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Why Do Companies Issue Sukuk?

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Abstract

This paper investigates the determinants for firms to choose *sukuk* over conventional bond. We investigate the potential impact of information asymmetries and adverse selection to explain why firms prefer using *sukuk*. We perform logit regressions of the choice of debt type to determine which characteristics lead a firm to issue a *sukuk* rather than a bond. We use a dataset of *sukuk* and conventional bond issuances in Malaysia from 2004 to 2013. We find evidence of the influence of information asymmetries and adverse selection on the choice of the *sukuk* market.

1. Introduction

Islamic finance has considerably expanded with an increase of Islamic financial assets from $150bn in the mid-1990's to $1800bn at the end of 2013 (Kuwait Finance House (2014)). The market of *sukuk*, the Islamic equivalent of bonds, itself gathers approximately $270bn, which represents 15% of Islamic total assets. This market is essentially rooted in emerging countries even if the UK and Luxembourg issued sovereign *sukuk* in 2014.

Islamic finance is a compartment of finance that complies with prescriptions of Islamic law, namely *sharia*. The transactions are based on licit Muslim contracts in the sense that they are compliant with the *sharia* requirements. Several characteristics distinguish Islamic finance from conventional finance, and so *sukuk* from bonds. First, interest defined as ex-ante required rate of return is not allowed, so the return of *sukuk* should stem from the profitability of its underlying assets. Second, some sectors are also forbidden because they are not compliant with *sharia*, mainly porcine, alcohol, pornography and weapon industries[1]. Third, two positive principles shape Islamic finance and *sukuk*: profit and losses must be shared between contracting parties, and every transaction must be backed on real and lawful assets.

Sharia requirements lead to specific *sukuk* features compared to conventional bonds. Thus, even if these two types of instruments share the common purpose to finance companies through debt, they can be chosen for different reasons by companies.

We can then wonder why some companies choose *sukuk* instead of bond for their financings. Our aim in this paper is to investigate the determinants of the choice of a *sukuk* over a conventional bond. To this end, we employ a dataset of *sukuk* and bond issuances in Malaysia for the period 2004-2013. Malaysia provides the largest corporate *sukuk* market in the world and as such represents the optimal country to perform such analysis. In addition, this country has developed and liquid bond markets, both for conventional bonds and for *sukuk*. We consider two hypotheses to explain the choice for *sukuk*.

First, greater information asymmetries can favour the choice for *sukuk*. Namely, firms may opt for *sukuk* because they consist in contingent debt contracts and because losses are shared with investors. Henceforth, companies with an uncertain future may prefer *sukuk* over bonds. In other words, *sukuk* market might be characterized by firms with higher information asymmetries than the bond market.

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[1] See for instance the rules of the Dow Jones Islamic Index (http://www.djindexes.com/islamicmarket)

Second, adverse selection can favour the choice for *sukuk* for companies in bad financial shape. Namely, higher information asymmetries are expected to generate adverse selection. Allen and Gale (1992) show that in the presence of information asymmetries contingent debt contracts are no longer optimal and lure less performing issuers. Thus, firms that tap on *sukuk* market are expected to be riskier and less profitable than those who choose bond market.

In this manner, a firm that chooses to issue a *sukuk* sends a negative signal to the market. On the contrary, bond issuing firms send a positive signal. The specific structuration of *sukuk* alleviates some major bonds' constraints for a firm: the results are contingent and the underlying assets are separated from those of the issuers. However, following Jensen and Meckling (1976) and Jensen (1986) reasoning, *sukuk* become then unable to resolve some dire moral hazards, on the contrary of conventional bond. Thus, market investors can perceive it as a negative signal, as suggested by Godlewski, Turk-Ariss, and Weill (2013).

Surprisingly no paper has ever investigated the determinants of choice between *sukuk* and conventional bond. We therefore contribute to the burgeoning literature on *sukuk*. We extend two empirical works, which are related to our study. Azmat, Skully, and Brown (2014) examine the determinants of choice between different types of *sukuk* but fall short of comparing them with conventional bonds. Godlewski, Turk-Ariss, and Weill (2013) investigate the stock market reaction to *sukuk* issuance relative to bond issuance in Malaysia, and test the hypothesis that stock market investors can have negative presumptions on *sukuk* use by issuing firms.

The rest of the paper is organized as follows. Section 2 presents the *sukuk* market and the existing literature. Section 3 develops the tested determinants of the choice of a *sukuk*. Section 4 describes data and methodology. Section 5 displays the results, while section 6 concludes.

2. Background

In this section we first present what distinguishes *sukuk* from conventional bonds and the recent evolution of *sukuk* markets. We then review the empirical literature on *sukuk*.

2.1 What are *sukuk*?

Sukuk consist in a specific class of *sharia*-compliant financial instruments which can be issued both by sovereign entities and firms. It combines characteristics of conventional bonds and stocks.

On one hand, *sukuk* can be considered as the Islamic equivalent of bonds because they share several similarities with bonds. Like bonds, they have a nominal, a maturity date, a rate (called a margin) and provide a regular stream of cash-flows to investors including capital refunding at the end. As a consequence, several scholars consider that differences between *sukuk* and conventional bonds are mainly cosmetic (e.g., Miller, Challoner, and Atta (2007) and Wilson (2008)).

