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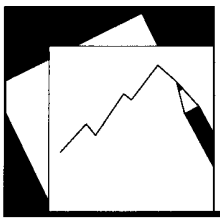

IMF Working Paper

The Economics of Islamic Finance and Securitization

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Abstract

Islamic lending transactions are governed by the precepts of the shariah, which bans interest and stipulates that income must be derived as return from entrepreneurial investment. Since Islamic finance is predicated on asset backing and specific credit participation in identified business risk, structuring shariah-compliant securitization seems straightforward. This paper explains the fundamental legal principles of Islamic finance, which includes the presentation of a valuation model that helps distil the essential economic characteristics of shariah-compliant synthetication of conventional finance. In addition to a brief review of the current state of market development, the examination of pertinent legal and economic implications of shariah compliance on the configuration of securitization transactions informs a discussion of the most salient benefits and drawbacks of Islamic securitization.

JEL Classification Numbers:

Keywords: securitization, ABS, MBS, structured finance, Islamic banking, Islamic finance, Islamic securitization, sovereign securitization, shariah compliance, sukuk, mudharaba, ijara, murabaha.

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I. INTRODUCTION

Financial globalization facilitates greater diversification of investment and enables risk to be transferred across national financial systems. Amid a compressed spread environment caused by the shortage of investment assets and abundant global liquidity, low risk premier have encouraged investors to seek higher yields from alternative investments. Securitization plays a special role in this context, as more institutional money is dedicated to emerging markets with underdeveloped local fixed-income markets. However, only very few structured credit transactions have been executed in countries where the compatibility of capital markets with Islamic law has required the development of *shariah*-compliant structures. Islamic finance is governed by the shariah, which bans interest and speculation, and stipulates that income must be derived as profits from shared business risk rather than guaranteed return.

Notwithstanding these religious constraints, Islamic finance can synthesize close equivalents to equity, mortgages, and derivatives known in conventional finance. To this end, it relies on structural arrangements of asset transfer between borrowers and lenders to emulate traditional interest-bearing financial contracts. Since lending transactions under Islamic law are based on the concept of asset backing and specific credit participation in identified business risk, it also appears relatively straightforward to structure a shariah-compliant *asset-backed securitization* (ABS) that delivers a risk-return profile similar to a conventional structures. However, conventional securitization was developed in non-Islamic economies and invariably involves interest-bearing debt.

Essentially, asset securitization represents a cost-efficient and flexible structured finance[1] technique of liquidity transformation and risk transfer, which converts present or future asset claims of varying maturity and quality into tradable debt securities. The various methods of securitization have much to offer, but so far they have found only limited acceptance in Islamic finance due to religious restrictions on the sale and purchase of interest-bearing debt and legal uncertainty surrounding the enforceability of investor interest under Islamic jurisprudence. Over the last five years, the nascent Islamic securitization market has seen many positive developments owing to the adoption of enabling capital market regulations, a favorable macroeconomic environment, and financial innovation aimed at establishing shariah compliance. The most popular ABS structures within Islamic finance are commonly referred to as *sukuk* bonds backed by either one of the three basic forms of Islamic finance (synthetic loans, sale-leasebacks, or profit-sharing arrangements). Sukuks operate similarly to mortgage pass-throughs except investors own a portion of the underlying assets, which collateralize debtor repayments.

The next section of this paper explains the fundamental legal principles and economic tenets of Islamic finance, which also includes the presentation of a valuation model that helps identify the constituent components of Islamic lending arrangements. The third section defines Islamic securitization and briefly reviews the current state of market development. The fourth section

[1] "Structured finance encompasses all advanced private and public financial arrangements that serve to efficiently refinance and hedge any profitable economic activity beyond the scope of conventional forms of on-balance sheet securities (debt, bonds, and equity) at lower capital cost and agency costs from market impediments on liquidity. In particular, most structured investments (i) combine traditional asset classes with contingent claims, such as risk transfer derivatives and/or derivative claims on commodities, currencies or receivables from other reference assets, or (ii) replicate traditional asset classes through synthetication or new financial instruments" (Jobst, 2006d).

informs a coherent discussion of the benefits and drawbacks of asset securitization under Islamic law. The last section concludes the paper by providing an outlook of future developments in Islamic finance.

II. DEFINITION OF ISLAMIC FINANCE

A. The Main Types of Islamic Finance

Islamic finance is limited to financial relationships involving entrepreneurial investment subject to the moral prohibition of (i) interest earnings or usury *(riba)* and money lending, (ii) *haram* (sinful activity),[2] such as direct or indirect association with lines of business involving alcohol, pork products, firearms, tobacco, and adult entertainment, (iii) speculation, betting, and gambling *(maisir*), including the speculative trade or exchange of money for debt *without* an underlying asset transfer, (iv) the trading of the same object between buyer and seller *(bay' al inah)*, as well as (v) preventable uncertainty *(gharar)* such as all financial derivative instruments, forwarding contracts, and future agreements. These distinctive properties derive from two religious sources predicated on the creation of an equitable system of distributive justice and the promotion of permitted activities *(halal)* and public goods *(maslaha)*: (i) the *shariah'ah* (or *shariah*) which comprises the *qur'an* (literally, "the way") and the sayings and actions of the prophet *Mohammed* recorded in a collection of books know as the *sahih hadith*,[3] and (ii) the *figh*, which represents Islamic jurisprudence based on a body of laws deducted from the shariah by Islamic scholars.

As opposed to conventional finance, where interest represents the contractible cost for funds tied to the amount of principal over a pre-specified lending period, the central tenet of the Islamic financial system is the prohibition of riba, whose literal meaning "an excess" is interpreted as any unjustifiable increase of capital whether through loans or sales. The general consensus among Islamic scholars is that riba covers not only usury but also the charging of interest and any positive, fixed, predetermined rate of return that are guaranteed regardless of the performance of an investment (Iqbal and Tsubota, 2006; Iqbal and Mirakhor, 2006; Iqbal and Llewellyn, 2000). Since only interest-free forms of finance are considered permissible in Islamic finance, financial relationships between financiers and borrowers are governed by shared business risk (and returns) from investment in lawful activities *(halal)*. Islamic law does not object to payment for the use of an asset, and the earning of profits or returns from assets is indeed encouraged as long as both lender and borrower share the investment risk together. Profits must not be guaranteed based on assumption and can only accrue if the investment itself yields income. Any financial transaction under Islamic law assigns to investors clearly identifiable rights and obligations for which they are entitled to receive commensurate return.[4] Hence, Islamic finance literally "outlaws" capital-based investment gains *without*

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[2]Other, less relevant sinful activity under Islamic law in this context include hoarding, miserliness and extravagance.

[3] In some countries the *shariah* touches almost every aspect of life including social policy, banking, commercial and economic relationships, while in others its primary influence lies in aspects of social policy, such as family law, with commercial codes governing business and contractual matters.

[4] While the elimination of interest is fundamental to Islamic finance, *shariah*-compliant investment behavior also aims to eliminate exploitation pursuant to Islamic law.

entrepreneurial risk. In light of these moral impediments to "passive" investment and secured interest as form of compensation, shariah-compliant lending in Islamic finance requires the replication of interest-bearing, conventional finance via more complex structural arrangements of contingent claims (Mirakhor and Iqbal, 1988).

