Sukuk Structures, Profiles and Risks

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ABSTRACT

Sukuk are financial instruments similar to bonds that are compliant with Islamic Shari'a law. Since their inception in 2002, sukuk markets have experienced dramatic growth rates attracting the attention of investors, analysts and researchers alike. Though driven by the same fundamentals as conventional securities, sukuk offer investors the added advantage of interest free loans and profit sharing opportunities. Despite their popularity, sukuk markets face a major stumbling block in that the underlying assets that generate their income streams must conform to Shari'a law. Sukuk structures vary with type representing particular risks that have to be factored in their pricing. Failure to capture all the specific risks in their valuation could make sukuk a new name in the lexicon of toxic assets.

Introduction

The recent growth of Islamic finance over the past decade has led to the development of tradable securities and to product innovations. The basic premise of Islamic finance lies on the need to eliminate both interest (riba) and uncertainty (gharar) from financial transactions. To meet this need, sukuk ¹ were introduced as a source of financing that is compliant with Shari'a law. Islamic law prohibits the charging or paying of interest and trading under conditions of excessive uncertainty and ambiguous outcomes "gharar"² or gambling.

The literal meaning of "riba" is excessive, or unjustifiable, increase in capital i.e. usury or a predetermined rate paid to capital regardless of the investment performance (Alasrag, 2011). While Islam encourages the earnings of profits determined ex-post, interest, is a cost that is set ex-ante, and as such is independent of outcome. Because Shari'a does not recognize the time value of money, it does not permit payment or receipt of interest. Money is regarded as a means of creating real economic value. When compensation is paid, it should be associated with a specified activity that is associated with a specified level of risk (Alasrag, 2011). Speculative activities are also prohibited in Shari'a and as such, profiting from them is not allowed.

Although risk is present in business activities, the intention is to realize gains from a productive activity rather than to make a quick profit.

While conforming to Islamic paradigm, sukuk have to compete in capital markets and face a challenging external environment. Because of the prohibition of interest, Islamic banking relies more on equity and asset- based finance. Partnership contracts are allowed and the sharing of profits or losses is permitted. The different forms and structures of sukuk offer an alternative to traditional debt instruments and are designed to meet diverse financing needs. One way of classifying them would be based on their tradability in secondary markets. Tradable Islamic financial assets include Mudaraba, Musharka and Ijara certificates. Non-tradable debt certificates include Murabaha (Istisna), and Salam sukuk.

Mudaraba and musharaka are types of partnerships and as such are considered to be non-debt modes of financing in which neither principal nor a fixed profit has to be paid back. With mudaraba, one party provides capital while the other party works the capital. If profits are realized, the two parties agree on their distribution. In the case of losses however, one party risks losing capital while the other risks foregoing his time and effort. Mudaraba could lead to moral hazard as the entrepreneur may be tempted to behave against the interest of the investors since they absorb all the losses (Tariq, 2004).

Musharka on the other hand, is a partnership arrangement in which capital contributions are shared and managed in proportion to the investment. While profits in musharka are distributed based on the total investment, losses are limited to the amount of investment (Tariq, 2004). In musharka, both investors and entrepreneurs share in the management and control. Both musharka and mudaraba are contract forms that are compliant with Islamic law and from which Islamic financial assets are derived.

Ijara, or the use of leasing, represents the sale of usufruct. With ijara, the ownership or title of the asset is kept with the bank, or may in some instances be sold to the lessor at the end of the lease period as would be the case in a "lease to own".

Non-tradable debt certificates include Zero Coupon sukuk, Murabaha (Istisna) and Salam sukuk. Since Islamic law prohibits trading in debt, murabaha, financing is based on cost- plus basis, with mark-ups added to the principal and paid out in installments, which make istisna or murabaha, similar to zero coupon bonds. Murabha could be regarded as a form of trust sale and are most often used to fund short term trade transactions. The seller is assumed to disclose his true costs and profit margins are determined either as a percentage or as a fixed amount (Tariq, 2004).

Salam sukuk on the other hand are securitized certificates in which funds are paid in advance and the underlying assets become a debt. A more recent innovation in sukuk is Al Wakala, in which one party entrusts another party to act on their behalf which is similar to an agency agreement. Al Wakala share common features like mudaraba, the main difference being that with the profits generated are not shared but are instead agreed upon by the parties at the outset. The agent, al wakeel, retains any excess profits generated as an incentive fee. (IslamicBanker.com)

In this paper we focus on tradable sukuk which account for 2/3 of the total value of the global sukuk market. In section 2, the structure of Ijara, Musharaka and Mudaraba is detailed. The profile and risk of each is identified in section 3. In section 4, a model design is presented and discussed. The concluding section of the paper looks at future market trends and direction.