On the other hand, some major features distinguish *sukuk* with conventional bonds. *Sukuk* can be better defined as tradable certificates of ownership that give the right of a stream of revenue from an investment project. It is the reason why they share some common features with capital-like instruments.

First, their structuring is strongly different from conventional bonds. Because Islamic finance requires each commercial transaction to be backed by real assets, *sukuk* need to be structured with a special purpose vehicle (SPV). The SPV buys the underlying assets of the investment project to the firm by raising funds from investors that are entitled with certificates of ownership. These certificates provides regular stream of cash-flows and a final capital refund. The project is managed by the issuer who can buy the underlying assets back.

Second, depending on the way the *sukuk* cash-flows are generated, it consists more in a debt or in a capital instrument. *Sukuk* can be of three types: debt-like, partnerships or a mix of both. In either case, assets are encapsulated in a SPV and constitute in the legal basis of the contract.

In the first case, the asset-based *sukuk* are structured with an Islamic equivalent of a credit contract. *Sukuk* can have the form of a cost-plus sale (*murabaha*), a prepayment contract (*salam*), an undertaking contract (*istisna*) or a leasing (*ijara*). For such *sukuk* types, the firm pays the investors, as it is the case for conventional bonds. However, these payments are channelled through the SPV. In the second case, the *sukuk* is backed by its own assets and relies on an Islamic partnership contract (*murabaha* or *musharaka*). In that case, the underlying project and the assets owned by the SPV generate the revenues to pay investors and not the issuer itself.

The type of *sukuk* has three important consequences. First, an asset-based *sukuk* will provide known cash-flows, uncorrelated with the project performance. Even if some assets are needed to base the operation on real assets (a mandatory condition for debt contracts in Islamic finance), the issuer will pay the coupons. The margin is defined ex-ante and often mimics interest, to the extent of being often indexed on conventional interbank rates.

Second and consequently, a debt-like *sukuk* will transfer the credit risk on the borrower. If the firm misses a payment, the *sukuk* is in default and it is technically the issuer's liability to refund investors. However van Wijnbergen and Zaheer (2013) point out that the complex structuration of *sukuk* makes uncertain the default process and reinforce the default cost.

Last, the refunding of the capital in a debt-like *sukuk* is defined at the beginning, whatever the real value of the asset is. In this way, debt-like *sukuk* are quite similar to bonds, an assessment already made by Wilson (2008) and put forward by rating agencies which evaluate *sukuk* in accordance with issuer's creditworthiness. Thus, in the case of asset-based *sukuk*, it is the issuer performance and reliability that will determine the payments and the credit risk of the *sukuk*.

On the contrary, partnership *sukuk* strongly rely on the performance of the assets that are used for their structuring. Their revenue and the refunding of the capital cannot be guaranteed by the issuer and depend on the profitability of the underlying assets and on market condition for their selling (AAOIFI (2008)). In this case, a *sukuk* is much closer to an equity instrument than a debt instrument. The default risk and the profitability are not determined by the firm characteristics but by the SPV itself, even if the firm usually secured the *sukuk*.

Moreover, if the revenues are theoretically variable, they can actually be composed of a fixed margin and a variable part smoothed with reserves accounts, in order to provide a foreseeable rate. In practice, due to these constraints, the *sukuk* market consists mainly of debt-like instruments (91% of the issuances in 2013) (Kuwait Finance House (2014)).

According to Kuwait Finance House (2014), the *sukuk* market gathers at the end of 2013 270 billion $ of assets worldwide, with tremendous year-to-year growth. On 2013, roughly 120 billion $ of new *sukuk* have been issued. This amount consists mostly in sovereign *sukuk* (62.3%) or issued by a government related entity (11.4%). Corporate *sukuk* total 26.3% of the issuances in 2013. The median maturity of the issuances is approximately one year in 2013, with 10% of *sukuk* issued with a maturity longer than 10 years. Malaysia marshals the greatest part of *sukuk* industry, with 69% of the issuances, followed by the GCC countries (22%).

Consequently, most *sukuk* are issued in Malaysian ringgit (67%), followed by issuances in US dollars (15%).

The government of Malaysia has taken several steps to promote Islamic finance and *sukuk* market. For instance, taxation rules for *sukuk* have been aligned with those of conventional bonds and some tax incentives have been established to facilitate the development of Islamic markets (Malaysian Institute of Accountants (2012)). The Securities Commission of Malaysia implemented two Capital Market Plan in the previous years which contributed to promote Islamic finance (SC Malaysia (2011)). Several public structures have been implemented in order to enhance the attractiveness of Malaysian Islamic market, like the Malaysian Islamic Financial Centre (MIFC) or the Islamic Financial Services Board (IFSB). Last, by issuing the first sovereign *sukuk* in 2002 and then issuing regular sovereign *sukuk*, the Malaysian government commits to develop a liquid Islamic sovereign yield curve (Bank Negara Malaysia, 2007)).

Malaysia managed to develop both bond market and *sukuk* market, even if the *sukuk* outstanding amount still represents only 51.4% of the bonds outstanding amount at the end of 2014 spring semester[2].

