the classical Merton DtD model. Their finding suggested that this naive alternate predictor of default leave behind the Merton DtD model. Abdullah and Ahmad (2008) provided a similar hazard model to that of Shumway (2001) and applied it to the Malaysian financial market. They provide a series of specifications,

and believe that leverage, earnings, cash flow mobility, increase in size, and growth can improve the accuracy and explanatory power of current hybrid models.

There are some studies, consistent with the model (Shumway, 2001) for instance, improve the hazard model that contain different variables and adjust industry consequences (Chava and Jarrow, 2004). Beaver, McNichols and Rhie (2005) and Beaver, Correia, McNichols (2010) assess the forecasting power based on accounting and market variables. Combell, Hilsaher and Szilagyi (2008) estimated the Shumway (2001) model and found that the probability of default caused by Merton's model structure method has slight predictability after accounting for accounting and market forecasting factors. They also found that the variables in Shumway (2001) were more important while adjusted by market-based denominators, such as the market value of the total assets (the book value of debt plus the market value of equity) was better than the book value of the total assets. They also added two variables in the description of Shumway (2001), namely book value and stock price.

2.3 Dividend Payout Policy

The policy related to dividend distribution that focus on corporate earnings as what share of it shall be provided to investors as an investment return and what is to be retained for future earning (Huda and Farah, 2011). Public corporations tend to allocate the profits of the financial year to be distributed to the shareholders in term of dividend. The decision about dividend payment depends on the current and future performances of the company. Dividend policy is one of the financial focuses of extensive research. Many studies have tried to find out how the company payment dividend determines the dividend policy.

Dividend policy is important for each managers and investors, because it isn't only a source of earnings for investors, but also displays the corporation's performance. Selecting an appropriate dividend policy for the company is an important choice for managers, an in addition to, investors. Academicians have future many theoretical and empirical models describing the elements the managers must take into consideration when creating dividend payout policy. These factors that affect dividend policy are qualitative analysis (Lintner, 1956; Dhanani, 2005; Khan et al., 2011) and quantitative analysis (Sharon and Frank, 2005; Banerjee et al., 2007).

The debate over the importance of dividend policy existed first proposed by Miller and Modigliani (1961), who claimed that in the ideal capital market, dividend payments had no significant effect on the value of the company and remained unchanged in all factors. In such world, the value of firm relies only on the distribution of forthcoming cash flow as a result of investments project.

Dividends allow companies to see the performance of financiers and capital markets. This is because the company's share price depends in part on the sample of dividend payments (Huda and Fara, 2011). Conventionally, financial researchers emphasized dividend interpretation based on the desire to communicate facts to shareholders (Allen and Michaely, 2003). In addition, the dividend distribution shows the company's growth and stability. The higher the dividend payment, the higher the investor's guarantee for the relevant company.

Gugler and Yurtoglu (2003) and Aivazian et al. (2006) pointed out the negative relationship between dividend payments and leverage. The study expects the relationship between these two variables to be negative. Rozeff (1982) reported that the Beta

coefficient, which represents the volatility of the company's profits compared to the market brought about by the company's economic and operating leverage. Because the company is likely to pay leverage through fixed payments, a higher beta will reduce dividend payments.

A large number of debts legally limit the company's dividend distribution. This indicator shows that high leverage limits the company's payment of higher dividends (Dickens et al., 2002). DeAngelo and DeAngelo (1996) found that more than half of the company's models on the New York Stock Exchange encountered a binding contract when they increased their dividend payments. Crutchley and Hansen (1989) found empirically that dividends are negatively associated with the company's leverage. The decline in debt obligations and interest expenses has reduced the company's ability to guarantee dividend payments. As a result, debt is expected to have a negative impact on the amount of dividends paid over a period of time. Kowalski et al. (2007) believe that additional companies are very obliged to pay less dividends.

According to Rozeff's (1982) hypothesis, higher income growth rates are positively associated with higher investment expenditures. The company is most likely to invest in additional profits. It is expected that the payout ratio will have a negative correlation with the growth rate of income. The drive behind this association is the requirement of funds to continue with rising rates of income growth. On ignoring this case, an entity will encounter rising transaction cost to support dividend payments for growing additional funds.

Chen and Dhiensiri (2009) stated that companies with rapid income growth tend to reduce their dividends. Rapidly rising companies increase their demand for capital and prioritize funding for new missions with retained earnings. As a finding, companies with

high growth potential may retain most of their revenues to finance project expansion instead of distributing income to shareholders.

Based on Chen and Dhiensiri (2009), companies with rapid income growth tend to reduce their dividends. Corporations are possible to funding their new tasks or investments through retained incomes rather than distributing the profits. Therefore, income growth is negatively connected with dividend payment.

2.4 Dividend Payout and Bonds Risk

One of the important factors that influence the risk of company debt is the shareholder-bondholder conflict. Bond price are probable to reflect the extent to which bondholder realize that the risk is levied through shareholder. This expropriation risk leads to underinvestment problems. This occurs due to the fact the company invests too early and abandons too soon, as compared with the case where there's no risk. The probability of expropriation and the probability to shut down the task once the expropriation risk is included (Restrepo, Correia, Peña, and Población, 2014). Dividend payments may create such a shareholder acquisition method. The observed increase in expropriation risk and the return on investment that bondholders need to take on additional risk.

Prior empirical evidence have also discussed the conflict arises shareholder and bondholder (Woolridge, 1983; Handjinicolaou and Kalay, 1984; Jayaraman and Shastri, 1988; Maxwell and Stephens, 2003). This conflict arises because of imbalance in the agreement. This shows that if company earns profit or project becomes successful then shareholders enjoy the benefits. On the other hand, if the company is in loss then bondholders bear the loss (Abor, 2008).

Bondholders get the fixed payments however Shareholders get the benefits of income. The agency problem between shareholders and bondholders arises because of debt as equity holder finances them optimally and receives benefits. (Fama and Miller, 1972) noted that, Leverage grows the benefits for shareholders due to wealth switch from bondholders to shareholders. Too much leverage grows the possibilities of default. This conflict leads to severe effects resulting into over investment or under investment issues.

Griffin and Lemmon (2002) noted the relationship between the credit risk perceived by the bondholders and stock return is nonlinear. The dividend payouts are comparatively small, bondholders see dividend positively and if the payouts are higher, the default of bonds increases. When the firms disperse the small amounts to shareholders, the distribution of small amount is a positive signal for the bondholder about the firm's prospects of growth. However, as the level of payment increases, bondholders feel the threat of large cash outflows, and require higher returns and higher debt costs. Consequently, when the dividend expenditure reaches a certain advantage, the conflict between shareholders and bondholders will intensify. This study determined the relationship between the default of debt and the announcement of dividends. The default of debt has been hypothesized as the proxy for credit risk.

Mathur et al. (2013) studied debt costs (corporate bond yields) and dividend payments. They indicate that at a certain level of dividends, dividends can reduce the default of debt. However, the impact of changes in dividends on company debt holders remains unclear. Research related to this issue has greater significance since a corporate policy involving dividend payments could guide firms' valuation through financial decisions and capital budgeting (Wei, Truong and Do, 2016).

Numerous entitlements of shareholders and bondholders' interest, primarily the competing hypothesis based on the content of information, changes and wealth expropriation of dividend varies. Corporate events such as of discussed in researches of Ghosh and Jain (2000) and Faccio and Masulis, (2005) related to corporate takeovers, Eberhart and Siddique (2002) for new equity issues; Maxwell and Stephens (2003) Jun, Jung, and Walkling (2009); Nishikawa, Prevost, and Rao, (2011) for share repurchases, are being utilized as test reason to consider the conflict of interest among bondholders and equity holders. The study spotted that the conflict of interest among bondholders and shareholders is limited while considering dividend policy because bondholders believe that changes in dividends have an impact on the valuation of bonds, similar to those in equity valuations. However, in companies with higher risk, the default is obviously that the increase in dividends is bad news for bondholders, which means that the transfer effect will be threatened.

Jayaraman and Shastri (1988), Dhillon and Johnson (1994), and Qi, Roth and Wald (2011) favored the wealth transfer hypothesis of dividend. An illustration of which can be found in the work of Jayaraman and Shastri (1988), which indicates that payment of debt is a distinctive form of dividend. Whereas, Dhillon and Johnson (1994) researched on a number of fluctuations in dividends and concluded on a price reaction reverse between bonds and stocks; stock price falls (rise) and bond price rise (fall) in reply to a decrease in dividends (rise). Both Dhillon and Johnson (1994) and Jayaraman and Shastri (1988) deduced that, by activating price response of liability, an extent of cash debt repayment decreased due to rise in dividends. Qi et al. (2011) did an examination of debt covenants and shareholders control by reviewing wealth collection. The conclusion is drawn;

companies with strong control procedures for shareholders rely more on debt contracts, in addition to dividend contracts, to decrease the wealth transfer.

Corporate bonds are public instruments that do not show a clear link with dividend changes due to equity valuation. The price of those corporate bonds is mainly driven by the interest rates in the market as well as the probability of default. However, the dividend is the main input for equity valuations. Companies with lower credit rating and high chances of default may cut the dividends that could upset the shareholders because of lower future cash flows.

The announcement of dividends is a clear signal of firm performance and they have low cash flows. The wealth transfer effect is extra pronounced between bonds issued by riskier firms with low cash flows while bonds move towards maturity. These riskier firms have a high potential of wealth transfer as dividend payment reduces the cash flows of firms to the level where it is insufficient / unable to honor the debt or bond at maturity. This particular situation increases the chances of default on bonds (Alexander, Edwards, and Ferri, 2000). Fan and Sundaresan (2000) report the evidence that companies have superior incentives to payment the dividends to shareholders before insolvency. This suggests that highly risky firms bearing severe financial crisis are more likely to use dividends to transfer the wealth. This transfer of wealth with dividend announcement might increase the chances of default of firms that leads to the increase in credit risk.

Wei, Truong, and Do (2016) employed the event study approach for bond returns reactions on dividend announcement in US bond market over 2002-2014. The study reported the significant direct reaction of bond price against dividend announcement. The study also found that that reaction of bond returns is more pronounced with the decrease in

dividend rather than increase in dividend payment. The study reports the significant evidence of signaling effect while examining the reaction of bond market to the dividend changes. Riskier bond exhibit a stronger reaction to the change in dividend and bond price and dividend changes moves in the same direction. Bondholders have a major concern with dividend announcement as their bonds approach to maturity. Overall, the study found that with the increase in dividend payment the default risk increases. The findings support the Black and Scholes (1973) bond price model which governs that a high sensitivity of bond price would lead to unfavorable news.

Findings show evidence that companies are reluctant to reduce dividends while facing the additional risk of acceleration of the financial crisis (Acharya et al., 2011; Floyd et al., 2012). Despite the increased risk, this unwillingness to lower dividends will lead to an increase in credit spreads. Bondholders need additional risk premiums to take on additional risks. Companies with higher default risk are expected to have higher credit spreads. High dividend payment reduces cash flow, and a short-term decline in cash flow reduces the company's ability to perform its contractual obligations. This special situation leads to higher credit risk and increases the risk of default. Longstaff and Schwartz (1995) reported that as the risk-free interest rate rises, the profitability of the company increases, so the possibility of default is reduced.

Galai and Wiener (2013) Shows in a Merton model with bankruptcy and impact of dividend on the choice debt and equity. The study emphasized that excessive dividend payment would lead the firm to financial distress. There is a strong need to put restrictions on dividend payment taking into account the potential conflict with bondholders. Moreover, the study explains that a stable dividend policy is an important tool for monitoring and managing the credit risk of corporate bonds. There is a need to set the

investment and dividend policy by the firms while facing the default risk. If not then firm distribute the high dividends while facing the default probability.

2.5 Signaling Theory

Dividends may have a signal effect, which helps the organization predict the company's future earnings or long-term planning. Investors expect changes in the company's future earnings outlook based on changes in the amount of dividends. However, compared with the target payout rate, companies should have a stable dividend payout and a higher dividend payout. Dividend changes may not affect the causality of the stock price movement. However, changes in stock prices may reflect future income and opportunity rates.

Zameer et al. (2013) observed that due to the distribution of statistical data to the market (Laux, 2011) and the company's future income potential (Zameer et al., 2013), dividends have a signal effect. In other words, dividends are a signalling tool for companies to enter the market.

When corporate management issues securities, traders can expect stock prices to rise. Management uses the additional holding income generated by income to fund the investment. On the contrary, companies increase external financing expenses through debt, indicating that corporate assets are overvalued. This makes investors expect the stock price to fall (Yook, 2003). In the economic market, there are negative statistics on outsiders (shareholders) and insiders (managers and administrators). In this case, managers and directors have additional information on current and future possibilities that outsiders cannot obtain (Malkawi et al., 2010).

The asymmetric information effect of the company's true intrinsic cost cannot be accepted by the market. The stock price is wrong in reflecting the value of the company. In fact, the specific and correct statistics insiders will lead the market and stock prices to respond positively to the bonus statement (Malkawi et al., 2010). This allows traders to think that the dividend announcement is an assessment of the company's future performance and prospects.

The increase in dividend payments means that the company is achieving a satisfactory profit outlook and the stock price will rise. On the contrary, although the reduction in dividends shows the company's bad future and the stock price will eventually fall. By studying the effects of Laux (2011) supporting signals, the payout ratio is higher than the long-term target ratio and an active liquidity shock occurs. Similarly, companies that pay dividends are assumed to have higher income values.

In addition, information on the level of dividends is related to changes in dividends (Grullon et al., 2005). Although changes are not part of future income, changes in the dividend signal do make some changes in current income (Benartzi et al., 1997). Although the distribution of dividends shows an ideal expected result, there is no future profitability development (Grullon et al., 2005).