STRUCTURES OF TRADABLE SUKUK

Sukuk are trust certificates or securities that are asset-backed and Shari'a compliant. Sukuk issuers include sovereign governments, corporations, as well as financial institutions. Sukuk securitization distributes risk by pooling debt instruments and then issuing new securities backed by the pool. This in turn enables an originator to divest their assets and generate the needed funds (Jabeen).

Securitization is a structured finance process that distributes risk by aggregating debt instruments in a pool, then issues new securities backed by the pool. The securities resulting from this process are termed Asset-Backed Securities or ABS. It is worth noting the credit quality of securitized debt is non-stationary due to changes in volatility that are time and structure dependent.

The tradable sukuk market includes: Ijara with 25%, Musharaka with 18% and Mudaraba with 4% share of the total global market (See Appendix A).

IJARA

The ijara contract is essentially a rental or lease contract that establishes the right to use an asset for a fee. The basic idea of ijara sukuk is that the sukuk holders (investors) are the owners of the asset and are entitled to receive a return when that asset is leased. Ijara sukuk, give the owners the right to own the real estate, receive rent and dispose of the sukuk in a way that does not affect the right of the lessee, i.e. they are tradable. It is essential for ijara that both the asset that is being leased as well as the rent to be clearly specified to the parties when the contract is issued. Rental fees must be expressed explicitly and formulated for the terms specified. Any expense incurred for maintenance is borne by the lessee, whereas initial expenses are considered the responsibility of the owner.

In ijara, property (building or machinery) is purchased by the lessor on behalf of the lessee and usufruct is transferred to lessee for an agreed price and at an agreed consideration. The subject of lease in ijara is not limited to building or machinery. It could be anything that contains some value, and can be identified and quantified. Thus, anything that can be consumed such as money and food items cannot be leased out. The lessor is liable for any damage or destruction of the subject of lease during the period of lease. The period of lease must be determined in clear terms at the time of sukuk contract. At the end of an agreed lease period, the lessee becomes the owner of the property by purchasing it from the lessor during or at the end of the lease period at an agreed sale price. In some cases, an amortization schedule is prepared to calculate a portion of each monthly payment to be applied to reduce the purchase price of the lessor till the termination date of the lease. The remainder of the lease payment is attributed to profit earned by the lessor. Upon paying the purchase amount of the lessor, the lessee can be the sole owner of the property (Usmani).

There are mainly three parties involved in Ijara: (i) the lessee, who will identify the property it wishes to get, and who will pay rent towards earning ownership rights in the property towards the end of lease agreement; (ii) the financier, which is the entity originating each transaction; and (iii) the lessor, a special purpose entity wholly owned by the financier or its partner/affiliate, which holds legal title in the property during the term of the financing and is the lessor under the lease agreement. [zayanfinance.com]

The structure of an ijara sukuk is shown in Figure 1 (Shaukat). The obligator or seller sells to a special purpose vehicle SPV certain assets at an agreed pre-determined purchase price. The SPV issues sukuk certificates in an amount equal to the purchase price to raise financing. The proceeds from the sale of the sukuk are applied to purchase the asset from the seller or obligator. A lease agreement is signed between the obligator and the SPV for a fixed time period, where the obligator leases back the assets as a lessee. SPV receives periodic rentals from the obligator which are then distributed among investors or the sukuk holders. At maturity, the SPV sells the assets back to the seller at predetermined price (Nisar, 2010).

Figure 1. Structure of Al Ijara Sukuk



MUSHARAKA

Musharaka is the oldest of all sukuk structures because it has been in practice long before the advent of Islam. It is based on profit-and-sharing system where two or more parties come together and form a relationship under a contract to share profits and losses arising from a joint enterprise or venture. Unlike mudaraba, all partners invest in musharaka; however, partners do not have to contribute the same amount. Profits are distributed in a mutually agreed proportion by all the partners. For Shari'a law to identify musharaka, the contract must take place with mutual consent of all partners without any fraud or misrepresentation. The share of each partner in the profit earned should also be identified at the time of the contract otherwise, the contract becomes void. All assets in the venture are jointly owned in proportion to the capital of each partner. All partners must contribute their capital in terms of money or assets at an agreed valuation.