As mentioned above, the *sukuk* market in Malaysia is characterized by an overwhelming amount of debt-like *sukuk* too. According to the Securities Commission of Malaysia[3], partnership *sukuk* account for 9% of the total of *sukuk* issued in Malaysia in the first semester of 2014 and are largely outnumbered by *murabaha sukuk* (82%).

2.2 Related literature

A growing yet still scarce literature investigates the effects of *sukuk* on issuers and the reasons of their use by firms.

Two papers examine the stock market reaction following a *sukuk* issuance. Godlewski, Turk-Ariss and Weill (2013) studied the reaction of stock market investors the days surrounding the issuance in Malaysia. They found a negative market reaction following a *sukuk* issuance, indicating that *sukuk* consists in a negative signal for the issuing firm. They primarily emphasize the contingent nature of *sukuk*, alluring riskier firms with less profitable projects. *Sukuk* appears to reinforce the asymmetry of information surrounding a debt market

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[2] Information provided by the Securities Commission website: http://www.sc.com.my/data-statistics/islamic-capital-market-statistics. Last view 29/01/2015.

[3] Ibid.

and to be especially exposed to moral hazard and adverse selection problems, due to its specific structuring.

Godlewski, Turk-Ariss, and Weill (2014) investigated more deeply this negative reaction by examining the influence of the *sharia* board on the stock marketreaction following *sukuk* issuance on a sample of *sukuk* from eight countries. To be issued, a *sukuk* should have been approved by a religious committee that scrutinize its conformity with the Islamic law: the *sharia* board. It appears that the choice of *sharia* scholars matters deeply in the shareholders reaction. Thus, *sukuk* are exposed to a hitherto unseen *sharia*-compliance risk compared to conventional bonds, which exacerbates their differences.

In the same study the authors consider the influence of the *sukuk* type. The negative market reaction should be especially true for partnership *sukuk* because they consist in contingent debt contract and enhanced moral hazard. It proves to be that the market reacts more positively to the issuance of debt-like *sukuk* than to the issuance of partnership *sukuk*. Thus, adverse selection seems particularly significant for *sukuk* that mixed debt and non-debt characteristics.

Azmat, Skully, and Brown (2014) investigate the determinants of choice of one specific type of *sukuk* relative to the other ones. However, they do not perform a comparison with conventional bonds. They distinguish partnership *sukuk* from *ijara* (leasing) *sukuk* and *murabaha* (cost-plus sale) *sukuk*. They use the Malaysian *sukuk* market, from 2002 to 2010. Their main finding is that, even if they expected partnership *sukuk* to be considered as equity instruments, it turns out that firms do not use it for equity reasons but as a debt funding. They also found that the reasons why a firm chooses an *ijara* are not much different than those put forward in the literature for a secured conventional bond. Thus, even if *sukuk* tend to generate a negative signal compared to conventional bonds, no study has already examined the reasons why a firm turns to sukuk issuance and do not stick to bond market. The next section sets the hypotheses of such a choice.

3. Determinants of *sukuk* choice

The choice of *sukuk* relative to conventional bonds is influenced by the specific structuration of *sukuk*. We consider two categories for the determinants of *sukuk* choice in line with these specific features. First, the structuration is expected to exacerbate the asymmetry of

information on the *sukuk* market. Second, following an adverse selection mechanism, it can lead riskier and less profitable firms to enter the *sukuk* market.

3.1 Information asymmetries on *sukuk* market

Sukuk appear to be particularly influenced by information asymmetries for mainly three reasons. First, *sukuk* based on partnership contracts rely entirely on the underlying assets' performance. For such contracts, literature stresses that an adverse selection will occur and that they will be chosen by less performing issuers. On the contrary, a non-contingent contract can prevent this phenomenon (Dewatripont and Maskin (1995)).

Second, all *sukuk* are grounded on a SPV, remote from the issuer, with assets extracted from the issuer's balance sheet. Thus, the issuer can be tempted to keep away some less performing assets or even bad investment projects. Moreover, the issuer is not encouraged to outperform a *sukuk* project, as it will not directly suffer from a default.

Last, a *sukuk* might not diminish the *free cash-flows* of a firm, nor disciplining the management team, because the underlying assets pay back the investors. Following Jensen and Meckling (1976) and Jensen (1986), these firms will turn out to be riskier and less profitable.

Thus, greater information asymmetries are expected to increase the probability for a firm to choice a *sukuk* over a conventional bond.

Information asymmetries are examined through the market-to-book (*Market to Book*) ratio, which has also been used by Altunbaş, Kara, and Marqués-Ibáñez (2010) and Esho, Lam, and Sharpe (2001). A higher market to book ratio means that shareholders expect returns to stem from future investments projects. In this situation, greater information asymmetries can occur between managers and capital providers about the strategy of the firm. Thus, we expect a positive relation between *Market to Book* and choice of *sukuk*.

Besides, Diamond (1991) shows that maturity is sensitive to information asymmetries. Greater information asymmetries 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 profit of the current premium. On the contrary, 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. Thus, bad-shape firms and firms with high information asymmetries are expected to choose longer maturity on the debt market. Henceforth, 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. *Maturity* is defined by the number of years from the issuance date to the final refunding date.

