

Determinants of *Sukuk* Issuers' Financial Stability: Evidence from Malaysia

Chen Xiaoting¹, Nurul Izza Abd Malek², Abu Hassan bin Md Isa², Muhamad Abdullah Zaidel²

¹Sunshine Property Insurance, Shangtong Avenue, Tongzhaou District, Beijing, China

²Faculty of Economics and Business, Universiti Malaysia Sarawak, Malaysia

ABSTRACT

Financial stability and *Sukuk* expanded swiftly into the financial industry after the 2007-2008 global financial turmoil. Malaysia's *Sukuk* market is arguably the most prominent in Islamic finance globally, and its inherent nature gives it a better security on the premise of guaranteed firms' financial stability and returns to investors. This study aims to explore the extent of the Malaysian firms' financial stability are being influenced by the characteristics of *Sukuk* and also the firms' characteristics. Sixty-one listed companies that have issued *Sukuk* from 1997 to 2017 have been selected for this study. The naïve distance to default (DD) developed by Bharath and Shumway was used as a measure of the firms' financial stability. Ordinary Least Squares (OLS) was employed in this study, and the results confirmed that *Sukuk* could promote the firms' financial stability. The variables related to the characteristics of *Sukuk* that were found to influence financial stability were the intensity of *Sukuk* and the proportion of *Sukuk* financing. The firm size, valuation, solvency, and profitability were the firms' characteristics that have also affected the firms' financial stability significantly. All these provide evidences that Malaysia should play more active role in promoting the development of *Sukuk* market, and at the same time should be aware that financial stability is a systematic element which involved many complex factors.

Keywords: *Sukuk*, financial stability, Malaysian firms, naïve distance to default

INTRODUCTION

Financial stability and *Sukuk* expanded into financial industry swiftly and become the recent interest after the global financial turmoil which happened in 2007 and 2008 (Taoual, 2016; Dusuki, 2010). Like financial stability, *Sukuk* is also relatively a new instrument that has been introduced into financial system. It is a *Sharia*-compliance asset-backed financial instrument which can be referred as Islamic bond and usually treated as one substitute of conventional bond (Alshamrani, 2014; Saeed & Salah, 2014; Jamaldeen, 2012; Wilson, 2004). As one of the most popular instruments under Islamic finance, *Sukuk* represents undivided interest or shares in the ownership of the underlying asset, where profit and cash flow will generate via this kind of ownership, meanwhile, the relative risk matched with those benefits that should be borne by its owner (Franklin Templeton Investment, 2014).

Sukuk market may be thought as a late bloomer compared with banking and equity market, and the modern history of the Islamic finance industry is considerably young which was just began about the 1970s (Jamaldeen, 2012). Based on the information gathered, *Sukuk* was first introduced to the global world with only \$600 million in 2002 and the issuance amount reached to \$118.84 billion in 2014 within only twelve years, which was an increase of approximately \$9.85 billion per year (Thomson Reuters, 2015; Malaysian International Islamic Finance Centre, 2015a).

Needless to say, Malaysia is the pioneer and leader of the *Sukuk* market. Malaysia occupied the first position with a sizeable 42.3% of total issuances in the first quarter of 2015, followed by the United Arab Emirates (UAE) with 18.2% and then Indonesia accounted for 14.1% share (Malaysian International Islamic Finance Centre, 2015a; Islamic Finance News, 2015). The *Sukuk* market has been performing well and widely received among the contemporary global financial industries (Jamaldeen, 2012). *Sukuk* investors are widely spread across Asia, the Middle East, Europe and the United State (Shahida & Sapiyi, 2013). In addition, *Sukuk* issuers are also increase along with the growing demand. The United Kingdom, Luxembourg, South Africa, Senegal, Hong Kong and a major Western bank, Goldman Sachs, became the participants of *Sukuk* issuers in 2014 (Islamic Finance News, 2015). Those growing trends have make *Sukuk* market the most notable achievement in the development of Islamic capital market and has received a great deal of attention after the global financial crises of 2007 and 2008 (Jamaldeen, 2012; Dusuki, 2010).

LITERATURE REVIEW

The literature related to financial stability, the growth of *Sukuk* market, types of *Sukuk* and the relationship between *Sukuk* and financial stability is important in providing information on the long-term sustainability development of a firm and also a nation.

The Development of Financial Stability

Financial stability refers to the smooth operation of financial intermediation where the market participants have full confidence in the operation of major financial institutions and markets (Bank Negara Malaysia, 2015b). Financial stability is a product of the modern financial world and it is a quite new concept. The high cost and increased frequency of financial crisis, the rapid growth of financial transaction volume, as well as the intricacy of new financial trading tools, could be the main activators that make financial stability issue receives a widespread attention for policy makers and research scholars in recent years (Creel, Hubert & Labondance, 2015; Beck, Degryse & Kneer, 2014; Morris, 2010; Alawode & Sadek, 2008; Cihak, 2007a; Cihak, 2007b).

The Bank of England's Financial Stability Report (FSR) has shown its importance, and therefore became the primary objective of most central banks around the world; about 80 central banks committed to publish their report by 2011 (Bank of England, 2015; Cihak et al., 2012). Malaysia has also started to publish its financial stability and payment systems report from 2006 as a response to the booming of financial transactions, more complexity of financial markets and closer interaction of the global economy. Furthermore, international institutions also joined the bandwagon to track financial stability; they include the World Bank, the International Monetary Fund (IMF) and the Bank for International Settlements (Alawode & Sadek, 2008; International Monetary Fund, 2017; and (Bank for International Settlements, 1997).