2.6 Agency Theory

Jensen (1986) introduced agency cost theory which explains the contracting problems of self-interested individuals having different interests. Jensen (1986) proposed and define agency cost theory that *“agency cost as a sum of the costs of structuring, bonding, monitoring contracts between agents as well as the costs stemming which it does not pay to enforce all contract perfectly”*. It highlighted the conflict of interest between

principal (shareholder) and an agent (manager), where the primary responsibility of the manager is to increase the shareholder wealth and to manage business efficiently (Zameer et al., 2013).

The agency problem arises when manager according to their own interest invest excess cash flows in projects which show negative or low net present value (NPV). Therefore, the shareholders must pay close attention to the manager's functions. The supervisory cost is called the agency cost. Therefore, to reduce the agency cost, dividend is issued which lessen the cash in manger's hand and as a result manager have less or no choice to misuse the funds. Further believe that when the insider increases ownership, the agency cost will decrease. When both the manager and the shareholder adjust their own interests, they do not need to pay dividends to compensate for agency costs.

Waithaka et al. (2012) expressed that one of the major agency problems which result manager and shareholder conflict, which affect the share prices is the availability of free cash flow. Furthermore, results showed that in order to weaken the managerial control over the free cash flow, dividend is the one way to do so. Additionally, agency problem also arise when manager use free cash flow for private benefits, such as investment in negative or low NPV projects, therefore by issuing dividends free cash flow in managers hands can be reduced.

The other side of the coin highlights bondholders and shareholders as another reason for agency cost. Shareholders require high dividend payments whereas bondholders require higher interest and low dividends. The logic behind this is that, debt covenants are provided by bondholders to guarantee cash availability when debt repayment arises. D'Souza (1999) focused on an inverse association between agency cost and dividend

payments. Whereas, Holder et al. (1998) concluded that with a rising insider ownership (decrease of agency cost) there would be lower rate of dividend payments.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes about the research methodology of this research. Research methodology explains the technique in a method that looks to be suitable for viewers (Zikmund et al., 2010). Furthermore, research methodology contracts with the explanation of methods applied to convey out research (Kombo and Tromp, 2009; Zikmund et al., 2010).

The outline of this section is the formulation of research design and the methodology which has been adopted to achieve the objectives of study. For this purpose, quantitative research approach is used for empirical analysis of data. The assumptions and limitations of this research were highlighted. This chapter covers the research design, estimation model, dependent variables, independent variables, data analysis and statistical analysis examination by using longitudinal study. First, this chapter introduces the research design for this thesis. This research designs methods in descriptive and underlying research.

Secondary-based quantitative research has been used in this study. The determination of this secondary-based quantitative research is to test the principal question of the relationship between corporate bonds and dividends Payouts. It is also connected with the measure of ontology, epistemology, axiology and methodology. The following portion of this chapter introduces the estimation model for this thesis. The research model use in the thesis is extended by accepting market model for robustness reason. The independent variable is dividends payouts, while, the three control variables are market to book, leverage and equity beta, the dependent variable bonds risk (distance to default). These variables are put in the model to create the estimate models.

3.2 Research Design

This research outlines methods in descriptive and causal research. Descriptive research is about the features of matters, people, groups, organizations, or backgrounds and examines investigation (Zikmund et al., 2010). Descriptive research defines the environments, organizations, groups, people, or objects that take portion in the bonds risk. Causal researches bring out the identified aim and include relationships (inferences) (Zikmund et al., 2010). Causal research is intended to determine the reasons that affect a firm's bonds.

The research uses secondary data. Secondary data refer to the data collected, data recorded, data gathered, and data approved by someone other than the user. Secondary data is easy to be discovered, accessible, quick and inexpensive (Zikmund et al., 2010). In other words, the study assembles the data from annual report, world scope and website for each non-financial company. This secondary data test the relationship of corporate bonds risks and dividends Payouts.

This is a quantitative research in nature and follows the positivism research paradigm. Quantitative research described a speculation when it recommends that a connection subsists between dependent variable, independent variable and control variables (Zikmund et al., 2010). It is used to test the theories, hypothesis and mathematical model. Two theories connected in this quantitative research are agency theory and signaling theory.

Many researchers, Cheng and Nasir (2010) have used same methodologies and have different conclusions between distance to default (bonds) and dividends payouts. However, some of them have use different approaches and come out with different outcomes. In the meantime, relationship between distance to default (bonds risk) and dividends payouts has not been completely and absolutely investigated. This study the dividend payouts as a factor has

been determine that it will be the reason of the default in the results of distance to default (bonds).

3.3 Sample Size and Source of Data

This study covered non-financial firms listed on Bursa Malaysia which paid dividends and issued bonds during the sample period. The secondary data is collected from the company's annual reports, balance sheet, and income statement over the period of 2006 to 2015. The sample contains seven non-financial industries such as construction, consumer products, industrial products, mining, plantation, properties, technology and trading services. The sample covers 297 non-financial companies listed on Bursa Malaysia.

Non-financial sector is included for the experiential examination and corporations with lacking values are excluded from the study in order to reduce the capability bias (Frank and Goyal, 2009; Strebbulaev and yang, 2013; Keefe and YOghoubi, 2016). The financial sector is excluded from the sample size as their characteristics are different from non-financial firms. Financial companies have a different structure in contrast to the non-financial companies (Wang, 2012). This fact has an imperative effect on how their leverage ratios differentiate from non-financial businesses (2008).

3.4 Estimation Method

To examine the impact of dividend payout on distance to default (bonds); panel data techniques were applied for empirical analysis of data. This study analyzes regression analysis in a panel data framework to test the hypothesis. Brüderl (2005) noted the advantages of using panel data. 1st panel data analysis is more informative because there is less collinearity and the data are more variable. 2nd for more detail with panel data can study separate dynamics of the different firms. Also, through panel data one can control the

unobserved heterogeneity. “Heterogeneity prejudice occurs because the time invariant fixed effects influencing separate cross-sectional elements, and therefore, they have been left out of the deterministic portion of the model. So, in essence heterogeneity prejudice is a form of omitted variable prejudice (Baddeley and Barrowclough, 2009)”.

3.5 Theoretical Background

In this section, the research defines that how the topic and theory are associated with the present study. The evaluation starts with the discussion about signaling theory and agency. The cause of exclusion of those theories is mentioned in theory discussion.

3.5.1 The Signaling Hypothesis

The signal of dividend payouts can create a positive or negative perception about firms. Firms use the dividend payout to create a signal in the market for the purpose to attract the investors. This dividend payout impacts the investor’s perception of firm’s risk. According to Bhattacharya (1979) and Ofer and Thakor (1987), dividend can increase the risk, and firms need more capital resources to complete the shortfall of the risks. According to this theory, corporations that pay larger dividend signal a positive view of their future cash flows. Bondholders identify the positive signal and price the bond higher. Therefore, there is positive signal through payouts effects in lower bond yields.

The signaling theory pronounces that dividend payout can be positive or negative signal for the firm’s riskiness. Dhillon and Johnson (1994) noted that the dividend payout signal creates the conflict between the bondholder and shareholder in the financial market. Jayaraman and Shastri (1988) noted that bondholders recognize the larger dividend payouts as a positive signal and they reduce the bond prices. It means that bondholders perceive the firms as less risky.

Bhattacharya, (1979); Miller and Rock, (1985) and John and Williams, (1985) noted that dividend represent an indication about the firms vision. A greater dividend payout indicates management's confidence about future cash flows of firms. Dividend creates a credible indication because a decrease in dividend is typically met with a severe adverse market response. In this case, bondholders must see the firms that pay greater dividend as less risky and therefore, they require a lower rate of return. On the other hand, dividend might worsen the agency battle between stockholder and bondholder.

Dividend decreases the cash accessible to meet the firms fixed responsibilities as well as principle and interest payments on debt. Furthermore, the negative market response related with dividend decreases, most of firms would rather borrow to avoid cutting dividends. Increases in the cost of debt and decrease in the bond price is consequently increase in the firm's risk. To the extent, bondholders requires high rate of return from the firms paying dividends. This yields a positive relation between dividend payout and cost of debt (Bhattacharya, and Hackbarth, 2010; Mansietal, 2011; Nejadmalayeri and Singh, 2004).

3.5.2 Agency Theory

The agency theory is founded on the link between agents and principle. The representatives of investor's are introduced to the company's directors that would take the decisions on behalf of investors as being their agents. Based on the theory, company's cash flow provisions is used for optimum clarification of capital structure. Jensen (1986) supports the claim that equity and debt at their optimum level lowers the agency cost. Managers those who lack behind to optimize shareholders' interest ends up with confronting two kinds of conflicts. These two conflicts spread its root to agency problems. The foremost conflict arises between shareholders and managers, this conflict proceeds to

agency equity cost. The second conflict arises between shareholders and debtors proceeding to agency debt cost since it involves financing of debt.

Literary contributions by Spence and Zeckhauser (1971), Alchian and Demsetz, (1972) Ross (1977) and Jensen and Meckling (1976) has made the agency theory a focal part of firm's financial theory. Not only this but for academic research it has also become a prominent theoretical outline when executive compensation is considered (Bratton, 2005).

This hypothesis, when based on agency theory identifies the characteristic conflict between shareholders and bondholders. Black (1976) acknowledges that a dollar when distributed in the form of dividend becomes a dollar that is not accessible to the company's creditors in case of trouble. Dividends as a distribution of cash indicate redistribution of capital to shareholders from bondholders.

Scholars such as Handjinicolaou and Kalay (1984), Woolridge (1983), Jayaraman and Shastri, (1988), Dhillon and Johnson (1994), and Maxwell and Stephens, (2003) have examined this issue. More recent researches, such as Acharya et al. (2011) and Floyd et al. (2012) claimed that dividend reduction is avoided in the situations where financial crises give rise to additional risks faced by the firm. The rising credit spreads is the cost beard due to increased risk and incapability to lower dividend. This is the case special to the situations where additional debt funds share repurchases.

The primary reason for conflicts between debtors and shareholders is the organizational imbalances. In case of successful project, the shareholders give rise to the income whereas in a situation of failure loss is tolerated by debtholders (Abor, 2008).the benefits of earnings are availed by shareholders and bondholders receive a fix amount. Debt is the major reason-giving rise to agency problem since optimal investment is made by equity holder to get its advantage. Shareholders advantage is increased by the leverage

since bondholders wealth is transferred to shareholders (Fama and Miller, 1972). The chances of nonpayment are increased in the situations of high leverage. Several concerns arises from this conflict such as underinvestment and overinvestment problems.

Since the consequences attached with the agency problem are difficult to overcome therefore, handful of studies are deep-rooted to solve agency conflicts between shareholders and debtors. Addition a payment benefits, profit and ownership of equity prompt them to take leverage. Debt addition lowers the flow of cash and complexities are accounted by firm to deal transactions associated with debt; so disciplinary strength is the role played by the debt. The cost of debt considered by agency can be lowered if higher achievement possibility and scheme of safer investment are selected.

3.6 Conceptual Framework

The examination of dividend payout policies' response in the bond market can be considered as an important approach. The results that emerged gave mix responses that dividend increase does not influences bonds but decreasing dividends have a negative effects on bonds (Handgjinicolaou, 1984; Wooleidge, 1983). An assumption thus deduced from this response could be the fact that; a reduction in payouts of an entity conveys adverse informational content related to its future prospects .Scholars such as Jayaraman and Shastri (1988) spotted a paramount negative response of the bond to dividend payments. Some studies also highlighted that bonds response to huge dividend payout changes is inverse of reaction to the stock price (Dhillon and Johnson, 994). An important effect of dividends 'wealth transfer to shareholders from bondholders is conveyed by these latter studies.

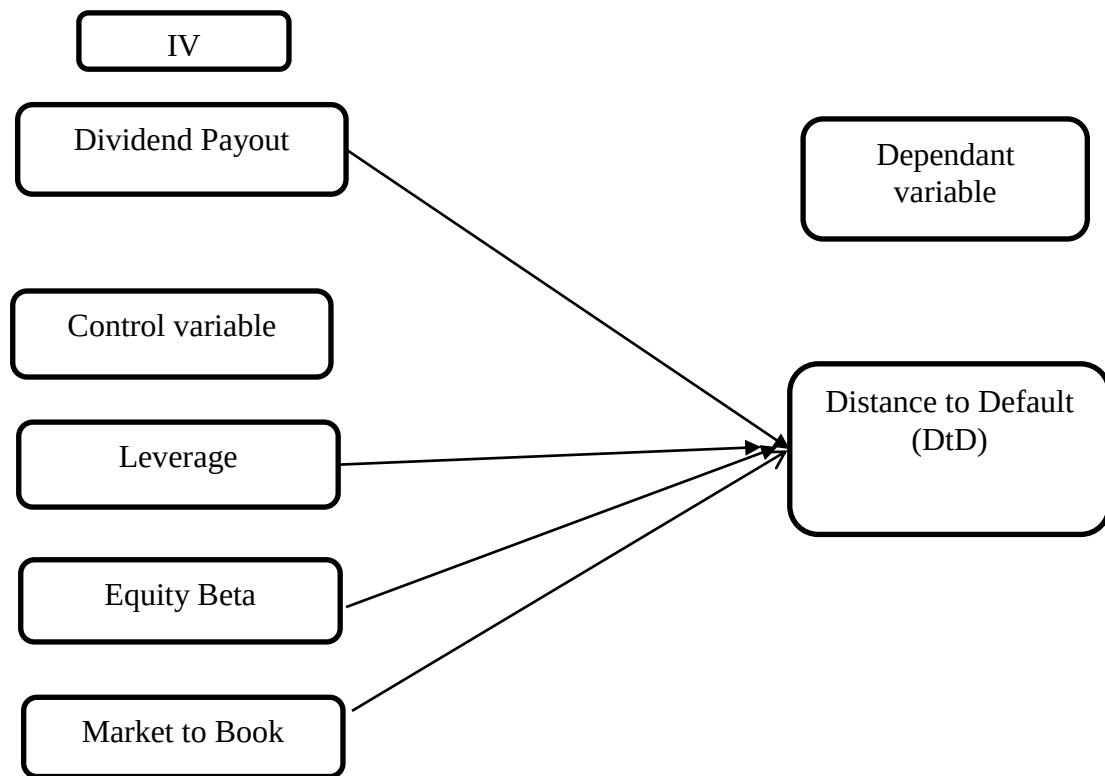


Figure 3.1: Conceptual Framework

3.7 Hypothesis Development

To examine the impact of dividend payouts on bonds risk, we develop two hypotheses in this study. Two likely hypotheses are given below.

