



**ROLE OF INFORMATION ASYMMETRY IN SUKUK ISSUANCE –
AN EMPIRICAL ANALYSIS OF THE BOND MARKET IN THE
UAE**

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ROLE OF INFORMATION ASYMMETRY IN SUKUK ISSUANCE – AN EMPIRICAL ANALYSIS OF THE BOND MARKET IN THE UAE

Purpose

The global sukuk market has seen widespread innovations in the last couple of decades which helped sukuks to develop into one of the most acceptable Islamic structures for raising finance. According to the Global Islamic Economy indicator (2018-19), United Arab Emirates is now ranked second among the Islamic economies in the world and Nasdaq Dubai is credited to be the world’s largest center for sukuk listings. However, there has been no research study on this financing option within the region. This study is the first to investigate the determinants for firms to choose sukuk over conventional bond in the UAE and makes a significant contribution in light of the recent expansion of sukuk issuances and the fills the lacuna in research carried out in the UAE bond market.

Methodology

We empirically tested our hypotheses on a dataset that covered a sample of 1354 bonds issuances over the period 2008 to 2019. This study had extended the existing research by looking into both the banking as well as the non-financial entities in the UAE. We use a logistic regression to distinguish between the issuance of a sukuk versus a conventional bond and firm-specific variables of the issuers were taken from the year preceding the issuance. Moreover, information asymmetry was proxied by market-to-book as a measure of expected long-term growth potential of the company.

Findings

The banking sector accounted for 93% of the bond issuances but contributed only 63% of the bond market in terms of the value in the UAE. Our data evidenced that the non-banking sector expanded over the years, with participation from sectors including real estate, oil and gas, logistics, telecom and utilities and contributed to 47% of the market for sukuks. Smaller firms and larger issue sizes were found to favour sukuks, while higher leverage prompted a higher valued firm to prefer conventional bonds. Weak information asymmetry was shown by the banking sector with presence of adverse selection amongst the non-banking firms.

Value

Although UAE’s sukuk market has existed for more than a decade, very scant research that has been carried out. Few studies exist which have investigated the sources of finance for the GCC firms, these have looked into the information asymmetry and pecking order theory of the capital structure as a whole and applied adverse selection principles into the choice between debt and equity as the preference choice for entities. Our study is the first to focus on listed firms in the UAE with an attempt to determine the determinants of sukuk issuance versus the preference for conventional bonds.

Keywords: Sukuk, Bond, Information Asymmetry, Adverse Selection, United Arab Emirates.

1. INTRODUCTION

Capital markets are an important component for raising funds for long term investment. Debt markets are an integral part of the financial sector and effectively supplement the funds provided by the banking sector. The Islamic Capital Market (ICM) refers to the market where the activities are carried out in ways that do not conflict with the Shariah Laws. One such Islamic financial product is the “sukuk” – “sukuk” is the Arabic name for financial certificates that can be considered the Islamic equivalent of a bond. Sukuks have been based on leasing (Ijarah); partnership (Musharakah) build-to-order projects (Istisna) etc. The characteristics that distinguish sukuk from bonds are that - the return of sukuk has to stem from the profitability of its underlying assets; some sectors are forbidden because they are not compliant with sharia; profit and losses must be shared between contracting parties, and every transaction must be backed on real and lawful assets (Klein and Weill, 2016).

Traditional interest-paying bond structure is not permissible under Shari’ah Law. Therefore, the issuer of a sukuk sells the certificate to an investor group which then rents it back to the issuer for a predetermined rental fee, also entering into a contract to buy back the bonds at a future date at par value. Shari’ah requires that financing should be raised only for trading in specific, identifiable assets – to that effect, all sukuk returns and cash flows are linked to assets purchased or those generated from an asset – since trading in debt is prohibited under Shari’ah. Otherwise, overall sukuk structures tend to replicate cash flows of conventional bonds, they are also listed and traded on exchanges, (Vishwanath and Azmi, 2009)

The first Sukuk was issued in February 1988 after the Council of the Islamic *Fiqh* Academy of the Organization of Islamic Conference (OIC) held its fourth session in Jeddah, Saudi Arabia. However, the first modern sukuk issuance can be traced to 1983, when the Malaysian government launched a government investment certificate (SPK) based on the concept of *Qard al-Hasan* (benevolent loans). The issuance of sukuk began formally in Malaysia in 1990 with the small issuance of RM120 million (U.S.\$30 million) by Shell Malaysia (Zulhibri, 2015).

Initially the issuance of sukuk was restricted to Muslim countries but gradually became a popular source of raising finance by both government and private institutions. The global sukuk market, which began in 2002, has been growing tremendously and according to a study done for the International Monetary Fund (IMF), a strong demand from Muslim countries and conventional global institutions for Shari’ah-principled bonds is expected to boost the potential for sukuk in the future (Kusuma and Silva, 2014). Widespread innovations in Islamic finance have helped sukuks to develop into one of the most acceptable Islamic structures for raising finance, which in turn has led to its increasing use in recent years by government and private institutions.

