Are Islamic Investment Certificates Special? Evidence on the Post-Announcement Performance of Sukuk Issues

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Abstract

The last decade has witnessed rapid expansion of Islamic financial instruments, notably with the proliferation of Islamic investment certificates called Sukuk. Sukuk generally represent the Islamic financial instrument equivalent to conventional bonds. We evaluate the economic differences between these financing techniques and appraise the implications on the future expansion of Sukuk. We use a market-based approach to investigate whether investors react differently to the announcements of issues of Sukuk and conventional bonds. We find that the stock market is neutral to the announcement of conventional bonds, but we observe a significant negative stock market reaction to the announcement of Sukuk. We explain this different stock market reaction using the adverse selection mechanism, which favors Sukuk issuance by lower-quality debtor companies. Unlike arguments presented in prior literature, our results support the view that differences exist between Sukuk and conventional bonds because the market is able to distinguish among these securities.

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Keywords: financial instruments, Islamic finance, sukuk, event studies.

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I. Introduction

The last decade has witnessed an unprecedented rapid expansion in Islamic finance. Recent figures indicate that the total assets of Islamic banks operating in over 75 countries worldwide are about 300 billion USD with an annual growth rate exceeding 15% (Chong and Liu, 2009). However, this expansion is also fuelled by the impressive increase in the issuance of Sukuk, often referred to as Islamic bonds. Just like Islamic banks provide an alternative mode of financing compared to conventional banking, Sukuk are Islamic investment certificates similar to conventional bonds in that they allow sovereign and corporate entities to raise funds in capital markets but following the principles of Shari‘a, which is the Islamic legal code.

The global outstanding volume of Sukuk exceeds 90 billion USD with an increase in the volume issued from 7.2 billion USD in 2004 to 39 billion USD in 2007 (Jobst et al., 2008). Islamic financial instruments largely originate in the Far East (Malaysia and Indonesia) and in the Gulf Cooperation Council (GCC) countries. Nevertheless, they are also issued outside these regions with the Saxony-Anhalt German State Sukuk in 2004 and the US GE Capital more recently in 2009. What is even more striking is the fact that several European governments (including France and the United Kingdom) are taking legal steps to favor the issuance of Sukuk in their countries. The motivations for this development in countries outside the Muslim world might be numerous, but they notably highlight the willingness of Western governments to attract funds from the GCC countries to finance sovereign and corporate debt.

The new and rising global interest in Sukuk raises several questions. To which extent do Sukuk differ from conventional bonds? Are Sukuk an alternative way of financing that may gradually replace conventional bonds? What are the economic
implications of the expansion of Sukuk? To answer these timely research questions, we investigate the stock market reaction to the issuance of Sukuk and conventional bonds by corporate entities. By doing so, we provide a comparative analysis of Sukuk and conventional bonds that is only based on the market’s perception of these alternative financing instruments. Our approach appraises Sukuk from two novel perspectives.

First, we inform on the opinion of stock markets regarding differences between Sukuk and conventional bonds. Are Sukuk different from conventional debt instruments? There is currently a debate on whether Sukuk really differ from conventional bonds. Miller, Challoner, and Atta (2007) and Wilson (2008) argue that Sukuk returns are structured to replicate conventional bond characteristics, but others like Cakir and Raei (2007) take an opposite stand to show that Sukuk are different from bonds because they present diversification benefits in terms of risk reduction when added to a portfolio of fixed income securities. Our analysis uses market-based evidence to address this unresolved issue.

Second, a market perception analysis rests on investors’ valuation of Sukuk and provides insights into their future prospects. Are Sukuk likely to replace conventional bonds? While the issuance of Sukuk is mainly motivated by religious principles, it is also spurred by financial reasons (e.g. the access to a new class of investors). In this light, a better (worse) valuation of Sukuk in comparison to conventional bonds would be in favor of an optimistic (pessimistic) view of the expansion of Sukuk markets.

Our study is important because it touches upon the economic implications of the recent expansion of Sukuk both at the firm and systemic levels. Indeed, a better valuation of Sukuk relative to conventional bonds indicates that their increasing use contributes to creating firm value, whereas a worse valuation suggests that Sukuk
expansion may contribute to destroying firm value. Another economic implication concerns the systemic stability and long-run viability of Islamic banking. All banks (conventional or Islamic) have incentives to hold a portfolio of investment assets, because they are more liquid than loans and they yield a higher return than interbank loans. However, the liquidity needs of Islamic banks are accentuated by the lack of acceptable means to deal with the asset liability mismatch inherent in banking operations. Islamic banks cannot borrow in the interbank market or at the central bank’s discount window because such transactions involve the payment of interest. As Wilson (2004) argues, the vast majority of Sukuk is held by Islamic banks because these financial instruments represent the backbone for the development of a much needed secondary Islamic capital market. If market participants view Sukuk as different financing instruments compared to conventional bonds, then it is likely that the financial stability of Islamic banks, as Sukuk investors, might also be affected, either positively or negatively.

The paper broadens the body of research on the scarcely investigated securities that are known as Sukuk. Existing work on the recent development of Sukuk appears in the context of books that describe the basics of Islamic finance (e.g. Iqbal and Mirakhor, 2007; Visser, 2009), and very few studies focus on their evolution or their specific characteristics (e.g. Jobst, 2007; Jobst et al., 2008).

To analyze the stock market reaction to Sukuk and conventional bond issuance, we use the event study methodology that allows for the measurement of the impact of a corporate event on the company’s stock return. Specifically, we examine whether announcements of Sukuk and conventional bond issues lead to significant abnormal returns for the issuers. In this aim, we consider a sample of Malaysian listed companies which issued conventional bonds and Sukuk from 2002 to 2009. Malaysia
represents the most interesting fieldwork to address our research questions because it is by far the most dynamic country for the issuance of Sukuk. In 2007, the volume of issued Sukuk in Malaysia was 28.1 USD billion compared with 19 USD billion in GCC countries (Ernst & Young, 2009). We do not consider GCC Sukuk because the majority of issues are sovereign, and there is no active secondary market for them because most are usually held till maturity. In contrast, Malaysia dominates the global corporate Sukuk market with 75% share of total corporate Sukuk over the period January 2004-June 2007. Furthermore, Sukuk represent about half of the total stock of Malaysian corporate bonds (Jobst et al., 2008), implying that Sukuk are not limited to a small portion of the disintermediated financing for companies. Therefore, Malaysia represents the most interesting country to address our research questions.

The remainder of the paper is structured as follows. In Section II, we overview Sukuk developments, challenges, and related literature. In Section III, we present our empirical design with a description of the data used and the presentation of results, which we discuss in Section IV. We conclude in Section V.

II. Overview of Sukuk

In this section, we start by defining Sukuk, distinguishing them from conventional investments such as bonds and stocks, followed by a description of recent market developments. We then review the prospects and challenges faced by Sukuk. We conclude by addressing our main research question regarding whether Sukuk are expected to be different from conventional bonds.