H₁: To measure distance to default of bonds issuance significantly in non-financial firms listed on Bursa Malaysia.

The first hypotheses measure distance to default use the Bharath and Shumway (2008) model. The Bharath and Shumway (2008) naive approach is better than BSM approach is because the Bharath and Shumway (2008) naïve DtD measure retains the functional form of the option price model while at the same time bypasses the complicated simultaneous calculation of unobservable parameters in the BSM approach.

H₂: Dividend payout has a negative effect on distance to default (Bonds risk) of non-financial firms listed on Bursa Malaysia.

Hypothesis H₂ will be calculated to check the relationship between dividend payout and distance to default (bonds). That dividend payout has any effect on distance to default. Check this relationship between dividend payout and distance to default this study use panel data regression analysis. Hypothesis H₂ use non-financial firm. Financial firm is not include because there characteristics is different.

3.8 Econometric Model

The study used the Bharath and Shumway Model for measuring the credit risk and the impact of dividend payouts on credit risk (distance to default). Following BSM model, Bharath and Shumway (2008) offer a less sophisticated form of the DtD without solving the non-linear equations as required by the BSM-model. Bharath and Shumway model separates the informational benefit of the BSM framework. Their empirical results suggest that the value of traditional market based models lies in the functional form rather than in solving the BSM function.

As such, their naive DtD measure retains the functional form of the option pricing model but bypasses the simultaneous calculation of unobservable parameters. According to Bharath and Shumway (2008), firm volatility ($\sigma_{A,naive}$) can be written as the weighted average of equity and debt volatility. Inspired by Bharath and Shumway model we assess the performance of a very simple model, identical to Bharath and Shumway, except for the choice of the asset volatility. We simply insert equity volatility instead of in equation

$$\sigma_{A,naive} = \frac{MV}{MTA} \sigma_E + \frac{TL}{MTA} \sigma_D$$

Where

$\sigma_{A,naive}$ = Firm volatility

σ_D = Debt volatility

TL = Total Liabilities (proxy to the market value of total debt)

σ_E = Equity volatility

MV = Value of equity

MTA = Market value of total asset

TL (book value of total liabilities) values of total liabilities an indicator for market. Debt volatility is estimated by:

$$\sigma_{D,naive} = 0.05 + 0.25\sigma_E$$

Where

0.05 is to represent term structure volatility (Bharath and Shumway, 2004)

0.25 * σ_E is to allow volatility associated with default risk (Bharath and Shumway, 2004)

$\sigma_{D,naive}$ = Standard deviation of debt (debt volatility)

σ_E = Standard deviation of equity (equity volatility)

In their study, Bharath and Shumway (2008) use the assumption measure of five percentage points to represent the term structure and also allow a variation of twenty five percentage points for the equity volatility. With these variables Bharath and Shumway (2008) define their naive DtD measure as:

$$DtD_{naive} = \frac{\ln(MTA/TL) + (ER1y - 0.5\sigma_{A,naive}^2)T}{\sigma_{A,naive}\sqrt{T}}$$

$0.5\sigma_{A,naive}^2$ = half of firm's asset volatility (standard deviation)

T = time of maturity (T is set to one year)

MTA = market value of total asset

TL = total liabilities (proxy to the market value of total debt)

ER1Y = return over the previous twelve months

Bharath and Shumway (2008) also say that their naïve method performs better than the BSM approach while Agarwal and Taffler (2008) confirm that there is unimportance between the two empirical models under discussion. As such, the naïve BS measure is authenticated substitute to the more classy BSM function.

3.9 Measurement of variables

In this study measure DtD; by the firm equity; market value of assets; total liabilities; time; return over the previous twelve months and dividend payout. The following sub-section details the measurement of each of those variables.

3.9.1 Distance to default

The proxy for the default riskiness is a firm's yearly DtD from 2006 to 2015. Calculation of our DtD is following the Bharath and Shumway (2008) method. According to them, the DtD measures the difference between the asset value of the firm and the face value of its debt, scaled by the standard deviation of the firm's asset value. DtD thus measures the number of standard deviation of asset value by which a firm's asset exceeds the face value of its debt.

$$DtD_{naive} = \frac{\ln(MTA/TL) + (ER1Y - 0.5\sigma_{A,naive}^2)T}{\sigma_{A,naive}\sqrt{T}}$$

Hillegeist et al, (2004) proposed the importance of asset volatility while financial probability of firm is calculated. The reason is that, it takes in to account the chances of decreasing firm asset's market value below its debt's face value. Duffie, Saita, and Wang (2007) spotted that conditional probabilities of defaults return structure emerged from data related to bankruptcy highly relies on DtD of firm. Furthermore, the financial distress probability can be calculated by using DtD as the proxy since a support is offered by these studies.

3.9.2 Leverage

Companies extremely leverages are perceived to have greater credit default risk (Skiafe et al., 2006; Cheng and Subramanyam, 2008) which may perhaps impact DtD levels. Debt and equity proportion has been commonly used previous finance literature to assume leverage. Thus debt to equity proportion is the traditional measure of a company's financial risk. It measures the ratio of its equity by interest-bearing responsibilities, which is used to finance its assets. If the income before interest and tax (EBIT) reduces, a firm goes the risk of default on its debt responsibilities. Increased leverage decreases earning by presenting higher equity and default risks (Kia, 2002; Kim, 2005).

The trade-off theory of capital structure suggests that the firm chooses an optimal ratio of its debt to asset value by determining the ratio of debt and equity, which is used to finance its action in order to bring equilibrium in cost and benefits. An optimal leverage proportion implies that a firm adjusts its unpaid debt in answer to change in its asset value in order to reach a target level of its leverage proportion (Graham and Harvey, 2001; Hovakomian et al., 2001; Robert, 2002; Korajczyk and Levy, 2003; Childa et al., 2005; Flannery and Rangan, 2006; Titman and Tsyplakov, 2007).

Therefore, in our correction, we describe leverage proportion as total debt divided by the total shareholder equity of the firm.

$$\text{Leverage} = \text{Total Debt} / \text{Total Shareholder Equity}$$

Here, total debt represents totally interest bearing and capitalizes lease responsibilities. It is the sum of long and short term debt. Similarly, total shareholder' equity represent the sum of preferred stock and common shareholder' equity. This item is collected based on the yearly time series.

3.9.3 Equity Beta

Asset volatility is not directly observable. In a simplified framework, asset volatility should be proportional to equity volatility (Campbell and taskler, 2003). The firm's equity volatility in our study is calculated using each firm daily closing price return over the period of one year from 2005 to 2015.

The effect of using equity market price volatility on asset the DtD is that it addresses the appropriateness of information used in assessing firm's financial health. Equity price are also the consensus view from the public market which ideally would be a cumulative of all the available information about a firm. Thus, equity volatility could be considered a robust observation of the firm's credit riskiness that also responds more quickly to events leading to increases in the firm's risk of default.

In empirical literatures on the determinants of corporate bond spreads, Campbell and Taksler (2003) perform an analysis on corporate bond credit risk and conclude that firm specific equity volatility is an important determinant of the corporate bond spreads and that the economic effects of volatility are large. Cremers et al. (2008) using volatility

implied by individual equity, confirmed Campbell and Taksler (2003) result they (2008) argue that equity volatility also contains information, which are useful for analysis different from historical volatility.

From previous experimental findings, it is therefore, assumed that equity beta indicate the tendency of a security return to respond to volatility in market return.

$$e_{\beta} = \sqrt{\frac{1}{N} \sum_{i=1}^n (x_i - \mu)^2}$$

Where:

e_{β} = equity volatility

μ = mean of all values

x^2 = individual value of x

N = number of observations

In this study it is planned that the e_{β} takes useful evidence for predicting DD level. Market price and return should incorporate the risk contact of the firm and thus their complete default risks. The higher is e_{β} , the more liable the firm is to the economy-wide macro-systemic risk and the lesser is it DtD (the DtD is expected to be negatively related to e_{β}).

3.9.4 Market to Book Value (*mtb*)

High economic growth ratio implies high total firm growth ratio. A firm is fewer probable to go into default when it grows faster. In this study, we follow Ceccagnoli (2009) and Lee and Makhija (2009) who proxy growth as the market to book ratio (*mtb*).

This measure has also been extensively used in previous studies (Vafeas, 2000; Kim, 2005; Shangguan, 2007). The *mtb* proportion is found to be an attractive measure of growth primarily because *mtb* proportion basically indicates the difference between the net assets of the firm and the estimation that the market gives to them.

Simply, the *mtb* ratio reflects the premium or (discount) that the market gives to the firm on its net assets and therefore, this reflects the efficiency with which the market views the firm as being managed. High *mtb* ratio suggests that for every additional Ringgit invested in the net assets of the firm, it would yield an attractive return for the investors. Conversely, a low *mtb* ratio means that the returns on additional investments are unlikely to be attractive, as such; The *mtb* ratio reflects the incentives for additional capital investments help the firm to grow (Tong and Ruer, 2006; Goranova, Dharwadkar, and Brandes, 2010). Therefore *mtb* is indicative not only of future growth potential but also linked to risk (Griffin and Lemmon, 2002).

In more recent study, Shangguan (2007) provides evidence that earnings growth measured by *mtb* ratio is apposite and significant determinant in the presence of illiquid growth opportunities. Since the *mtb* ratio incorporate both historical and forward looking market indicators of firm performance, it provide a theoretical rationale for using the *mtb* ratio as a measure of growth performance (Lee and Makhija, 2009) and we propose that it should also affect DtD. In this study we calculate the *mtb* ratio as the market value of equity divided by the book value of common shareholder equity following approach adopted by Anderson et al (2003). In this study, the *mtb* is represented as follows,

$$MTB = \frac{MVE_{it}}{BVE_{it}}$$

Where:

MVE = Market Value of Equity

BE = Book Value of Equity

Where, market value of equity (MVE) is the product of closing shares price (p) and the number of shares, in other words, the stock market capitalization. Book value of equity represents the shareholder equity i.e. the difference of total assets and total liabilities.

3.9.5 Dividend Payout

To estimate numerically, changes in the cost of debt in accordance with dividend distribution Becker et al (2011) conducted a study. His study took dividend yield as a proxy measure to payout. The dividend yield is considered as RM quantity of annual dividend payment to the issuance of debt dividend by the ending monthly price closer to the data of issuance.

$$Div\ Pout_{it} = \left(\frac{\sum Annual\ Dividend_{it}}{Share\ Price_{it}} \right)$$

3.10 Model Specification

DtD is defining as the closeness of the firm being defaulted, measure by the standard deviation. The study has derived the equation for the dependent variable, i.e. the distance to default in terms of the observable variables as following

$$DtD_{naive} = \frac{\ln(MTA/TL) + (ER1y - 0.5\sigma_{A,naive}^2)T}{\sigma_{A,naive}\sqrt{T}}$$

Next it proceeds to discuss the regression equation to capture the relation between dependent and independent variables. A firm risk is a set of systematic and unsystematic risk. The systemic risk is equal for all firms because market risk affects all the firms equally (Sharp, 1964; Lintner, 1965). Accordingly, Fargher, Wilkins, and Webb (2012) noted that financial leverage is related to systematic risk and the asset volatility is related to unsystematic risk. They used different variables but only leverage and asset volatility noted significant credit risk of the firm.

The credit risk is dependent upon that variable, the volatility, leverage and risk-free spot rate, on the basis of option price theory (OTP). This study will use the growth rate of the firm instead of riskless spot rate. Collins and Kothari (1989) and Gosh et al., (2005) suggest that the growth rate is more appropriate to measure the firm credit risk. The ratio of market to book value (*mtb*) is used as the proxy of growth rate.

One of the objectives of this study is to investigate the relationship of dividend payout and firm's credit risk (Distance to Default). Bhattacharya, 1979; Miller and Rock 1985; John and Williams (1985) the dividend payout create big angular signal in the market. That signal can be taken positive as well can be as negative by the bondholder. A dividend payment delivers a positive signal in the market. That positive signal shows the future growth of the firm and lesser risk of default. This signal has a negative effect on firm's distance to default. Firms, which are not paying the dividend, face the negative reaction in the market. To avoid this reaction a firm takes a more debt from the debt market, thus the firm debt level will increase. Based on these arguments, this study develop the following econometric model for empirical estimation of the study

$$DtD_{it} = \beta_0 + \beta_1 Div_{it} + \beta_2 lev_{it} + \beta_3 mtb_{it} + \beta_4 \beta_{it} + \varepsilon_{it}$$

Where

DtD_{it} = Distance to default of firm i at time t .