The permissibility of risky capital investment without explicit interest earning has spawned several finance techniques under Islamic law. We distinguish among three basic forms of Islamic financing methods for both investment and trade finance: (i) synthetic loans *(debt-based)* through a sale-repurchase agreement or back-to-back sale of borrower or third party-held assets, (ii) lease contracts *(asset-based)* through a sale-leaseback agreement (operating lease) or the lease of third-party acquired assets with purchase obligation components (financing lease), and (iii) profit-sharing contracts *(equity-based)* of future assets. As opposed to equity-based contracts, both debt- and asset-based contracts are initiated by a temporary transfer of existing assets from the borrower to the lender or the acquisition of third-party assets by the lender on behalf of the borrower.[5]

Islamic "loans" create borrower indebtedness from the purchase and resale contract of an (existing or future) asset in lieu of interest payments. The most prominent form of such a "debt-based" structural arrangement is the *murabaha (or murabahah)* ("cost-plus sale") contract. Interest payments are implicit in an installment sale with instantaneous (or deferred) title transfer for the promised payment of an agreed sales price in the future. The purchase price of the underlying asset effectively limits the degree of debt creation. A *murabaha* contract either involves (i) the sale-repurchase agreement of a borrower-held asset ("negative short sale") or (ii) the lender's purchase of a tangible asset from a third party on behalf of the borrower ("back-to-back sale"). The resale price is based on original cost (i.e., purchase price) plus a pre-specified profit markup imposed by the lender so that the borrower's repurchase of the asset amounts to a "loss-generating contract." Different installment rates and repayment and asset-delivery schedules create variations to the standard *murabaha* cost-plus sale. The most prominent examples are *salam* (deferred delivery sale), *bai bithaman ajil* (BBA) (deferred payment sale), *istina* (or *istisna, istisna'a*) (purchase order), *quard al-hasan* (benevolent loan), and *musawama* (negotiable sale). As opposed to the concurrent purchase and delivery of an asset in *murabaha*, asset purchases under a *salam*[6] or a *bai bithaman ajil*[7] contract allow deferred delivery or payment of *existing* assets. *Salam* closely synthesizes a conventional futures contract and is sometimes also considered an independent asset class outside the asset spectrum of *murabaha* (Batchvarov and Gakwaya, 2006). An *istina* contract provides pre-delivery (project) finance for *future* assets, such as long-term projects, which the borrower promises to complete over the term of the lending agreement according to contractual specifications. A *quard al-*

[5] In a debt-based *synthetic loan*, the borrower repurchases the assets from the lender at a higher price than the original sales price, whereas borrowers under a *lease-back agreement* repurchase the assets at the same price at the end of the transaction and pay quasi-interest in the form of leasing fees for the duration of the loan.

[6] *Salam* contracts are mostly used in agricultural finance.

[7] A *bai bithaman ajil* (BBA) contract is primarily used for long-term financing and does not require the lender to disclose the profit margin.

hasan signifies an interest-free loan contract that is usually collateralized. Finally, a *muswama* contract represents a negotiable sale, where the profit margin is hidden from the buyer.[8]

Analogous to conventional operating and finance leases, *al-ijarah* leasing notes[9] ("asset-based") provide credit in return for rental payments[10] over the term of the temporary use of an (existing) asset, conditional on the future re-purchase of the assets by the borrower.[11] The lease cash flow is the primary component of debt service. The lessor (i.e., financier) acquires the asset either from the borrower[12] (*operating lease* or "sale-leaseback"/"lease-buyback") or a third party at the request of the borrower (*financing lease* or "lease-purchase") and leases it to the borrower (or a third party) for an agreed sum of rental payable in installments according to an agreed schedule. The legal title of the asset remains with the financier for the duration of the transaction. The financier bears all the costs associated with the ownership of the asset, whereas the costs from the use of the asset have to be defrayed by the lessee.[13, 14] If the *ijarah* transaction is a financing lease *(ijarah wa iqtina)*, such as an *Islamic mortgage*, the repayment through lease payments might also include a portion of the agreed resale price (in the form of a call option premium), which allows borrowers to gradually acquire total equity ownership for a pre-determined sales price.[15] If the lessee does not exercise the call option at maturity, the lender disposes of it in order to realize the salvage value (put option).[16] In an operating lease with a repurchase

[8] This form of *murabaha* is only permitted for merchant banks, as in the case of *Kuwait Finance House*'s in-house car dealership.

[9] An *ijarah* lease fulfills the functions of either a finance or operating lease. It is increasingly used in aircraft finance by lessees in Islamic countries and in operating lease-back transactions, which combine conventional lending with Islamic investment. Note that Islamic scholars make no distinction between operating and financial leases as to the classification of profits from the use of assets against the prohibition of interest.

[10] However, rental payments and their adjustment to changing market conditions (for floating-rate financed assets) cannot be expressed by reference to an interest rate. Lessors pass down the risk of rate fluctuations by subjecting the rental payable to adjustments by reference to provisions in other documents (e.g., an adjustment letter linking rentals to LIBOR) or by cross-reference to another non-Islamic lease signed at the same time and the same rentals.

[11] Besides the option to (re)purchase the asset, the lessee can be given the right to sublet the asset. Moreover, the terms of the lease must be clearly identified, and the lease needs to be renewed for every rental payment if the rent is linked to LIBOR or some other market interest rate.

[12] If the underlying assets were originally held by the borrower, this arrangement represents a lease-back agreement over the term of the financing agreement to the borrower, who has the option to acquire the equipment after the lease expires.

[13] Possible ways of ijarah-compliant relief of the responsibility for the maintenance and insurance of leased assets by the lessor are: (i) the lessor agrees to perform insurance and maintenance, and to an increase of rental payments to recover insurance premium and appointment of lessee or third party as agent to acquire the insurance in return for a fee commensurate to the insurance mark-up; or (ii) the lessor appoints the lessee or third party to discharge these duties for a fee. The degree of transfer of maintenance responsibility is reflected in the lease payments.

[14] Also note that in a headlease-sublease *ijara* transaction the legal title remains with the borrower, who leases the assets to the lender. This form of asset retention implies similar counterparty risk as with some types of debt-based Islamic finance (see below) unless the borrower enters into a guarantee agreement to repay the exercise price of the transferred asset on a dissolution event.

[15] This structural feature has been applied especially in Islamic mortgage deals in the U.S.

obligation, the asset is returned to the borrower for the original sale price or the negotiated market price[17] unless otherwise agreed.[18] In this case, the lender's put option represents a repurchase obligation[19] by the borrower (at the current value of outstanding payments), which is triggered upon certain conditions, such as delinquent payments or outright default.

In Islamic *profit-sharing contracts* (equity-based), lenders (i.e., investors) and borrowers (i.e., entrepreneurs) agree to share any gains of profitable projects based on the degree of funding or ownership of the asset by each party. In a trustee-type *mudharaba (or mudarabah)* financing contract, the financier *(rab ul maal)* provides all capital to fund an investment, which is exclusively managed by the entrepreneur *(mudarib)* in accordance with agreed business objectives. The borrower shares equity ownership with the financier (i.e., a call option on the reference assets) and might promise to buy-out the investor after completion of the project. At the end of the financing period, the entrepreneur repays the original amount of borrowed funds only if the investment was sufficiently profitable. Profits are distributed according to a pre-agreed rate between the two parties. Investors are not entitled to a guaranteed payment and bear all losses unless they have occurred due to misconduct, negligence, or violation of the conditions mutually agreed by both financier and entrepreneur.[20] The equity participation and loss sharing in a *musharaka* (or *musharakah/musyarakah*) contract is similar to a joint venture, where both lender/investor and borrower (or asset manager/agent) jointly contribute funds to an existing *or* future project, either in form of capital or in kind, and ownership is shared according to each party's financial contribution. Although profit sharing is similar to a *mudharaba* contract, losses are generally borne according to equity participation**.**

Overall, the different basic types of Islamic finance combine two or more contingent claims to replicate the risk-return trade-off of conventional lending contracts or equity investment *without* contractual guarantees of investment return or secured payments in reference to an interest rate as time-dependent cost of funds. Such arrangements may become complicated in practice, once they are combined to meet specific investor requirements under Islamic law (El-Qorchi, 2005). Although both Islamic and conventional finance are *in substance equivalent to conventional finance* and yield the same lender and investor pay-offs at the inception of the transaction, they differ in *legal form* and might require a different valuation due to dissimilar transaction structures (and associated legal enforceability of investor claims) and/or security design (Jobst, 2006d). Most importantly, *Islamic finance substitutes a temporary use of assets by the lender for a permanent* transfer *of funds to the borrower as a source of indebtedness in conventional lending*. Retained asset ownership by the lender under this arrangement constitutes entrepreneurial investment. The financier receives returns from the *direct participation in asset*

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[16] In Figure 1, the temporary retention of asset ownership by lender in a lease contract represents a put option with a strike price on the present value of transferred assets.