Financial stability is mainly considered in the context of macro-economy, and regarded as a necessary condition for the normal operation of the entire national economic system to achieve the stable economic growth (Pera, 2017; Bank of England, 2015; Bank Negara Malaysia, 2015b; Rosengren, 2011; Schinasi, 2004). Similar with the financial stability at the national level, this concept is also the main goal of a company and treated as an indispensable condition for the long-term sustainable development of the company (Cernavskis, 2014). Financial stability of a company means that even in the presence of disturbances, the company can stick to its development goals, withstand shocks and quickly return to the

development path (Pera, 2017). At the same time, Cernavskis (2014) believed that stability can be treated as solvency, and according to this, a company's financial stability is to have enough free cash flow available to repay the company's short-term and long-term debt.

In terms of the measures of financial stability, lots of methods have been used. In the perspective of firm level, Z-score model and Merton (1974) distance to default (DD) model are mainly adopted for the measurement of company's financial stability. Among them, the Merton DD model is easily to be modified, for example, Bharath and Shumway's naïve DD model was developed based on Merton (1974) DD model and its naïve DD was used as one proxy of financial stability from firm level (World Bank, 2016; Bharath & Shumway, 2008).

The Growth of Sukuk Market

The growth of the *Sukuk* market has been rapid and has made gratifying achievements. Only twelve years later after the first global issuance, the amount of *Sukuk* issuance has reached \$118.84 billion in 2014, and it is somewhat clear that the issuance of *Sukuk* is increasing rapidly, especially during the financial crisis of 2007 and 2008. The global circulation of *Sukuk* in 2006, 2007, 2008 and 2009 was \$20.43 billion, \$37.63 billion, \$20.99 billion and \$34.3 billion respectively. Its issuance rapidly rebounded to \$34.3 billion in 2009 after a brief decline in 2008, which was higher than the circulation in 2006. Hereafter, the *Sukuk* market reached a total issuance of \$137.14 billion in 2012 with an average annual growth rate of about 60% globally (\$51.24 billion in 2010, \$85.07 billion in 2011 and \$137.14 billion in 2012) (Malaysian International Islamic Finance Centre, 2015).

Malaysia is the world's largest Islamic founder and has been the pioneer of *Sukuk* development (Oladunjoye, 2014; Rezaei, 2013; Alhabshi, 2013). The latest data showed that Malaysia continue to be accounted for the first place with 50.4% of total global *Sukuk* shares in 2018 (Malaysian International Islamic Finance Centre, 2019). Other countries also participated in *Sukuk* market actively, such as Saudi Arabia, Kuwait, Bahrain, Indonesia, Brunei, Pakistan, Gambia, UAE and so on (Said & Grassa, 2013; Zaidi, 2008). Saudi Arabia is considered as the second-largest player from the Middle East for Islamic finance with 30% of its total financial assets are in Islamic finance products. In 2004, the first *Sukuk* of the Kingdom of Saudi Arabia (KSA) was issued on behalf of HANCO Rent-A-Car (Alshamrani, 2014; Jamaldeen, 2012). Bahrain is another world's leader in Islamic financial services with a dual banking system (Rezaei, 2013; Wilson, 2004). In the year of 2007, the Dubai International Financial Exchange (DIFX) had about \$10.43 billion worth of *Sukuk* listed on it (Alshamrani, 2014).

In addition, more and more non-Muslim countries are also been attracted to participate the *Sukuk* market. England became the first non-Muslim country to issue sovereign *Sukuk* with a five-year maturity of \$0.35 billion on 25th June 2014 (Edwards, 2014). Hong Kong also issued \$1 billion *Sukuk* successfully on 11th September 2014 (Rezaei, 2013, Hanefah, Noguchi & Muda, 2013). The government of Ningxia Hui, an autonomous region of China, signed an agreement with the Aviation Industry Corporation of China (AVIC) to decide on the issuance of \$1.5 billion *Sukuk* on 24th December 2014 (China Development, 2015).

Usually, *Sukuk* can be treated as one alternative to conventional bond which complied with *Sharia* laws (Jamaldeen, 2012). *Sukuk* and conventional bond are quite similar and have no such differences in terms of financial perspectives. Consequently, this has brought about rapid development in *Sukuk*, and sometimes, market participants tend to treat *Sukuk* as the conventional bond (Jamaldeen, 2012). However, *Sukuk* and conventional bond are distinctly different. One of the biggest differences between them is that

Sukuk means ownership of underlying asset together with the associated risk and potential return while the conventional bond is the certificate of pure debt (Jamaldeen, 2012). Table 1 compares *Sukuk* and conventional bond side by side so that makes it clearer and easier to understand.