Div_{it} = Dividend of firm i at time t .

lev_{it} = Leverage of firm i at time t .

mtb_{it} = Market to Book ratio of firm i at time t .

$e\beta_{it}$ = Systematic Risk or Equity Beta of firm i at time t .

ε_{it} = Error term of firm i at time t .

3.11 Statistical Analysis

This study has used stata 2014 software for general statistical analysis and econometric analysis. Besides that, it is also used to predict, and estimate the panel data. This thesis have one estimate model which is developed and used to analyze the relationship between dependent variable, independent and control variables. The methodology that will be used in this thesis consists of descriptive statistics, normality, multicollinearity, autocorrelation and heteroskedasticity. Besides that, Random Effect Model (REM) is used in this study in order to closely “fit” a function with the data and REM is used to minimize the sum of the squared residual. Based on the REM regression analysis, it is established to analyze the relation between the dividends payouts and bonds.

3.11.1 Normality Test

Normality test describes a data set with standard distribution and measure how possible it is for a random variable fundamental the data set to be normally distributed. This study took the outcome based on four techniques of measurement which are skewness and kurtosis (Doane and Steward, 2011), the Shapiro Wilk test (Shapiro and Wilk, 1965; Razali and Wah, 2011), review the histograms, normal Q-Q plots and Box plots and three

sigma rule or the 68-95-99.7 rule (Anderson et al., 2011). The value of Skewness and Kurtosis should be close to zero as possible in stata panel 2014. Skewness and Kurtosis is testing z-values. To analyse the skewness and kurtosis z-value distribute the skewness by its standard error.

When exam statistic is less than 0.05, it will reject the null hypothesis, H_0 and will not reject the substitute hypothesis, H_1 which means that the residuals are not usually distributed. Also, when test statistic is more than 0.05, we will reject the substitute hypothesis, H_1 and will not reject the null hypothesis, H_0 which means that the residuals are usually distributed. On the other hand, histograms, normal Q-Q plots and box plots should visually specify that the data are almost normally distributed. The histograms should have the approximate shape of normal curve and the box plots should be as symmetrical as possible. Moreover, three sigma rule or the 68-95-99.7 rule will show that if the data falls from the three standard deviation range, it can indicate normal distributions.

3.11.2 Pearson Correlation

Pearson correlation is to analyse how well the variables are connected. It is the most mutual measurement that is used to calculate the correlation. Furthermore, it shows the linear connection among two variables, which is between the dependent variable and the independent variable. It is connecting value between 1 and -1 and means that 1 is positive correlation, 0 has no correlation and -1 is negative correlation. The positive correlation means that when the value of x (independent variable) increases, the value of y (dependent variable) also increases. The negative correlations mean that when the value of x (independent variable) increase, the value of y (dependent variable) decreases. No correlation means that there is no correlation between the value of x and value of y .

3.11.3 Multicollinearity Test

According to the Gujarati and Porter (2009), multicollinearity occurs at the same time as the independent variables are closely linked to each other's. The independent variables are contributed to an understanding of the dependent variable. If there is perfect multicollinearity, this means that one independent variable will be matched accurately by another independent variable (Gujarati and Porter, 2009).

According to Gujarati and porter (2009), multicollinearity can be sensed out by some symbols. These can be elevated explanatory model power (R^2), but when seen individual parameters of predictors, most of them are insignificant. Incorrect signs illustrating relationship between variables and greater VIF (variance inflation factor) are also some of the indications for existing multicollinearity among predictors. Among these various indications, VIF is considered as of great importance. It identifies that our predictors are associated with each other in the functional form. The rule of thumb or cutoff for VIF is 10. When VIF is greater than 10 then there exist multicollinearity among predictor variables. If VIF less than 10, mean $VIF < 10$, there is no multicollinearity problem. Furthermore, there is alternative way to know measurement of multicollinearity, which is tolerance. The tolerance cannot more than 1, if $tolerance > 1$, there is multicollinearity problem. On contrary, if tolerance less than 1, meaning $tolerance < 1$, there is no multicollinearity problem.

3.11.4 Autocorrelation Test

According to Fall (2008), autocorrelation assume all other assumption remains to hold, under the situation of autocorrelation which are the REM is not BLUE anymore and the REM estimator is still unbiased. While Durbin Watson test and review the Scatterplot are used to determine the autocorrelation problem. It is used to determine whether the error

term is in higher order autocorrelation. Besides that, it should make sure that the dependent variable is unstandardized predicted value and independent variable is unstandardized residual value to analyse the scattered plot.

The instruction of the value of Durbin Watson should be inside the break of 1.8 to 2.2, but it depends open the sample size. When the Durbin Watson is outside the break of 1.8 to 2.2, we will reject H_0 and will not reject H_1 . This shows that the model is autocorrelation. On the others hand, if the Durbin Watson is inside the interval of 1.8 to 2.2, it will reject H_1 and will not reject H_0 . This means that the model does not have any autocorrelation problem.

3.11.5 Heteroscedasticity Test

Heteroscedasticity occurs when the variance of the error term differs or not constant across observation (Fall, 2008). In this study, the test used to detect the heteroskedasticity problem is an autoregressive conditional heteroskedasticity test (ARCH). Autoregressive conditional heteroskedasticity test (ARCH) use the Bresuch Pagan Test and Koenker Test to notice of heteroskedasticity exists.

In this test, we do reject H_0 if the test statistic is larger than the critical chi-square value. The reason is that the model is suffers from heteroskedasticity problem. If the test statistic is smaller than the critical chi-square value, H_0 is not rejected.

3.12 Descriptive Analysis

Descriptive statistics is one of the approaches used to examine the regression model which measure the data and collects the sample from current. Based on the preceding studies, descriptive statistics is used to describe, and measure mean, median, standard deviation, minimum value and maximum value.

3.12.1 Mean

Mean is the measure of principal propensity of data (Trochim, 2006). In this study, mean is defined as the average of the explanatory variable that affects the dependent variable which is distance to default (bonds). It can be measured as the sum of all of the numbers in the series divided by total numbers of observations.

3.12.2 Standard Deviation

Standard deviation is to measure variation. It is calculated as square root of variance and it is used to measure the historical volatility (Trochim, 2006). In this thesis, the standard deviation is used to classify the dispersion of the data of factors that affect the dependent variable which is distance to default (bonds).

3.12.3 Minimum and Maximum Value

The minimum value signifies the lesser value of the variables, but the maximum value signifies highest value of the variables in the models.

3.13 Multiple Regression

Multiple regressions are used for empirical testing of the model that was established on the basis of theoretical and empirical evidence. It is a statistical examination in which connection between the two variables are measured while other factors are held constant.

This multiple regression measures the relationship between the three variables, the effects of each independent variable (i.e. dividend payouts) and the effects of control variable (i.e. Leverage, Market to book and Equity Beta) on the dependent variable (i.e. distance to default (bonds)).

CHAPTER 4

EMPIRICAL ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter illustrates the data analysis and discussion section of the study. The balance panel approach taking into account 297 cross-sectional units of listed non-financial firms in Malaysia is applied. A highlight of the previous chapter is an emphasis on methodological aspects of the study whereby, issues such as detail account of data collection method; that would be utilized to accomplish the core objectives of this study to measure the distance to default of bonds and relationship between dividend payout and distance to default of non-financial firms listed on Bursa Malaysia are discussed. The empirically tested results are presented in current section along with the main effect of payments of dividends some control effects accounted by the variables of distance to defaults of corporate bonds (DtD) distance to default are also tested.

4.2 Descriptive Statistics of Distance to Default and Dividend Payout

Descriptive statistics use to provide simple summarise, which is easier to understand and interpret. Table 4.1 presents the summary of variables used in this study for period 2006- 2015.

Table 0.1: Descriptive statistics

Variable	Obs.	Mean	Std. Dev	Min	Max
DtD	2970	2.36	1.52	0.21	10.35
DPO	2970	18.22	23.21	0	95.92

Figure 4.1 shows the descriptive statistics of distance to default (DtD) of Malaysia corporate bonds. As shows in the table, the mean of the ratio of DtD is 2.36. The range between min and max 0.21 and 10.35 and the standard deviation is 1.52. The detail year wise explanation of mean value, standard deviation, minimum and maximum value of distance to default (DtD) in Figure 4.1.

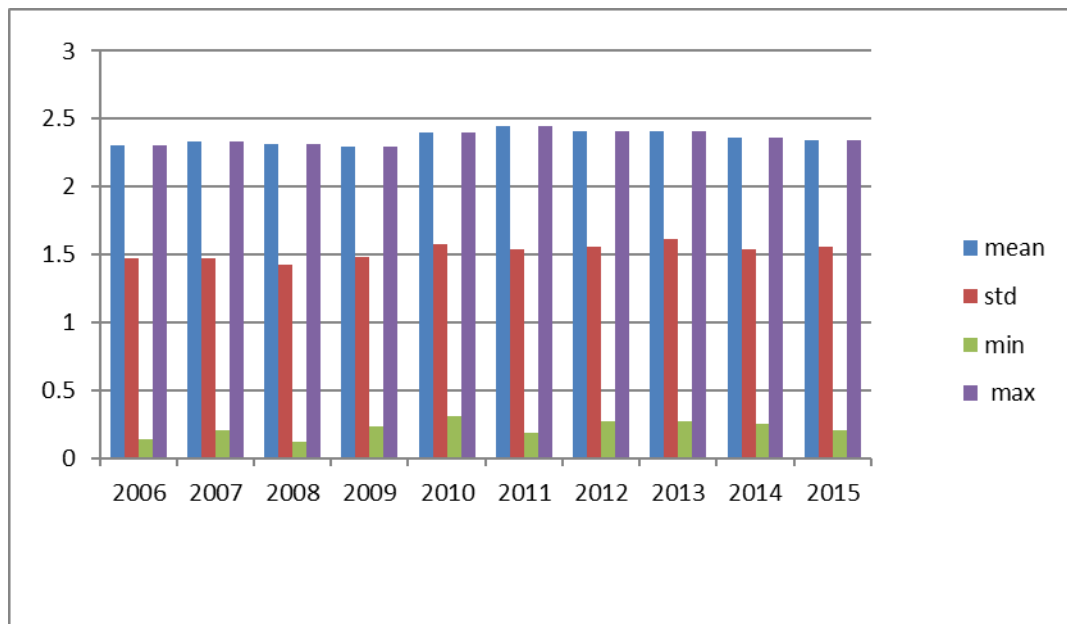


Figure 0.2: Descriptive statistics Distance to Default (DtD)

4.2.1 Interpretation of Distance to Default

The H_1 to measure distance to default of bonds issuance significantly in non-financial firms listed on Bursa Malaysia. Structures used by Bharath and Shumway (2008) were adopted from option prices model by Black-Scholes, these structures associates the asset's market value and firms equity value. Crosbie and Boh (2003), Arora and Sellers (2004) and Dwyer and Qu (2007) stated simple definition of DtD. DtD can be considered as how far is firm's asset value from its debt if quantified in terms of standard deviation.

Firm's volatility and leverage correction means that quality of firm's credit can be understood by DtD. Hence, in case of unavailability of data on actual firm's default DtD can serve the purpose of identifying firm's credit worthiness. . Findings of the study of Groopp et al. (2004, 2006); tudela and Young (2003) and international monetary fund in (2009) figured out DtD as the financial strength indicator that outperform other such measures such as bonds. DtD nearer to zero indicates a firm closer to default whereas a firm having DtD far from zero indicates low chances to default.

Empirical evaluations make this study to identify three issues related to credit, prominently the firm's leverage and asset value, asset risk and expectations related to earnings (Gropp et al., 2002). Studies of Crosbie and Bohn (2001) and Gropp et al. (2002) states that an increase in reining expectations lowers firm's default risk and give rise to its asset value. DtD can be used to identify declining default risk when its value increases. An illustrative example could be a situation whereby a decrease in the leverage of the firm creates a positive effect for firm and reduces its risk. Additionally, when a firm's asset become less volatile, its default probability increases causing a reduction in levels of DtD. This study explain the DtD in Malaysian firms where shows the mean, standard deviation, minimum and maximum indicator for Bursa Malaysia Securities.

Table 0.2: Yearly DtD level in Malaysia

DtD	Mean	Std, Dev	Min	Max
2006	2.30	1.47	0.13	8.61
2007	2.33	1.47	0.20	9.60
2008	2.31	1.42	0.12	10.05
2009	2.29	1.48	0.22	10.17
2010	2.39	1.58	0.30	10.86
2011	2.44	1.53	0.18	10.82
2012	2.41	1.55	0.27	10.72

2013	2.41	1.61	0.27	11.76
2014	2.30	1.53	0.25	10.38
2015	2.33	1.55	0.22	10.58
Average DtD	2.35	1.52	0.21	10.35

Table 4.2 shows the yearly mean, std dev min and max DtD level in Malaysia. Table shows each year average level of distance to default. The DtD value far from zero has less chance of default and close to zero have more chances of default. Bharath and Shumway (2008) distance to default method measure that the Malaysia firms are still 2.35 far from the default point. Based on rating distribution, AAA- and AA-rated bonds continued to dominate fundraising activities, accounting for more than 94% of total funds raised throughout 2015 (2014: 87%). That brought the long-term annual corporate default rate for the year 2000 to 2015 marginally lower to 2.3% (2014: 2.4%), with high-grade and high-yield long-term default rates of 1.0% and 9.0% respectively. By sector, the industrial products sector has the highest default risk of 7.3% versus the industry average of 2.1% Malaysia rating corporate (MARC, 2015).

Table 4.2 shows that the DtD level is recorded by 0.21 and the standard deviation is 1.52. This can be suggested that it would only take 1.29 standard deviation moves in the asset value of the firms before it will be eventually default.