II.1 What are Sukuk?
The Islamic capital market has taken a head start since the turn of the century with the development of Shari’a-compliant financial instruments known as Sukuk.¹ Sukuk investments represent a distinct class of securities issued by sovereign and corporate entities. They are investment certificates with bond- and stock-like features, which are issued to finance trade or the production of tangible assets. Similar to bonds, Sukuk certificates have a maturity date, and holders are entitled to a regular stream of income over the life of the Sukuk in addition to another balloon payment at maturity. However, Sukuk are asset-based (rather than asset-backed) securities, with the underlying being Shari’a-compliant in its nature and use. The eligibility of Sukuk rests on identifying an existing or a well-defined asset, service, or project that is capable of being certified by a third party, and for which ownership can be recorded in some form. Sukuk holders might be responsible for asset-related expenses, and the sale of Sukuk results in the sale of a share of an asset. Bonds, in contrast, are pure debt obligations issued to finance any activity and whose value rests on the creditworthiness of the issuer, whereas Sukuk prices vary both with the creditworthiness of the issuer and the market value of the underlying asset. Further, Sukuk and shares of stock are similar financial instruments in the sense that they represent ownership claims and that the return on both investments is not guaranteed, but Sukuk are related to a specific asset, service or project for a period of time, whereas equity shares represent ownership claims on the whole company with no maturity date.

In May 2003, the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) officially defined Sukuk in the Standard for Investment Sukuk as certificates of equal value representing undivided shares in ownership of tangible

¹ The term Sukuk is a plural form of the Arabic term Sakk that can be translated as “to strike one’s seal on a document” (McMillen, 2007) and which, according to Adam (2006), worked its way in Medieval Europe to become the modern day Latin word of “Cheque”.
assets, usufruct and services, and it identified at least fourteen possible Sukuk structures. The AAOIFI Standard distinguishes Sukuk from stocks, bonds, and from the conventional process of securitization as well, emphasizing that Sukuk are not debt certificates with a financial claim to cash flow and that they may not be issued on a pool of receivables. Rather, they are similar to a trust certificate with proportional or undivided interest in an asset or a pool of assets, and the right to a proportionate share of cash flow is derived from ownership interest that carries risks and benefits.

Sukuk structures vary from Murabaha (cost-plus sales), Salam (pre-payment of an asset for future delivery), Ijara (rental/lease agreement), istisna (build-to-own property), Mudaraba and Musharaka (partnerships). However, most offerings to-date are Ijara-based, with some recent innovations taking place in the structuring and pricing of Musharaka Sukuk (Abdel-Khaleq and Richardson, 2007; Wilson, 2008). Appendix 1 and 2 present diagrams to illustrate Ijara and Musharaka Sukuk structures, respectively.

In a typical Ijara Sukuk structure, the originator sells assets to the Sukuk issuer, which is a bankruptcy-remote special purpose vehicle (SPV) that is created to act as a trustee for investors acquiring the assets (Iqbal and Mirakhor, 2007). The assets are leased back to the Sukuk issuer for a stated period, with the agreement to sell the asset back to the lessee at the end of the lease period.2

2 Murabaha, Salam, and Istisna Sukuk certificates are not readily tradable on the secondary market due to Shari’a restrictions (Usmani, 2002).

3 Shari’a scholars agree that ownership of an asset is possible with proper documentation even if the title is not registered under the buyer’s name. The common practice is to transfer the beneficial title but not the legal title of ownership to avoid transfer taxes or other unfavorable costs. One exception is the case of Qatari global sukuk whereby an actual transfer of the land title took place to the SPV.

4 It should be noted that there are Shari’a restrictions to executing a contract of sale of the leased assets at a future date at the time of initiating the Ijara agreement. The sale/purchase deal is not an integral part of the Ijara agreement, and can only be executed at the time of transferring back the assets from the lessor to the lessee. Alternatively, an initial sale/purchase undertaking can be entered into, allowing the lessee to ultimately purchase back the assets. Such an undertaking is not a contract, and is only binding on the undertaker while the other party has the option not to proceed. Further, it is only signed after completing the initial sale agreement relating to the assets.
SPV issues certificates of participation to investors representing undivided ownership in the underlying asset. Over the term of the lease contract, the trustee receives rental payments for the use of the asset and distributes them to certificate holders in proportion to their ownership stake.\(^5\) At the expiry of the lease contract, Sukuk holders’ ownership claims cease to exist and payments flow stop. They receive the return on their principal and asset ownership reverts to the lessee. If the asset has a market value, Sukuk holders can realize a capital gain or loss. However, if the underlying is a public good for which there is no market, Sukuk holder exercise an embedded put option whereby the originator buys back the underlying assets at face value.

Alternatively, in a Musharaka Sukuk structure, the two parties include an originator providing a pool of assets and an SPV which raises cash by selling Sukuk notes to investors (Abdulkader and Nathif, 2004). These parties enter into a Musharaka (partnership) arrangement for a fixed period and agree on profit- and loss-sharing ratios. The issuer also undertakes to buy the Musharaka shares of the SPV on a periodic basis. The two partners then appoint a managing agent (usually the originator) to act on behalf of the Musharaka, and to develop or make efficient use of the asset(s). In return, the agent gets a fixed agency fee and a variable incentive fee payable. The cash returns generated from the Musharaka are paid as profits to the Sukuk investors. At the end of the fixed Musharaka period, the issuer would have bought back the Musharaka shares at pre-agreed prices and intervals, and the SPV no longer has any shares in the partnership. Partnership contracts through Musharaka Sukuk strengthen the paradigm of Islamic finance and are preferred from the viewpoint of jurists because they rest on profit-and-loss arrangements. The returns on

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5 Most Ijara Sukuk pay a predetermined rate of return to investors. Variable rate Sukuk linked to an agreed upon pricing benchmark, usually the LIBOR, may also issued under a Master Lease Agreement.
such participation certificates are contingent on the company fundamentals and not
benchmarked to market rates. They are also attractive to investors because they are
negotiable instruments that can be traded in the presence of an active secondary
market.

II.2 Sukuk developments

Sukuk were issued as early as the 1980s, but their growth was significantly
marked after the turn of the century. According to Moody’s (2007, 2008), the global
outstanding volume of Sukuk exceeds US$90 billion and is expected to reach $200
billion by 2010, with issuance quadrupling from $7.2 billion in 2004 to close to $39
billion by the end of 2007, and up from $336 million only in 2000. Table 1 shows the
distribution of Sukuk across corporate and sovereign issues over the period 2000-
2006.

Figures in Table 1 indicate that corporate Sukuk dominate total issuance with a
market share that reached a peak exceeding 94% in 2005. Corporate Sukuk broaden
the firm’s financing base away from traditional sources of fund (such as bank loans
and lines of credit that are saved for other strategic investments), and extend their
maturity beyond the short term horizon usually granted by banks. Further, corporate
Sukuk issues increase public recognition of the company and raise its profile in the
market.

Malaysia dominates the Sukuk market with a share standing at approximately
70% of total issues, despite some mega-deals in the past two years that have
established Dubai International Financial Exchange (DIFX)’s position as another
global leader in Sukuk, with a total of eight listings worth exceeding $10 billion as of
June 2007 (DIFC, 2007). The Malaysian law plays a significant role in developing the market for *Sukuk* because it has a special provision for non-profit making trusts, similar to English law (Wilson, 2008). Such a legal framework facilitates the establishment of SPV that is required for all *Sukuk* to hold the title of the underlying securitized assets and administer payments to investors. In this background, *Sukuk* issuance proliferated in Malaysia and a secondary market that is much more active compared to the GCC region developed. In our study, we only include *Sukuk* from Bursa Malaysia to address our research question. Figures 1 and 2 show the strong expansion of *Sukuk* in Malaysia during the last decade.

On the international level, London is keen on maintaining a lead in the provision of Islamic financial services, and it signaled its intention to stimulate the industry through the Finance Bill 2007 (Miller, Challoner, and Atta, 2007). The objective of this new legislation is to place *Sukuk* on a level playing field with conventional securitization by providing them with a tax treatment equivalent to other financial products.