Table 1: *Sukuk* (Islamic Bond) versus Conventional Bond

Issue	<i>Sukuk</i> (Islamic Bond)	Conventional Bond
Ownership	<ul style="list-style-type: none"> • Consistent with the laws of <i>Sharia</i>. • Investors get the partial ownership of the <i>Sukuk</i>'s underlying asset. • Underlying assets must compliance with <i>Sharia</i> law. 	<ul style="list-style-type: none"> • The investors do not have the ownership of the asset or business they support. • Representative borrowers owe the debt to the investors.
Investment criteria	<ul style="list-style-type: none"> • All the investment activities and each issuance process need compliant to <i>Sharia</i> laws. 	<ul style="list-style-type: none"> • Do not have the special law to follow, just need to comply with the local legislation.
Meaning of per unit	<ul style="list-style-type: none"> • Represents a share of ownership of the underlying asset. 	<ul style="list-style-type: none"> • Represents a share of debt.
Face value	<ul style="list-style-type: none"> • Based on the market value of the underlying asset. 	<ul style="list-style-type: none"> • Based on the credit worthiness of issuer and its rating.
Investment rewards and risks	<ul style="list-style-type: none"> • Profit and loss come from the share of underlying asset. The principle amount not guaranteed by the issuer at maturity. 	<ul style="list-style-type: none"> • Get the interest payment based on the regularly scheduled during bond period and the principle will return at the maturity date.
Costs and investor's profit	<ul style="list-style-type: none"> • Negative relationship existed between investors' profit and the cost of underlying asset. 	<ul style="list-style-type: none"> • Investors are not affected by the performance of the underlying asset.
Invest area	<ul style="list-style-type: none"> • Prohibited to invest some area relate to gaming, tobacco, alcohol manufacturers and other include uncertainty. 	<ul style="list-style-type: none"> • Do not have clear ban area.

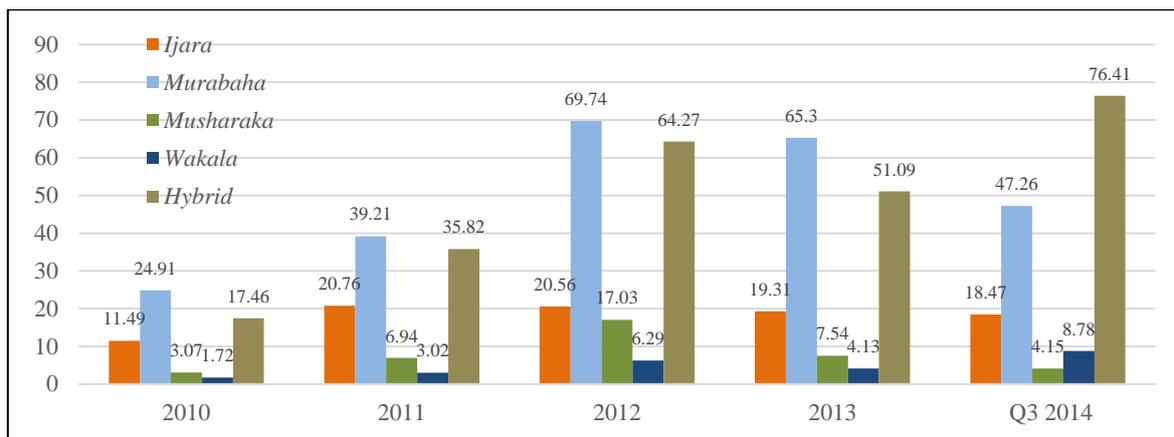
Sources: Alshamrani (2014), Franklin Templeton Investments (2014), Jamaldeen (2012)

Types of *Sukuk*

A number of different *Sukuk* types that have been structured based on a different mode of financing and Islamic transactions. Fourteen different types of *Sukuk* structures were established on the basis of Islamic financial contract and are acceptable in the AAOIFI *Sharia* standard 17 "investment *Sukuk*" (Saeed & Salah, 2014; Hanefah et al., 2013; Infosys, 2012). AAOIFI (2014) and Infosys (2012) pointed out that the most common types of *Sukuk* are *Mudaraba*, *Musharaka*, *Murabaha*, *Ijara*, *Salam*, *Istisna* and Hybrid *Sukuk*. In addition, Oladunjoye (2014) believed that *Murabaha* and *Ijara* are the most popular *Sukuk* structures based on the issuance and the number of issuers in 2012. Furthermore, Franklin Templeton Investments (2014) stated that the most popular type of *Sukuk* are *Musharaka*, *Murabaha* and *Ijara* based on the issuance volume. Thomson Reuters (2015) depicts the trend of global *Sukuk* based on five different structures from 2010 to the third quarter of 2014, which are *Musharaka*, *Murabaha*, *Ijara*, *Wakala* and Hybrid. This is as shown in Figure 1.

The volatility of financial markets and the desire for stability linked bond/*Sukuk* market and financial stability closely. Attention has grown on bond/*Sukuk* and financial stability from different perspectives by policymakers, market participants and academicians.

Figure 1: Global *Sukuk* Structure Trend from 2010 to 3rd Quarter 2014 (billions of USD)



Source: Thomson Reuters (2015)

Although the types of *Sukuk* are numerous, three main parties are normally involved when *Sukuk* is issued, which are obligator, trustee or issuer and investors. Sometimes, underwriter may also be included as an optional party (Jamaldeen, 2012). Obligator refers to a government or a corporation who will achieve some financial benefit via *Sukuk* issuance. Trustee or issuer is a part connecting the obligator and the investors and this part usually know as special purpose vehicle (SPV). Investors are the parties who hold the *Sukuk*. While underwriter usually acts as an insurance of SPV to guarantee any unsold *Sukuk* will be purchased.

Taoual (2016) comprehensively studied and analysed the development of *Sukuk* market in the Gulf Corporation Countries (GCC) from the following five aspects: 1) the maturity of *Sukuk*, treated as short term if the maturity less than 12 months; 2) the issuance currencies of *Sukuk*, divided into domestic and international markets based on whether it was issued in local currencies; 3) the industry distribution of *Sukuk* issuer, which included basic materials, government, consumer prod, industrial, financial, and oil/gas/electricity industry; 4) the structure and potential risk of *Sukuk*, which contained *Mudarabah*, *Musharakah*, *Murabahah*, *Ijarah*, and *Hybird Sukuk*; and 5) the Islamic securitization by basic collateral of *Sukuk*, which included residential mortgages, trade receivables, property lease receivable, and lease receivables. The finding of this study indicated that *Sukuk* could indeed achieve the effective contribution to the financial stability of GCC.