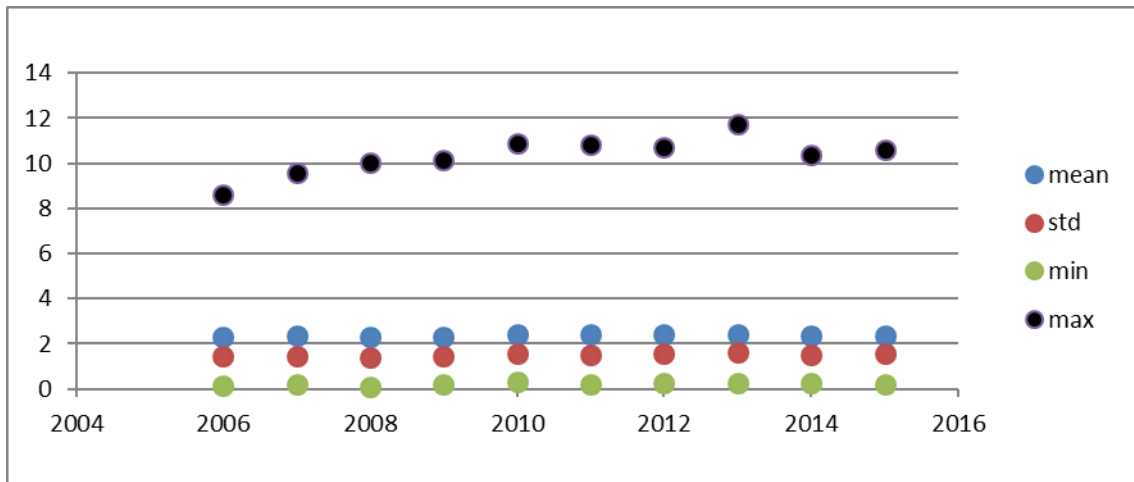


Figure 0.3: 10 years Average DtD level in Malaysia

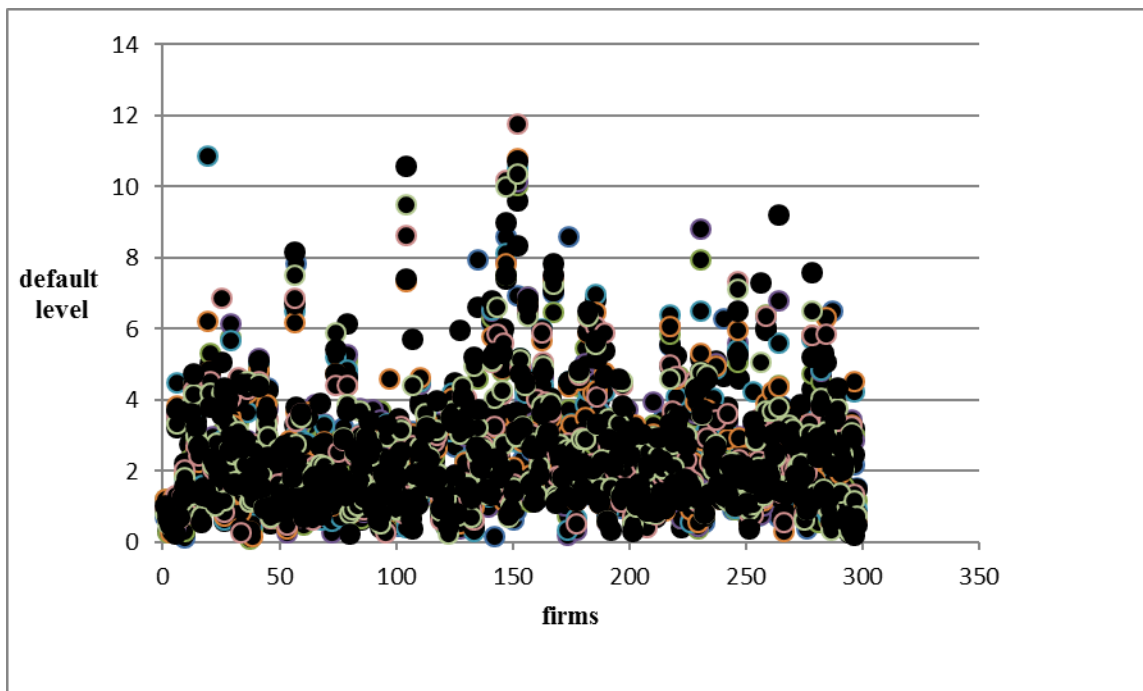


Figure 0.4: Dot plot distance to default level

Figure 4.2 shows the last 10 years from 2006 to 2015 the average level of default in Malaysia. Early in this study documented that DtD nearer to zero indicate that a firm closer to default. Figure 4.2 also shows that the average point of default is 2.35 far from default. Dot plot in Figure 4.3 also shows that the Malaysians firms are still far from default.

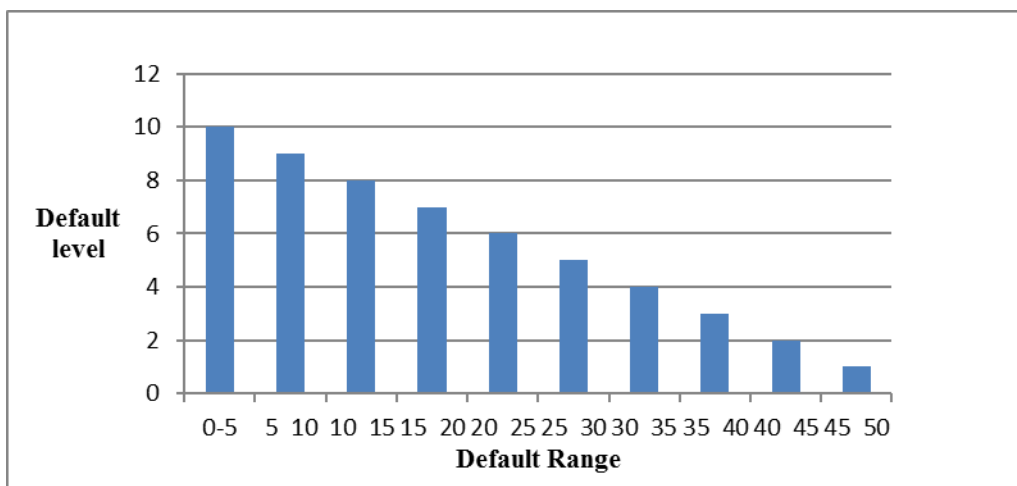


Figure 0.5: Frequency DtD level in Malaysia

Figure 4.4 shows the frequency level of last 10 years from 2006 to 2015 default in Malaysia. Figure 4.4 y-axis shows 10 years default level in Malaysia and x-axis shows the range of default. The range between 0 - 5 is higher and it indicates that a firm close to zero but still far from default.

4.2.2 Descriptive Statistics of Dividend Payout

Moreover, the results of Dividend payout ratio stated that the mean and standard deviation of dividend Payout ratio in Malaysia's firms are 18.22% and 23.21% respectively. However, the maximum value for dividend payout ratio is 95.92 while the minimum value is recorded as 0. The mean value of dividend payout ratio is 18.22% which means that average dividend per share is about 18.22 % of total earnings. Figure 4.5 shows the graphical picture of year wise descriptive statistics of dividend payouts and it indicates the mean value, standard deviation, minimum and maximum values in each year.

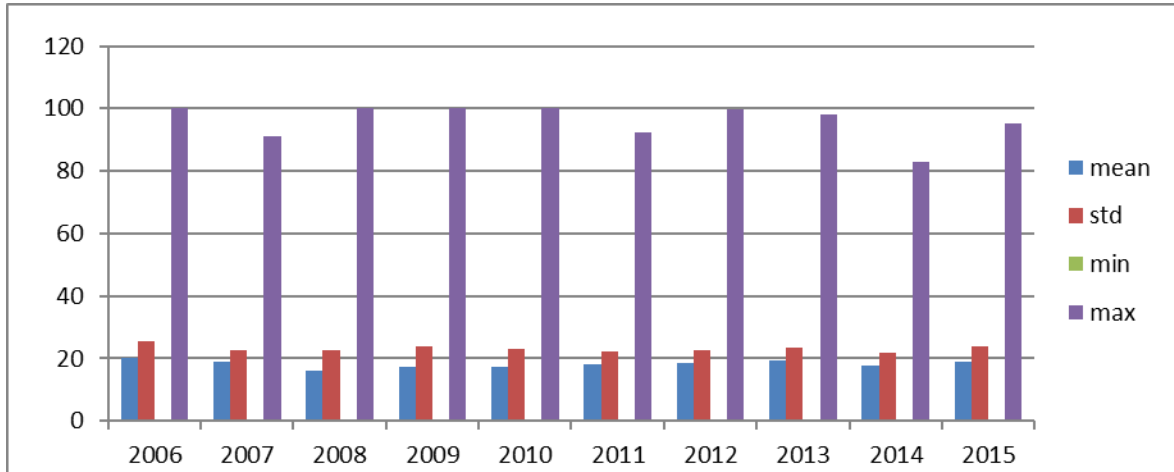


Figure 0.6: Descriptive statistics of Dividend Payouts

Figure 4.6 and Figure 4.7 Shows more detail about dividend payout in Malaysia. Figure 4.6 dot plot shows that Malaysia firms continually pay dividends to their shareholders. In the dot plot chart shows higher and lower level in Malaysia. The maximum level is 95.92% and the minimum level 0%. Figure 4.6 shows the overall dividend payout in Malaysia and Figure 4.7 shows the 10 years average dividend payout level in Malaysia.

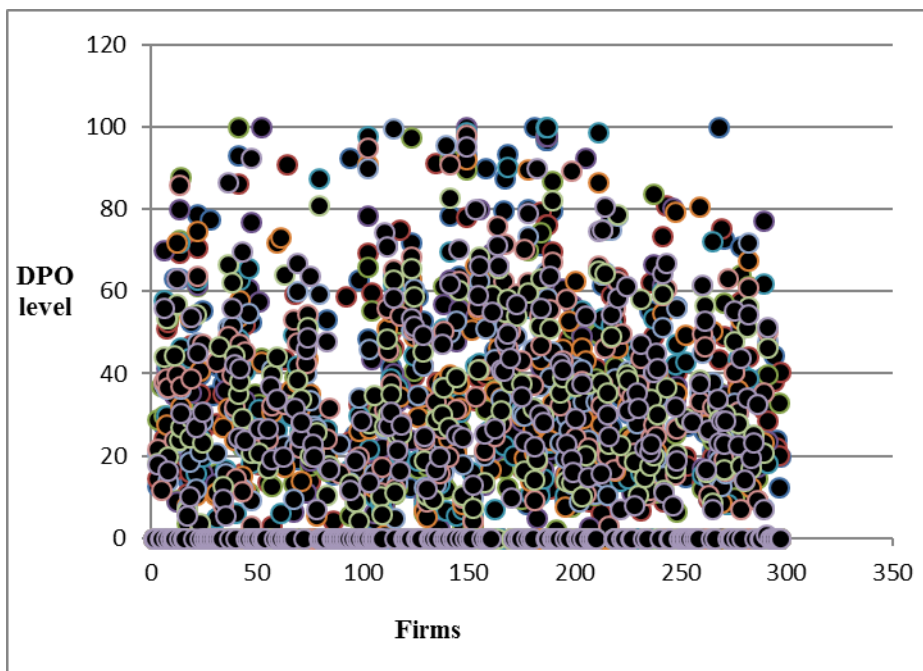


Figure 0.7: Dot plot Dividend payout

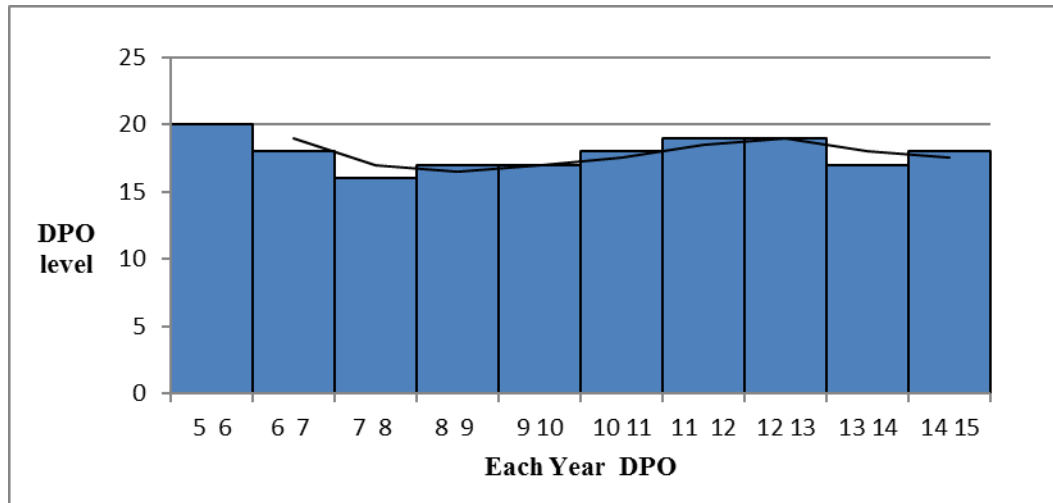


Figure 0.8: 10 years dividend payouts level

4.3 Relationship Between Dividend payout and Distance to Default

4.3.1 Correlation Analysis

Correlation analysis is a method of statistics evaluation, which is used to see the strength or direction of relationship between two variables. There may be perfect negative correlation, perfect positive correlation and no correlation. This study, it is observed that over the period to 2006 to 2015, the DtD positively correlates with each of the explanatory variables.