More recently in late 2009, two new issues have marked the recognition and acceptance of *Sukuk* beyond the borders of the Islamic world (Parker, 2010b). First, the 5-year Aaa-rated $100m *Sukuk* by the International Finance Corporation (IFC), jointly lead arranged by HSBC, Dubai Islamic Bank and Kuwait Finance House—

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6 Some of the mega-*Sukuk* of the GCC include the 2004 Department of Civil Aviation of UAE issue for $750 million to fund the expansion of the Dubai International Airport, the 2006 *Sukuk* by Dubai Ports, Customs and Free Zone Corporation for $3.5 billion, the 2006 Abu Dhabi Aabar Petroleum oil exploration and production fully convertible *Sukuk* for $460 million, the 2006 Abu Dhabi Islamic Bank $800 million floating rate Islamic note which secured ratings from Fitch Ratings and Moody’s, and the 2006 Nakheel Group record of $3.52bn unrated *Sukuk* with unique IPO rights.

7 As of December 2009, Bursa Malaysia took the lead again in terms of total *Sukuk* value which exceeds $17.6 billion for 12 issues, followed by DIFX ($15.7 billion), London (GBP 6.5 billion), Luxembourg ($7.3 billion), and Bahrain ($2.18 billion and BD330 million) (Parker, 2010a).

8 According to Wilson (2008), lead *Sukuk* managers include Citigroup, HSBC, Standard Chartered, and Deutsche Bank.

9 Wilson (2008) suggests that Malaysian *Sukuk* might serve as a tool for Islamic banks to manage liquidity problems, as an alternative to going to London Metal Exchange to buy/ sell commodities on a *Murabaha* basis.
Bahrain, was well oversubscribed, with the proceeds intended to increase funding for
development activities in emerging markets, including the MENA region. Although
the size of the issue is not large compared to other mega-*Sukuk*, it shows that leading
international institutions like the World Bank recognize the importance of *Sukuk* as a
financing tool. Second, GE Capital in the US also closed a 5-Year $500 million *Sukuk*
issuance whose proceeds will be used for general corporate and balance sheet
purposes. This transaction is strategically important for GE because it raises funds
from a new and important investor base.

II.3 *Sukuk* prospects and challenges

*Sukuk* serve as an important instrument for resource mobilization and a
primary vehicle for the development of Islamic capital markets. Solé (2008) argues
that expanding the range of financing opportunities for the private sector in Kuwait
(and other similar emerging economies engaged in large infrastructure projects) by
developing *Sukuk* and bond markets is likely to deepen the financial sector and
diversify the economy away from oil activities. Jobst et al. (2008) summarize the
economic, financial, legal, and regulatory challenges for the *Sukuk* market. They also
suggest that, despite the global financial crisis, there is a strong demand from both
Muslim countries and conventional global institutions for *Shari’a*-compliant securities
in the form of *Sukuk*.

Abdel-Khaleq and Richardson (2007) evaluate the legal challenges for issuing
*Sukuk* in non-Islamic jurisdictions and argue that *Sukuk* avail a new area of
cooperation between various international stakeholders. The authors present the first
American *Sukuk* offering backed by US oil and gas assets, and issued by The East
Cameron Gas Company. The deal involves parties from the US, a bankruptcy-remote
intermediary issuer of certificates in the Cayman Islands, investors from the Muslim and Western worlds, bankers in London and Beirut, and legal counsels from Dubai and Houston. The transaction is deemed Shari’a-compliant because it essentially involves the sale of property, and it ties investor returns to a profit distribution scheme which also depends on the performance of the underlying. More importantly, the Sukuk originator was able to tap liquid resources from the Muslim world to support drilling and operation wells in the Gulf of Mexico for a Texas-based company, thus providing an alternative and innovative form of corporate financing that complements traditional sources of funding.

Wilson (2008) addresses the criticisms to Ijara Sukuk related to linking distributions to the LIBOR. He examines innovations in the structuring of Sukuk securities and the potential for novel structures based on Musharaka or a hybrid of different Sukuk structures. Wilson also proposes adopting alternative benchmarks to the LIBOR based on macroeconomic indicators of real activity such as GDP growth for sovereign Sukuk and of firm performance in the case of financing corporations.

In Islamic finance, conventional financial derivatives are not Shari’a permissible investments because they are regarded as being unreal instruments, or 'promises', as opposed to actual assets. Tariq and Dar (2007) assess the various risks associated with Sukuk investing. They also discuss the possibility of developing Shari’a-compatible risk mitigating techniques such as embedding in Sukuk options and swap features to hedge against those risks. Convertible Sukuk are first issued in the Malaysian market in 2005, but they have not been widely launched in any market before until recently in Dubai.10

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10 Examples include the $200 million International Investment Group (IIG) Sukuk exchangeable into shares of a Kuwaiti company, and the Malayan Banking Bhd subordinated Sukuk qualifying as Tier 2 capital and which includes embedded options for the originator to redeem in whole (and not in part) the Sukuk.
However, these financial instruments can only achieve their benefits if they are issued and traded on a large scale. According to Moody's (2007, 2008), the major drawback is that Sukuk are usually held till maturity and an active secondary market has yet to develop. In the GCC region, there is almost no secondary trading in sukuk because most investors treat these instruments as "buy and hold" investments. McMillen (2007) argues that widespread issuance and trading can be achieved if Sukuk obtain ratings, which are currently absent in light of the inability to secure satisfactory legal opinions with respect to Shari’a enforceability issues in different jurisdictions. The impact of such legal impediments might be lessened under a standardization of Shari’a-compliant transactions that reduces transactional risks through consistency, predictability, and transparency in the enforcement of Shari’a, in addition to contributing to the integration of Islamic financial services in the global economy.

Aside from legal enforceability issues, a recent debate was initiated regarding the Shari’a-compliance nature of Sukuk.11 After a series of meetings in 2007, the AAOIFI Shari’a council issued in February 2008 proposals for amendments in contemporary Sukuk issues including new recommendations regarding the ownership of underlying assets in a Sukuk transaction and the guarantee of the principal investment to Sukuk certificate holders. These AAOIFI efforts culminated in the publication of six core principles for structuring and issuing Sukuk in relation to asset ownership rights and obligations of Sukuk holders, the nontradability of Sukuk with underlying revenue streams or debt, the corporate responsibility of the Sukuk manager when actual earnings fall short of expected earnings, the lessee’s right to purchase leased assets when Sukuk are extinguished for their nominal value, the purchase of

11 The Sukuk debate was triggered after a scholar reportedly said that most current Sukuk structures are not Shari’a-compliant and appear to violate the principle of risk and profit sharing by promising to pay back principal (Norman, 2009).
Sukuk at net value instead of nominal value, and the on-going duty of the Shari’a Supervisory Board after initial Sukuk issuance (AAOIFI, 2008).

II.4. Are Sukuk different from conventional bonds?

The recent controversy on the compliance of Sukuk with the precepts of Shari’a signals that Sukuk are generally structured along Western rules of asset securitization, and raises the question of whether these innovative financial instruments are really different from conventional bonds. According to Miller, Challoner, and Atta (2007), Sukuk are structured in a way to ensure an equivalent return to a conventional bond, the difference being that the return on the Sukuk is generated from an underlying asset and not from the obligation to pay interest. Similarly, Wilson (2008) argues that financiers exercise special care to render Sukuk identical to other conventional securities because they aim at simplifying investors’ risk assessment of these new investments. As a result, Sukuk mirror conventional securities, suggesting that product innovation coupled with distinctive and pricing risk characteristics is lagging in the Islamic finance industry.