Dubai launched a comprehensive effort to list sukuks in 2013 after its ruler Sheikh Mohammed bin Rashid al-Maktoum declared his agenda to transform the Emirate into a

leading center for Islamic finance in the world. By 2015, Dubai had overtaken other Islamic bonds markets of Ireland and London and according to the Global Islamic Economy indicator 2018-19, (Thomson Reuters, 2018) United Arab Emirates (UAE) is now ranked second and Nasdaq Dubai is credited to be the world's largest exchange for sukuk listings. Despite the economic downturn in the Middle East amidst tight liquidity conditions, dampened oil prices, high geopolitical risks, the sukuk issuance in the UAE continued to grow as is evident from Figure 1 below. As a major step in 2019, Nasdaq Dubai was preparing technological infrastructure to allow sukuk to be offered to individual investors.

Despite the growing importance of the sukuk market in the UAE, no paper has investigated the determinants of choice between sukuk and conventional bond in this region. Our paper, therefore, makes a significant contribution by looking into the choice of financing of the UAE companies and this paper investigates the determinants for firms to choose sukuk over conventional bond. To this end, we look into the role of information and asymmetry to determine the choice of sukuks for a company. The use of a Special purpose Vehicle (SPV) tends to foster moral hazard issues since the least performing projects of the firm could be transferred to a remote SPV. Therefore, sukuk may be chosen rather than bonds by firms with greater information asymmetries to prevent an effective market monitoring. The specific structuration of a sukuk could also lead to an adverse selection mechanism whereby the sukuk market could also suffer from consequences of a negative signal for the market (Godlewski et al., 2013).

Our study makes a significant contribution in light of the recent expansion of sukuk issuances and the fills the lacuna in research carried out in the UAE bonds market. The remainder of the paper is organized as follows. In the following section, we introduce the concept of the Sukuks followed by a review the literature leading to the hypotheses to be tested. Section 4 presents the research methodology and the variables that were used in the study. The data used to examine our hypotheses is discussed in Section 5 along with the empirical models and analyses. Finally, in Section 6, we offer concluding remarks along with the scope of further research.

2. WHAT ARE SUKUKS

"Sukuk" is the Arabic name Sukuk which was originally used in the Middle Ages as papers representing financial obligations originating from trade and other commercial activities. In the modern context "Sukuk" refers to a financial certificate that represents ownership in an asset and grants the investors a share of the asset along with profit and risks resulting from such ownership (Yean, 2009). Like conventional bonds, sukuks have a nominal value, a maturity date, a rate (called margin) and provide a regular stream of cash-flows to investors including capital refunding at the end. So, sukuk holders are entitled to share in the revenues generated by the sukuk assets as well as being entitled to share in the proceeds of the realization of the sukuk assets

However, since Islamic finance requires each commercial transaction to be backed by real assets, sukuk need to be structured with a special purpose vehicle (SPV) which buys the underlying assets of the investment project by raising funds from investors that are entitled with certificates of ownership. The certificates provide the regular stream of cash-flows to the investors and a final capital refund. The project is managed by the issuer who can buy the underlying assets back. Sukuks are structured with a credit contract which could represent

- a cost-plus sale (murabaha or partnership)
- a partial ownership of a business (musharaka or equity participation)
- a prepayment contract (salam)
- an undertaking / project contract (istisna)
- a leasing of an asset (ijarah)

In a mudaraba sukuk, the capital is provided by one party and labor by the other, while the shares of the profit are determined beforehand. Musharaka are used to mobilize funds for establishing a new project or developing an existing one whereby the sukuk holders become owners of the project. In musharaka, the issuer and the SPV enter into an equity participation-type joint venture for a specified period and an agreed profit-sharing ratio. The corporation provides the assets (such as land or existing plants or machinery) to the joint venture and the SPV contributes to the investment from the sukuk proceeds while profits are distributed to the sukuk holders.

A business may pre-sell their future commodities and monetize the assets through the issuance of sukuk salam, as certificates of equal value issued for the purpose of mobilizing the capital such that the goods are owned by the sukuk holders. Salam may be sold by an SPV whereby the funds from investors are paid as an advance in return for a promise to deliver a commodity at a future date.

Istisna is referred to as the "Islamic project bond" and not been widely used as a source of financing of greenfield projects. The istisna Sukuk is a source of funding of the construction phase of a project. As of the date of publication, there are no sukuk al-istisna issuances listed by originators on NASDAQ Dubai.

Ijarah sukuk are the most popular and represent physical durable leased assets. The sukuk issuer transfers the ownership of the asset to a SPV for a fixed price and the SPV issues sukuk certificates to investors. The SPV leases the asset to the sukuk issuer who pays periodic lease rentals to the SPV which are, in turn, paid as coupons to the sukuk holders. On maturity the SPV sells the assets at a predetermined value.

Sukuk and conventional bonds do share similar characteristics as both provide investors with fixed payment streams as coupons along with the redemption value at maturity and both are considered safer investments than equities. However, sukuk involves asset ownership while bonds are debt obligations. So, appreciation of a sukuk is linked to its asset backing whereas bond profitability is strictly due to the interest rate.

3. LITERATURE REVIEW

Modigliani and Miller (1958) introduced the capital structure irrelevance theory whereby they assumed that under the perfect market condition, the capital structure of a firm is irrelevant. However, under imperfect market, models based on an optimal structure emphasize tradeoffs between debt and equity, which in turn was based on costs and benefits.