Table 4.3 shows the correlation matrix for dividend Payout, distance to default and the control variables. Dividend Payout has a positive correlation value of 0.2139 with distance to default (DtD), which is also shown in Figure 4.8. This relationship shows that when the dividends Payout level increase the bonds default level decrease. DtD is far from zero means that less chances of default. Bharath and Shumway (2008) distance to default method measure shows that the Malaysia corporate bonds are far from default. Moreover, this positive relation shows that dividend payout effect on the Malaysia bonds.

Market to book value (*mtb*) has a positive correlation as 0.0863 with DtD. The effect of *mtb* on DtD is 8.63%. Leverage has a negative correlation value of 0.1806 with DtD. The leverage effect ratio is 18.06%. A correlation value Equity Beta has a positive correlation effect with DtD at a value of 0.0437. Equity Beta has effect 4.37% of DtD.

Table 0.3: Correlation Analysis between DtD, dividend payout and control variable

DtD	DtD	DPO	<i>mtb</i>	<i>lev</i>	<i>eβ</i>
DtD	1.0000				
DPO	0.2139	1.0000			
<i>mtb</i>	0.0863	0.1421	1.0000		
<i>lev</i>	-0.1806	0.0886	0.1035	1.0000	
<i>eβ</i>	0.0437	0.0484	-0.0077	0.0556	1.0000

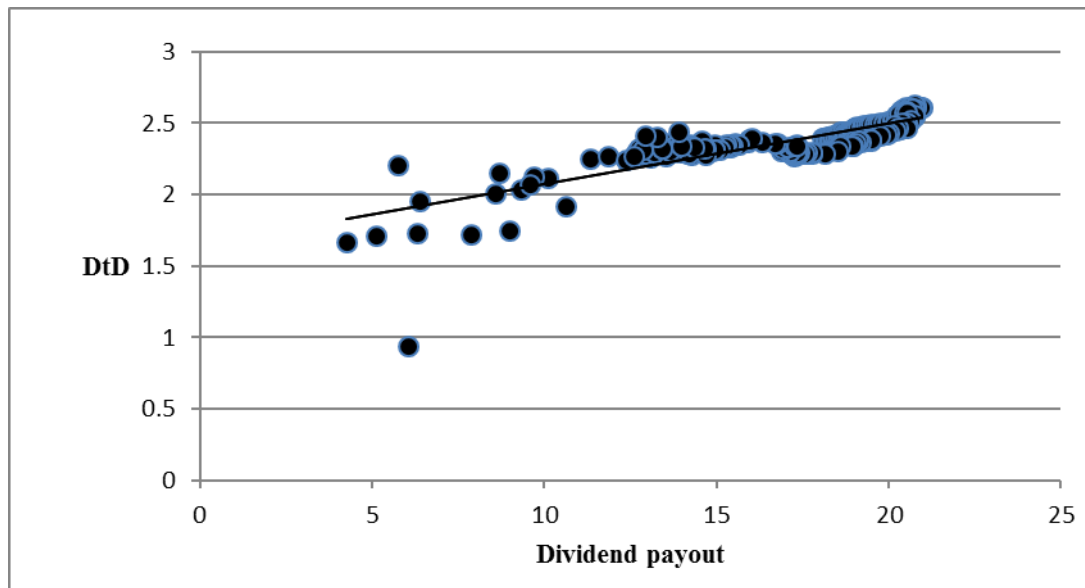


Figure 0.9: Correlation chart of DPO and DtD

4.4 Descriptive Statistics of *lev*, *mtb* and *eβ*

The leverage ratio shows a mean value of 0.655% with standard deviation 0.672%. However, market leverage ratio has the minimum value 0.005% in lowest percentile and 17.656% in the highest percentile. Figure 4.9 shows the yearly detailed explanation about

the leverage ratio. It shows the mean value, standard deviation, minimum and maximum value of leverage in each year.

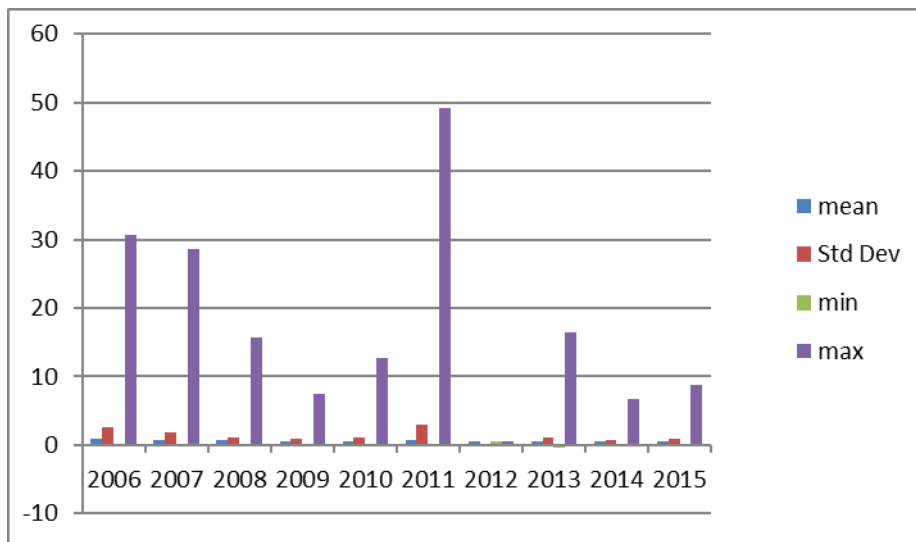


Figure 0.10: Descriptive Statistics of Leverage

Market to book value ratio represents growth opportunities and it has a mean value 1.107 and the average value of market to book ratio in lowest and highest percentiles are 0.159 and 14.255. Figure 4.10 presents the descriptive statistics about market to book value ratio.

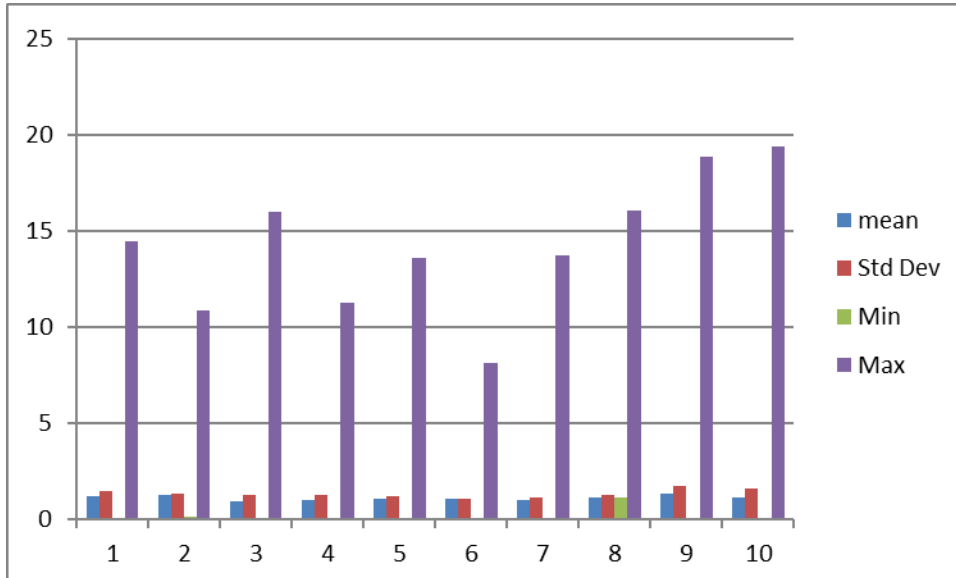


Figure 0.11: Descriptive Statistics of Market to Book Value

Moreover, the graphical presentation of equity beta shown in Figure 4.11 and it is shows that the mean value of firm equity beta is 0.661 with standard deviation of 0.069. The lowest and highest percentile shows the average values of 0.0351 and 0.723 respectively.

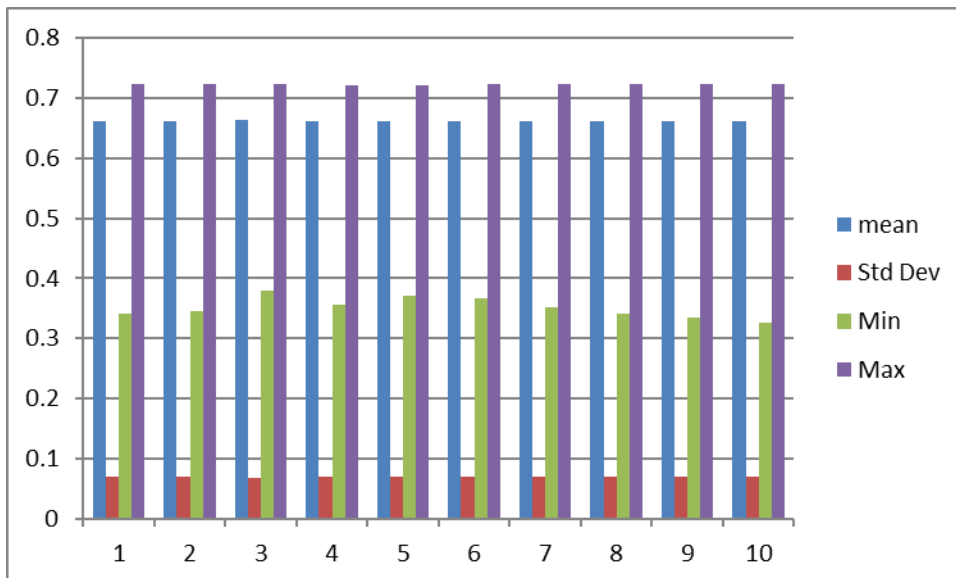


Figure 0.12: Descriptive Statistics of equity Beta

Table 0.4: Descriptive statistics mtb , lev and $e\beta$

Variable	Obs.	Mean	Std. Dev	Min	Max
<i>lev</i>	2970	0.655	0.672	0.005	17.656
<i>mtb</i>	2970	1.107	1.331	1.159	14.255
<i>e6</i>	2970	0.661	0.069	0.0351	0.723

4.5 Diagnostic Analysis Results

This section describes a number of tests to assess the robustness of the model. The structure of the model is examined through a set of procedures or tests to ensure the model is not poorly defined. The regression method follows the classical linear regression model procedure. The 297 assumption used in this thesis consist of normality, correlation, multicollinearity, heteroskedasticity and autocorrelation test.

4.5.1 Normality

As mentioned earlier in chapter three, there are 4 types of measurements of normality. Hence, we use the empirical rule as a normality measurement. The rule could provide a quick estimate of whether the sample data set could represent the entire population. The empirical rule is also called the three sigma rule or the 68-95-99.7 rule. The empirical rule states that for data to have a normal distribution (Anderson et al., 2011):

Approximately 68% of the data values will be within first standard deviation of the mean.

Approximately 95% of the data values will be within two standard deviations of the mean.

Almost all (99.7%) of the data values will be within three standard deviations of the mean.

If a number of data points fall out of the three standard deviation range, it can indicate non-normal distributions. In this study, about 68% of all the data values fall within first standard deviation from the mean (Table 4.5). Therefore, it can be said that the sample

data set values of this study are normally distributed and could be well represent the population.

Table 0.5: Normality Test

Variables	Mean	Standard Deviation	Probability	Result
<i>Explain Variable:</i>				
DtD	2.362	1.522	P(0.840<X<3.884)	0.6826
<i>Explanatory Variables:</i>				
DPO	18.223	23.215	P(-4.992<X<41.438)	0.6826
lev	0.683	1.810	P(-1.127<X<2.493)	0.6826
mtb	1.172	1.348	P(-0.176<X<2.520)	0.6826
eβ	0.661	0.069	P(0.592<X<0.730)	0.6826

4.5.2 Multicollinearity

Multicollinearity test has to be employed to ensure that there is no inter correlation problem amid the independent variables that an involved in the regression model. As mentioned early in Chapter 3, multicollinearity is highly correlated with two or more predictor variables in a multiple regression model. Multicollinearity in independent variables was detected by using the Variable Inflation Factors (VIF) or tolerance. The multicollinearity test is used to determine whether the Variance Inflation Factor (VIF) or tolerance is rejected.

It depends on whether VIF value is higher than 10 and tolerance value is higher than 1. The multicollinearity rejection rule rejects the null hypothesis if the VIF and tolerance are smaller than 10 and 1.0 respectively.

Table 0.6: The results of Variable Inflation Factors (VIF) for independent variables

Model	Collinearity Statistics	
	Tolerance (1/Vif)	VIF

Dividend payout	.966315	1.03
Market to book	.972167	1.03
Leverage	.988171	1.01
Equity Beta	.996421	1.00

Table 4.6 shows the VIF and tolerance of the independent variables. It shows that, the Variance inflation factors (VIFs) computed for all the independent variables are all less than ten (<10). Meanwhile, the tolerance computed for all the independence variables are all less than one (<1). All of the VIF is less than 10 and all of the tolerance is less than 1. Therefore, the null hypothesis is rejected and there is no multicollinearity problem.

4.5.3 Model Selection

This study uses a panel data; we have to first estimate the pooled effect model (OLS) and random effect model (REM). The Breusch Pagan Lagrange Multiplier (LM) test is conducted to measure whether OLS is suitable or RM is suitable for the data. The LM test concludes that the calculated p-value 0.000 which is less than 5 percent; we therefore reject the H_0 , leading us to conclude that the REM is more suitable than OLS model.