Shari’a scholars oppose rendering Islamic financial instruments familiar to international investors because of the danger of making them similar to conventional interest-based products, despite the argument that such similarity helps bridging the gap between conventional capital markets and the emerging Islamic securities market to further strengthen global financial integration. According to the President of the AAOIFI Shari’a Council, Mohammad Taqi Usmani, current practices of issuing Sukuk replicate the structure of conventional bonds in terms of lack of ownership, right to a fixed return, and the guarantee of repayment of principal. Usmani (2007) also argues against obtaining international ratings, since Sukuk can be rated by the
recently established regional ratings agency, if needed, and Islamic banks should stand ready to endorse the acceptability of Sukuk.

Alternatively, Cakir and Raei (2007) take an opposing stand on the suspected comparability of Sukuk and conventional bonds, suggesting that Sukuk are different financial instruments compared to conventional bonds. The authors examine the risk reduction advantages of issuing sovereign Sukuk as alternative financing instruments compared to sovereign conventional bonds. Using a sample of sovereign Sukuk and Eurobonds by the same issuer, the authors estimate and compare the value-at-risk (VaR) for a portfolio that includes both instruments to another portfolio that only comprises Eurobonds. They find that VaR is reduced when Sukuk are added to the portfolio of fixed-income securities, implying that these investment certificates offer diversification benefits for investors.

In our study, we examine whether Sukuk are really different from conventional bonds using a sample of actively traded Sukuk and bond instruments in Malaysia.

III. Empirical design

In this section, we first provide a description of the data and relevant descriptive statistics. Then, we present the methodology and the results.

III.1 Data and summary statistics

The sample of issues of Sukuk and conventional bonds comes from Bloomberg. Our sample spans the years 2002 through 2009. The sample size is determined by information availability on all requested variables, notably the closing stock prices for companies issuing debt for a time span long enough before the announcement date of the issue, in order to apply the market model and compute
abnormal returns. Our final sample includes 170 issues from which 77 are sukuk and 93 conventional bonds.

Table 2 presents descriptive statistics on our sample of securities classified by issue type, distinguishing between conventional bonds and Sukuk. We observe that, on average, conventional bonds are considerably larger in size than Sukuk, with respective means for the amount issued equal to 314 million and 96 million Malaysia Ringgit (approximatively 92 million USD and 28 million USD at the current exchange rate). The maturity is, on average, twice longer for conventional bonds than for Sukuk (six years and half versus three years and half, respectively). The shorter maturity of Sukuk might suggest that these financial instruments are likely to pay lower total return in terms of both current yield and capital gains yield. However, the descriptive statistics show that the average coupon rate on Sukuk is higher than for conventional bonds (4.06 versus 3.79 percent), and that Islamic securities in Malaysia are issued at a deeper discount compared to conventional debt instruments (97.94 versus 99.17 percent of par) thereby offering greater potential for capital appreciation. These preliminary observations are interesting in the sense that higher promised returns on Sukuk might associate with greater investment risk, notwithstanding shorter maturity for these securities. They also suggest that Sukuk issuers are keen on offering greater return incentives for investors to purchase their securities, who are unwilling to commit their funds for long periods of time.

To shed more light on the nature and characteristics of different issuers of conventional bonds and Sukuk, we provide in Table 3 descriptive statistics by issuer of each security. We find that companies issuing Sukuk are smaller in size than those issuing conventional bonds, both in terms of balance sheet assets and market valuation. They are also more indebted and exposed to greater financial risk. Sukuk
issuers are less capitalized with an average equity-to-assets ratio lower than 20 percent, which is twice as small as the 40 percent equity-to-assets ratio of conventional bonds issuers. Debt ratios are similarly higher than those of conventional bonds issuers. To illustrate, the long-term debt-to-assets ratio of companies issuing Sukuk is close to 30 percent, whereas the corresponding figure for firms borrowing in the conventional market is around 20 percent. Under normal economic conditions, greater financial risk is likely to translate into higher profitability levels. However, all profitability ratios listed in Table 3 indicate that they are worse for firms issuing Sukuk compared to companies raising funds through conventional bonds. Indeed, operating margin and ROA are negative for companies issuing Sukuk, suggesting greater operating risk on top of the higher financial risk. In a nutshell, these observations point to a better financial and operating position for companies issuing conventional bonds compared to those engaging in Sukuk. To some extent, we can explain why Sukuk have shorter maturity and lower amount than conventional bonds, since they are associated with lower-quality borrowers. Further, Sukuk issuers have issued in the past twice more investment certificates (6.63 average issues) than conventional bond issuers (3.10 average issues). This finding might be in line with the fact that Sukuk are smaller in size and have shorter maturity, thus leading to the need for more issues.

III.2 Methodology and findings

Following the literature, we use a standard market model to estimate abnormal returns around the event date for a security issue\(^\text{12}\). Our sample period is 2002 until 2009, and we consider 93 events for conventional bonds and 77 events for Sukuk.

\(^{12}\) See, for instance, Lummer and McConnell, 1989; Preece and Mullineaux, 1996; and Gasbarro et al., 2004. MacKinlay (1997) also provides an excellent survey on event studies methods.
date of announcement is considered as day 0. We estimate the market model parameters over the period (-100, -10). This filter reduces the sample size to companies that have at least 100 days of stock returns observations. Using larger estimation periods (150 trading days) as well as stopping the estimation period up to 30 days before the event date does not affect our results. We define returns as \( \frac{P(t) - P(t-1)}{P(t-1)} \), where \( P \) is the stock market daily price at closing. We use several Malaysian stock indices (FBM 100, FBMKLCI, FBMEMAS, FBMS), all giving similar findings.\(^{13}\) In the tables below, we show the results pertaining to the stock index giving the largest R\(^2\) for the market model regression (or FBMEMAS).

We examine one-day \([0,0]\), three-day \([-1,+1]\) and five-day \([-2,+2]\) event windows and calculate average abnormal daily returns (non standardized and standardized). We obtain cumulative average abnormal returns (CAARs) by summing daily excess returns over the respective event windows. We use standard OLS regressions estimate the market model, with an average R\(^2\) (not reported) close to 20\% for all estimations.

We perform t-tests to investigate the statistical significance of CAARs and standardized CAARs\(^{14}\). Then, to investigate if the stock market discriminates among the type of investment certificate event (\textit{Sukuk} versus conventional bond issuance), we apply Student, Wilcoxon and Kruskal-Wallis tests to the CAARs and standardized CAARs by type of debt.

\(^{13}\) FBM 100: FTSE Bursa Malaysia Top 100 Index is a capitalization weighted index that is comprised of the top 100 large and mid cap companies on the Bursa Malaysia Main Board by market capitalization. FBMKLCI: FTSE Bursa Malaysia KLCI Index comprises of the largest 30 companies by full market capitalization on Bursa Malaysia Main Board. FBMEMAS: FTSE Bursa Malaysia EMAS Index is a capitalization weighted index that is comprised of the large and mid cap constituents of the FTSE Bursa Malaysia 100 Index and the FTSE Bursa Malaysia Small Cap Index. FBMS: FTSE Bursa Malaysia EMAS Shariah index is a market capitalization weighted index that incorporates the large and mid cap stocks of the FTSE Bursa Malaysia 100 Index and the FTSE Bursa Malaysia Small Cap Index.