Sukuk and Financial Stability

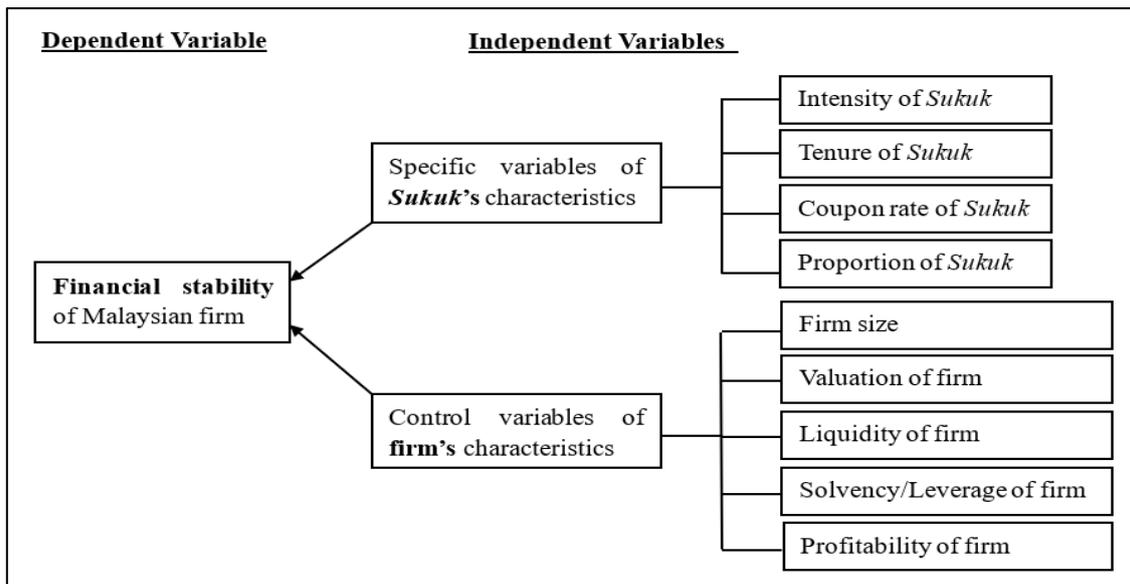
Although the development of *Sukuk* has also been affected by financial crisis in 2007 and 2008, the performance of *Sukuk* during and after financial crisis deserves attention. As mentioned earlier, the global circulation of *Sukuk* increased 554% approximately from \$20.99 billion in 2008 to \$137.14 billion in 2012 (Malaysian International Islamic Finance Centre, 2015). At the same time the development of *Sukuk* in Malaysia was propitious during the financial crisis where it accounted for half of the total stock of Malaysian corporate bonds in 2008 (Jobst et al., 2008), and corporate *Sukuk*'s issue amount as a percentage of total bond issuance was 65.5%, 47.6%, 53% and 57% in 2007, 2008, 2009 and 2010 respectively (Securities Commission Malaysia, 2010; Bank Negara Malaysia & Securities Commission Malaysia, 2009). The amount of *Sukuk* issued rebounded quickly after the crisis and continue to bloom in Malaysia and globally. Its outstanding performance demonstrated its ability to withstand the financial crisis.

In addition, scholars and relevant policy makers have affirmed the positive effects of *Sukuk* on financial stability. The Governor of the Central Bank of Malaysia (Bank Negara Malaysia), Dr. Zeti Akhtar Aziz gave a speech at the 10th World Islamic Economic Forum (WIEF) in 2014, she confirmed that the dynamism of the *Sukuk* market has contributed towards strengthening financial stability (Aziz, 2014). Besides, Zin et al. (2011) and Taoual (2016) stated that the *Sukuk* market is now the most powerful part in Islamic finance and affirmed the role of Islamic bonds in promoting financial stability. Although some studies have begun to focus on *Sukuk* and financial stability, most of them were only been discussed theoretically to provide understanding of those two topics from a basic perspective, such as development history, definitions and so on (Saeed & Salah, 2014; Rosengren, 2011; Zin et al., 2011; Alawode & Sadek, 2008).

Furthermore, *Sukuk* provided one option for a company to issue fixed-yield securities, which at the same time follows *Sharia* Islamic law that prohibited uncertainty, interest and gambling. These unique properties of *Sukuk* allowed the issuers to access longer-termed funding at lower financing costs, and thus have attracted more domestic firms to tap into Malaysian *Sukuk* market to meet their financing needs (Bank Negara Malaysia, 2015a; Alhabshi, 2013). Meanwhile, Singh (2015) pointed out that debt management was seen as a key factor to achieve financial stability. As a substitute of conventional bond, *Sukuk* was also a debt security. Thus, *Sukuk* could influence Malaysian firms' financing significantly via enhancing rationality of capital structure (Patuta & Pryshko, 2016; Haron & Ibrahim, 2012).

Zin et al. (2011) pointed out the development of the *Sukuk* market can promote financial stability as it could participate in international market and could generate important cross-border capital flows that could be realized outside the domestic market. In its infancy, the government was the main player in the *Sukuk* market. As demand for long-term financing grows, the private sector has become an integral part of the *Sukuk* market. In this highly competitive environment, the depth and liquidity of the *Sukuk* market, as well as the huge role that *Sukuk* market can enable large cross-border flows of money outside the domestic market are conducive to promoting global economic growth and financial stability.