Pecking order theory was first introduced by Donaldson (1961) where he formulated the idea that when raising external funds, managers tend to issue securities in ascending order of risk, known as the pecking order, in an attempt to preserve the wealth of shareholders. Myers (1984) explained that a company's preferred funding sources would be its internal financing sources, followed by issuance of debt securities. Raising equity is considered a means of last resort. Firms whose investment opportunities exceed internally generated funds tend to issue more debt securities and hence have higher debt ratio (Moyer et al., 2007).

Another parallel theory that tried to explain the preference of debt to equity was agency cost which refers to the internal cost that arises from conflict of interest between shareholders and management. Shareholders wish for management to run the company in a way that increases shareholder value whereas the objective function of the management may not be in the best interests of shareholders. Jensen and Meckling (1976) pointed out that unless managers own 100 percent of the shares there will always be management-shareholders conflicts and one way to reduce agency cost was through the use of debt since a reduction in external equity would help the concentration of managerial ownership.

3.1 Information Asymmetry

Leland and Pyle (1977), Grossman and Hart (1981) and Myers and Majluf (1984) have proved that information asymmetries can have a profound impact on a firm's financing decisions. Asymmetric information and cash flow effects model assumed that managers have better information than outsiders about the firm's value since they have more knowledge about their company's prospects, risks and value than outside investors. From the investor point of view, information asymmetry is characterized by two major problems - adverse selection and moral hazard (Knutsen, 2001). From the issuer perspective, greater information asymmetries favour the choice for sukuk whereby firms with an uncertain future may prefer sukuk over bonds since losses are shared with investors. Sukuk market, therefore, is likely to be characterized by firms with higher information asymmetries than the bond market (Grassa and Minaoui, 2018).

Following the existing literature (Donaldson, 1961; Myers, 1984; Shyam-Sunder and Myers, 1999) the issuance of conventional bonds require a low level of information asymmetry because the investment decision of the investors demand depends on the knowledge of creditworthiness of the issuing firm. Thus, we expect a positive relation between Information Asymmetry and choice of sukuk.

H01 – There is no relation between Information Asymmetry and choice of sukuk

HA1 – There is a positive relation between Information Asymmetry and choice of sukuk

3.2 Adverse Selection

High information asymmetry also gives rise to the moral hazard behavior of securitization where the issuer firms may be tempted to transfer less performing assets to the Special Purpose Vehicles (SPVs) issuing the sukuk. Klein and Weill (2016) opine that the moral hazard arises from window dressing the issuer firm's financials as the direct responsibility to pay the sukuk investor lies with the SPV. Therefore, the process of securitization and complex structure of sukuk can worsen moral hazard issues and the presence of asymmetry of information results in less profitable firms with riskier projects to prefer issuance of sukuku.

Investors are aware of this adverse selection whereby sukuk issue is expected to send negative signals to market participants (Godlewski et al., 2013). As a result, in their attempt to send positive signals, healthier firms rely on conventional bonds. Following the pecking order theory as well as the information asymmetry, it is therefore expected that once a firm shows a preference for debt financing, less profitable companies would tend to prefer Sukuk over conventional bond financing (Ahmed et al., 2018; Alam et al., 2013; Klein & Weill, 2016). Raei and Cakir (2007) found that the value-at-risk is reduced when Sukuk are added to the portfolio of fixed-income securities, demonstrating that sukuku create diversification benefits for investors. So, owing to adverse selection, a less profitable firm is expected to favor sukuk in order to share the operating risks with the lender.

H02 – There is no relation between Adverse Selection and choice of sukuk

HA2 – There is a negative relation between Adverse Selection and choice of sukuk

3.3 Leverage

A higher leverage indicates better access to the debt market and a better reputation of the firm (Denis and Mihov, 2003). Signaling theory and liquidity constraint hypotheses play strong roles in influencing firm decisions in their financing preference since a debt issuance firm, as opposed to a sukuk issuer, is valued highly in the market (Ross, 1977; Nagano, 2017). Shahida and Saharah (2013) argued that leverage best represented the firms funding ability that would influence a firm's decision to issue sukuk. A higher leveraged firm would prefer to send positive signals to the market by issuing conventional bonds, which indicates that leverage is expected to be negatively linked with the probability to issue sukuk.

H03 – There is no relation between Leverage and choice of sukuk

HA3 – There is a negative relation between Leverage and choice of sukuk

3.4 Maturity

Maturity is defined by the number of years from the issuance date to the final refunding date. Maturity is sensitive to information asymmetries (Diamond, 1991) and greater information asymmetries, and therefore, issuance of sukuk, favour the choice for long-term debt, because the borrower is not sure to be able to keep borrowing on the future and may intend to take advantage of the current premium. Conversely, good-shape firms tend to borrow on the short-run, as they can expect better borrowing conditions in the future and might not want to be tied by long term debt conditions. So, if sukuk is chosen by less performing issuers with higher information asymmetries, we can expect that the maturity is positively correlated with a sukuk issuance (Grassa and Minaoui, 2018).