[17] In contrast, debt-based contracts require a higher re-purchase price, which includes quasi-interest payments.

[18] The temporary transfer of stock ownership from borrower to lender pursuant to a repurchase agreement within a lease contract implies full collateralization if its value at the time of transfer equals the present value of the borrowed amount repayable at some future date. The lower the present value of the reference asset being funded by the contract, the lower the degree of collateralization.

[19] The repurchase obligation insulates the lender from the performance of the underlying asset.

[20] This equity-based arrangement implies a non-recourse debt feature (see Figure 1).

performance in the form of state-contingent payments according to an agreed schedule and amount.[21]

B. Islamic Finance and Put-Call Parity

The specific lending arrangements of Islamic finance replicate interest income of conventional lending transactions in a religiously acceptable manner. The concept of *put-call parity*[22] shows that the three main types of Islamic finance represent different forms to re-characterize interest-based rate of return and are only distinct as to the attribution of economic benefits from the (temporary) use of an existing or future asset (see Figure 1).

In *asset-based* Islamic finance for investment or trade, the borrower leases from the lender one or more assets A valued at S, which the lender has previously acquired from either the borrower or a third party. The lender writes a call option $C(E)$ with strike price E to the borrower to acquire the asset after time T, subject to the promise (put option) of full payment E of the current asset price plus an agreed premium in the form of rental payments over the investment period, which amounts to a present value of $PV(E)$ of risky debt at maturity. If the lender has full recourse (i.e., by retaining ownership until the borrower can exercise the right to acquire the asset at maturity T by virtue of $C(E)$), the put option has the same strike price E, which ensures that the borrower's default entitles the lender to sell the asset to compensate for the financial shortfall. This arrangement amounts a *secured* loan with *fully collateralized* principal, equivalent to the current purchase price of the desired asset at inception. According to put-call parity, the lender's position at maturity is

$$L_1 = S - C(E) + P(E) = PV(E) \tag{1}$$

in present value terms,[23] which equals the present value of the principal amount and interest of a conventional loan (see Figure 1). In a more realistic depiction, the combination of a held put and a written call option on the same strike price is not a simple forward contract on the underlying asset over time period T, but represents a *series of individual forward contracts* on asset value S over a sequence of rental payment dates t. Hence, the discrete form *ex ante* pay off L_1 of the lender at maturity T would be

[21] The underlying asset transfer of Islamic lending arrangements provides collateralization until the lender relinquishes ownership at the maturity date. In equity-based Islamic investments, lenders do not have any recourse unless pre-mature termination enables the lender to recover some investment funds from the salvage value of project assets.

[22] The relationship between the put and call values of a European option on a non-dividend paying stock of a traded firm can be expressed as $PV(E)+C=S+P$. $PV(E)$ denotes the present value of a risky debt with a face value equal to exercise price E, which is continuously discounted by $exp(-rT)$ at an interest rate r over T number of years. In our case of a lending transaction, the share price S represents the asset value of the funded investment available for the repayment at future value E.

[23] The lease payments received from the borrower wash out in this representation.

$$L_1' = S_T - \left(\frac{\sum_{t=1}^{T-1} C_{t,t+1}(E) - \sum_{t=1}^{T-1} P_{t,t+1}(E)}{\prod_{t=1}^{T} \left[\left(1+r_f\right)\left(1+\lambda\right) \right]^t} \right) = \underbrace{E\left[\left(1+r_f\right)\left(1+\lambda\right) \right]^{-T}}_{PV(E)}, \qquad (2)$$

where r_f and λ denote the risk-free interest rate analog and the market price of risk (for the "physical probability of default") implicit in the pre-specified repayment amount of the lending transaction. The call option is extendible periodically, as the borrower renews the option to eventually acquire (or buy back) the asset by making all required rental payments. The borrower pays a periodic premium for the lender's short position (i.e., the written call option $-C_{t,t+1}(E)$) on the underlying asset until final repayment at maturity. At the same time, asset ownership of *S* implies a periodic put option $+P_{t,t+1}(E)$, which offers lenders full recourse on collateralized repayment. Lenders can sell the asset at each rental due date *t* if the premium payment is delinquent or force the borrower to (re)purchase the asset at final maturity *T* if the fair market price drops below the pre-specified repayment price *E*,[24] and investors exercise their put option to enforce the (re)purchase of leased assets. Hence, the payments from the contingent claim of borrowers to (re)purchase the asset offers lenders full recourse from a collateralized repayment claim. Borrowers regain asset control only after full repayment.[25] Note that the strike price *E* of both options is *time-invariant*, because full asset ownership (total equity interest) remains with the lender throughout the lending period until maturity.[26]

Overall, the put-call arrangement of *asset-based Islamic lending implies a series of cash-neutral, risk-free hedges of credit exposure*. However, poor transparency of the actual asset value in long-dated contracts could make the time value of the put option appear greater than its intrinsic value, which would debilitate the timely execution of the put option and efficient investor recourse.[27] Long-term lending with limited information disclosure would require a high repayment frequency with the possible inclusion of principal under these circumstances. This

[24] If the lender was not endowed, the repayment of the asset received from a third-party reduces the *ex ante* lender payoff L_1 by the present value of purchase price *PV(F)* (see Figure 1).

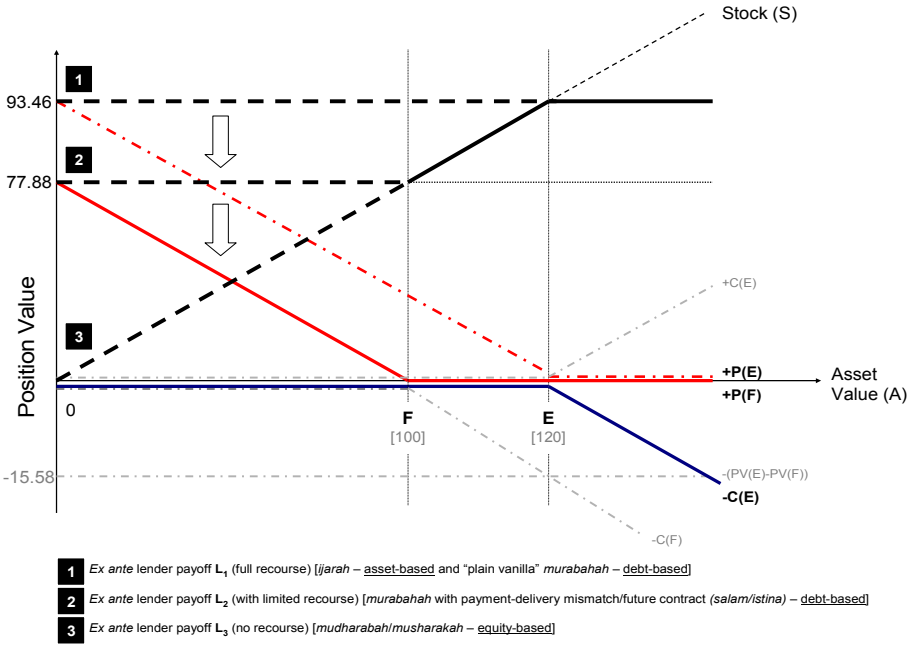
[25] In conventional corporate finance, borrowers (i.e. managers) would pay debt holders a spread over the risk-free return (implied in the coupon yield) as put option premium for their limited liability in the event of default, which results in the payoff *PV(E)-P(E)*. As opposed to holders of risky corporate debt, Islamic creditors are "debtors-in-possession", whose long put position *+P(E)* on the firm value is equivalent to the limited liability of corporate shareholders.

[26] This assumption about the strike price contrasts with asset-based Islamic contracts that function as financing leases, where the borrower gradually acquires complete equity interest over the duration of the transaction in the course of making the rental payments (see below).