Figure 2: The Relationship between Dependent Variable and Independent Variables



Framework of the Study

Figure 2 depicts the relationship that existed among the variables in this study. The dependent variable was the financial stability of the firms that issued *Sukuk*, and the independent variables were divided into two parts. First, the specific *Sukuk* characteristics, which included intensity of *Sukuk*, tenure of *Sukuk*, coupon rate of *Sukuk* and proportion of *Sukuk* financing. The second group of variables were the firms' characteristics, which included firms' size, the valuation, the liquidity, the solvency, and the profitability of the firms.

The Dependent Variable

The dependent variable used in this research was financial stability of each firm that issued *Sukuk*, and proxied by the naïve distance to default (DD) probability based on Bharath and Shumway's naïve DD model which developed in 2008. The model which originated from Merton model (Cui & Cai, 2014; Falkenstein & Boral, 2001; Bharath & Shumway, 2008). The original Merton DD model can measure the firms' solvency risk as well as liquidity risk. The most difficult part of this model was that the company's total value (V) and volatility of the company's asset (σ_V) which were not easily obtainable; therefore, two non-linear equations were required for these two parameters. Moreover, since Merton DD model can be easily improved, the theoretical circle had made continuous attempts and efforts to do the contribution of Merton DD model so that to make this model easier to be used (Cui & Cai, 2014; Falkenstein & Boral, 2001).

Through their empirical research, Bharath and Shumway (2008) proposed a new and easier way to predicting default based on Merton DD model, namely, naïve DD model. The naïve DD model built a simple alternative probability based on Merton DD probability that does not require to solve for the firm's equity value and the volatility of the equity (σ_E). This naïve DD model provided a reduced-form of Merton DD model, meanwhile, it had the same functional form and the basic input variables as Merton DD model; and it was easier to compute DD. The naïve DD model might be one of the most important theoretical

improvements to Merton model in recent years (Cui & Cai, 2014; Bauer & Agarwal, 2014). In order to predict financial stability more concisely and accurately, this study also adopted the Bharath and Shumway's naïve DD model and the following part of this section elaborates on this new naïve DD model.

Before establishing the new probability, Bharath and Shumway (2008) let the market value of each company's debt equal to the face value of its debt approximately:

$$\text{naïve } D = F \quad (1)$$

And according to the accounting identity, the company's assets (V) were equal to the sum of the market value of the risky debt (D) and the equity value (E), in this way:

$$V = E + F \quad (2)$$

After this, Bharath and Shumway (2008) were of the opinion that a company on the brink of default were usually with the risky debt, and debt risk was closely related to equity risk. Thus, the debt volatility of each company could be approximated as:

$$\text{naïve } \sigma_D = 0.05 + 0.25\sigma_E \quad (3)$$

where 0.05 representative the term structure volatility and the 0.25 equity volatility made the volatility correlated with default risk. And σ_D and σ_E were the volatility of debt and volatility of equity respectively. Therefore, the following weighted algorithm can estimate the volatility of the company's asset value approximately:

$$\begin{aligned} \text{naïve } \sigma_V &= \frac{E}{E+\text{naïve}D} \sigma_E + \frac{\text{naïve}D}{E+\text{naïve}D} \text{naïve} \sigma_D \\ &= \frac{E}{E+F} \sigma_E + \frac{F}{E+F} (0.05 + 0.25\sigma_E) \end{aligned} \quad (4)$$

where $\text{naïve } \sigma_V$ was the firm volatility, E was the market value of equity, F was the market value of total debt which would be measured by total liabilities.

Then, Bharath and Shumway (2008) set the expected return on the company's assets equal to the return on the company's stocks in the previous year:

$$\text{naïve} \mu = r_{it-1} \quad (5)$$

So far, this iterative procedure focused on the data of equity return over the entire year and had made it possible to capture some information same with Merton DD model. Then, the naïve distance to default can be defined as follows once the parameter $\text{naïve} \mu$ has been obtained:

$$\text{naïve} DD = \frac{\ln[(E+F)/F] + (r_{it-1} - 0.5\text{naïve} \sigma_V^2)T}{\text{naïve} \sigma_V \sqrt{T}} \quad (6)$$

where:

- $\text{naïve} DD$ = naïve distance to default;
- E = market value of equity;
- F = market value of total debt which will measured by total liabilities;
- r_{it-1} = stock return over the previous one year;
- T = time to maturity T is set to one year; and

$naïve \sigma_V$ = the firm volatility.

Equation (6) preserved the Merton DD model and the calculation was extremely simple. The naïve DD probability was then written as:

$$naïve P_{def} = N(-naïve DD) \quad (7)$$

Independent Variables

The first part of the independent variables was related to *Sukuk*. Followed the study done by Taoual (2016), this study explored the relationship between the characteristics of *Sukuk* and financial stability. And in line with studies done by Smaoui & Nechi (2017), Taoual (2016), Jamaldeen (2012), and Hmida & Brahmi (2016), the variables related to the specific characteristics of *Sukuk* included were *Sukuk* intensity, tenure, coupon rate and proportion of *Sukuk* financing.