\(^{14}\) We standardize CAARs using the square root of the product of the number of days in the event window and the mean square error.
Table 4 displays CAARs and standardized CAARs by type of security issue (Sukuk versus conventional bonds). The percentage of positive CAARs appears in the fourth column, while the last two columns provide p-values for t-tests of CAARs significance. Across all event windows, we notice that all computed CAARs are positive for conventional bonds and negative for Sukuk, despite lack of significance over the [0,0] and [-1,1] windows of returns. However, we observe that Sukuk issues’ CAARs and standardized CAARs are negative and significantly different from 0 for the largest event window [-2,2]. Further, the percentage of positive Sukuk CAARs is generally lower than the corresponding ratio for conventional bonds, and it decreases as the event window widens, whereas the percentage of positive conventional bonds CAARs rises with larger event windows.

Table 5 displays the results of Student, Wilcoxon and Kruskal-Wallis tests for the difference of CAARs and standardized CAARs by type of issue (Sukuk versus conventional bonds). For the first two tests, the null hypothesis is that the difference of CAARs (respectively standardized CAARs) between Sukuk and conventional bond issues’ events is null. For the Kruskal-Wallis test, the null hypothesis is that the Sukuk and conventional bond issues’ events samples come from identical populations. CAAR and standardized CAAR variances are unequal according to Fisher tests, so we use the Satterthwaite method for the Student tests. Student approximation gives similar results to normal approximation for Wilcoxon tests. We display the normal approximation (Z-score) for this test.

We note that the Student and Wilcoxon tests allow rejecting the null hypotheses for standardized CAAR over the largest event window [-2,2] at the 10% confidence level, i.e. the difference between the CAARs of Sukuk and bonds is not zero. In other words, abnormal returns are different for Sukuk and conventional bond

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15 We also use Patell (1976), Boehmer et al. (1999), and cross-sectional t-statistics and obtain similar findings.
issues or, stated differently, the market does not react in a similar manner to these two types of issues and is hence capable of discriminating them. This result reinforces our previous finding of a negative market reaction to Sukuk issues in Table 4.

III.3 Robustness checks

We perform several robustness checks of the results. A first sensitivity check relies on using two different (asymmetric) four days event windows, i.e. [-1,2] and [-2,1]. Since financial markets in emerging economies are not expected to be efficient, we may expect the existence of a leakage of information that a certain type of securities will be issued. In this light, it is possible that abnormal returns can be realized prior to the announcement date. We display the results of tests similar to those conducted above for symmetric event windows in Tables 6 (for CAARs and standardized CAARs by type of security issue) and 7 (for the results of Student, Wilcoxon and Kruskal-Wallis tests for the difference of CAARs and standardized CAARs by type of issue, respectively). First, we find that stock market reaction is negative and significant for Sukuk over both asymmetric event windows. This result confirms the results reported over the [-2,2] event window in Table 4, but they are slightly weaker in significance. Second, we observe that the stock market reaction differs following the type of investment security issuance, similar to the finding over the largest event window in Table 5. Hence, investors perceive conventional bonds and Sukuk issues differently on the Malaysian stock market.

A second robustness check relates to the estimation of the market model in computing normal returns for each stock. In our sample, companies which issue conventional bonds do not issue Sukuk, and those which issue Sukuk do not issue conventional bonds. Since our sample exhibits market segmentation, it may be
inappropriate to use the same market model for both types of companies\textsuperscript{16}. In this light, stock returns for companies issuing different types of securities may be sensitive to different stock market indices. To address this issue, we perform two separate regressions to compute normal returns for companies issuing each type of security. The first uses the FBMEMAS index as a proxy of market return for companies issuing conventional bonds, and the second employs the FBMS Islamic index as a proxy for market return for companies issuing Sukuk\textsuperscript{17}. The rest of the methodology is exactly the same as described in sub-section III.2\textsuperscript{18}. We display the results using different market models in Tables 8 (for CAARs and standardized CAARs by type of security issue) and 9 (for the results of Student, Wilcoxon and Kruskal-Wallis tests for the difference of CAARs and standardized CAARs by type of issue, respectively).

Compared to our main results in Tables 4 and 5, we observe that changing the market model specification does not alter our main findings. We find that stock market reaction is negative and significant for Sukuk over the largest event window [-2,2]. We also note that, for this event window, the stock market reaction differs following the type of security issued, confirming that investors have a different perception of conventional bonds and Sukuk issues\textsuperscript{19}.

These additional robustness checks confirm and therefore reinforce our previously obtained results. Overall, the Malaysian stock market is capable of

\textsuperscript{16} The average betas for companies issuing conventional bonds and Sukuk are equal to 1.21 and 1.11, respectively, when employing the same market model with the FBMEMAS index to proxy for market return. Using a t-test, we cannot reject the null hypothesis of betas equality.

\textsuperscript{17} The R\textsuperscript{2} for the market model regression using the FBMS index equals 15.46\%, and it is slightly lower than for the market model with FBMEMAS index (18.47\%).

\textsuperscript{18} Another alternative is to apply the Asset Pricing Theory approach and estimate normal returns using a Fama-French type of multi-factor model. However, we do not follow this method for two main reasons. First, recent evidence shows that event study results are weakly sensitive to the type of specification used to compute returns and that simple models are more appropriate (Ahern, 2009). Second, the implementation of a multi-factor model requires using companies’ characteristics that are available only on a limited sample, thus reducing the scope of our investigations.

\textsuperscript{19} We obtain similar findings when using two asymmetric event windows and two different market model specifications.
distinguishing *Sukuk* from conventional bond issues and that stock market reaction is negative when *Sukuk* are issued.

**IV. Discussion**

Our empirical results wind up with three major findings related to *Sukuk* and conventional bonds issues: the absence of significant stock-market reaction to conventional bond announcements, the negative reaction to *Sukuk* issues and, as a corollary, the significant difference in stock market reactions to *Sukuk* and conventional bond issues.

A noteworthy first finding is the absence of significant reaction of stock markets to conventional bond announcements. This is not at odds with former literature, which includes studies providing evidence that stock markets do not react to debt announcements including bond issuances (Eckbo, 1986; Mikkelson and Partch, 1986), even if some of them also find support for a negative reaction (Spiess and Affleck-Graves, 1999). The reaction of stock markets to the issue of bonds is influenced by opposing influences. Debt issuance may send a credible signal about the quality of firms, helping to solve the adverse selection problem that results from information asymmetries between firm insiders and outsiders, and thus leading to a positive stock market reaction (Ross, 1977). It might also reduce moral hazard behavior and agency costs resulting from conflicts of interest between shareholders and managers (Jensen, 1986). However, stock markets might react negatively to debt issue events because greater debt may contribute to increasing moral hazard behavior under two possible scenarios. First, debt enhances the bankruptcy risk of the borrower, (since bankruptcy is associated with the failure to repay due debt commitments); and second, debt increases the agency costs resulting from the
conflicts of interest between shareholders and debtholders (Jensen and Meckling, 1976).

Against this background, we interpret the absence of significant reaction to conventional bond announcements in the Malaysian stock exchange as the result of these opposing effects, and in line with the findings of former studies.

However, the main conclusion of our study is the significant difference in stock market reaction to Sukuk and conventional bond issues, following the negative reaction to Sukuk issues in comparison with insignificant reaction to conventional bond issues.

We use the adverse selection argument to explain our finding. We propose that only the borrowers with the lowest return expectations have incentives to prefer Sukuk. The reason is the following: borrowers can choose between interest-based (conventional bonds) and profit-and-loss sharing (Sukuk) securities. If an entrepreneur expects a low profit, he prefers profit-and-loss sharing financing schemes to minimize his loss in the likely event of failure. If an entrepreneur expects a high profit, he prefers interest-based financing to maximize his gain in the likely event of success. So the worst borrowers will choose to issue Sukuk, and stock market participants expect this outcome. Hence a Sukuk issuance is likely to send a negative signal on the financial position of the issuing firm.