[27] Like in corporate finance, the value of the long put option held by Islamic investors is the greater of (i) the intrinsic value, i.e., the price difference between the strike price and the asset value in present value terms, and (ii) the time value (to a specified maturity date). The higher the asset volatility and/or the greater the decline of asset value, the greater the likelihood that the intrinsic value is positive and debt holders take over the firm (in corporate finance) or enforce the (re)purchase obligation of the borrower (in Islamic asset-based finance) by exercising the option at maturity (or prematurely if they hold an American option). However, investors are dissuaded from a timely execution of the put option if the combination of low asset volatility, low seasoning and poor information about the actual asset value make the time value of the option appear greater than its intrinsic value.

consideration is acutely relevant to asset-based Islamic finance, where the underlying asset remains within the possession of the borrower for the duration of the lease contract.

Figure 1. The pay-off profile under put-call parity of the three basic forms of Islamic finance (asset, debt, and equity-based). We assume a risk-free interest rate of r=5 percent and a maturity term of five years, which results in a present value $PV(E)$=93.46 of full repayment E=120. Partial repayment F=100 due to market risk amounts to $PV(F)$=77.88. The thick line indicates the pay-off line of investors in Islamic contracts with limited recourse. For asset value S=100, the fair market price of lending contract would be 83.59, which implies an (implicit) annual interest rate of 7.5 percent according to our OPT-based valuation model above.



In *debt-based* Islamic finance, borrower indebtedness from a sale-repurchase agreement ("cost-plus sale") or back-to-back sale of an asset with current value PV(E) implies a premium payment to the lender for the use of funds over the investment period T and the same investor pay-off L1 as asset-based Islamic finance. However, as opposed to an asset-based arrangement, some debt-based financing with deferred payment of existing assets (salam) or pre-delivery finance for future assets (istina) are futures contracts and imply counterparty and market risks from nonperformance and/or lost recovery value due to delayed investor recourse. If we assume that these contingency risks would translate into a mismatch of strike prices F and E, premium payments in a salam contract could increase by +(C(F)-C(E)) in present value terms, while the put option value of investor recourse on some future asset in an istina contract with deferred delivery may shed -(P(F)-P(E)). Hence, in the latter case, the reduced present value of repayment (or collateralization) for the desired funding limits the e*x ante* lender payoff to

$$L_2 = S - C(F) + P(E) = PV(E) - \left(PV(E) - PV(F)\right) + C(F) - C(E) \quad . \qquad (3)$$

Finally, in profit-sharing agreements between borrowers and lenders in *equity-based* Islamic finance, the lender receives any pay-out in accordance with a pre-agreed disbursement ratio only if the investment project generates enough profits to repay the initial investment amount and the premium payment at maturity T. Since the lender bears all losses, this equity-based

arrangement precludes any recourse in the amount *+P(E)* in absence of enforceable collateral. For simplicity, we assume that an investor owns 100 percent equity and receives repayment[28] up to *PV(E)* equivalent to all profits if the borrower exercises the call option *C(E)* to buy out the investor for a total price *E* (see Figure 1). The *ex ante* lender payoff is

$$L_3 = S - C(E) = PV(E) - P(E). \tag{4}$$

Analogous to asset- and debt-based arrangements, for a series of periodic forward contracts based on the combination of a put and a call option on the same strike price, the discrete form of pay-off L_3 of *equity-based* Islamic finance at maturity *T* would be

$$\begin{aligned} L_3' &= S_T - \frac{\sum_{t=1}^{T-1} C_{t,t+1}(E)}{\prod_{t=1}^{T}\left[(1+r_f)(1+\lambda)\right]^t} \\ &= \underbrace{E\left[(1+r_f)(1+\lambda)\right]^{-T}}_{PV(E)} - \frac{\sum_{t=1}^{T-1} P_{t,t+1}(E)}{\prod_{t=1}^{T}\left[(1+r_f)(1+\lambda)\right]^t} \end{aligned}. \tag{5}$$

The lender pay-off L_3 from equity-based Islamic finance is similar to the pay-off from an asset-based financing lease, which is particularly prominent in Islamic mortgage finance. In such ("rent-to-buy") contracts, the borrowers gradually acquire all of the equity interest *S* as part of their periodic rental payments until maturity *T* while renting the portion of the asset the lender still owns. Since lenders retain a declining ownership interest until maturity, they can enforce the realization of the agreed selling price *E* if the borrower fails to make all payments on *C(E)*. In addition to generic asset-based contracts, at the end of each payment period *t*, borrowers decide to acquire more equity if they continue to make rental payments, while the lender has a long put position to enforce repayment. Therefore, the strike price *E* of a sequence of individual put-call based forward contracts declines over time as the partial equity ownership of borrowers increases until they eventually acquire the underlying asset at maturity. Hence, the discrete form *ex ante* pay off of the lender at maturity *T* would be

$$\begin{aligned} L_1'' &= S_T - \left(\frac{\sum_{t=1}^{T-1} C_{t,t+1}\left(E - t\frac{E}{T}\right) - \sum_{t=1}^{T-1} P_{t,t+1}\left(E - t\frac{E}{T}\right)}{\prod_{t=1}^{T}\left[(1+r_f)(1+\lambda)\right]^t} \right) \\ &= \underbrace{E\left[(1+r_f)(1+\lambda)\right]^{-T}}_{PV(E)} - \frac{\sum_{t=1}^{T-1} P_{t,t+1}\left(t\frac{E}{T}\right)}{\prod_{t=1}^{T}\left[(1+r_f)(1+\lambda)\right]^t}, \end{aligned} \tag{6}$$

[28] Otherwise, a lower equity share requires a higher option strike price to maintain the same equity-based pay-off of the investor.

which almost conforms to L_3 as the borrower gradually increases a long put option on asset value *S*.

C. Asset Pricing Islamic Finance

The representation of lender payoffs under put-call parity permits the identification and exact valuation of all constituent components of asset-based Islamic finance as balance sheet identities within the standard Black-Scholes-Merton (BSM) framework of capital structure-based *option pricing theory* (OPT) (Black and Scholes, 1973; Merton, 1973 and 1974). In the following section, we show how to derive the fair market price of Islamic lending transactions if the underlying collateral conforms to a lognormal asset process. In particular, this approach allows us to characterize the implicit interest rate of Islamic lending as a result of the premium payments (i.e., periodic rental payments) received by the lender in return for the call position on assets held by the borrower in Islamic finance.

According to Merton's reduced-form model, a firm's outstanding liabilities constitute a bankruptcy level ("default threshold"). Owners of corporate equity in leveraged firms hold a call option on the firm value after outstanding liabilities have been paid off. They also have the option to default if their firm's asset value ("reference asset") falls below the present value of the notional amount of outstanding debt ("strike price") owed to bondholders at maturity. So, corporate bond holders effectively write a European put option to equity owners, who hold a residual claim on the firm's asset value in non-default states of the world. Bond holders receive a put option premium in the form of a credit spread above the risk-free rate in return for holding risky corporate debt due to the limited liability of equity owners. The value of the put option is determined by the duration of debt claim, the leverage of the firm, and asset-price volatility.

The BSM approach assumes that the firm's debt consists of a zero-coupon bond *B* with a notional value *F* and a maturity term of *T* periods. The firm's outstanding liabilities constitute the bankruptcy level, whose standard normal density defines the "distance to default" relative to the firm value. This capital-structure-based evaluation of contingent claims on firm performance under the risk neutral measure implies that a firm defaults if its asset value is insufficient to meet the amount of debt owed to bondholders at maturity. Conversely, if the "distance to default" is positive, and the asset value of the firm exceeds the bankruptcy level, the call option held by equity holders on firm value has intrinsic value (in addition to its time value until the maturity of debt). The same logic can be readily applied to pricing singular Islamic finance transactions.