3.2 Adverse Selection on *sukuk* market

Another consequence of greater information asymmetries on the *sukuk* market is to lure riskier and less profitable firms. It stems from the contingent aspect of *sukuk* contract. A firm with riskier projects is expected to use contingent contracts in order to share the operating risks with the lender. Moreover, a riskier and less profitable firm may be tempted to encapsulate some of its assets in a remote and more opaque structure, in particular because the firm is not bound by the performances of the underlying assets. Overall, we can expect riskier and less profitable firms to tap on the *sukuk* market.

This adverse selection scheme is fostered by a signalling effect. Because the market participants know the specific features of *sukuk* compared to bonds, issuing a *sukuk* is interpreted as a negative signal. This link has been shown by Godlewski, Turk-Ariss, and Weill (2013). It should lead healthy firms not to tap on the *sukuk* market and to rely on the bond market.

We investigate the influence of the adverse selection scheme with four variables. First, we consider the leverage of the firm, defined as the ratio of total debt to total assets (*Leverage*). According to Boot, Gopalan, and Thakor (2008) and Denis and Mihov (2003), a higher leverage indicates a better access to the debt market and a better reputation. In this sense, a higher leverage plays a signalling role and enhances the value of the firm (Ross, 1977). Thus a higher leverage is interpreted as a positive signal, and this variable is expected to be negatively linked with the probability to issue *sukuk*.

Second, we use the current ratio as a financial stress proxy to take into account the negative consequences of an excess of debt. *Current ratio* is defined as the ratio of current assets divided by current liabilities. Since we expect an adverse selection on the *sukuk* market, this variable should indicate higher financial distress for *sukuk* issuers. We expect *current ratio* to be negatively linked with the probability to issue a *sukuk*. However, adverse selection can also occur through a shortage of short-term debt. In this case, the *current ratio* is expected to be positively linked with the probability to issue a *sukuk*. The sign of the coefficient would eventually shows which effect is predominant.

Third, we consider the fact that riskier firms are also firms with lower collateral. Besides, available collateral consists in a credible signal sent to the market to certify the liability of the firm. Thus, we expect firms with more collateral to turn to bond market, and conversely firms with less collateral to tap on the sukuk market. Following Altunbas, Gambacorta, and Marques-Ibanez (2009), we use the ratio of fixed assets scaled by the total assets as a proxy of collateral and liquidation value (*Fixed assets*). We expect a negative link between sukuk issuance and fixed assets.

Collateral is however a tricky issue for *sukuk* issuance. *Sukuk* are primarily structured with fixed assets and companies with a great part of fixed assets may turn to *sukuk* in order to achieve their capital needs. In this way, *sukuk* makes easier the access to debt market for companies that were previously struggling to get in. In a sense, as a securitization process, *sukuk* will transform illiquid assets to liquid liabilities. We might then expect fixed assets to be positively associated with the probability to issue a *sukuk.* In a nutshell, the sign of fixed assets will eventually determine which effect is predominant, *i.e.* lack of collateral (negative) or structuration process (positive).

Last, we use the earnings before interest, taxes and depreciation scaled by the total assets (*EBITDA*) to measure profitability. The motivation to use this indicator is threefold. It provides reliable information on firm profitability by leaving out amortization policy and the extraordinary result. It avoids taking into account the influence of interest charges, which can be influenced by the choice of a certain type of debt and are already taken into accounts in debt indicators. Last, it excludes any tax advantage that might partly stem from the choice of a *sukuk* over a bond in the previous years. As we expect less performing firms to choose the *sukuk* market, the relation between EBITDA and the choice of *sukuk* should be negative.

4. Empirical Design

In this section we first present a description of the data before explaining the methodology.

4.1 Data

We investigate the *sukuk* and bond market in Malaysia, with issuances from 2004 to 2013. We get the data from the Bloomberg Terminal. The issuance must have been registered by Bloomberg and the issuer identified with balance sheet details available. The hybrid bond issuances, including asset-backed bonds and convertibles, have been removed from the analysis. The financial and government sectors have been excluded. Issues of the Petronas have been removed from the sample, as this firm is overwhelmingly large compared to the other issuers.

Our final sample encompasses 2,715 issuances made by 114 issuers. *Sukuk* represent 60% of the sample in number of issues but the total amount issued is slightly inferior to bonds one. Table 1 presents the year and the sectors of the issuances.

Table 2 displays the characteristics of the *sukuk* and bond issuances. We observe that bonds are on average larger than *sukuk*. The median maturity is slightly but not substantially longer for bond issuances. It provides some leads that both markets are differentiated and may correspond to different needs for firms. Besides, the market is also strongly segmented, as the *sukuk* issuers issue much less bonds than *sukuk* formerly and conversely for bond issuers. It accords with the potential view that the reason to choose one market over another is rooted primarily in the characteristics of the issuing firm.