Intensity of *Sukuk*, refers to the total number of *Sukuk* issuance per company per year. This means that a company may have issued *Sukuk* more than once in a year. This variable served as one indicator of the *Sukuk* development (Smaoui & Nechi, 2017). Tenure of *Sukuk*, means the length of time from *Sukuk* issued date to the maturity date, and measured by years. The same variable “*Sukuk* maturity”, was used by Taoual (2016), and served as one of the characteristics of *Sukuk*. Coupon rate of *Sukuk* is different from the coupon rate of the conventional bond. As interest is prohibited in Islamic finance, coupon of *Sukuk* refers to a stable payment flow which comes from a certain percentage of profits derived from the underlying asset. Thus, the coupon rate of *Sukuk* is a pre-determined specified profit rate. And it should be noted that the profit of *Sukuk* to investors is not guaranteed, the investors may suffer losses (Jamaldeen, 2012). Proportion of *Sukuk* is similar to the “ratio of bond financing” which was used by Hmida and Brahmi (2016) and means that how much of the total asset that was funded by *Sukuk*. Those four proxies specific to *Sukuk* are expected to have positive correlation with financial stability, as many researches confirmed the role of bond/*Sukuk* in promoting financial stability (Taoual, 2016; Zin et al., 2011; Burger et al., 2009).

In addition, the specific characteristics of the firms are incorporated as control variables in this study. In line with prior research done by Skribans (2009), Cernavskis (2014), Lemus-Esquivel et al. (2015), Yu and Zhao (2015), and Orazalin et al. (2019), after a comprehensive consideration, the variables related to the company’s specific characteristics included five aspects of the company, namely, firm’s size, valuation, liquidity, solvency, and profitability.

Firms’ size is an important and basic characteristic of a company (Dang, Li & Yang, 2018), and usually measured by the natural logarithm of the total asset (Orazalin et al., 2019; Lemus-Esquivel et al., 2015). As stated by trade-off theory, large firms were stronger in facing bankruptcy cost as they were far more diversified (Mohamed et al., 2015), and hence the larger the company, the higher the company’s financial stability (Skribans, 2009). Thus, it is assumed that a positive relationship exists between the firm size and financial stability.

Firms’ valuation, which determines the potential value of a company and provides information about the company’s share price. Price to earnings ratio (P/E ratio) was the proxy of the firms’ valuation in this study which was normally used to explore the reasonableness of stock price by investors, and usually used to estimate their future earnings. The lower the value of this ratio means that the investment payback

period is a shorter and with smaller risk, and thus a larger value of the investment (Danielson & Dowdell, 2001). Valuation has a great significance to a company's sustainable development which is closely related to financial stability (Pera, 2017; Yu & Zhao, 2015; Cernavskis, 2014). Thus, a positive relationship is assumed between valuation and firms' financial stability.

Firms' liquidity, reveals the company's ability to fulfil its short-term financial obligations. Quick ratio was selected to represent the liquidity of the company (Lemus-Esquivel et al., 2015). A company with high liquidity indicator tends to perform better during the 2008 financial crisis (Vieira, 2010). Thus, a positive relationship is assumed between liquidity and the firms' financial stability.

Firms' solvency ratio refers to the company's ability to fulfil its long-term debts and financial obligations. Debt to equity ratio (D/E ratio) was normally used as the indicator of the firms' solvency or leverage ratio (Lemus-Esquivel et al., 2015). D/E ratio indicates how much capital is in the form of debt and whether a company is able to meet its debt obligations persistently. The firms would face higher risk if this ratio increases (Lemus-Esquivel et al., 2015). And Orazalin et al. (2019) found that leverage of the firms was significant and negatively related with firms' financial stability. Thus, a negative relationship is assumed between solvency and firm's financial stability.

Firms' profitability, reveals the result of the company's decision on investment and production planning, and the ability of a company to generate profit. Return on asset (RoA) was chosen as its proxy (Lemus-Esquivel et al., 2015; Reynaud & Thomas, 2013). Obviously, the higher the value of RoA means that the better the performance of the company. Thus, a positive relationship is assumed between profitability and firm's financial stability.

DATA DESCRIPTION

As mentioned earlier, the objective of this study is to explore the influence of *Sukuk* on firms' financial stability in Malaysia spanning from 1997 to 2017. Malaysian listed firms that have issued *Sukuk* were the main concern of this study. Data for this study was obtained from Bond Info Hub, the website under Bank Negara Malaysia (BNM) which was responsible to publish all bonds information in Malaysia and provided the historical data about *Sukuk* since 1997. While the data of the calculation of firm's financial stability and also firms' characteristics were obtained from Thomson Returns DataStream.

The sample size of this study consisted of 61 firms listed on Bursa Malaysia that have issued *Sukuk*. The sample selection involved 5 steps. Firstly, all the firms that issued *Sukuk* were obtained from Bond Info Hub. There were altogether 164 firms that issued *Sukuk* from 1997 to 2017. Secondly, 58 company were excluded because they were not listed on Bursa Malaysia. Thirdly, 13 financial institutions (banks and insurance companies) were excluded from the sample because of the high leverage and high level of industry regulations imposed on them (Cooper, Jackson III, & Patterson, 2003). Subsequently, 23 sample companies were excluded as they were subsidiaries and their data had been merged into the parent companies'. This is because the study only focused on the parent companies. Lastly, further 9 firms were discarded since the financial data related to the company was not sufficient. After these five criteria, 61 sample firms were included in this study. The whole sample selection procedure is as shown in Table 2 below.

Table 2: Sample Selection Procedure

Selection Criteria	Number of Sample Companies
All companies that issued <i>Sukuk</i> from 1997 to 2017	164
Less companies list on Bursa Malaysia	(58)
Less financial companies	(13)
Less subsidiaries of main companies	(23)
Less companies with insufficient data on financial	(9)
Final number of firms in the study	61

Out of these 61 Malaysian listed companies they were be further classified as in Table 3.