- H04 – There is no relation between Maturity and choice of sukuk*
- HA4 – There is a positive relation between Maturity and choice of sukuk*

3.5 Issue Size

Large issue sizes combined with adverse selection encourage firms to prefer sukuk to conventional bonds (Nagano, 2017). He found that in case of Malaysian and Indonesian firms, as funding size grew companies found it costlier to approach their conventional bond market and showed a preference for sukuks. In contrast, Alam et al (2013) found large financial requirements funded by large issuances of conventional bonds send positive signals about strong financials of the company and therefore might go against the sukuk choice.

- H05 – There is no relation between Issue Size and choice of sukuk*
- HA5 – There is a positive relation between Issue Size and choice of sukuk*

3.6 Firm Size

In the previous research studies, the size of firm, as measured by the log of total assets, has been considered as proxy to bankruptcy costs. Therefore, larger firms with less risk of bankruptcy (Shahida and Saharah, 2013) are expected to prefer conventional bonds as their source of finance (Ahmed et al, 2018). Further, smaller firms would be expected to show a preference for risk sharing in sukuks as well as enter into a partnership-based sukuk like Ijarah (Grassa and Miniaoui (2018).

- H06 – There is no relation between Firm Size and choice of sukuk*
- HA6 – There is a negative relation between Firm Size and choice of sukuk*

4. RESEARCH METHODOLOGY

We use a logistic regression to distinguish between the issuance of a sukuk versus a conventional bond with a dummy variable. This approach is in line with Alam (2010); Klein & Weill (2016); Grassa and Miniaoui (2018) who conducted logistic regression in their analysis of firms' choice of project finance.

The model can be specific as follows -

$$(\text{Sukuk}) = \alpha + \beta_1.\text{Asymmetry} + \beta_2.\text{Adverse} + \beta_3.\text{Debt} + \beta_4.\text{Maturity} + \beta_5.\text{Size} + \beta_6.\text{Firm} + \beta_7.\text{Year} + \beta_8.\text{Slowdown} + e$$

where odds (Sukuk) implies the odds in favour of issuance of a sukuk by the borrower versus issuance of a conventional bonds which is represented by Sukuk = 0 If company chose bonds; and = 1 if company chose sukuk.

The logistic model is a non-linear probability econometric regression method, where the dependent variable is a dummy variable that follows the logistic distribution function. Since we consider a binary dependent variable, it does not follow the basic assumption of the OLS. As shown in the diagram, the fitted OLS regression line cannot correspond to the binary nature of the dependent variable and therefore becomes inappropriate.

In a logistic regression, the coefficients are interpreted as the odds ratio of an event which is defined as the probability that the event occurs divided by the probability that the event does not occur. In our case, the coefficients of the independent variables would imply if the parameter value would be in have a positive/negative impact on the issuance of a Sukuk in terms of

$$\begin{aligned} \text{Odds (Beta)} &= \text{probability (sukuk issuance)} / (1 - \text{probability (sukuk issuance)}) \\ &= \text{probability (sukuk issuance)} / \text{probability (conv. bond issuance)} \end{aligned}$$

Therefore, odds = 1 implies probability (sukuk) = probability (conv. bond)
 odds > 1 implies probability (sukuk) > probability (conv. bond)
 odds < 1 implies probability (sukuk) < probability (conv. bond)

Following Altunbaş et al., (2010) the variables of the issuers were taken from the year preceding the issuance. This choice was motivated by two reasons. Since the issuance occurs during the year, the new accounts have not been done yet and the determinants of the choice are fundamentally the situation of the firm at the end of the previous year. This also prevented endogeneity since the variable the year before the issuance cannot be impacted by the issuance itself.

Since the degree of information asymmetry is not directly observable, the use of proxies becomes essential (Sufi, 2007; Karlan and Zinman, 2006). Since managers of companies with high growth rate potentials seem to possess better knowledge of the companies' investment opportunities, information asymmetry can be proxied by a measure of expected long-term growth potential of the company. Following this theory,

market-to-book has been extensively used as a proxy for firm growth (Rajan and Zingales, 1995; Bevan and Danbolt, 2002); impact of diversifications strategies (Amit and Livnat, 1988); reputation building (Fombrun and Shanley, 1990) and organisational slack (Chakravarthy, 1986). Signaling and information asymmetries have also been extensively examined using the market-to-book ratio (Altunbaş et al., 2010; Esho et al. 2001; McLaughlin et al., 1998) but with ambiguous results. Fama and French (1992) viewed low market-to-book as a signal of high equity risk which would be associated with high returns.

However, Hilliard and Zhang (2015) observed that market-to-book had no impact on Chinese stock performance and did not signal riskiness since most of the Chinese listed firms had large state ownership. In contrast, Nagano (2016) argued that higher market to book ratio indicates higher expected returns to stem from future investments projects and investors of sukuk are paid dividends on profit-sharing agreements instead of fixed coupons as in normal bonds which leads of a positive relation between information asymmetry and sukuk issuance.

Higher asymmetries are also expected to generate adverse selection whereby companies with low profits could issue sukuk by transferring their non-performing assets to the SPV. So, we use profitability as a measure for Adverse Selection by taking the earnings before interest, taxes and depreciation scaled by the total assets (EBITDA) to measure profitability.