To decide which appropriate panel estimator can be employed, whether individual effects are fixed or random and that which of the two-estimator model appropriate i.e. REM or FEM for this study, the Hausman specification test ($p < 0.05$) was introduced (Baltagi, 2005). The p value <0.05 - reject H_0 , therefore the fixed effect model is more appropriate than RM effect model. In this study, the Hausman specification tests in each and every one cases rejected the REM in the favour of FEM. This finding is in line Baltagi's (2005) that the FEM is an efficient estimator for the balanced panel data regression model (Baltagi, 2005).

Thus, the FEM accurately characterized the relationship between the Malaysian corporate bonds DtD and various explanatory variables. Accordingly, a large value of Hausman is evidence against this, confirming that the FEM estimator should be used in this study. Table 4.7 shows the completed detail.

Table 0.7: Results of Panel Data Analysis, Dependent variable and Independent variable

DtD	Pooled OLS	Random Effect	Fixed Effect	Panel corrected std Error
DPO	0.013 (0.001) ***	0.003 (0.000) **	0.002 (0.000) ***	0.013 (0.000) ***
<i>lev</i>	-0.131 (0.018) ***	-0.019 (0.009) *	-0.011 (0.009) *	-0.131 (0.000) ***
<i>mtb</i>	-0.113 (0.020) ***	-0.058 (0.015) ***	-0.055 (0.015) **	-0.113 (0.000) ***
<i>eβ</i>	0.790 (0.383) *	0.711 (0.933) ***	-0.055 (0.015) *	0.790 (0.013) **
Cons	1.796 (0.255) ***	1.90 (0.621) **	3.101 (1.716) *	1.796 (0.000) ***
Breusch-Pagan LM test	959.37 (0.0000) ***			
Hausman Test		412.49		

		(0.0000) ***		
Observations	2970	2970	2970	
Multicollinearity			1.02	
Heteroskedasticity (χ^2 - stat)			7.1e+05 (0.0000) ***	
Autocorrelation			86.115 (0.0000) ***	

4.5.4 Heteroskedasticity

This thesis examines the existence of heteroskedasticity issue by using the woolridge test. Heteroskedasticity can be very problematic because it will produce biased and misleading parameter estimates. The heteroskedasticity rejection rule is to reject the null hypothesis if the p-value is smaller than 0.05.

Table 0.8: Heteroskedasticity

Test for heteroscedasticity	
H0: $\sigma(i)^2$	= σ^2 for all i
chi2 (297)	= 7.1e+05
Prob>chi2	= 0.0000

Table 4.8 shows that Woolridge test is more reliable for this research because it is suitable for testing big samples. Woolridge test a chi-square value of 7.1e+05 and p-value is 0.0000. The p-value less than 0.05 means there is heteroskedasticity problem. Hence, the result above in Table 4.8 shows that there is heteroscedasticity problem. The study uses Beck and Kurtz (1995) panel corrected standard error estimation in correction this problem.

4.5.5 Autocorrelation

This is also called serial correlation and it is a mathematical tool for finding repeating patterns in a model and assess whether the residual terms in the model stands peculiar among various time periods (Gujarati, 2009). In a circumstance where there is a correlation between errors of different time periods the problem of auto correlation occurs. Wooldridge test is used to check if there is no error of fixed effects. The hypothesis goes like this:

Ho: there is no element of serial correlation problem in the model.

Ha: there is the element of serial correlation problem in the model.

The null hypothesis is maintained if the p-value is more than alpha value at 5% and it is assuming that there is no problem of autocorrelation.

Table 0.9: Autocorrelation

86.115
(0.0000)

Hence, this study reports autocorrelation p value 0.0000, which is less than 0.05. This means that there is autocorrelation problem in this dataset.

4.6 Dividend Payouts on Distance to Default

This study forwards the dividend payouts relationship with corporate bonds risk. We examine this issue in the regression framework and examine our hypothesis by estimating the following model using a panel data approach:

$$DtD_{it} = \beta_0 + \beta_1 DPO_{it} + \beta_2 lev_{it} + \beta_3 mtb_{it} + \beta_4 \beta_{it} + \varepsilon_{it}$$

Given that our data are a large panel of issued corporate bonds, we follow the convention of recent studies (Chen et al., 2007; Guntay and Hackbarth, 2010; Nejadmalayeri and

Singh, 2004) to estimate our model using fixed effect methods. This study choose fixed effect methods over the Pooled and Random effect model on the base of Breusch-Pagan LM test and Hausman Test. Breusch-Pagan LM test reject the Pooled and recommend Random Effect. Hausman Test reject Random Effect and recommend fixed effect. The Table 4.7 shows the complete detail on (page 77).

Table 4.10 shows the regression parameters estimator and the mane variable dividend payout coefficient (0.000) *** significant and positive. Therefore, the interaction of DPO implies a significant positive connection with the DtD. This positive relation between DPO and DtD explains that increases in dividend payouts have a positive effect on the bonds default in Malaysia.

Table 0.10: Estimation Result of the DPO, *lev*, *mtb*, $e\beta$ for DtD

Variable/ DtD	Coef.
DPO	0.013 (0.000)***
<i>lev</i>	-0.131 (0.000)***
<i>mtb</i>	-0.113 (0.000)***

$e\beta$	0.790
	(0.013)**
cons	1.796
	(0.000)***
Observations	2970
R-sq	0.0830

Note: ***, ** and * shows the significance level at 1%, 5%, and 10% respectively.

It can clarify that increase in firm dividend payouts will results in the increase of default. A large dividend payout signifies management's confidence in the future cash flows of the firm.

The result is expected on the base hypothesis that the relationship between dividend payout and distance to default is positive. With the result of this study unable to expect (H₂) negative relationship between dividend payout and distance to default. Early in this study documented that the Malaysia corporate bonds continuously default from 2005 to 2015 and the default ratio is 2.3%. Furthermore, Malaysia continuously pays dividends to their shareholder and become the second-high paid dividend country in the Asia with ex-japan. On the bases of previous study, the outcome of the dividend payouts and DtD is expected to be negative, whereas, the result of correlation and regression parameters analysis are same from the expected outcome. The correlation analysis shows that the dividend payout and distance to default have a positive relationship. DtD nearer to zero indicates a firm closer to default whereas a firm having DtD far from zero indicates low chances to default. Bharath and Shumway (2008) distance to default method noted that the Malaysia firms are still 2.35 far from the default.

The result of regression parameter analysis shows the significant and positive relationship between dividend payout and distance to default. This result indicates that somehow dividend payouts effect Malaysia bonds. The company payout more dividends the credit of the company increases. Literature discusses the relationship between dividend payout and bonds are mixed. Griffin and Lemmon (2002) noted that increase in dividend payout increase the default of bonds. When the dividend payment exceeds a certain amount, the relationship between the default of bonds and expenditure becomes negative. Maxwell and Stephens (2003) Jun, Jung, and Walkling, (2009); Nishikawa, Prevost, and Rao, (2011) noted that the conflict of interest among bondholders and shareholders is limited while considering dividend policy because bondholders believe that changes in dividends have an impact on the valuation of bonds. (Fridson and Garma, 1998; Guntay and Hackbarth, 2010; Mansietal, 2011) noted the positive relation between the dividend payout and bonds (Nejadmalayeri and Singh, 2004). Over study result supports the (Fridson and Garma, 1998; Nejadmalayeri and Singh, 2004; Guntay and Hackbarth, 2010; Mansietal, 2011).

The signalling hypothesis suggests that bondholders view large dividend payouts as a positive signal and as a result require a lower rate of return. On the contrary, agency theory predicts that dividends represent a wealth re-distribution from bondholders to shareholders and, therefore, are viewed negatively by bondholders. In particular, at lower levels of payouts, bond investors interpret dividend distributions as a positive signal about the superior future prospect of the firm.

Empirical testing of Kalay (1980, 1982) Ross (2006) further authenticates that the signalling approach identifies that the firm in the marketplace, which increases its dividend

payments, signals a wider future prospect of increased profitability or growth. The success of signalling approach lies in the new signal being below or above what is already predicted out of stock prices and what is already predicted by market. Regardless of the leverage entailed by firm SA would unanimously work for various firms if applicable.

Increased profitability can also be associated with rise in the dividend per share. The main objective behind such increase could be signalling prosperous future to the market but rather there can be a simple objective of aligning shareholders interest and stabilizing the Probability of Default (PD). When earnings of the firm increase without expected increase in dividends, its PD declines and shareholders welfare does not optimize to the level of what they expected.

The hypothesis pertaining to agency debt assumes that holders of firm's bond may find payment of dividends as a kind of transfer involving capital, to shareholders. An expected result is the greater debt for firms paying greater dividends. The entity may prudently reduce dividend payments in an advance of bond issue so that debt financing can be reduced. Additionally, increased ratio of dividend payouts can also be an indication to agency problems since it signals unavailability of excessive cash to expropriate (Easterbrook, 1984).

This study well acknowledge the claims that link greater dividend payments with less bond risk. These claims are based on the conflict that emerges between shareholders and creditors. They are backed on the foundation that payment of high dividends brings agency issues between shareholders and creditors. Since dividend payments are major payments confronted by firms, so it reduces the cash available to the firm for its operations as well as which is required for the payment of interest and principle on debt. Additionally,

there may spread a negative response in the marketplace emerged by reduction in the payments of dividend. In consequence, many firms fulfil their obligations of dividend payments by borrowing or debt financing. This would increase the firm's leverage with an additional risk of higher cost of debt. The level at which creditors assumes payment of dividends giving adverse effects, they put forth their call for greater returns with greater payments of dividends. A situation so discussed, makes us hypothesize a relationship of direct nature between bonds and payments of dividends.

In contrast, predictions of agency theory are based on hypothesis that payment of dividends is reallocation of wealth to shareholders from bondholders. Therefore, 'triggering negative views by bondholders. This proves so available supports from both the assumptions though based on different dividend payment ranges. Particularly when the dividend payments are at lower levels investors of bond assumes it as being positive indication for brightened prospective for firm (Mathur et al. 2013).

Finally, although previous researches suggest an early disappearance and a recent resurgence of dividends as payout mechanism, our results indicate that relation between corporate bonds and dividend payouts is positive and significant across sample sub-periods.

4.7 The Effect of Control Variables *lev*, *eβ* and *mtb* on DtD

Using the Fixed panel data regression, the study found that the coefficient on *lev*, and *mtb*, and *eβ* is significant. This result suggests that these control variables have significant predictive power in explaining the DtD. Except for the DtD change over the equity beta, the firm DtD measure adjust equally to leverage and market to book value.

Table 0.11: Estimation Result of the *lev*, *mtb*, *eβ* for DtD

Variable/ DtD	Coef.
<i>lev</i>	-0.131 (0.000)***
<i>mtb</i>	-0.113 (0.000)***
<i>eβ</i>	0.790 (0.013)**
cons	1.796 (0.000)***
<i>Observations</i>	2970
<i>Random effect</i>	0.0830

Note ***, ** and * shows the significance level at 1%.5%, and 10% respectively.

4.7.1 DtD and Leverage

Financial leverage is central to all credit risk model, ceteris paribus, the more leverage the firm, the higher the probability of default (Ericsson, Jacobs and Oviedo, 2004). Table 4.11 represent the result the coefficient of *lev* (-0.131) has a statistically significant and appears with negative sign and opposite relationship with DtD.

Financial leverage remains a significant variable when we include one or several other variables in our estimates. Our test shows that the interaction of the DtD with *lev* (-0.131) is significant and appears with a negative sign. This is consistent with the expected inverse relationship between changes in DtD and level of *lev* changes. When the DtD decreases (goes closer to zero), it implies that credit quality of the firm has worsened which, in turn, implies due to increases in leverage outstanding. Our result is therefore consistent with empirical evidences thus also conforms to theoretical expectations. Titman

and Wessels (1988) show a negative relationship between credit risk and leverage. Thus, also conforms to theoretical expectations, for example (Bharath and Shumway, 2004; Campell et al., 2004; Vassalou and Xing, 2004; Hilscher and Szilagyi, 2007; Duffie, Saita and Wang, 2007). Dufresne et al. (2001) show that measures of default risk, such as leverage, is important determinants of changes in credit risk changes.

4.7.2 DtD and Market to bBook Value (*mtb*)

In this study employ both market and accounting- based model which only offer an approximation of the real inputs. Moreover, the reliability of market equity data in emerging economies like Malaysia could be questioned due to several empirical findings that conflict with the assumption of efficient markets and that especially distressed assets are subject because the annualized standard deviation of return for FBMKLCI (FTSE Bursa Malaysia KLCI) was around 13.1% over 2001-2011; far way below the average of 22% recorded by the other market (Malaysia Securities commission, 2011) i.e. the market liquidity constraints (Avramiv et al., 2010).

From our finding we suggest that at low levels of *lev*, DtD changes are small and insignificant for change in *lev*. DtD only start changing (dropping towards zero) significantly only for much higher levels of *lev*. For a constant level of *lev*, DtD shows much sharper drops for changes in *mtb* level. This implies that more *lev*, it is *mtb* that has also significant influence in driving large change in DtD level.

This result has some impactful implications for using the market based DtD as a measure of Malaysia corporate bond credit risk. When the *mtb* value is high, it is likely that even small changes in the *lev* will cause large changes in the DtD. Thus, in situations such as the financial crisis of 2008, market reacted much more strongly to even small changes in

lev. Whereas these same changes in *lev* during stable stock market would have generated smaller in DtD. Thus, the interpretation of changes in DtD has different implications on changes in firm credit quality during periods of market sentiments of Malaysian corporate bonds issues.

Thus, we can say that the change in the *lev* and *mtb* remains consistently influential in predicting DtD level changes in Malaysian corporate bonds credit risk. This result therefore unanimously suggests that *lev* and *mtb* measures should be included as well to enhance the identification of DtD level.