The BSM model assumes that market price *S* of the underlying asset evolves following the stochastic differential equation of asset price dynamics

$$dS_t / S_t = \mu_S dt + \sigma dW_t \tag{7}$$

with drift μ_S and diffusion defined by a standard *geometric Brownian motion* (GBM) $\Delta W_t \sim \varphi(0, \Delta t)$ with Wiener process $z \sim \varphi(0, \sigma)$ of instantaneous value change. After application of Ito's Lemma, the discrete form analog of equation (7) for initial value S_0 can be written as a lognormal asset process

$$\ln S_t - \ln S_0 \sim \phi\left[\ln S + \left(\mu_S - {\sigma_S}^2/2\right)t; {\sigma_S}^2\sqrt{t}\right], \tag{8}$$

where $\phi(.)$ is the standard normal density function. Equation (8) defines the physical probability distribution of the end-of-period value S_T,

$$S_T \sim S_0 \exp\left\{\left(\mu_S + {\sigma_S}^2/2\right)T + \sigma_S\sqrt{T}\tilde{\varepsilon}\right\}, \tag{9}$$

based on

$$S_t = S_0 \exp\left\{\left(\mu_S + {\sigma_S}^2/2\right)t + \sigma W_t\right\}. \tag{10}$$

Given lack of suitable market prices in Islamic finance, the asset price *S* can also be derived from a mark-to-market exercise, internal audits or some other verification process. Default occurs if the asset value *S* falls below the repayment value *E*.

Analogous to firm leverage $d = Fe^{-rT}/V$ as the ratio of the discounted face value of outstanding debt *F* and the asset value of the firm *V* in BSM, we define a default barrier as the ratio $b = E/S$ of the face value of outstanding Islamic debt *E* and the asset value *S*.[29] Hence, the expected probability of default $\Pr(S \le E) \approx \Pr(\ln S \le \ln E)$ at time *t* is defined as

$$\begin{aligned}
&\Phi\left(\left(\ln E - \left(\ln S_t - \left(\mu'_S + {\sigma_S}^2/2\right)t\right)\right)\Big/\sigma_S\sqrt{t}\right) \\
&= \Phi\left(\left(\ln b + \left(\mu'_S + {\sigma_S}^2/2\right)t\right)\Big/\sigma_S\sqrt{t}\right) \\
&\equiv \Phi(-d_1) \equiv \Phi^{-1}(d_1)
\end{aligned} \tag{11}$$

where μ'_S is the risk-free rate of interest r_f (including some market price of risk) minus the internal rate of return r ("dividend yield"), and "distance to default"

$$\begin{aligned}
d_1 &\equiv \left(\ln\left(S_t/E_t\right) + \left(\mu_S - {\sigma_S}^2/2\right)t\right)\Big/\sigma\sqrt{t} \\
&= \left(\ln(-b) + \left(\mu_S + {\sigma_S}^2/2\right)t\right)\Big/\sigma\sqrt{t}
\end{aligned} \tag{12}$$

with $\Phi(d_1) = \Pr(S > E)$ and cumulative standard normal distribution function $\Phi(.)$. If these conditions hold, the fair market value of the rental or lease payments in debt- and asset-based contracts or the periodic profit pay-out in equity-based Islamic transactions at each time period *t* is defined as call option

[29] The definition of the repayment obligation as the face value *E* of outstanding debt is assumed roughly equivalent to discounting the face value of debt after having added all coupon values in the context of the conventional finance application of BSM.

$$C(E) = S_t e^{-\mu_1 t}\Phi\left(d_1\right) - E_t e^{-\mu_2 t}\Phi\left(d_2\right), \tag{13}$$

where μ_1 and μ_2 are the internal rate of return r and the risk-free rate r_f under the risk-neutral measure respectively and $d_2 = d_1 - \sigma_S\sqrt{t}$. Since the present value *PV(E)* of repayment *E* and asset price *S* at time *t* are given, we can solve for $P\left(E\right) = PV\left(E\right) + C\left(E\right) - S_t$ under put-call-parity, and identify all components of an Islamic transaction, given

$$C\left(E\right) = \frac{PV\left(E\right) - P\left(E\right)}{\left(\Phi\left(d_1\right) - b\Phi\left(d_2\right)\right)^{-1} - 1}, \tag{14}$$

which implies the declining positive correlation of the call option value *C(E)* and Islamic debt $S_t - C\left(E\right) = PV\left(E\right) - P\left(E\right)$ as $t \to T$ (Jobst, 2006a). We finally derive the annual, continuously compounded interest rate of Islamic debt as

$$r' = \frac{E}{\sqrt[T]{S_t - C\left(E\right)}} - 1. \tag{15}$$

In our example, the issuance of a notional amount of *E*=120 of debt with a tenor *T* of five years and a continuously compounded risk-free interest rate of $r_f = 5.0\%$, so that present value *PV(E)*=93.46 and *PV(F)*=77.88 of full and partial repayment (see Figure 1). For asset value *S*, the fair market price of the Islamic lending contract would be 83.59, which implies an annual interest rate of $r' = 7.5\%$ according to our OPT-based valuation model if we assume $r = 0\%$.

III. ISLAMIC SECURITIZATION

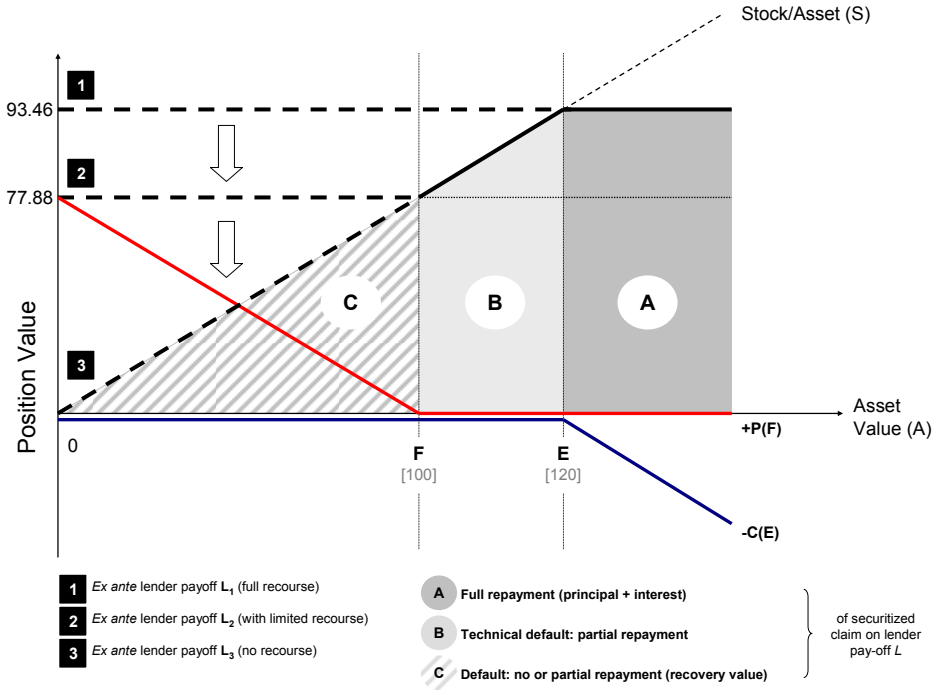
Islamic capital markets are generally underdeveloped. Religious constraints on permissible investment rule out conventional forms of interest-bearing debt finance. In the absence of tradable debt and valuation problems of financing contracts, Islamic finance has proven conceptually difficult especially for money management. Banks operating under Islamic law are predisposed to adopt buy-and-hold investment strategies and carry excess short-term reserves for lack of sufficient long-term reinvestment opportunities, which has inhibited efficient financial intermediation and capital-market deepening. Nonetheless, financial institutions have been able to develop various forms of Islamic finance instruments that are virtually identical to their conventional counterparts in substance. However, as we will explain in this paper, these securities are *not* surrogates for conventional interest-based securities that mimic the interest rate structure.

Before examining the implications of shariah compliance on conventional structured finance, it is necessary to clarify how Islamic securitization fits with the notion of Islamic finance. Since most Islamic financial products are based on the concept of asset backing, the economic concept of asset securitization is particularly amenable to the basic tenets of Islamic finance. Asset securitization describes the process and the result of issuing certificates of ownership as pledge against existing or future cash flows from a diversified pool of assets ("reference portfolio") to investors. It registers as an alternative, capital market-based refinancing mechanism to diversify

external sources of asset funding in lieu of intermediated debt finance based primarily on the risk assessment of securitized assets (Jobst, 2006b).