Table 3 presents the characteristics of bonds and *sukuk* issuers. *Sukuk* and bond issuers are on average of similar size. However, *sukuk* issuers have lower ratios of fixed assets to total assets. *Sukuk* issuers are in addition less indebted than bond issuers. It can be interpreted as a lower access to debt market and a poorer reputation compared to bond issuers. Such a conclusion is comforted by the fact that they are less profitable, with a significantly lower *EBITDA*. *Sukuk* issuers also present a lower *Market-to-Book* than bond issuers. However, they seem also to be less risky, with a better *Current ratio*.

4.2 Methodology

To investigate the determinants of *sukuk* or bond choice, we rely on a logit regression with a dummy variable *Sukuk* distinguishing the issuance type as the explained variable. It equals to 0 if the issuance is a bond and 1 if the issuance is a *sukuk*. To correct for the

presence of an issuer more than one time in the whole sample, we cluster the standard deviation at the issuer level.

Following Altunbaş, Kara, and Marqués-Ibáñez (2010) the explaining variables of the issuer are from the year preceding the issuance. This choice is 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. Then, it prevents an endogenous issue since the variable the year before the issuance cannot be impacted by the issuance itself.

In addition to the tested determinants described above, we include the logarithm of the total assets of the firm and the logarithm of the amount issued to control for size effects. We also include dummy variables to control for industry and year fixed effects.

5. Results

This section displays and comments the results of the study. We first present our main findings, then show additional results and last display robustness checks.

5.1 Main Findings

Table 5 presents our main estimations. We find limited evidence for the hypothesis of the influence of information asymmetries. We first observe that the primary indicator of information asymmetries, *Market-to-Book*, proves to be mute. However the second indicator of information asymmetries, *Maturity*, is significantly higher for *sukuk* issuers. Following Diamond (1991)'s reasoning, firms with higher asymmetries of information opt for debt with a longer maturity. This supports the view that the *sukuk* market is chosen by firms with higher information asymmetries.

We also obtain some support for the hypothesis of the adverse selection mechanism. In line with this hypothesis, we find that *EBITDA* is significantly negative. Thus, an adverse selection mechanism seems to take place on the *sukuk* market, with less profitable firms electing *sukuk*. We also observe that *Current ratio* appears to be significantly positive. This latter result associated with the negative relation for *EBITDA* might show firms that have more difficulties to access to the short-term debt market and eventually turn to *sukuk* instead

of bond. Thus, our hypothesis that, following an adverse selection scheme, riskier firms are heading to *sukuk* market proves to be true. *Sukuk* market is chosen by less profitable firms, with difficulties to access the conventional bond market to fund their projects.

Last, *Fixed assets* proves to be non-significant. In a related vein, the amount issued and the size of the firm are not relevant to determine the probability for a firm to issue a *sukuk*. It means that, the specific structuration apart, *sukuk* do not call up specific assets or needs, even if it is primarily conceived for investment projects associated with large tangible fixed assets.

To precise our analysis, we redo the regression within and outside the crisis period. We identify 2008 and 2009 as crisis period, because the GDP retracted and the stocks felt in Malaysia. Moreover, this period is also marked by a contraction of *sukuk* market, following a declaration of Usmani (2008) who criticized *sukuk* to be unlawful from religious point of view (Merzaban (2009)). For these reasons, the characteristics of firms opting for *sukuk* during the crisis may be different from normal times.

Table 6 presents the estimations within and outside the crisis period. We find some differences between both periods. Outside the crisis period, we overall find the same conclusions than in the main estimation. On one hand, we have some support for the influence of information asymmetries with the positive and significant coefficient for *Maturity*. On the other hand, the impact of the adverse selection mechanism also obtains some limited support with the significantly positive coefficient for *Current ratio*. Within the crisis period, we obtain limited support that an adverse selection mechanism occurs with the significantly negative coefficient for *EBITDA*. However no result supports the influence of information asymmetries.

Overall, the *sukuk* market appears to be chosen by issuers with higher information asymmetries. An adverse selection scheme operates with less performing firms. *Sukuk* issuers also seem to struggle to access the short-term debt market compared to bond issuers. It explains that their current ratio is higher than bond issuers even if they are less performing.

5.2 Additional Results

We dig deeper in our results by performing three additional estimations on subsamples.

First, we consider only the issuers of more than one type of instrument (*i.e.* multiple issuers) over different years as this subsample is characterized by firms who choose to tap on both markets. A firm that uses both markets in different years (but not in the same year) is

expected to choose one market over the other especially because of its financial characteristics. The idea is that multiple issuers in different years are used to both types of debt and would only use *sukuk* when their financial characteristics force them to do so. Thus we expect the hypothesis for unique issuers which turn to *sukuk* to be supported more strongly for multiple issuers in different years.

Table 7 displays the results of the estimations for multiple issuers on different years. Adverse selection appears to be an important issue for firms that elect *sukuk* issuance and also issue bonds over the period. It proves to be that it is a lower profitability which leads a firm to issue a *sukuk* instead of a bond. Moreover, multiple issuers appear to suffer from a shortage of debt at the time they elect *sukuk*: a lower leverage and a higher current ratio increase the probability for a firm to tap on the *sukuk* market.

Another finding of interest is the absence of information asymmetries for multiple issuers, since both *Maturity* and *Market-to-Book* are mute. This result is consistent with the fact that these firms are issuers of both types of instruments. Because they also issue bonds, these firms appear to be well-known by market participants when they choose *sukuk* funding.