Ideally, all partners take part in management actively. However, if one or more partners choose to become silent partners, the ratio of to share profit with them cannot exceed the ratio of their capital investment in the venture. Giving a lump sum amount to any of the partners is not allowed. A management fee, however, can be paid to the managing partners. Even though the profit is based on the agreement of the parties and not in proportion to the capital invested by each partner, but loss is always subject to the ratio of investment. Therefore, if a partner has invested 40% of the capital, he must suffer 40% of the loss, not more, not less, and any condition to the contrary shall render the contract invalid. There is a complete consensus of

jurists on this principle. Figure 2 shows the transaction structure of sukuk al musharaka (Shaukat).



Figure 2. Structure of Sukuk Al Musharaka

The musharaka (partnership) is between the two parties, the corporate and the SPV in which they concur to enter into a profit sharing arrangement for a fixed period of time at an agreed upon profit ratio. Corporate contributes the asset and the SPV contributes cash which is derived from the sale of musharaka sukuk to the investors. The corporate develops the asset (land) with the cash injected and sells or leases the developed asset on behalf of the musharaka. In return, the corporate gets a fixed fee plus a variable incentive fee. Profits are distributed to the sukuk holders. The corporate irrevocably undertakes to purchase periodically at a pre-agreed price the shares of the SPV such that at the end of the fixed period, the SPV would have no shares in the musharaka.

MUDARABA

Mudaraba is a kind of passive investment, where an investor provides the capital and receives a return but takes no further part in the project (Gafoor). The investment comes from "Rabb-ul-Maal" (investor) while the management and work is done by the "mudarib" (working partner). Rabb-ul-Maal, however, has authority to oversee the mudarib's activities and work with him upon his consent (Usmani). For validity of mudaraba, the parties involved must decide on profit-sharing ratio otherwise profits are shared equally. Apart from the agreed proportion of the profit, the mudarib cannot claim any periodical salary or a fee or remuneration for the work done for the mudaraba. Before sharing profits, the rabb-ul-maal firsts gets the entire investment amount back. The remainder, if available, is distributed between rabb-ul-maal and mudarib according to the agreed ratio. In case of a loss, rabb-ul-maal bears all the loss of investment while mudarib loses his time and effort in the investment. Mudaraba can be terminated any time by either of the two parties by giving notice (Usmani). If mudaraba was for a particular term, it will terminate at the end of the term. If all assets of the mudaraba are in cash form at the time of termination, and some profit has been earned on the principal amount, it shall be distributed between the parties according to the agreed ratio (Usmani). If the assets of mudaraba are not in cash form, they will be sold and liquidated so that the actual profit may be determined (Usmani). The sukuk structure of al mudaraba is shown in Figure 3 (Shaukat).



Figure 3. Structure of Sukuk Al Mudaraba

The mudaraba structure is an agreement between two parties, the mudareb and the project owner with the help of the SPV who issues sukuk to raise funds. The mudarib collects regular profit payments and final capital proceeds from the project activity for onward distribution to investors. Upon completion of the project, the mudarib hands over the finished project to the owner (Shaukat). The table below compares the three tradable sukuk structures highlighting the main features that characterize each.

	Musharaka	Mudaraba	Ijara
Investment	Comes from all parties	Sole responsibility of Rabb-ul-Maal	Lessor invests on behalf of lessee
Management	All partners participate	Mudarib participates; Rabb-ul-Maal has no right	Lessee manages the property or asset while on contract
Liability	Unlimited liability of partners	Rabb-ul-Maal liable to the extent of his investment; Mudarib losses his effort	Lessee bears liability during contract for damages
Capital Appreciation	All partners can benefit from profit gained through appreciation in value of investment	An appreciation of the investment goes to Rabb-ul-Maal	Lessor receives rent payments until the title is transferred to lessee

RISK AND PROFILE OF SUKUK STRUCTURES

When profiling sukuk models we need to consider the different risks that are incorporated in their structure. These risks include both a systemic market risk component and an idiosyncratic risk component that is specific to Islamic financing. The systemic market risk includes elements such as: interest rate risk, foreign exchange risk, equity price risk and commodity price risk. Systemic risk measurement and its mitigation techniques are extensively documented in the literature. The idiosyncratic risk includes factors such as: credit risk, Shari'a compliance risk, operational risk and institutional risk (Heffernan, 2003).