The 'Slowdown' variable was taken to capture the macroeconomic condition of the UAE during the time period. The Real annual GDP was taken as the indicator of external factors in the economy such that Slowdown = 0 when the GDP declined for two consecutive years and =1 otherwise. Consequently, the years 2008-2009 and 2016-2017 were taken as "0" based on the real GDP data published by the International Monetary Fund (IMF).

5. DATA ANALYSIS

5.1 SAMPLE AND DESCRIPTIVES

The total data set comprised of bonds issued by all asset classes (corporates and governments) between 1 January 2008 and 22 July 2019 with ultimate parent country of risk being UAE. A total 1629 bonds were issuances of which 136 were Islamic while 1493 were conventional bonds. All bond specific data was accessed from Bloomberg while financial data of the issuers was obtained from Capital IQ.

The inclusion of information asymmetry for issuance of bonds required the observable market variable (market-to-book ratio) in our study. Hence only issuances by listed entities were shortlisted, which reduced the data set to 1354 issuances with 1256 bonds being issued by the banking sector. See Tables 2 and 3 for detailed break-up according to number of issuances and according to issue size.

Banks constituted more than 92% of the total bond issuances in our study and the market was dominated by Conventional Bonds from the banking sector (Figure 2). Interestingly, if we look at the market for Islamic Bonds alone, the banking sector captured only half of the market and the non-banks captured the other half with real sector grabbing almost a quarter of the market share followed by Oil & Gas with another 11%.

The trend was more significant in terms of the Issue Sizes where the non-banking entities comprised 34% of the market for conventional bonds and 47% of the market for Islamic bonds (Table 3). Notable in this case is that in terms of the Issue Size, the non-banking sector was dominated by two large industry categories - real estate (20.24%) and logistics (15.47%). So, although the Oil & Gas sector had issued 11% of the Islamic bonds, the sector constituted 8.53% of the market share in terms of issue size. This is important since theoretically, Islamic Banks are mandated to issue Sukuks while the non-banking sector is driven by their preference ordering. So, 47% of the sukuk coming from non-banking sector highlights that sukuk has been gaining a stronghold as the preferred choice of financing in the UAE amongst entities who chose to issue Islamic bond when they had access to all sources of financing.

5.2 REGRESSION RESULTS

We applied the logistic regression model for the entire dataset of bonds issued by 27 companies that are listed in the stock exchanges of Dubai, Abu Dhabi and NASDAQ representing 6 industries covering the time period 2008 to 2019. The dataset showed there was no multicollinearity with variance inflation factors (VIF) less than 5, but confirmed the presence of heteroscedasticity. So, we obtained the robust parameters in STATA with the logistic coefficients.

With a total of 1354 observations, the model shows an explanatory power of 57%. The coefficients of the regression indicate that leverage, issuance size and firm size were the three variables that were significant in explaining the preference for Islamic versus conventional bonds and were also of the expected signs. Our results show that, for the overall data, smaller firms and larger issue sizes would show a preference for sukuk. Also, higher leveraged firms would want to enhance their position in the market by sending positive signals and issue conventional bonds, which is confirmed by the negative sign. Although information asymmetry and adverse selection do not show any significant effect in the preference for sukuk, our results are still in line with signaling, pecking order as well as agency theories whereby larger firms with higher leverage are found to issue conventional bonds.

Despite the presence of Information Asymmetry, the irrelevance of the variable in our model may be justified. First, in case of Malaysian and Indonesian firms, a major reason cited for information asymmetry is the government support like tax incentives (Nagano, 2017) which prompt riskier projects to prefer sukuk issuances (Shahid and Saharah, 2013). So, the absence of corporate tax in UAE could render the variable irrelevant for

UAE and does not play a role in the choice of sukuk through information asymmetry. Second, market-to-book value as the proxy for information asymmetry could be another interesting aspect which has rendered this variable insignificant for the UAE. Al-Shboul and Alsharari (2019) and Majumdar and Varadarajan (2013) found that the stock markets in the UAE exhibit signs of inefficiency due to low trading volumes indicating that market shocks in UAE do not provide strong evidence for a reflection in the respecting market prices. Paltrinieri (2015) also confirmed a contraction in market capitalization and trading volumes in the UAE. In the absence of actively traded stocks, the market-to-book is unlikely to convey information of growth prospects of the firm and therefore might render the variable insignificant.

The banking sector had 1256 observations and the logistic model showed an explanatory power of 56%. Only issuance size and firm size were the significant variables and were of the expected signs. Smaller banks and larger issue sizes show a preference for sukuks. Information Asymmetry shows a weak significance for the banks but a high growth firm with a high market-to-book value is found to be favoring sukuks. In the case of banks, this could be justified because our data clearly shows that it was mandatory for all Islamic banks to issue sukuks, irrespective of their growth potential. Interestingly, when the non-Islamic banks had the option to choose their financing according to their preference, there have been only 8 sukuk issuances – one from ADCB and seven from FGB – while all issued conventional bonds. So, once again the irrelevance of Information Asymmetry as a determinant of sukuk issuance may be justified. It is, therefore, obvious that our main point of interest in the dataset was to investigate the determinants of bond issuances amongst the non-banking entities where the firms could exercise their preferences without any mandates.