Islamic securitization transforms *bilateral risk sharing* between borrowers and lenders in Islamic finance into the *market-based refinancing* of one or more underlying Islamic finance transactions. In its basic concept, originators would sell existing or future revenues from lease receivables (asset-based), "sale-back profit" (debt-based) or private equity from a portfolio of Islamically acceptable assets to a *special purpose vehicle* (SPV),[30] which refinances itself by issuing unsecured securities to market investors, who are the "capital market corollary" to a singular lender in Islamic finance (see Figure 3). They assume the role of a "collective financier" whose entrepreneurial investment does not involve guaranteed, interest-based earnings.

Figure 2. The pay-off profile of asset-backed securities under the three basic forms of Islamic finance.



In keeping with our previous presentation of the three basic forms of Islamic finance above, we can illustrate the concept of Islamic securitization by simply reversing the *ex ante* lender payoff from Islamic finance transactions (Exhibits 1 and 2). Using a pass-through securitization structure on the proceeds from a dedicated reference portfolio of one or more *mudharabah* futures with deferred delivery or payment (which implies limited recourse due to market risk or other contingencies from certain payment and repurchase provisions), originators would be able to issue unsecured financial obligations with investor payoff *S+C(E)-P(F)* backed by expected

[30] In conventional securitization, a SPV is set up solely for the purpose of the securitization and might be a trust, limited liability company, partnership, or a corporation. In Islamic securitization, the objectives set out in the constitutional documents of the SPV also must not infringe on the prohibition of *riba* and *haram* under Islamic law.

repayment L_2. Investors receive full repayment of principal and a pre-specified share of profits (as investment return) if the asset performance of the underlying Islamic transaction generates proceeds in the amount of *PV(F)* or higher (indicated by area "A" in Figure 1). Whenever the issuer is unable to repay some or all of the promised return (and original investment amount), default occurs (indicated by areas "B" and "C" in Figure 1). If the originator had no endowment to finance the underlying asset(s) in the first place, expected repayment L_2 would be reduced by asset value *–S* owed to a third party as "asset supplier" over the term of the lending transaction, who holds a short position *–P(E)*. Therefore, the maximum issuance amount would be limited to *PV(E)-PV(F)*.

A. Adapting the Principles of Islamic Finance to Securitization

The implementation of Islamic securitization requires a two-stage "fundamental" verification process, which assesses the shariah compliance of (i) the *type of assets* in the underlying reference portfolio and the generation of investment returns, and (ii) the *transaction structure*, which includes the configuration of credit enhancement (and other forms of credit and liquidity support) and the form of ownership conveyance. Securitization under Islamic law bars interest income and must be structured in a way that rewards investors for their direct exposure to business risk, i.e., investors receive a share of profits commensurate to the risk they take on in lieu of pre-determined interest. All three asset types of Islamic finance are principally eligible for Islamic securitization; however, unresolved issues, including restrictions on debt trading or the management of prepayment risk could limit their indiscriminate use as collateral. Characteristics of conventional securitization only apply if they convey a sufficient element of ownership to investors as *entrepreneurial investment in real economic activity* within an interest-free structural arrangement. In addition, also administrative issues, such as underwriting standards, issue placement and the procurement of ratings, are subject to religious scrutiny. Any capital generated from securitized issuance under Islamic law is to be used exclusively used for the repayment of initial funding.

Conventional securitization, which originated in non-Islamic economies, invariably involves interest-bearing debt. Note holders would typically hold (secured) contingent claims on the performance of securitized assets, which entitle them to receive both pre-determined interest and the repayment of the principal amount. However, the issuance of interest-bearing debt securities with a secured redemption cannot be reconciled with Islamic financing principles on the prohibition of profit from debt and speculation. Financial relationships under Islamic law are not governed by interest but by shared business risk (and returns) from investment in religiously acceptable services, trade, or products, with clear and transparent rights and obligations to investors. In particular any gains from Islamic fixed-income securities are related to the purpose for which the funding is used. Such purpose under Islamic law must involve the funding or the production of real assets rather than the purchase of financial securities, which would amount to second-order financing akin to lending for derivatives (Wilson, 2004), with the subsequent gearing being speculative. Islamic securitization must confer upon investors clearly identifiable rights and obligations in securitized assets in order to ensure direct participation in the any distribution of risk and reward between lenders and borrowers with limited risk mitigation and/or indemnification through credit enhancement. Hence, from a *procedural* and *substantive* perspective, Islamic securitization would need to involve the *conversion of uncertain, business-related proceeds of direct investment in religiously-sanctioned real economic activity*.

Hence, adapting the basic principles of conventional securitization for Islamic purposes requires compliance with the following conditions: (i) there should be a *real* purpose behind raising

funds via securitization, and the type of collateral assets realizing the securitized revenues must be clearly identified (or be capable of identification) and cannot be consumed; (ii) each transaction participant should share in both the risk and return, and investor should receive positive pay-off from profitable ventures only; (iii) collateral assets must not be debt, cash or prohibited as *haram* (sinful activity) and must not be associated in any way with unethical or exploitative operations or with speculation and uncertainty *(gharar)* from non-productive investment; (iv) the structure should provide investor compensation for business risk from direct participation in securitized assets and should not imply an exchange of debt for interest-generating investment return (unless those securitized assets are interest free and sold at face value); (v) investors should hold an unconditional and unsecured payment obligation and *not* a guaranteed promissory note; (vi) a sufficient element of ownership must be conveyed to investors; (vii) the contribution from investors in the form of proceeds from issued notes (and any returns generated by the issuing agent from managing collateral assets) cannot be reinvested in short-term cash instruments or interest-bearing debt;[31] (viii) the underlying assets and securitized obligations must not be employed for speculative purposes, and turnover should be kept low; (ix) because conventional insurance violates shariah provisions, *takaful* (Islamic insurance, based on co-operation and mutual help)[32] should be employed instead; and (x) any form of credit enhancement and/or liquidity support and limitations of prepayment risk must be in a permissible form.

The conventional *pass-through* payment structure[33] (i.e., equity participation) of traditional securitization seems to be closest to the strict interpretation of Islamic principles, which require the *transfer of a minimum level of ownership* to ensure direct investor participation in the business risk associated with the performance of a dedicated collateral pool of securitized assets. If the pass-through transaction removes the securitized assets from the originator's balance sheet (off-balance sheet), ownership conveyance through *true sale* implicitly satisfies three further criteria: (i) the *exclusive dedication of cash flows* from the underlying asset to establish the linkage of ownership interest to identifiable economic activity, (ii) the *irrevocable,* but *unconditional* and *unsecured repayment* from underlying assets, and (ii) a transaction structure that *does not involve interest payment*. For instance, pay-through bonds collateralized by on-balance sheet assets, whose asset proceeds are dedicated but conveyed through interest-bearing debt, would not qualify as suitable securities under these criteria. However, shariah-compliant conveyance of legal title in pass-throughs can also be designed to represent a simple

[31] Instead, commodities could serve as religiously acceptable short-term investments.

[32] The concept of takaful is similar to mutual insurance. Customers pay a certain amount of finances into a collective pool of funds and withdraw money when a claim is made. Administrators of takaful insurance charge a shariah-compliant fee in the form of a "donation" and distribute any funds left over at the end of the year among the original contributors.

[33] An *asset-backed bond* (ABB) is a debt obligation collateralized by a reference portfolio of on-balance-sheet assets of the originator. ABBs are over-collateralized as a form of credit enhancement, i.e., the value of securitized assets exceeds the notional value of issued debt obligations. As opposed to *pass-through* transactions, the cash flows from the reference portfolio are not dedicated to investors, who have no direct ownership rights to them. Frequently, the underlying reference portfolio is reconfigured, with a residual claim held by the issuer/originator. A *pass-through* payment structure conveys direct ownership of investors in a reference portfolio of off-balance-sheet assets, which are similar in maturity and quality. The originator services the portfolio, makes the collections and passes them on, less servicing fee, to investors—without reconfiguration of the cash flows. A *pay-through bond* combines security features of both a pass-through and an ABB.

collection of ownership attributes, such as an assignment of a portion of ownership rights and obligations, which allow investors to exercise control over securitized assets, take over operations or even sell securitized assets to realize the redemption value of their investment claims. In cases of complex tax and legal issues as well as prevailing restrictions on foreign ownership of locally domiciled assets (such as in many Islamic countries), partial assignment or sale without recordation is sometimes the only possibility of implementing securitization with direct ownership rights under shariah law.[34] However, the conveyance of direct ownership through promissory notes, mortgages, or security instruments[35] to establish shariah compliance may entail legal uncertainty if shariah principles govern the transaction as a matter of form and negate the enforceability of investor interests under commercial law vis-à-vis the originator of securitized assets.