Interest rate risk or rate of return risk, for sukuk that offer fixed rates are the same as that of fixed rate bonds. If market rates rise above the coupon value, then the price of fixed income sukuk value would fall. Currency risk or exposure to foreign exchange rate risk varies directly with time. Short term sukuk that are more liquid will have a lower currency risk than those that are longer term. Price risk is associated with the price of the underlying assets in relation to market prices. Ijara sukuk are most exposed to this type of risk as the underlying assets may

depreciate faster than market prices. Maintenance as well as liquidity of assets needs to be factored the valuation process.

Of the idiosyncratic risks of sukuk is credit risk. Credit or counterparty risk refers to exposure resulting from default or delay in settlements. In the case of sukuk it stems from having one of the contractual parties not adhere to the contractual terms agreement. Because of their unique characteristics, sukuk do not have access to hedging instruments to cover such exposure. Credit risk for both fixed rate ijara and musharaka can be serious (Khan and Ahmed, 2001).

Shari'a compliance risk relates to failure to conform to Islamic principles. Shari'a interpretations are open to debate and discussion as they depend on the school of thought to which they belong. The lack of consensus on what constitutes compliance, together with the need to preserve competitiveness, represents a risk that adversely affects the valuation process. As the sukuk market grows, pressure mounts, and finding Shari'a compliant investments becomes a more challenging task. To reduce this risk, a supervisory board needs to be established to ensure that standards, regulations and rules are consistent so that Islamic finance can grow from its infancy to maturity stage (Bose and McGee, 2008). The responsibilities of this supervisory board would be to ensure Shari'a compliance, provide prudential supervision, safeguard the interests of investors and stakeholders, and to instill confidence of the system (Sole, 2007).

Operational risks include default risk, coupon payment risk, asset redemption risk, SPV specific risks and investor specific risks. With mudaraba and musharaka, operational risk takes the form of bankruptcy due to unprofessional management (Shafi and Redzuan). Institutional risks are derived from the weak financial infrastructure in which sukuk are issued and traded. Malaysia with (65%), UAE (10%), Saudi Arabia (7%) of the total global sukuk issuances, have rigid financial markets that translate to increased risk levels. In these emerging markets salient key element are lacking amongst which are (Tariq, 2004):

- Lack of hedging instruments
- Lack of uniform regulatory standards
- Weak legal frameworks to settle disputes and default
- Non-uniform accounting and auditing systems
- Non-robust investment appraisal
- Lack of any type of insurance coverage

Because sukuk structures are characterized by additional risks, they must be competitively priced. If they are to measure up against bonds and other tradable securities, sukuk must reward investors for the additional risks they undertake and provide them with assurances that safeguard against those elements that are Shari'a specific.

MODEL DESIGN

Sukuk differ from bonds in a number of ways. First, they represent partial ownership of an asset in the case of ijara, or a business in the case of musharaka. Second, unlike bonds, sukuk offer investors a variable rather than a fixed rate of return. Third, sukuk issuance is heavily concentrated in S.E. Asia or the Middle East where financial markets are not as developed.

To determine the fair market value of ijara sukkuk, the most common type of sukuk, this paper presents a pricing model that relies on extending the NPV valuation model to include to the specific idiosyncratic risks to the systemic risks. The idiosyncratic risks associated with Ijara are credit risk, operational risk and shari'a compliance risk.

Credit Risk (Probability of Default)

Credit risk is the risk that lessee will default and not pay the lease payments. Several factors like expected loss rate, expected probability of default, and bank's expected credit exposure need to be considered, while determining the expected amount received by sukuk holders in the case of a default in the contract. Let $V_{default}$ be the present value of lease receipts in the case of default. $V_{default}$ will be the summation of factors that affect rental receipts in each lease term.

$$V_{default} = \sum_{t=1}^{N} \frac{LR_t \cdot (1 - Q_t) \cdot LEE_t \cdot L_t}{(1 + r_{default})^t}$$

where,

LR_t is the expected loss rate,

Q_t is the probability of no default (survival probability),

LEE_t is the bank's expected credit exposure (often termed the loan equivalent exposure),

 L_t is the lease receipts in each term t,

r_{default} is the interest rate,

and N is the length of the contract.