To conclude, the estimation on multiple issuers confirms that these firms choose *sukuk* only when they have to do so. It is mainly because of poorer performance and of a lack of debt funding the year before the issuance. As they are also known on the bond market, they do not suffer from strong information asymmetries.

Second, we focus on firms which issue only one type of debt over the whole period. We expect our hypothesis on adverse selection and information asymmetries to be strengthened on this subsample. The idea is that firms that issue only *sukuk* are "stuck" on this market due to their specific characteristics. On the contrary, firms that only elect bonds benefit from a good financial reputation refraining them to tap on the *sukuk* market. Table 8 presents the results. Information asymmetries and adverse selection hypotheses are confirmed for unique issuers. Both *Market-to-Book* and *Maturity* are positively linked to the probability to issue a *sukuk*. A lower firm performance the year preceding the issuance leads the firm to elect the *sukuk* market. Moreover, this type of issuers has a lower leverage and a higher current ratio. It thus suggests that firms that choose to issue only *sukuk* suffer from a shortage of debt funding. Overall, the results on issuers of *sukuk* solely confirm both hypotheses: *sukuk* market is characterized by an adverse selection scheme and firms that opt fort *sukuk* are characterized by higher information asymmetries.

Last, we focus on firms that issued debt instruments with a maturity longer than one year. The idea is that a debt instrument with a longer maturity issuance consists in a stronger commitment for the firm to one type of debt and can thus stem from durable financial characteristics. Moreover, this analysis is of particular interest because differences in information asymmetries between bond and *sukuk* may be more effective for longer maturities. Diamond (1991) shows that longer maturities can be preferred by firms with high information asymmetries. Thus, we expect that our hypothesis on the influence of information asymmetries to be reinforced for issuances with a maturity over one year.

Table 9 displays the estimations. Both hypotheses are confirmed. A lower profitability the year preceding the issuance leads the firm to elect the *sukuk* market instead of the bond market. It supports the adverse selection hypothesis. Second, firms tap on the *sukuk* market to issue longer maturities confirming higher information asymmetries. Interestingly, firms that choose *sukuk* market on maturities greater than one year do not have any shortage of debt. Both the current ratio and the leverage are not significant. It supports the view that these firms do have access to debt funding and can secure longer maturities either on *sukuk* or bond market. However the choice of the market depends on the degree of information asymmetries and the previous profitability of the firm.

Overall the estimations confirm that the *sukuk* market is primarily chosen by firms with high information asymmetries. An adverse selection scheme is occurring, because less profitable firms mainly turn to *sukuk* market. Yet, these firms are not over-indebted, suggesting that they may be struggling to access the conventional debt market. Last, they do not choose *sukuk* because of specific assets or for long-run investments.

6. Conclusion

This paper has analysed the reasons for firms to choose issuing *sukuk* rather than bonds. It yields two main findings.

First, it confirms the influence of ex ante information asymmetries on the sukuk market. Firms with greater information asymmetries tend to opt more for *sukuk.* This result is particularly meaningful as it provides information on a key debate in Islamic finance. Kuran (1995) has stressed that profit and loss sharing contracts in Islamic finance are expected to generate some information issues. It is also a common statement in debt literature that

contingent contracts are not optimal anymore with information asymmetries compared to standard debt contracts. In the *sukuk* literature, Godlewski, Turk-Ariss, and Weill (2013) have explained a bad stock market reaction to sukuk issuance partly because of higher information asymmetries from firms on the sukuk market. We can confirm this interpretation. Moreover, we extend Azmat, Skully, and Brown's (2014) results who find more information asymmetries from firm issuing partnership *sukuk* compared to debt *sukuk*.

Second, an adverse selection scheme tends to occur on the *sukuk* market. Less profitable firms turn to sukuk market instead of bond. . This adverse selection appears to be the direct consequence of higher information asymmetries on the *sukuk* market. Thus, we confirm that the *sukuk* market is characterized by an adverse selection scheme, due to the specific structuration of these instruments which heightens information asymmetries.

We tend to confirm that the bond market provides a costly and positive signal which distinguishes good firms from bad firms. On the contrary, due to the specific features of this instrument, *sukuk* issuance does consist in a bad signal, distinguishing less profitable firms with higher information asymmetries.

Last, we find that firms issuing *sukuk* do not rely on higher fixed assets. This finding is of importance interesting because *sukuk* are theoretically structured with underlying assets sold by the issuer. Hence, our results tend to minimize the effective differences between bonds and *sukuk* securities.

To put it in a nutshell, information asymmetries and adverse selection enhance the probability for a firm to turn to *sukuk*. Moreover, *sukuk* is not used by firms with specific assets when comparing with bonds.

Overall, our results underline the specific features of firms going to the *sukuk* market. They also emphasize the need of a tight supervision of *sukuk* market due to the adverse selection and moral hazards mechanisms leading to use *sukuk* instead of bonds.

Table 1

Sample distribution of issues by industry and by year

The table gives the composition of the sample by industry and by year, depending on the issue type.