Table 3: Analysis of Sample Companies

Number of Years Issued <i>Sukuk</i>	Number of Companies Issued <i>Sukuk</i>	Observations
5	1	5 (5*1)
4	0	0 (4*0)
3	6	18 (3*6)
2	11	22 (2*11)
1	43	43 (1*43)
Total	61 Companies	88 Observations

Table 3 shows the number of companies that issued *Sukuk* from year 1997 to 2017. Based on the table it was found that there were only one company issued *Sukuk* for five years, which were years in 1997, 2001, 2004, 2013, and 2014. Besides, there were six companies that issued *Sukuk* for three years. Furthermore, there were eleven companies in Malaysia that had issued *Sukuk* for two years. Additionally, there were forty-three companies that had been issued *Sukuk* for one year. Finally, the total obtainable observations were eighty-eight.

It was observed that companies did not issue *Sukuk* every year, and they could only have issue *Sukuk* once in their life time. According to the data collected, more than 70% of the sample companies issued *Sukuk* once only, thus, the data could not be formed as panel data. Then, this study would list down all the sample companies by the time *Sukuk* was issued and then the time factor to be ignored. Therefore, the data used in this study was treated as cross-section data.

SPECIFICATION OF THE STUDY MODEL

The naïve DD model created by Bharath and Shumway based on Merton DD model in 2008 was adopted to measure the default probability of the *Sukuk* issuers. And based on the functional form developed by Hmida and Brahmi (2016) and Orazalin et al. (2019), the empirical model of this study was established as follow:

$$naïve\ DD_i = f(Specific_Sukuk_i, Company_Control_i) \quad (8)$$

In Equation (8), naïve DD_i was the distance to default of company i , which was the proxy of company's financial stability and worked as the dependent variable in this study. $Specific_Sukuk_i$ was the first part of independent variables that were related to the four characteristics of *Sukuk* issued by company i , which included intensity of *Sukuk* (Int_i), tenure of *Sukuk* (Ten_i), coupon rate of *Sukuk* (CoR_i) and proportion of *Sukuk* financing (PS $_i$) (Smaoui & Nechi, 2017; Taoual, 2016; Jamaldeen, 2012; Hmida

& Brahmi, 2016). *Company_Control_i* was the second part of independent variables that are related to the characteristics of company *i*, which consisted of five aspects as follows: firm size (*TA_i*), firm's price-to-earnings ratio (*P/E_i*), firm's liquidity (*QR_i*), firm's solvency (*D/E_i*), and firm's profitability (*RoA_i*) Thus, Equation (8) can be rewritten as follows:

$$naïve\ DD_i = \beta_0 + \beta_1 Int_i + \beta_2 Ten_i + \beta_3 CoR_i + \beta_4 PS_i + \beta_5 TA_i + \beta_6 P/E_i + \beta_7 QR_i + \beta_8 D/E_i + \beta_9 RoA_i + \varepsilon_i \quad (9)$$

RESULTS AND FINDINGS

The main analytical technique employed in this study was multiple regression analysis, and this was used to explore whether the characteristics of *Sukuk* as well as the company's characteristics could influence the financial stability of listed firms that have issued *Sukuk*.

Multiple Regression Analysis

The results of the analysis are as shown in Table 4. According to the table, the computed R-squared (R^2) of the regression equation was 43.66%. In terms of the test for overall significance, *F* test was conducted to determine whether a significant relationship existed between the dependent variable and the independent variables. From the results it was found that the *F* value is significant at 1% level.

Subsequently, the individual tests which included *t*-test was employed for the individual significance of each independent variable in the regression equation. Three of the variables were found to be significant at 1% level; they were proportion of *Sukuk* financing, firm size and P/E ratio. Three variables were significant at 5% level. The variables were intensity of *Sukuk*, debt-to-equity ratio and return on assets. All in all, six out of nine independent variables' *t*-values were greater than the critical value at 5% significant level. Thus, it can be concluded that six independent variables were significant and have influenced on the financial stability of the *Sukuk* issuers.

Discussion on the Independent Variables

As indicated earlier, the independent variables consisted of two groups, namely, specific variables related to characteristics of *Sukuk*, and variables related to characteristics of the company. Intensity of *Sukuk* (*Int*) was the first proxy of *Sukuk*'s characteristics and this variable displayed a positive effect on firms' DD; the higher the *Sukuk*'s intensity, the more stable the company. This is in line with the finding of Smaoui and Nechi (2017) which indicated positive association between *Sukuk* development and economic growth. This variable was significant at the 5% level.

Tenure of *Sukuk* (*Ten*), the second proxy of *Sukuk*'s characteristics, also shown a positive relationship with firms' DD, the longer the tenure of *Sukuk*, the more funds of the issuing company, hence, the more stable the issuing company. This had supported Taoual's (2016) finding which argued that more long term of *Sukuk* were issued in the Gulf Corporation Countries (GCC) region. However, this variable was insignificant even at the 10% level.

Coupon rate of (*CoR*) was the third proxy related to the *Sukuk*'s characteristics. The estimated coefficient of this variable was negative and insignificantly related to firms' DD even at 10% significant level. This suggested the higher the coupon rate of *Sukuk*, the more profit should be distributed to investors, hence, the lower the financial stability of firms.