4.7.3 DtD and Equity Beta ($e\beta$)

Table 4.10 shows the result between distance to default (DtD) as dependent variable and equity beta as a control variable. The coefficient of equity beta (0.790) has a statistically significant relationship with DtD. the positive relationship between DtD and $e\beta$, suggest that a significant relationship exists between DtD and $e\beta$ although the relationship are obviously strong as evidenced by more than 5.0 percent p-value of 0.013.

Interestingly, these finding augurs not well with theoretical estimation that firms with higher equity volatility should have a lower DtD value (goes closer to zero meaning riskier). Using the estimation result for all sample firms in our study, a 1.0 percent increase in $e\beta$ reduces the DtD level on average by an approximation of 1.21 basis points, holding other factors constant. This study finding is similar and consistent with that of Shumway (2001) and Campbell, Hilscher and Szilagyi (2007). A similar and correlation is consistent with the intuition of Merton's (1974) model and also Longstaff and Schwartz (1995) and Duffee (1998). Both Longstaff and Schartz (1995) and Duffe (1998) suggest that, a larger,

more liquid and profitable firms with high past returns will register a greater DtD therefore unlikely to default.

There signs are consistent with the implication of structural models that an increase in the $e\beta$ will decrease DtD level. Simply, when the DtD decrease (goes closer to zero), it implies that credit quality of the firm has worsened which, where, in turn, implies an increase in risk to default. However, a contract finding was obtained here, where we also found that the $e\beta$ has significant with DtD at p-value 0.013. One possible explanation to this reasoning behind stylized fact is that theoretically, equity beta is not directly observable.

The value and sign on the estimated coefficient for the fixed implied that coefficient associated with change in DtD and over horizon are consistent with the expected relationship between change in DtD and variable change. Accordingly, when the lev decreases, it implies that the credit quality of the firm improve which, in turn, implies an increase in the DtD (goes further away from zero). Of these, the change in $e\beta$ over the period under investigation has significance in explaining changes in DtD. However, all changes in mtb over the period under study horizon have positive significant coefficients. This suggests that there is some predictive power in the changes of empirical determinants for sample firms DtD.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study is to examine the dividend Payouts impact on distance to default (bonds) in Malaysia. This comprises the examination of the connotation between a few firm characteristics specifically, Market to book value (*mtb*), leverage (*lev*) and Equity Beta ($e\beta$).

This chapter is divided into few units. The first part wraps up the full study and followed by the significance of study which explains the importance of this thesis to body of knowledge and industry. Finally, it reveals the limitation of this research and provided suitable recommendations for future research. This chapter is organised into Five sections comprising Section 5.2 Conclusion of Study, Section 5.3 Limitation of the Study, 5.4 Contribution to Industry or Regulators, 5.5 Suggestion for Future Research and 5.6 Recommendation.

5.2 Conclusion of Study

The objective of this study is to investigate the dividend Payouts relationship between distances to default (DtD) of Malaysian firms. This study is conducted on Malaysian listed non-financial companies covering the duration from 2006 to 2015. Several control variables have been added to the estimation model based on the previous studies. Market to Book value (*mtb*), leverage (*lev*) and Equity Beta ($e\beta$) are among those variables that also have an impact on the DtD (Bonds). This can confirm that the well estimates model is used in this thesis. Also, there is an absence of research on this subject particularly in the Malaysian context.

The first question is “to create a suitable DtD measures following Bharath and Shumway (2008) by extending the attention on market of corporate bonds dataset on Malaysia.

The second main research question in this study is “can dividend Payouts effect Malaysia corporate bonds?.”

The third question of this study is “is there is any significant relationship between control variables i.e Market to book value (*mtb*), leverage (*lev*) and Equity Beta (*eβ*) with DtD (bonds).

To reach every of the above objectives, the test for the DtD is started following the works of (Bharath and Shumway 2008) and the previous work of Collin-Dufresne, Gooldstein and Martin (2001), who also classify the theoretical factors of corporate bonds credit by using similar variable.

Notable, DtD study is produced using the hybrid framework of Bharath and Shumway (2008) by applying the asset value and asset volatility generated from the companies listed on Bursa Malaysia that have issued corporate bonds.

Having empirically the Malaysia corporate bonds DtD, this study proceeds to investigate the economic determinants of DtD. Accounting and market base information factors, such as the firms leverage, equity beta and market to book value are the empirical variables proposed for all the firms. This research methodology help offers to work with and more correct evaluation. In this study, regression bases test is used to determine the factors that cases DtD first. In specific, test of the objective was based on the following regression equation:

$$DtD_{it} = \beta_0 + \beta_1 DPO_{it} + \beta_2 Lev_{it} + \beta_3 mtb_{it} + \beta_4 \beta_{it} + \varepsilon_{it}$$

In this equation, the coefficients relate to the DtD. For example, if the estimate of coefficients on $\beta_2 Lev_{it}$ is significant and negative, that should indicate that Lev_{it} effect is related to DtD level.

The results of this study found that there is a significant and positive relationship between dividend payouts and distance to default (DtD) and result of correlation analysis shows that dividend payout have a positive effect on Malaysia bonds. Bharath and Shumway (2008) distance to default calculation shows that Malaysia bonds are still far from default. Furthermore, the regression parameter significant and positive result shows that somehow dividend payouts affect Malaysia bonds. The signalling hypothesis proposes that bondholders view large dividend Payouts as a positive indication and as a result need a lower rate of return. In specific, at lower levels of Payouts, bond investors understand dividend supplies as a positive signal about the greater future prospect of the firm and therefore require a lower return. Through contrast, when dividend Payouts reach higher levels, bond investors regard huge cash distributions as detrimental to their attention, and therefore, demand a higher return. This leads to higher default of debt for firms.

Foremost, the empirical determinants of DtD in this study are firm leverage, Market to book and Equity Beta. This study find that these variables are statistically significantly estimated and that their effect is statistically important.

Furthermore, the estimations of the statistical effect of *lev* and *mtb* are very comparable regardless of the econometric methodology. 1 percent increases in annualized firm *lev* decreases the DtD quality by approximately 0.1 to 1 basis points. 1 percent rises in the *mtb* ratio increases the DtD premium by approximately 7 to 8 basis points. These effects are not out of streak with some of the estimates available in the previous literature

on corporate bonds; however, Campbell and Taksler (2003) estimate a stronger effect of a change in volatility. The indication points to the applied implication that the association of credit riskiness and its determinants might not necessarily be the same across different countries because every country has their capital structure.

5.3 Limitations of the Study

Various limitations of this study are identified and discussed below. Among the limitations, the first is the study conducted in Malaysia corporate bonds market. As such it is worth emphasizing that the result in this study is quite restrictive as it just related to only Malaysian listed firms that issued corporate bonds in Malaysia. The usefulness of any model depends upon its accuracy and reliability of its output because precise input data are rarely available; output values are subject to imprecision. It is equally plausible that these inconsistencies may result in a causal ordering problem.

This study is limited to listed companies in Bursa Malaysia. This implies that this study only generate conclusion for listed companies in Bursa Malaysia, where the institutional setting might be slightly different with other developing countries.

Nevertheless, this thesis is only limited to non-finance companies such as construction, consumer products, industrial products, plantation, and property, technology, trading and services sector. This study did not include finance, hotels, mining, IPC, REITs and SPAC sector as well as the banking industry. Thus, the different industries will have different results. The limitation of study may lead to different results in the future.

The study is done on the selected limited number of independent variables. The selection of these variables is based on the empirical literature in the area of corporate

finance. Therefore, more factors are needed to be considered in analysis for the financial behavior of firms.

5.4 Contribution to Industry or Regulators

Notable, Distance to default study is produced using the hybrid framework of Bharath and Shumway (2008) by applying the asset value and asset volatility generated from the companies listed on Bursa Malaysia that have issued corporate bonds. the result of correlation and regression parameters analysis are same from the expected outcome. The correlation analysis shows that the dividend payout and distance to default have a positive relationship. DtD nearer to zero indicates a firm closer to default whereas a firm having DtD far from zero indicates low chances to default. Bharath and Shumway (2008) distance to default method noted that the Malaysia firms are still 2.35 far from the default.

The result of regression parameter analysis shows the significant and positive relationship between dividend payout and distance to default. This result indicates that somehow dividend payouts effect Malaysia bonds.

This research may contribute to make several implications for policy makers and decision makers in public listed industries, investors and even for governments as well. One of the objective of this study is to determine the role of dividend payout on the Malaysia corporate bonds.

Malaysia capital market like several other financial markets is likely to continue to be affected by financial crisis going forward. Credit risk to capital market is probable to evolve with changes in financial and economic landscape, the dynamics and nature of the capital market over time. As such, there is a need for policy makers to guarantee that credit risk outlines are active and continues to remain related to manage with new risks and tasks.

Thus, there is a need to improve supervision ability of corporate credit risk to guarantee that the assessment of credit risk to capital market firmness continues to be forward looking. This is critical to ensure timely detection of any potential credit default and vulnerabilities in the capital market system and hence, translate into swift and pre-emptive policy measures to mitigate the build-up of risks. The DtD, for example, is a credit risk indicator that measures the intensity of corporate bond distress at a particular point in time. Constructed using information derived from macroeconomic and firm's financial imbalance, the DtD level assists in forecasting future conditions in the private debt sector and hence, enable projection of distress build-up prior the occurrence of corporate default. From this study, we found that Malaysia corporate bonds DtD value is close to the market wide mean of 11.0 and implies that DtD changes are small for changes in $e\beta$. For this this argue that in the case of Malaysia capital market, its more than $e\beta$, it is the firms leverage level that has a greater influence in driving large changes in DtD level for Malaysia corporate bonds. Therefore, by implementing of an enhanced risk based supervisory tool like the DtD, and with more assessment of firm's unique risk profiles, it will be ensuring that authorities attention continues to be proportionately focused on firms that are of higher risk.

The scope of surveillance by policy makers also needs to be expanded to take into account contribution of economics sectors affect, if any, that are increasingly playing a more critical role in the private debt intermediation process and are becoming more interconnected with financial system and poised to even assume that more significant role in corporate bonds development going forward.

In summary, addressing the credit risk concern had been at the centre of corporate finance. As such issue presented in this study would be important as guideline for the

understanding the co-movements of the credit risk behaviour and it server as the platform of debate for the experiences of emerging economics.

5.5 Suggestion for Future Research

The limitations of this study could be used as ideas for future research. In the future, doubts can be overcome when more consistent data becomes available. The following recommendation for future research is proposed based on the results of this study. Different approaches of operationalising the DtD could be explored for further research. Furthermore, there is no convinced measurement to evaluate the disclosure level. Therefore, taking different methods may produce different outcomes in the Malaysian context.

Based on the accessibility of listed companies' annual reports, the sample selected for study consists of 297 listed companies in Malaysia from 2006 to 2015. Future researchers may cover their analysis to include more listed and public companies in Malaysia in their research samples. To this extent, a relative analysis of public listed companies and private companies could be carried out. Also, future researches should study other industries such as finance, hotels, mining, IPC, REITs and SPAC sector as well as banking independently or as whole. Finally, future institutional setting should involve IT-based manager or IT based director to provide internet reporting-related discovery for large samples with minimum time and effort.

5.6 Recommendation of Study

The results of this study contribute towards a well understanding of credit risk performance of corporate bonds that issued by public listed firms in Malaysia. Three descriptive variables namely *lev*, *eβ* and *mtb* were used to measure their effect on DtD

level between Malaysian corporate bonds. Another one is dividend Payouts variable have been added to determine whether DtD affected by dividend Payouts measure over the life of the corporate bonds. Based on the selection standards of dataset, 297 firms are nominated as sample size. This study uses quantitative dataset. To increase the validity of this proposed model, a number of tests were carried out to ensure that the result obtained were robust. The exam result suggest that the model used in this study is specified and acceptable hence suggesting that offered model is free from omitted variable or other specification errors. The correlation and panel data regression analyses were used to determine the output of study. The study goal to understand the performance of DtD and its relative among it observed factor. The result suggests that Malaysian dividend Payouts policy is not affect the Malaysia bonds and not increase the risk of default in Malaysia.

This study analysis production suggests that all three descriptive variables i.e *lev*, *eβ* and *mtb* are significant. All three-control variable *lev*, *eβ* and *mtb*.

The usefulness of any model depends on the accuracy and reliability of its results because theoretical model is imperfect concept of reality. Input dataset errors and modelling uncertainties are not dependent of each other, the result is imprecision and uncertainty associated with model result generations. As discussed previously, it should not be ignored that the important of characteristics of DtD varies different countries. In addition, every country has its own regulatory system, legal code, ownership structure which can affect the DtD in different ways. Therefore, it is suggested that future study employ important proxies (such as, interviews and surveys to complement quantitative techniques) in the study to examine the importance of the determinants of DtD of corporate bonds.

The commitment of debt obligations is based on the future growth of earning and firms with no growth in the earning are unable to meet their obligations. The investment would go in loss as firms are uncertain about the growth of earning from investment. Debt are used to finance the investment of the firm and failure of investment leads the firm towards default. Under those circumstances, firm might not be able to meet he shareholder objectives of wealth maximization and decreases the value of the firm.

More stability in earning means the less / volatility and firm faces low cast of capital and low stability in earning means high volatility as well as high cost of capital. Firms take capital structure decisions keeping in the view the cost of capital. Therefore, it is recommended that firms should reduce the level of debt form their capital structure in the order to avoid from any consequence of default. In this way, they can better run their operations smoothly and can better survive in an uncertain business environment.

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