The dataset showed no multicollinearity and no heteroscedasticity. There were 98 bond issuances from the non-banking sector and our model shows an explanatory power of 51%. The coefficients of the regression once again indicate that small issue size and larger firm size were significant determinants for the preference of conventional bonds over sukuks. Large firms are more diversified, thus have lower possibility of experiencing financial failure and can access capital market more easily. So, these non-banking firms are not looking for sharing of risk as would be guaranteed by sukuks through the SPV securitization process. Hence firm size was negatively and significantly related to the issuance of sukuks.

The Year of issuances becomes positively significant indicating that the non-banking firms have contributed in a major way to the growth of the sukuk market in the UAE over the last 12 years. In this case, Debt and Adverse Selection emerge as negatively significant determinants indicating that firms with higher leverage and higher profits would want to enhance their position in the market by sending positive signals and issue conventional bonds, which is confirmed by the negative sign.

6. Conclusion and Scope of Further Research

Although UAE's sukuk market has existed for more than a decade, there is still low level of corporate business participation. Few studies exist which have investigated the sources of finance for the GCC firms, these have looked into the information asymmetry and pecking order theory of the capital structure as a whole and applied adverse selection principles into the choice between debt and equity as the preference choice for entities. Our study is the first to focus on listed firms in the UAE which included Dubai, Abu Dhabi and Nasdaq with an attempt to determine the determinants of sukuk issuance versus the preference for conventional bonds.

We empirically tested our hypotheses on a dataset that covered a sample of 1354 bonds issuances over the period 2008 to 2019. This study had extended the existing research by looking into both the banking as well as the non-financial entities in the UAE. The Banking sector showed an overwhelming presence in the bond market, accounting for 93% of the number of issuances but contributed only 63% of the bond market in terms of the value of the bonds, in US dollars. Our data evidenced that over the years, the non-banking sector expanded in terms of bond issuances with participation from sectors including real estate, oil and gas, logistics, telecom and utilities. Importantly, the non-banking firms also contributed to 47% of the market for Islamic Bonds, with sukuks being issued heavily by the real estate and the logistics companies followed by oil and gas.

The estimation results yield the following conclusions. Firm size and Issue size were significant determinants of financing preferences in issuing sukuk versus conventional bonds for both banking as well as non-banking firms. Smaller firms and larger issue sizes were found to favour sukuks, which were in line with our **Hypotheses HA5** and **HA6**. Higher leverage indicated a positive signal in terms of better reputation and better access to the debt market which prompted a higher valued firm to prefer conventional bonds. This was supported by our results for the overall data and for the non-banking sector, which confirmed our **Hypothesis 3A**. A weak information asymmetry was shown by the banking sector but the sign was not in line with our expectation mainly because of the mandated sukuk issuance by the Islamic Banks which made the confirmation of Adverse Selection with the significant negative sign (**Hypothesis H2A**) by the non-banking firms an important result for our further research.

We aim to focus on the non-banking entities for our further research into the bonds market in the UAE, by extending our scope beyond the 98 listed issues. Financial databases would be accessed in order to extract financial data of the non-listed private entities. Further, in order to have a better applicability of Information Asymmetry in the UAE, one should not include variables that are linked to the market valuation or stock price signaling, as has been taken extensively in the existing literature. One could calculate the Altman Z-score that would reflect the solvency or the likelihood of bankruptcy based on its financial ratios. One could also consider the credit rating of each individual bond to reflect the perceived riskiness of the issuance and hence the presence of information asymmetry.

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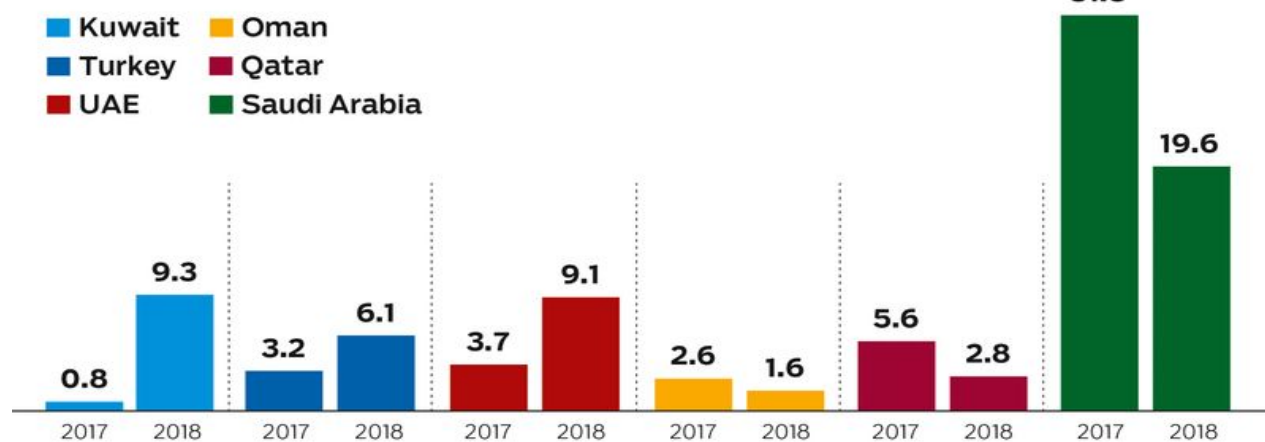
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Figure 1.