In principle, the flexible security design of conventional securitization allows issuers to devise various mechanisms of risk sharing, which includes subordination as one form of credit enhancement to improve the quality of issued securities. Issuers commonly subordinate investor claims into a three-tier transaction structure of junior, mezzanine, and senior tranches, which concentrates expected losses in a small junior tranche ("first loss position"). While capital market investors receive the mezzanine and senior tranches as subordinated debt-like notes, the issuer commonly bears most of the asset exposure and shifts most unexpected risk to larger, more senior tranches by retaining the junior tranche as a residual equity-like class to avert *ex ante* moral hazard and possible adverse selection. Alternatively, issuers (or servicers) of transactions could set aside some of the cash flow generated by securitized assets to fund a "reserve account" or "first loss pool" as a form of self-insurance. Other types of credit enhancement also involve over collateralization, spread counts, standby letters of credit to the securitization conduit (or by a sponsoring bank), pool insurance, or monoline insurance. Islamic law does not rule out the use of credit enhancement as such as long as it is optional for investors and does not change the overall character of the transaction. For instance, tranche subordination of conventional securitization can be replicated by a lease-buyback *(ijarah)* transaction under shariah law. The issuer would assign partial ownership rights of the underlying asset portfolio to investors according to the riskiness of their investment and lease back the entire portfolio in return for fixed rental payments conditional on the option (or obligation) to repurchase the reference portfolio at a pre-determined sales price at some future date. The rental payment and the repurchase price are set such that they support a fair market return for investment risk.

B. Islamic Investment Certificates *(Sukuk)*

Although the religious prohibition of the exchange of debt and the required conferral of ownership interest to participate in business risk still poses challenges to further development of Islamic securitization, the gradual acceptance of Islamic investment certificates, so-called *sukuk*

[34] Also *pay through* structures (i.e., debt-type issuance) with dedicated collateral assets that fund unsecured, interest-free obligations with direct ownership rights, such as trust-based private equity funds, would theoretically meet shariah requirements.

[35] Unlike conventional securitization, where two securities might be created from a single asset, such as principal-only and interest-only instruments from a security instrument and a promissory note respectively, conveyance of ownership interest in Islamic securitization disallows issuers to derive multiple instruments from one underlying asset in a manner that creates either a sale of debt, isolated cash flow or an indirect interest obligation (Abdi Dualeh, 1998).

bonds, represents a successful attempt to overcome these impediments based on the adequate interpretation and analogical reasoning of shariah principles applied in Islamic finance. Sukuks are shariah-compliant and tradable asset-backed, medium-term notes,[36] which have been issued internationally by governments, quasi-sovereign agencies, and corporations after their legitimization by the ruling of the *Fiqh Academy* of the *Organization of the Islamic Conference* in February of 1988.[37] Over the last five years, the sukuk has evolved as a viable form of capital-market-based Islamic structured finance, which reconciles the concept of securitization *and* principles of the shariah law on the provision and use of financial products and services in a risk-mitigation structure subject to competitive pricing (El-Qorchi, 2005). The *Accounting and Auditing Organization of Islamic Finance Institutions* (AAOIFI) currently recognizes 14 different types of sukuks, which are traded on the *Scripless Securities Trading System* (SSTS)[38] in Malaysia. Only appropriate Islamic bodies, so-called *shariah boards*, may adjudicate the shariah compliance of the terms of any sukuk issuance.

Sukuk notes convey *equity* interest to (capital market) investors in the form of a *call option* on partial or complete ownership of underlying reference assets, including the right to some calculable rate of return as a share of profit *(secondary notes)* and the repayment of the principal amount *(primary notes)*. All three broad types of Islamic finance transactions (asset, debt, and equity-based) can be reference assets of such Islamic securities. We distinguish between *two broad* structures of sukuk contracts that convey shariah-compliant asset ownership to investors: either (i) asset originators themselves issue notes backed by existing Islamic assets, or (ii) the originator sells Islamic assets (and/or the proceeds thereof) to an unaffiliated SPV, which issues notes with a put/tender feature to fund the acquisition of assets. The notes are funded by the proceeds from the underlying assets paid to the SPV as part of the repurchase obligation by the asset originator. Depending on the claim-generating asset type of Islamic finance, the SPV acquires ownership rights on either (i) *existing* assets within a lease-purchase or sale-repurchase agreement, or (ii) *future* assets as equity investor, and structures the anticipated cash flows from these assets into sukuk payment obligations of different risk and maturity. These obligations entitle investors to a *pro rata* ownership in the SPV and the proceeds generated from the net revenue of a loan, a lease or an investment project. The amount of debt issued is limited to the value of assets held by the SPV.

Most sukuk issues have been sponsored by sovereign and quasi-sovereign issuers in Islamic countries. A government-linked SPV would issue discounted and tradable zero coupon bonds with varying maturities on the back of Islamically approved assets with pre-fixed terms to maturity. However, the indemnification of investors in such transactions may not conform to the shariah prohibition of guaranteed investment income. The shariah compliance of these bonds has been contested by Islamic scholars on two grounds: (i) the discount on the issued bonds

[36] "Investment sukuk are certificates of equal value representing undivided shares in ownership of tangible assets, usufructs and services or (in the ownership of) the assets of particular projects or special investment activities." (AAOIFI Standard No. 17).

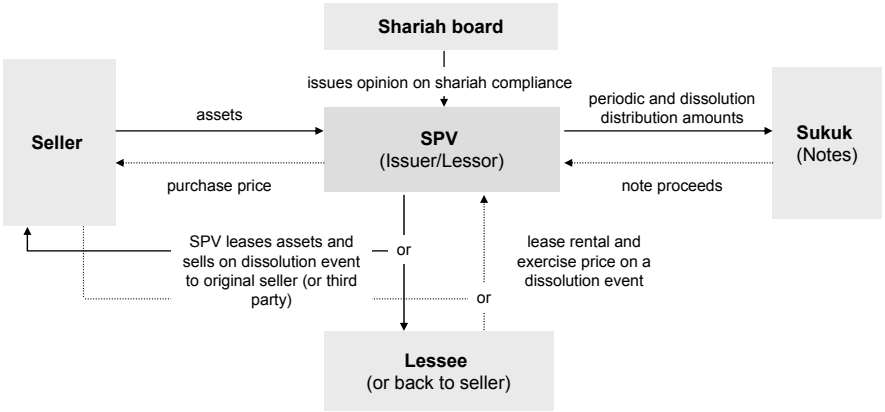
[37] Although there is no formal obligation of compliance associated with the ruling, it carries considerable weight with most Islamic financial institutions.

[38] The SSTS is a system operated by the *Bank Negara Malaysia* (BNM)'s real time gross settlement/delivery-versus-payment system through which sovereign and unlisted corporate bonds are registered, cleared, and settled via the *Real-time Electronic Transfer of Funds and Securities* (RENTAS), Malaysia's scripless book-entry securities trading and funds transfer system. SSTS also maintains securities accounts for financial institutions.

could be construed as equating to interest return, and (ii) the guaranteed *ex ante* profit from a discounted offer does not exposure investors to investment risk.