Kuran (2004) provides a similar argument to explain why many Islamic banks do not supply more equity-like financing instruments in line with the profit-and-loss sharing principle (Musharaka and Mudaraba) and in comparison with debt-based financing instruments. Since Islamic banks coexist with conventional banks in most countries, they are likely to face adverse selection problems if they only propose equity-like financing instruments. Borrowers with low expectations might opt for
these instruments whereas those with high expectations will deal with conventional banks.\footnote{\textquoteleft\textquoteleft By allowing entrepreneurs to choose between interest and profit and loss sharing, conventional banks create an adverse selection problem for the Islamic banks: entrepreneurs with below-average profit expectations prefer profit and loss sharing in order to minimize their losses in the likely event of failure, while those with above-average expectations prefer interest in order to maximize their gains in the likely event of success. The upshot is that the Islamic banks receive a disproportionately large share of the bad risks.'' (Kuran, 2004, p.12)}

Our interpretation of the findings is supported empirically by differences in the characteristics of the issuers of the two categories of securities. Companies issuing Sukuk are in worse financial and operating shape than those issuing conventional bonds. They are notably more leveraged and less profitable. Therefore, these weaker companies may have economic incentives to prefer issuing a security based on a profit-and-loss sharing principle rather than a fixed-income instrument that imposes more financial burden.

Our major conclusion regarding the negative market reaction to Sukuk issues in comparison with insignificant reaction to conventional bond issues has several implications. The first one concerns the fact that stock market investors are able to distinguish between sukuk and conventional bonds. This market-based evidence supports the view of Cakir and Raei (2007) that Sukuk are different from conventional bonds, and it is opposite to the arguments of Wilson (2008) and Miller, Challoner, and Atta (2007). Although Sukuk are similar in structure to conventional bonds (Usmani, 2007), stock market participants perceive these instruments as being special and they accordingly react differently to their issuance.

A second implication relates to the evolution of Sukuk and the predictions of strong growth of this market. There might be several motivations for firms to issue Sukuk, including religious factors. However, the fact that stock markets negatively perceive Sukuk seems to indicate that the use of these securities should not be favored
for economic reasons. Sukuk financing may be detrimental to firm value, at least in the short run, thus limiting shareholders’ incentives to issue these investment certificates.

The third implication deals with the economic effects of the expansion of Sukuk on Islamic banks, which are pillar institutions in the Islamic finance industry. Shari’a-compliant financial institutions hold Sukuk on their balance sheet as liquidity management tools in the same way that conventional banks invest in fixed income securities. It is possible that the worse market perception registered for Sukuk issues than for conventional bond issues might lead to a worse perception of their holders.

V. Conclusion

This paper analyzes the stock market reaction to announcements of conventional bonds and Sukuk. We use the event study methodology to a sample of Malaysian public companies. Our findings support the view that stock markets react differently to issuances of both securities. While there is no significant market reaction to conventional bond issues, we observe a significant negative stock market reaction to Sukuk issues. Furthermore, the stock market reaction is significantly different between both types of issues.

We attribute this different reaction of stock markets to the expectations of participants that an adverse selection mechanism encourages worse companies to prefer Sukuk to conventional bonds. Companies with low profit expectations have incentives to finance their project through Sukuk as these instruments are based on profit-and-loss sharing schemes to allow them minimize their share in the loss, while companies with high profit expectations opt for conventional bonds as it means a fixed repayment schedule and thus the maximization of their upside potential. This
explanation is corroborated by the worse financial situation for companies issuing Sukuk than for those issuing conventional bonds.

Our findings are relevant for two major debates in Islamic finance. First, Islamic finance is subject to criticism because its empirical application exhibits great similarity with conventional finance. Ayub (2007) observes that a major criticism of Islamic finance rests on the lack of differences with incumbent modes of finance. We provide opposing evidence that that stock markets are able to distinguish between Sukuk and conventional bonds. Thus, market-based information supports the existence of differences between instruments emerging from Islamic finance and those associated with conventional finance.

A second debate concerns the economic effects of the expansion of Islamic finance. Our results show that Sukuk announcement leads to a negative market reaction, adversely affecting firm value, whereas the issuance of conventional bonds has a neutral impact on market capitalization. Therefore, the increasing use of Sukuk may be detrimental to the firm and eventually to economic development, at least in the short run.

A pessimistic view on the latter finding is the fact that negative stock market reaction may limit the incentives for companies to issue Sukuk rather than conventional bonds. In other words, market mechanisms are likely to limit the expansion of Sukuk, even if religious motivations may counterbalance them. In parallel, an optimistic interpretation of the implication of our results on the future development of Sukuk relates to the adverse selection mechanism in place that results from the coexistence of Sukuk and conventional bonds on the Malaysian market. Such a process would not happen if only Sukuk are issued on the same exchange. Thus, the negative reaction to Sukuk issues may be reduced in a pure Islamic financial system.
Nonetheless, before arguing in favor of the large-scale adoption of Islamic finance, additional research is needed to assess the long run implications of using *Sukuk* financing to finance for development.
References


Ernst and Young (2009). Ernst & Young Islamic Funds and Investments Report 2009.


Moody’s (2008). “Focus on the Middle East”. Inside Moody’s, (Spring).


**Table 1**

**Total Sukuk issuance 2000-2007**

The table below provides the value of Sukuk issuance in million USD for each year for the period 2000-2007. Source: adapted from data provided by the Islamic Finance Information Services (IFIS).

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Corporate Sukuk</strong></td>
<td>336.30</td>
<td>530.00</td>
<td>179.90</td>
<td>4,537.06</td>
<td>5,731.19</td>
<td>11,358.89</td>
<td>24,832.50</td>
<td>31,916.70</td>
</tr>
<tr>
<td>% of total</td>
<td>100.00</td>
<td>67.95</td>
<td>18.36</td>
<td>79.36</td>
<td>79.48</td>
<td>94.14</td>
<td>90.65</td>
<td>82.69</td>
</tr>
<tr>
<td><strong>Sovereign Sukuk</strong></td>
<td>0.00</td>
<td>250.00</td>
<td>800.00</td>
<td>1,180.00</td>
<td>1,479.35</td>
<td>706.50</td>
<td>2,560.00</td>
<td>6,679.90</td>
</tr>
<tr>
<td>% of total</td>
<td>0.00</td>
<td>32.05</td>
<td>81.64</td>
<td>20.64</td>
<td>20.52</td>
<td>5.86</td>
<td>9.35</td>
<td>17.31</td>
</tr>
<tr>
<td><strong>Total Sukuk issuance</strong></td>
<td>336.30</td>
<td>780.00</td>
<td>979.90</td>
<td>5,717.06</td>
<td>7,210.54</td>
<td>12,065.39</td>
<td>27,392.50</td>
<td>38,596.60</td>
</tr>
</tbody>
</table>
Table 2
Descriptive statistics by type of security