	Bond	Sukuk
Years		
2004	75	100
2005	120	126
2006	124	229
2007	161	271
2008	156	329
2009	192	220
2010	133	172
2011	72	107
2012	24	56
2013	26	22
Sectors		
Basic Materials	80	159
Communications	49	20
Consumer, Cyclical	239	378
Consumer, Non-cyclical	293	324
Diversified	45	7
Energy	5	25
Industrial	336	621
Technology	2	86
Utilities	34	12
Total	1083	1632

Table 2

Descriptive statistics by issuance type

The table provides the mean, median, standard deviation, minimum and maximum of issuances in the sample. Amount issued are in million USD and maturity is in years. If the issuance includes several tranches, the amounts and the tranches are summed with each tranche weighted by the amount of the tranche to the amount of the issuance. The stars indicate significant differences for means (ttest) and medians (Kruskall-Wallis test) of the variables by issuance type, at the *10%, **5% or ***1% level.

	N	Mean	Median	Standard Dev	Minimum	Maximum
Bond Issuances						
Amount issued	1083	22.3***	7.62***	87.700	0.29	2200
Maturity	1083	0.62	0.25***	1.532	0.03	15.01
Sukuk Previously Issued	1083	1.76***	0***	10.493	0	139
Bond Previously Issued	1083	43.3***	28***	42.293	0	164
Sukuk & Bonds Previously Issued	1083	45.13***	30*	41.987	0	164
Sukuk Issuances						
Amount issued	1632	14.8***	5.99***	44.500	0.28	854.00
Maturity	1632	0.71	0.24***	1.881	0.025	22.014
Sukuk Previously Issued	1632	35.46***	25***	32.700	0	139
Bond Previously Issued	1632	1.01***	0***	6.959	0	62
Sukuk & Bonds Previously Issued	1632	36.93***	27*	33.290	0	142

Table 3

Descriptive statistics by issuer

The table sums up the issuer characteristics the year preceding the issuance, depending on the security it issued. Variables are in millions of USD with the exception of EBITDA and ROA in percentage, maturity in years. Data are from 2003 to 2012 (one year before the issuance). The stars indicate significant differences for means (ttest) and medians (Kruskall-Wallis test) of the variables by issuance type, at the *10%, **5% or ***1% level.

	N	Mean	Median	Standard Dev	Minimum	Maximum
Bond Issuances						
Total Assets	189	1779.97	207.85	3467.093	36.67	16679.37
Total Capitalization	187	1467.86	160	2900.768	30.66	13899.06
Sales	189	691.06	202.93**	1161.083	12.05	6499.46
Market-to-Book	187	2.01***	1.13	4.011	-0.64	31.26
Fixed Assets	189	0.44**	0.43	0.172	0.01	0.90
Leverage	187	38.18***	37.63***	14.856	1.49	88.50
Current ratio	189	1.53**	1.29***	1.241	0.14	11.98
EBITDA (%)	185	10.73***	8.72	8.686	-4.85	52.56
Return on Assets (%)	183	4.25	3.32	8.686	-16.90	55.32
Sukuk Issuances						
Total Assets	253	1484.11	226.29	3103.985	10.55	16679.37
Total Capitalization	253	1140.69	167.34	2428.112	7.71	12467.74
Sales	252	714.26	145.37**	1622.843	9.63	13577.06
Market-to-Book	253	1.27***	0.93	0.956	0.13	5.9
Fixed Assets	253	0.39**	0.39	0.204	0.01	0.93
Leverage	252	32.92***	31.93***	13.095	1.03	75.01
Current ratio	252	1.81**	1.5***	1.338	0.11	11.98
EBITDA (%)	250	8.83***	8.99	5.568	-13.49	36.18
Return on Assets (%)	247	4.1	3.98	4.434	-9.62	19.94

Table 4

Correlation between variables

The table shows the correlation between variables used in the estimations.

	Total Assets (log)	Market-to-Book	Fixed Assets	Leverage	Current ratio	EBITDA	Return on Assets	Amount issued (log)	Maturity
Total Assets (log)	1.00								
Market-to-Book	0.21	1.00							
Fixed Assets	0.17	0.00	1.00						
Leverage	-0.09	-0.06	0.11	1.00					
Current ratio	-0.16	-0.03	-0.12	0.04	1.00				
EBITDA	0.08	0.33	0.01	-0.18	-0.20	1.00			
Return on Assets	0.15	0.34	-0.21	-0.35	-0.09	0.56	1.00		
Amount issued (log)	0.60	0.22	0.19	-0.04	-0.07	0.11	0.05	1.00	
Maturity	0.29	0.12	0.02	-0.05	-0.03	0.07	0.13	0.42	1.00

Table 5

Main logit regression

Logit regression. The dependent variable is a dummy variable equal to one if the used instrument is *sukuk* and zero if the used instrument is a bond. This table reports coefficients with standard errors in brackets. *, ** and *** denote an estimate significantly different from 0 at the 10%, 5% or 1% level. Dummy variables for industry and year are included in the regressions, but not reported. Standard deviations are clustered at the issuer level.