Operational Risk

Operational risk stems from the uncertainty associated with the business operations which in turn can affect the lease receipts of the investor.

$$V_{\text{operational}} = \sum_{t=1}^{N} \frac{L_t \cdot (1 - Q_t)}{(1 + r_{operational})^t}$$

where,

 L_t is the lease receipts in each term t,

Q_t is the probability of no default (survival probability),

r_{operational} is the interest rate,

and N is the length of the contract.

Shari'a Compliance Risk

Shari'a compliance risk is the possibility that a financial service or product is not or will not be compliant to the Shari'a principles. Recognizing and mitigating Shari'a risk is not different from managing market risk, credit risk, liquidity risk and operational risk. Shari'a supervisory boards (SSBs) certify sukuk instruments with a fatwa and play a vital role in managing such risk (Khnifer). According to the Shari'a rules, if a financial instrument is not compliant then the sukuk contract ends. Therefore, the risk is a factorization by 0 or 1 where the risk is 0, if the sukuk is shari'a compliant, or 1, if otherwise.

Net Present Value (NPV) analysis

The Net Present Value (NPV) formulation designed for ijara sukuk has two legs: the first is the discounted cash inflows and the second is the idiosyncratic risk valuation characteristic of the instrument. The stream of cash inflows is derived from two sources, the first is the lease income L_t , which for ijara is variable and the second is the residual value of the asset **R** ,which is a function of the lease type. The discount rate used in the pricing formulation for the cash inflows is the Islamic Interbank Benchmark Rate IIBR or **r*** which offers a reliable alternative for pricing Islamic instruments. IIBR is designed to provide an objective indicator for the average expected rate of return of Shari'a –compliant short-term interbank funding. The second leg of the NPV valuation is the idiosyncratic risk which has three components, each of which is discounted by a rate appropriate to its riskiness level.

$$NPV = \sum_{t=1}^{N} \frac{L_t}{(1+r^*)^t} + \frac{R_N}{(1+r^*)^N} - \sum_{t=1}^{N} \frac{LR_t \cdot (1-Q_t) \cdot LEE_t \cdot L_t}{(1+r_{default})^t}$$
$$\sum_{t=1}^{N} \frac{L_t \cdot (1-Q_t)}{(1+r_{operational})^t}$$

There are four parts in the above equation, which are:

- The periodic discounted lease receipts L_t which the investor receives
- The discounted residual value R_N at the end of the contract period

- Present value of lease receipt decrement due to credit risk
- Present value of lease receipt decrement due to operational risk

The discount rates used in the pricing formulation for the idiosyncratic risk components vary depending on their level of risk. Alternatively, if a single rate is used, then the Islamic Interbank Benchmark Rate IIBR or r* should replace the variable rates as it offers the most reliable alternative for pricing Islamic instruments.

CONCLUSION

Fundamental to effective risk management is appropriate risk identification, measurement and disclosure. This holds true for both conventional and Islamic financial instruments. In this paper we have identified the most common forms of risk components in Islamic financial instruments and have attempted to design a simple model that factors the relevant risk factors for Ijara sukuk. Much work is still needed in this area of study if accuracy is to be improved. The disclosure of these findings need to be made transparent and information rendered accessible at different levels to the alternate entities .

Sukuk investors expect to have access to consumer friendly information regarding the riskreturn mix they face. In order to do so, financial reporting and disclosures have to be accurately measured through extensive data compilation followed be the implementation of modern risk assessment techniques. Such steps will insure proper pricing of Islamic instruments that will allow investors to manage and control the various types of risks. Given the special nature of Islamic finance, transparency and adherence to accounting standards are key to surrvival in the global market. Such steps can garner sukuk investors the benefits of Islamic finance with conventional capital market instruments. A list of factors that would enhance the global expansion of sukuk includes:

- Expansion, innovation and exploitation of advances in information technology
- Developing a broader range of financial instruments that are Shari'a compliant risk mitigating instruments
- Developing Islamic derivatives market for hedging purposes will support secondary market activities
- Accessing a wider range of delivery channels that would enhance operational efficiency
- Strengthening linkages both within and between different geographic regions

The foundations of Islamic financial markets have been established. In moving forward however, reform, innovation and talent should be geared towards sustaining the current momentum and safeguarding against contagion that would make sukuk a new name in the lexicon of toxic assets.

Appendix A











ENDNOTES

¹ Sukuk is the plural form of the noun, Sak is singular

 2 The distinction between gharar and decision under uncertainty is that whereas gharar is a zero sum game, decision under uncertainty can generate a win-win outcome.

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