The table below provides the mean and standard deviation for several characteristics of the issues by type of bonds. All variables are in million Malaysian Ringgit, with the exception of coupon and issue price (in percent), maturity (in years), and number of past issues. Amount issued is the original issue amount for a security. Amount outstanding is the current amount of the issue outstanding. Coupon is the current interest rate of the security. Issue price is the price of the security at issue.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conventional bonds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amount issued</td>
<td>93</td>
<td>314.15</td>
<td>1,034.87</td>
</tr>
<tr>
<td>Amount outstanding</td>
<td>93</td>
<td>208.37</td>
<td>304.87</td>
</tr>
<tr>
<td>Coupon</td>
<td>93</td>
<td>3.79</td>
<td>3.13</td>
</tr>
<tr>
<td>Issue price</td>
<td>51</td>
<td>99.17</td>
<td>4.14</td>
</tr>
<tr>
<td>Maturity</td>
<td>82</td>
<td>6.51</td>
<td>11.69</td>
</tr>
<tr>
<td><strong>Sukuk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amount issued</td>
<td>77</td>
<td>96.00</td>
<td>160.73</td>
</tr>
<tr>
<td>Amount outstanding</td>
<td>77</td>
<td>84.42</td>
<td>151.88</td>
</tr>
<tr>
<td>Coupon</td>
<td>76</td>
<td>4.06</td>
<td>3.37</td>
</tr>
<tr>
<td>Issue price</td>
<td>21</td>
<td>97.94</td>
<td>7.56</td>
</tr>
<tr>
<td>Maturity</td>
<td>62</td>
<td>3.53</td>
<td>4.14</td>
</tr>
</tbody>
</table>
Table 3
Descriptive statistics by issuer

The table below provides the mean and standard deviation for several characteristics of the issuers by type of bonds. All variables are in million Malaysian Ringgit, with the exception of financial ratios and the number of past issues. Financial leverage is the ratio of average total assets to the average total common equity. Global amount outstanding is the debt distribution among outstanding for the current issuer only (excluding subsidiaries). Number of past issues is the number of securities used in the calculation of debt distribution values for the issuer.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conventional bonds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total assets</td>
<td>47</td>
<td>4 719.99</td>
<td>10 772.23</td>
</tr>
<tr>
<td>Total market value</td>
<td>47</td>
<td>4 558.93</td>
<td>12 121.02</td>
</tr>
<tr>
<td>Sales</td>
<td>47</td>
<td>1 122.33</td>
<td>3 015.00</td>
</tr>
<tr>
<td>Equity to total assets</td>
<td>47</td>
<td>40.60</td>
<td>20.41</td>
</tr>
<tr>
<td>Total debt to total assets</td>
<td>47</td>
<td>32.16</td>
<td>15.39</td>
</tr>
<tr>
<td>Long term debt to total assets</td>
<td>47</td>
<td>20.34</td>
<td>11.24</td>
</tr>
<tr>
<td>Ebit to total interest expenses</td>
<td>43</td>
<td>3.60</td>
<td>5.63</td>
</tr>
<tr>
<td>Current ratio</td>
<td>44</td>
<td>2.13</td>
<td>1.60</td>
</tr>
<tr>
<td>Operating margin</td>
<td>47</td>
<td>13.60</td>
<td>17.36</td>
</tr>
<tr>
<td>Return on assets</td>
<td>46</td>
<td>1.73</td>
<td>6.45</td>
</tr>
<tr>
<td>Global amount outstanding</td>
<td>47</td>
<td>653.36</td>
<td>1,287.50</td>
</tr>
<tr>
<td>Number of past issues</td>
<td>47</td>
<td>3.10</td>
<td>3.68</td>
</tr>
<tr>
<td><strong>Sukuk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total assets</td>
<td>30</td>
<td>3 057.78</td>
<td>5 437.40</td>
</tr>
<tr>
<td>Total market value</td>
<td>29</td>
<td>2 944.87</td>
<td>5 507.26</td>
</tr>
<tr>
<td>Sales</td>
<td>30</td>
<td>2 028.13</td>
<td>4 169.64</td>
</tr>
<tr>
<td>Equity to total assets</td>
<td>30</td>
<td>19.70</td>
<td>119.42</td>
</tr>
<tr>
<td>Total debt to total assets</td>
<td>30</td>
<td>52.62</td>
<td>96.67</td>
</tr>
<tr>
<td>Long term debt to total assets</td>
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<td>29.84</td>
<td>35.92</td>
</tr>
<tr>
<td>Ebit to total interest expenses</td>
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<td>3.27</td>
<td>5.87</td>
</tr>
<tr>
<td>Current ratio</td>
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<td>1.90</td>
<td>1.43</td>
</tr>
<tr>
<td>Operating margin</td>
<td>30</td>
<td>-4.32</td>
<td>86.39</td>
</tr>
<tr>
<td>Return on assets</td>
<td>28</td>
<td>-3.10</td>
<td>33.25</td>
</tr>
<tr>
<td>Global amount outstanding</td>
<td>30</td>
<td>610.66</td>
<td>1,487.26</td>
</tr>
<tr>
<td>Number of past issues</td>
<td>30</td>
<td>6.63</td>
<td>6.96</td>
</tr>
</tbody>
</table>
Table 4
Cumulative average abnormal returns

This table displays CAARs and standardized CAARs by type of event (Sukuk vs. conventional bond announcement) in the third and fourth columns, and across three event windows. The percentage of positive CAARs is in the fifth column, while the last two columns provide p-values for t-tests of CAARs and Std. CAARs significance. *, **, *** denote significance at the 10%, 5% or 1% level, respectively.

| Event window | Type of announcement | CAAR   | Std. CAAR | Positive CAAR (%) | Prob. > |t| for CAAR | Prob. > |t| for Std. CAAR |
|--------------|----------------------|--------|-----------|-------------------|---------|---------|-----------|---------|----------------|
| [0,0]        | Conventional bonds   | 0.01426| 0.34058   | 0.41860           | 0.46865 | 0.46057 |
|              | Sukuk                | -0.00388| -0.09743  | 0.43421           | 0.28957 | 0.39266 |
| [-1,1]       | Conventional bonds   | 0.01828| 0.12773   | 0.44086           | 0.26698 | 0.57526 |
|              | Sukuk                | -0.00858| -0.19963  | 0.42857           | 0.18531 | 0.15673 |
| [-2,2]       | Conventional bonds   | 0.01904| 0.14915   | 0.47312           | 0.29123 | 0.46663 |
|              | Sukuk                | -0.01552**| -0.28522***| 0.36364           | 0.01303 | 0.00812 |
Table 5
Difference significance tests by type of events for cumulative average abnormal returns

This table displays the results of Student, Wilcoxon and Kruskal-Wallis tests for the difference of CAARs and standardized CAARs by type of investment security event (Sukuk vs. conventional bonds) across each of three event windows. For the first two tests, the null hypothesis is that the difference of CAARs (and standardized CAARs) between Sukuk and conventional bond events is zero. For the Kruskal-Wallis test, the null hypothesis is that the Sukuk and bond events samples come from identical populations. CAAR and standardized CAAR variances are unequal for the [0,0] event window according to Fisher tests, hence we use the Satterthwaite method for the Student tests. We find equal variances for the other event windows and we use the pooled method for the tests. The Student approximation gives similar results to the normal approximation for Wilcoxon tests. *, **, *** denote significance at the 10%, 5% or 1% level, respectively.