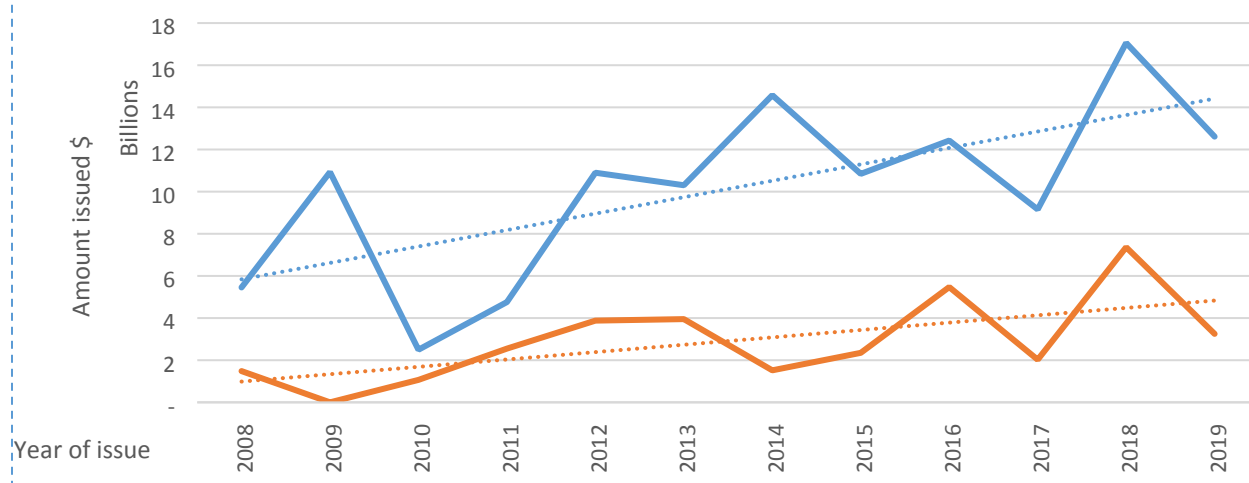
REGIONAL SUKUK ISSUANCE CONTRACTED IN 2019



Source: Standard & Poor's

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Figure 2 - Listed Bonds issued - trend



Note: the blue line denotes the issuance on conventional bonds while the red line denotes the issuance on sukuk from 2008 to 2019.

Table 1 – List of Independent Variables

Variable	Measure	Expected Sign
Asymmetry	Firm Growth = Market to Book value	+ve
Adverse	Firm Profitability = EBITDA / Total Asset	-ve
Debt	Leverage = Long term debt / Total Asset	-ve
Maturity	Number of years from issue till Maturity	+ve
Size	Issue Size = Log of total amount issued	+ve
Firm	Firm Size = Log of total asset	-ve
Year	Year of issuance of the bond	
Slowdown	Consecutive negative real GDP = 0; else = 1	

Table 2 – Bond Issuances according to Sector and number of bond issuances

SECTOR	CONVENTIONAL	ISLAMIC	CONVENTIONAL %	ISLAMIC %	ISSUANCES %
Banking	1229	27	94.54	50.00	92.76
Logistics	10	5	0.77	9.26	1.11
Oil & Gas	4	6	0.31	11.11	0.74
Real Estate	19	13	1.46	24.07	2.36
Telecom	5		0.38	0.00	0.37
Utilities	33	3	2.54	5.56	2.66
Total	1300	54	100	100	100

Table 3 – Bond Issuances according to Sector and Issue Size

SECTOR	CONVENTIONAL	ISLAMIC	CONVENTIONAL %	ISLAMIC %	ISSUE SIZE %
Banking	79831336451	18498967000	65.70	53.00	62.71
Logistics	6987719000	5400000000	5.75	15.47	8.04
Oil & Gas	23006136322	2976310740	18.93	8.53	16.87
Real Estate	4512170845	7065851250	3.71	20.24	7.10
Telecom	5057928000		4.16	0.00	3.28
Utilities	2112874300	962836900	1.74	2.76	2.00
Total	121,508,164,918	34903965890	1354	100	100

Table 4 – Summary Statistics

	<i>Asymmetry</i>	<i>Adverse</i>	<i>Debt</i>	<i>Size</i>	<i>Firmsize</i>	<i>Maturity</i>
Mean	1.0962	2.3537	11.5890	7.5338	11.3590	5.2574
Standard Error	0.0132	0.0598	0.2874	0.0165	0.0090	0.2925
Median	0.9300	1.8515	9.1228	7.3979	11.4121	2.0000
Mode	1.0500	1.8945	9.1228	7.6990	11.6091	1.0000
Standard Deviation	0.4860	2.2015	10.5758	0.6087	0.3307	10.7630
Sample Variance	0.2362	4.8465	111.8480	0.3705	0.1094	115.8421
Kurtosis	9.1812	18.9658	23.1118	0.4438	5.4295	45.3415
Skewness	2.1531	4.0149	4.6900	0.7559	-1.6054	5.9562
Range	3.8000	26.5502	76.2574	3.7854	2.4673	98.9200
Minimum	0.3400	-5.7461	0.0000	5.4265	9.4043	0.0800
Maximum	4.1400	20.8041	76.2574	9.2119	11.8716	99.0000
Count	1354	1354	1354	1354	1354	1354