Table 4: Ordinary Least Squares (OLS) Results

Variable	Coefficient	Standard Error	t-Statistic	Probability
C	-14.4487	3.6552	-3.9529	0.0002***
Int	0.0052	0.0025	2.0922	0.0397**
Ten	0.0095	0.0129	0.7378	0.4628
CoR	-0.0975	0.0872	-1.1181	0.2669
PS	0.7342	0.2694	2.7254	0.0079***
Ln ^{TA}	0.8028	0.1745	4.6013	0.0000***
P/E	0.0482	0.0176	2.7378	0.0077***
QR	0.0478	0.1548	0.3089	0.7582
D/E	-0.3943	0.1729	-2.2801	0.0253**
RoA	0.0772	0.0344	2.2438	0.0277**
R-squared	0.4366	Adjusted R-squared	0.3716	
S.E. of regression	2.1557	Mean dependent var	3.2588	
Log likelihood	-187.1515	F-statistic	6.7153	
Durbin-Watson stat	1.8186	Prob(F-statistic)	0.0000***	

Note: C, constant term; Int, intensity of *Sukuk*; Ten, tenure of *Sukuk*; CoR, coupon rate of *Sukuk*; PS, proportion of *Sukuk*; Ln^{TA}, total asset in natural logarithm form; P/E, price to earnings ratio; QR, quick ratio; D/E, debt to equity ratio; RoA, return on asset; The asterisks (**) and (***) denote rejection of the null hypothesis at 5% and 1% significant level respectively.

The last proxy of *Sukuk*'s characteristics was the proportion of *Sukuk* to total financing (PS). The coefficients of this variable were positive with firms' DD and significant at 1% significant level. This high significant might be explained by the Pecking Order Theory (Myer & Majluf, 1984) that the company's managers preferred to raise fund via debt, and debt financing indicated that the managers acknowledged the company's situation well and they were confident with their investment activities. This finding was similar to a study done by Hmida and Brahmi (2016) that ratio of bond financing was significantly affected financial stability.

Generally, *Sukuk* could promote the firms' financial stability, and this positive and significant influence was more telling mainly by intensity of *Sukuk* and proportion of *Sukuk*. Moreover, three out of four variables related to *Sukuk*'s characteristics which were intensity of *Sukuk* (Int), tenure of *Sukuk* (Ten), and proportion of *Sukuk* (PS) were positively related to firms' financial stability, while there was negative relationship existed between coupon rate of *Sukuk* (CoR) and firms' financial stability.

The variables that were related to the characteristics of the company itself were the second group of independent variables in this study, it included five aspects of the company as follows: total asset, valuation, liquidity, solvency, and profitability.

Total asset (TA) was the first basic characteristic of a company that was found to have positive and significantly relationship with DD, and it was significant at 1% level. This finding was in line with the study done by Skribans (2009) which indicated that the larger the company, the higher the company's financial stability. This appears to indicate that a bigger company would be able to withstand unforeseen financial shock.

The second variable related to the company's characteristics was the price to earnings ratio (P/E)

used to measure the valuation of the firms. The estimated coefficient of P/E showed that valuation had a statistically positive and significant relationship with the firms' DD at the 1% level. This supported the result of Yu and Zhao (2015) and Pera (2017) which indicated positive influence on financial stability as implied by a higher P/E value. The higher the P/E value, the higher the share price which indicated that investors had plenty of confidence in the company's future, and thus, the higher the financial stability of company.

Liquidity variable (QR) was the third variable that was related to the firm's characteristics. The estimated coefficient of this variable was found to be positively related to DD, and unfortunately it was insignificant even at the 10% level. This finding suggested that the impact of company's short-term debt repaying ability on firms' financial stability was limited. This finding supported by study done by Vieira (2010), and could be explained by the study done by Pera (2014) and Cernavskis (2014) that financial stability was an indispensable condition for the company's long-term development, and firms' financial stability was firms' solvency which related to the firms' ability to repay long-term obligations.

Next, the proxy variable for solvency or leverage (D/E), and its estimated coefficient was statistically significant at the 5% level and negatively related to the DD. This suggested that the higher the solvency or leverage, the higher bankruptcy probability, and this result supported the finding by Orazalin et al. (2019). Furthermore, this finding also supported the trade-off theory (Modigliani & Miller, 1958) that managers should be aware that marginal benefit from debt financing would decrease as the debt financing ratio increased. Thus, although *Sukuk* would enhance firms' financing stability, this did not mean that there was no limit. Managers should seek the balance between debt financing and equity financing that was in line with the reality of the firms.

Subsequently, the coefficient of the profitability of the company that was measured by the return on asset (RoA) was statistically significant at 5% level and positively related with the DD. The finding supported the result of Vieira (2010) and Hmida and Brahmi (2016) that profitability was important to company's financial stability. This indicated that the better the company's ability to generate earnings from its assets, the better the financial stability.

CONCLUSION

The results of the regression analysis indicated the *Sukuk* could promote the firms' financial stability in Malaysia, especially the intensity of *Sukuk* (Int) and proportion of *Sukuk* (PS) to total financing, both of them were significant and positively related to firms' financial stability. The findings provide evidence on the importance of *Sukuk* in influencing the financial stability of firms. Thus, *Sukuk* has a significant role to play in the capital market. In addition, it is becoming an important asset class for investors to consider. Not only that, the issuance of *Sukuk* adds to the diversity of funds available to companies. Apparently, it is essential for Malaysia to get involve actively in promoting *Sukuk* as important source of financing.

With regard to variables related to firms' characteristics, firm size, firm valuation (P/E ratio), firm solvency/leverage, and firm profitability were found to be highly significant in influencing their financial stability. Therefore, it provides indications that firms that wish to issue *Sukuk* should be concerned with their size, solvency standing, P/E ratios and also their profitability. The issuing of *Sukuk* without due consideration to these factors may be detrimental to their financial stability.

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