<table>
<thead>
<tr>
<th>Event window</th>
<th>Student test</th>
<th>Wilcoxon test</th>
<th>Kruskal-Wallis test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
<td>Prob. &gt;</td>
<td>t</td>
</tr>
<tr>
<td>[0,0]</td>
<td>CAAR</td>
<td>0.91</td>
<td>0.3650</td>
</tr>
<tr>
<td></td>
<td>Std. CAAR</td>
<td>0.93</td>
<td>0.3570</td>
</tr>
<tr>
<td>[-1,1]</td>
<td>CAAR</td>
<td>1.53</td>
<td>0.1293</td>
</tr>
<tr>
<td></td>
<td>Std. CAAR</td>
<td>1.23</td>
<td>0.2214</td>
</tr>
<tr>
<td>[-2,2]</td>
<td>CAAR</td>
<td>1.82*</td>
<td>0.0708</td>
</tr>
<tr>
<td></td>
<td>Std. CAAR</td>
<td>1.89*</td>
<td>0.0605</td>
</tr>
</tbody>
</table>
Table 6  
Cumulative average abnormal returns – robustness checks using asymmetric event windows

This table displays CAARs and standardized CAARs by type of event (Sukuk vs. conventional bond announcement) in the third and fourth columns, and across three event windows. The percentage of positive CAARs is in the fifth column, while the last two columns provide p-values for t-tests of CAARs significance and Std. CAARs. *, **, *** denote significance at the 10%, 5% or 1% level, respectively.

| Event window | Type of announcement | CAAR   | Std. CAAR | Positive CAAR (%) | Prob. > |t| for CAAR | Prob. > |t| for std. CAAR |
|--------------|----------------------|--------|-----------|-------------------|---------|-----------|---------|---------------|
| [-1,2]       | Conventional bond    | 0.01740| 0.09836   | 0.46237           | 0.31130 | 0.63475   |         |               |
|              | Sukuk                | -0.01319*| -0.25224*| 0.38961           | 0.05976 | 0.05545   |         |               |
| [-2,1]       | Conventional bond    | 0.01991| 0.17901   | 0.44086           | 0.22326 | 0.38247   |         |               |
|              | Sukuk                | -0.01090*| -0.23953**| 0.40260           | 0.05445 | 0.03319   |         |               |
This table displays the results of Student, Wilcoxon and Kruskal-Wallis tests for the difference of CAARs and standardized CAARs by investment security event (Sukuk vs. conventional bonds) across each three event windows. For the first two tests, the null hypothesis is that the difference of CAARs (and standardized CAARs) between Sukuk and conventional bond events is zero. For the Kruskal-Wallis test, the null hypothesis is that the Sukuk and bond events samples come from identical populations. CAAR and standardized CAAR variances are unequal for the [0,0] event window according to Fisher tests, hence we use the Satterthwaite method for the Student tests. We find equal variances for the other event windows and we use the pooled method for the tests. The Student approximation gives similar results to the normal approximation for Wilcoxon tests. *, **, *** denote significance at the 10%, 5% or 1% level respectively.

<table>
<thead>
<tr>
<th>Event window</th>
<th>Student test</th>
<th>Wilcoxon test</th>
<th>Kruskal-Wallis test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
<td>Prob. &gt;</td>
<td>t</td>
</tr>
<tr>
<td>[-1,2]</td>
<td>CAAR</td>
<td>1.66*</td>
<td>0.0966</td>
</tr>
<tr>
<td></td>
<td>Std. CAAR</td>
<td>1.44</td>
<td>0.1524</td>
</tr>
<tr>
<td>[-2,1]</td>
<td>CAAR</td>
<td>1.79*</td>
<td>0.0754</td>
</tr>
<tr>
<td></td>
<td>Std. CAAR</td>
<td>1.80*</td>
<td>0.0733</td>
</tr>
</tbody>
</table>
Table 8
Cumulative average abnormal returns – robustness checks using different market models

This table displays CAARs and standardized CAARs by type of event (Sukuk vs. conventional bond announcement) in the third and fourth columns, and across three event windows. The percentage of positive CAARs is in the fifth column, while the last two columns provide p-values for t-tests of CAARs and Std. CAARs significance. *, **, *** denote significance at the 10%, 5% or 1% level, respectively.

| Event window | Type of announcement | CAAR   | Std. CAAR | Positive CAAR (%) | Prob. > |t| for CAAR | Prob. > |t| for Std. CAAR |
|--------------|----------------------|--------|-----------|-------------------|---------|-----------|---------|---------------|
| [0,0]        | Conventional bonds   | 0.01426| 0.34058   | 0.38710           | 0.46865 | 0.46057   |
|              | Sukuk                | -0.00420| -0.11036 | 0.45455           | 0.25460 | 0.33673   |
| [-1,1]       | Conventional bonds   | 0.01828| 0.12773   | 0.44086           | 0.26698 | 0.57526   |
|              | Sukuk                | -0.00828| -0.19885 | 0.46753           | 0.20898 | 0.16729   |
| [-2,2]       | Conventional bonds   | 0.01903| 0.14915   | 0.47312           | 0.29123 | 0.46663   |
|              | Sukuk                | -0.01442**| -0.27218**| 0.36364          | 0.01900 | 0.01073   |
Table 9

Difference significance tests by type of events for cumulative average abnormal returns – robustness checks using different market models

This table displays the results of Student, Wilcoxon and Kruskal-Wallis tests for the difference of CAARs and standardized CAARs by investment security event (Sukuk vs. conventional bonds) across each three event windows. For the first two tests, the null hypothesis is that the difference of CAARs (and standardized CAARs) between Sukuk and conventional bond events is zero. For the Kruskal-Wallis test, the null hypothesis is that the Sukuk and bond events samples come from identical populations. CAAR and standardized CAAR variances are unequal for the [0,0] event window according to Fisher tests, hence we use the Satterthwaite method for the Student tests. We find equal variances for the other event windows and we use the pooled method for the tests. The Student approximation gives similar results to the normal approximation for Wilcoxon tests. *, **, *** denote significance at the 10%, 5% or 1% level respectively.

<table>
<thead>
<tr>
<th>Event window</th>
<th>Student test</th>
<th>Wilcoxon test</th>
<th>Kruskal-Wallis test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAAR</td>
<td>Prob. &gt;</td>
<td>t</td>
</tr>
<tr>
<td>[0,0]</td>
<td>1.27</td>
<td>0.2071</td>
<td>0.2007</td>
</tr>
<tr>
<td></td>
<td>1.11</td>
<td>0.2689</td>
<td>-0.1817</td>
</tr>
<tr>
<td>[-1,1]</td>
<td>1.43</td>
<td>0.1550</td>
<td>-0.1534</td>
</tr>
<tr>
<td></td>
<td>1.40</td>
<td>0.1641</td>
<td>-0.2536</td>
</tr>
<tr>
<td>[-2,2]</td>
<td>1.77*</td>
<td>0.0796</td>
<td>-1.0143</td>
</tr>
<tr>
<td></td>
<td>1.84*</td>
<td>0.0680</td>
<td>-1.2240</td>
</tr>
</tbody>
</table>
Figure 1
Total amount of issues per year from 2002 to 2009 on the Malaysian market

This figure is based on data from the Bloomberg database. The breakdown distinguishes among Sukuk and conventional bonds.
Figure 2
Total amount issued per year from 2002 to 2009 on the Malaysian market

This figure is based on data from the Bloomberg database. The breakdown distinguishes among Sukuk and conventional bonds. Amounts are in million Ringgit.
Appendix 1: Sukuk al-Ijara Structure

- Originator sells sukuk assets
- SPV pays for sukuk assets
- SPV leases back sukuk assets
- Originator pays rental for sukuk assets

Purchase undertaking

Servicing/Management agreement

Declaration of trust over sukuk:
Regular rental payments and reimbursement at maturity

SPV Issuer

- SPV issues sukuk certificates
- Investors buy sukuk certificates

Investors
Appendix 2: Sukuk al-Musharaka Structure

Diagram showing the structure of Sukuk al-Musharaka, including the purchase undertaking, declaration of trust over sukuk, and the contribution in kind and cash. The Beneficiary/Originator contributes in kind, while the SPV contributes in cash. Investors buy sukuk certificates from the SPV, which issues sukuk certificates.
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