Table 5 – Full Data - Tests for Multicollinearity and Heteroscedasticity

Variable	VIF	1/VIF
Adverse	2.20	0.454286
Debt	1.85	0.540674
Firmsize	1.59	0.629878
Size	1.55	0.643542
Year	1.17	0.857881
Asymmetry	1.12	0.895277
Maturity	1.11	0.898731
Mean VIF	1.51	

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of Sukuk

chi2(1) = 2640.09

Prob > chi2 = 0.0000

Table 6 – Full Data Logistic Regression Result

Logistic regression	Number of obs	=	1,354
	Wald chi2(7)	=	112.80
	Prob > chi2	=	0.0000
Log pseudolikelihood = -96.999043	Pseudo R2	=	0.5725

<i>Dep. Variable SUKUK</i>	<i>Odds Ratio</i>	<i>Robust Std Error</i>	<i>z</i>	<i>P > z</i>
Asymmetry	0.582416	0.199379	-1.58	0.114
Adverse	1.009909	0.054773	0.18	0.856
Debt	0.965277	0.011045	-3.09	0.002
Maturity	1.007479	0.006575	1.14	0.254
Issue Size	44.458100	22.267790	7.58	0.000
Firm Size	0.046038	0.022958	-6.17	0.000
Year	1.095454	0.073699	1.36	0.175
Slowdown	0.906062	0.446591	-0.20	0.841

Table 7 – Banking Sector - Tests for Multicollinearity and Heteroscedasticity

Variable	VIF	1/VIF
Asymmetry	1.47	0.679278
Adverse	1.41	0.708181
Year	1.28	0.781958
Size	1.21	0.823350
Firm size	1.18	0.846727
Slowdown	1.16	0.864593
Maturity	1.13	0.887520
Debt	1.08	0.926926
Mean VIF	1.24	

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of Sukuk

chi2(1) = 3419.63

Prob > chi2 = 0.0000

Table 8 – Banking Sector Logistic Regression Result

Logistic regression	Number of obs	=	1,256
	Wald chi2(8)	=	103.49
	Prob > chi2	=	0.0000
Log pseudolikelihood = -57.085954	Pseudo R2	=	0.5622

Odds Ratio	Coefficient	Robust Std Error	z	P > z
Asymmetry	0.408091	0.216704	-1.69	0.091
Adverse	1.918009	0.897503	1.39	0.164
Debt	0.963587	0.070345	-0.51	0.611
Maturity	1.009926	0.007885	1.27	0.206
Issue Size	41.204620	22.329880	6.86	0.000
Firm Size	0.058104	0.047142	-3.51	0.000
Year	0.994923	0.100519	-0.05	0.960
Slowdown	1.955518	1.405459	0.93	0.351

Table 9 – Non-Banking Firms - Tests for Multicollinearity and Heteroscedasticity

Variable	VIF	1/VIF
Debt	2.41	0.414650
Size	1.71	0.583501
Slowdown	1.68	0.593705
Firm size	1.64	0.608133
Maturity	1.53	0.655203
Asymmetry	1.51	0.663064
Year	1.26	0.790710
Adverse	1.11	0.903467
Mean VIF	1.61	

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of Sukuk

chi2(1) = 1.74

Prob > chi2 = 0.1868

Table 10 – Non-Banking Firms - Logistic Regression Result

Logistic regression	Number of obs	=	98
	LR chi2(8)	=	58.59
	Prob > chi2	=	0.0000
Log likelihood = -28.395167	Pseudo R2	=	0.5078

Odds Ratio	Coefficient	Std Error	z	P > z
Asymmetry	0.555646	0.2976047	-1.10	0.273
Adverse	0.840496	0.084426	1.73	0.084
Debt	0.958423	0.020728	-1.96	0.050
Maturity	0.805190	0.118903	-1.47	0.142
Issue Size	119.284800	175.925000	3.24	0.001
Firm Size	0.008160	0.010859	-3.61	0.000
Year	1.714442	0.289727	3.19	0.001
Slowdown	0.352835	0.333610	-1.10	0.271

Table 11 – Summary Of Logistic Regression Results For The Three Models

	MODEL 1	MODEL 2	MODEL 3
	Full Data	Non Banks	Banks
Observations	1354	98	1256
R squared	57%	51%	56%
Asymmetry (M-to-B)			-ve*
Adverse (EBITDA/TA)		-ve*	
Debt (lgtD/TA)	-ve***	-ve**	
Maturity (years)			
Slowdown			
Issue Size (log issue)	+ve***	+ve***	+ve***
Firm Size (log TA)	-ve***	-ve***	-ve***
Year		+ve**	