	Sukuk
Total Assets (log)	0.17
	(0.78)
Market-to-Book	-0.02
	(-0.08)
Fixed Assets to Total Assets	-0.40
	(-0.22)
Leverage	-0.03
	(-1.08)
Current ratio	0.92**
	(2.15)
EBITDA (%)	-0.12**
	(-2.40)
Amount issued (log)	-0.23
	(-1.11)
Maturity	0.16**
	(2.57)
Constant	2.30
	(0.52)
N	2427.00
Nb of issuers (clusters)	101.00
Model Chi²	76.16
P>Chi²	0.00
Pseudo R²	0.18

Table 6

Logit regression on subperiods

Logit regression. The dependent variable is a dummy variable equal to one if the used instrument is *sukuk* and zero if the used instrument is a bond. The financial crisis entails the issues in 2008 and in 2009. This table reports coefficients with standard errors in brackets. *, ** and *** denote an estimate significantly different from 0 at the 10%, 5% or 1% level. Dummy variables for industry and year are included in the regressions, but not reported. Standard deviations are clustered at the issuer level.

	Outside Crisis	*Within Crisis*
	Sukuk	*Sukuk*
Total Assets (log)	0.30	-0.39
	(1.40)	(-0.68)
Market-to-Book	-0.26	0.83
	(-0.75)	(1.41)
Fixed Assets	0.15	0.75
	(0.08)	(0.25)
Leverage	-0.03	-0.03
	(-1.12)	(-0.58)
Current ratio	1.15**	0.27
	(2.38)	(0.94)
EBITDA (%)	-0.05	-0.37***
	(-0.97)	(-3.61)
Amount issued (log)	-0.39*	0.48
	(-1.77)	(1.58)
Maturity	0.18**	0.36
	(2.46)	(1.53)
Constant	3.43	-6.73
	(0.73)	(-1.05)
N	1638.00	781.00
Nb of issuers (clusters)	99.00	47.00
Model Chi²	56.59	
P>Chi²	0.00	
Pseudo R²	0.19	0.35

Table 7

Logit regression on multiple issuers

Logit regression. The dependent variable is a dummy variable equal to one if the used instrument is *sukuk* and zero if the used instrument is a bond. The sample includes only firms that issued both *sukuk* and bond over the period, but not in the same year. This table reports coefficients with standard errors in brackets. *, ** and *** denote an estimate significantly different from 0 at the 10%, 5% or 1% level. Dummy variables for industry and year are included in the regressions, but not reported. Standard deviations are clustered at the issuer level.

	Sukuk
Total Assets (log)	0.73
	(1.30)
Market-to-Book	0.24
	(1.18)
Fixed Assets	-5.25
	(-1.34)
Leverage	-0.11***
	(-3.07)
Current ratio	1.82**
	(2.06)
EBITDA (%)	-0.37***
	(-2.61)
Amount issued (log)	-0.68***
	(-2.74)
Maturity	0.33
	(1.47)
Constant	16.35***
	(3.36)
N	519.00
Nb of issuers (clusters)	22.00
Pseudo R²	0.64

Table 8

Logit regression on one type issuers

Logit regression. The dependent variable is a dummy variable equal to one if the used instrument is *sukuk* and zero if the used instrument is a bond. The sample encompasses only firms that have issued one type of debt over the whole period. Henceforth, if the dummy variable *sukuk* is equal to one, the issuance has been realized by an issuer who has not issued any bond from 2004 to 2013. This table reports coefficients with standard errors in brackets. *, ** and *** denote an estimate significantly different from 0 at the 10%, 5% or 1% level. Dummy variables for industry and year are included in the regressions, but not reported. Standard deviations are clustered at the issuer level.

	Sukuk
Total Assets (log)	-0.02
	(-0.05)
Market-to-Book	0.59*
	(1.66)
Fixed Assets	-1.39
	(-0.60)
Leverage	-0.08*
	(-1.80)
Current ratio	2.56**
	(2.01)
EBITDA(%)	-0.21**
	(-2.41)
Amount issued (log)	0.19
	(0.61)
Maturity	0.40**
	(2.47)
Constant	-6.45
	(-0.92)
N	1227.00
Nb of issuers (clusters)	67.00
Model Chi²	61.18
P>Chi²	0.00
Pseudo R²	0.44

Table 9

Logit regression on maturities greater than one year

Logit regression. The dependent variable is a dummy variable equal to one if the used instrument is *sukuk* and zero if the used instrument is a bond. The sample includes only issuances with a maturity longer than one year. This table reports coefficients with standard errors in brackets. *, ** and *** denote an estimate significantly different from 0 at the 10%, 5% or 1% level. Dummy variables for industry and year are included in the regressions, but not reported. Standard deviations are clustered at the issuer level.

	Sukuk
Total Assets (log)	0.35
	(1.59)
Market-to-Book	0.44
	(1.52)
Fixed Assets	-0.18
	(-0.15)
Leverage	0.00
	(0.08)
Current ratio	-0.30
	(-1.51)
EBITDA (%)	-0.11*
	(-1.94)
Amount issued (log)	-0.24
	(-1.03)
Maturity	0.15*
	(1.76)
Constant	-0.31
	(-0.07)
N	206.00
Nb of issuers (clusters)	78.00
Model Chi²	42.93
P>Chi²	0.01
Pseudo R²	0.37

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