Although asset-based *(ijarah)* sukuks are the most common form of Islamic securitization, sukuks on other Islamic finance transactions have been structured as well over the recent past. Ijarah sukuks are financial obligations, issued by a lessor, and backed primarily by cash flows from lease receivables from a credit lessee *(guthrie)*, such as sovereign governments, regional governments, corporations, and multilateral lending institutions (Richard, 2006). In the popular *sale-leaseback ijarah* sukuk transaction structure ("sale model"), the SPV holds legal title to the assets, which are leased back to the originator in return for rental payments (and possibly other cash flows from the assets depending on the transaction structure) to service payments on the issued sukuks. The SPV holds a repurchase obligation for a price equal to the amount of outstanding debt in order to insulate the transaction from an adverse performance of the underlying assets (see Figure 3). In the *headlease-sublease ijarah* sukuk model, the owner of the assets headleases them to the issuer and rents them back. Since this arrangement does not include a repurchase obligation of transferred assets like a *sale-leaseback ijarah* sukuk, the credit risk of non-performance by the sub-lessee is usually covered by a quasi-guarantee on payments due to sukuk note holders. One recent example of such a transaction was the US$250 million sukuk issued by the *Bahrain Monetary Agency International Sukuk Co.* in June 2004 as an unconditional, unsubordinated, unsecured and general-payment obligation, backed by the full faith and credit of the *Kingdom of Bahrain*.[39] In this case, the notes are more akin to *guaranteed* obligations than to *non-recourse, secured* obligations of RMBS or CMBS transactions.[40]

Figure 3. The concept of an ijarah sukuk transaction.



[39] The payments to sukuk note holders were serviced by the Kingdom of Bahrain acting through the Ministry of Finance and National Economy ("sub-lessee").

[40] An alternative guarantee is the purchase of sukuks by the asset originator if the underlying assets fail to perform. In April 2005, the *Dubai Metals and Commodities Centre Authority* (DMCC) issued a US$200 million musharaka sukuk (joint venture) backed by the sale of three residential tower complexes via the Gold Sukuk DMCC transaction. In order to insulate the transaction's rating from the performance of the underlying assets, DMCC as originator would be required to purchase *musharaka* units from the issuer and not the commercial property per se in the case of credit event.

C. Current State of Islamic Securitization

Islamic financial institutions are flush with cash thanks to the recent oil boom and are increasingly eyeing shariah-compliant investments to accommodate their excess liquidity, which has resulted in a flurry of Islamic securitization transactions over the last two years. The *General Council for Islamic Banking and Finance Institutions* (GCIBFI) reports that roughly 200 *Islamic financial institutions* (IFIs) operating in 48 countries (El-Hawary and others, 2004) hold more than US$300 billion in assets under management. The Islamic finance sector has been estimated to grow by more than 15 percent per year and the expectations are for this growth to continue in the foreseeable future. In the wake of rapid growth in cash markets and first conventional structured credit transactions since 2003, Islamic securitization has begun to attract investment especially from the Middle East, with gross issuance volume surging from US$6.7 billion to about US$15.0 billion by end-2006—but still shy of 10 percent of conventional securitized issuance in emerging markets during the same time.

Shariah compliance of securitization transactions in Islamic countries is less of a demand-side issue than a supply-side phenomenon fueled by sovereign-sponsored efforts of capital market development and the power of precedent, with successful issues creating firsts for different collateral types of Islamic finance that create further demand as asset supply widens and the investor base matures. Although a shariah-compliant structure improves the marketability and liquidity of securitization transactions, many institutional investors and high-net-worth individuals in Islamic countries invest quite heavily in high grade conventional ABSs that are not shariah-compliant.

The first phase in the evolution of a market for Islamic fixed-income instruments and structured finance products has centered on the securitized issuance by creditworthy sovereigns, which has made the underlying assets incidental to the credit risk taken by investors. Much of the issuance of sukuks—at least offshore—has been sponsored by sovereigns and quasi-sovereigns with explicit or implicit government guarantees after the Malaysian government kick-started the market in 2002 with a US$600 million issuance backed by lease payments (see Box 1).[41] Although these sovereign transactions were linked to underlying assets, investors were mainly enticed by buying sovereign credit quality and appeared to have paid little heed to the actual source of servicing and underling asset exposure (Hales, 2005).

The prominence of government credit support in Islamic securitization is not surprising given the lack of basic conditions for securitization in most Islamic countries—with the exception of self-contained projects with guarantees from host governments, e.g. Turkey, Pakistan, Malaysia, and Egypt. Securitization is at a still modest level due to (i) deficient legal frameworks and accounting standards for structured finance; (ii) regulatory rigidities; (iii) poor market practice, standards of origination, trading, and investor protection; as well as (v) an under-developed local institutional investor base.

Given the underdeveloped debt markets in Islamic countries, the dominant role of sovereign-sponsored structured finance reflects a natural path of capital market development, which starts

[41] Further prominent sovereign sukuk issues include Qatar (US$700 million in September 2003), Bahrain (US$250 million in February 2004), and Pakistan (US$600 million in February 2005) (Iqbal and Tsubota, 2006).

with public sector debt before investors grow familiar with the product and move down the credit curve to create demand for lower-rated corporate credit. As the market matures and liquidity increases, sukuks and related investment products will go beyond low-yielding credits to cover the entire risk-return spectrum (Business Monitor, 2006).

Nonetheless, the large footprint of sovereigns in Islamic securitization contrasts with the development of conventional securitization in emerging markets, which started at the end of the 1980s, when large and highly-rated exporters and banks from the private sector sold ABS backed by selling hard-currency receivables from abroad to foreign institutional investors, in the effort to pierce the relatively low sovereign ceilings of emerging market county ratings on foreign-currency debt and borrow at lesser cost than under conventional funding methods (Jobst, 2006c). Although government-linked transactions still dominate, several prominent non-sovereign deals have been issued across the Middle East, North Africa and Asia (e.g., Bahrain, Kuwait, the United Arab Emirates, Saudi Arabia, Lebanon, Egypt, Malaysia, and Singapore). Recently, the *Dubai Islamic Bank* formed the *Emirates National Securitization Corp.*, an organization that arranges and advises on transactions. In August 2006, *Kingdom Instalment Corp. of Dubai* debuted what is believed to be the first true-sale sukuk securitization.[42]

[42] Note that transactions in the Gulf region do not have to be shariah-compliant and can be completed for non-Islamic investors. For example, in Dubai, properties and revenues generated in geographical areas known as "free zones" are not subject to Islamic law and could be securitized in conventional structures.

Box 1. Malaysia as Pacemaker of Islamic Securitization

Malaysia has become the pacemaker and champion for the development of capital-market-based, fixed - income instruments under Islamic law in the form of sukuks. It hosts the world's largest Islamic bond market, estimated at US$300 billion, which has grown at an average rate of 20 percent per year over the last three years. Although sukuks have been issued by governments, government agencies, international development organizations, and private corporations, private debt securities dominate and constitute the largest segment (70 percent) of Malaysia's Islamic bond market. The most common type of sukuks are based on *bai bithaman ajil* (BBA) and *murabahah* (ca. 90 percent), while government entities tend to issue *istina* sukuks, which are also considered pricing benchmarks.

After the Malaysia's *Securities Commission* introduced guidelines for ABS only in mid-2001, securitized issuance of conventional and Islamic transactions remained sluggish for more than two years until *Cagamas Berhad*,[1] the National Mortgage Corporation of Malaysia, kick-started the market in October 2004, when it issued a RM1.6 billion (US$432 million) mortgage-backed offering to create a (liquid) yield curve for *mortgage-backed securities* (MBS)[2] with longer maturities in a move to promote a viable and active secondary securitization market. Although the transaction was non-Islamic, it established a pricing benchmark for subsequent offerings in Malaysia, all of which had been sukuk offerings up to then. In July 2005, Cagamas also raised funding with its first Islamic mortgage-backed issue of mudharabah bonds in the amount of RM2.05 billion (US$532 million),[3] which was issued to regional investors and added a new asset class to the local debt market. The government's shift to shariah-compliant structures is plausible, as the government's housing loan portfolio also includes Islamic financing debts. Cagamas plans to further securitize some RM25 billion (US$5.5billion) worth of staff housing loan receivables in the near future.

Over the last two years, Malaysia has stepped up efforts to broaden the investor base, announcing a slew of measures to overhaul the exchange market (*Capital Market Plan)* and foster greater asset diversity in the securitization market with the release of revised *Guidelines on Asset Backed Securities* in March 2005. In the same year, Malaysia's central bank launched the first regular issue of ijarah leasing securities. After having successfully placed US$750 million worth of local-currency-denominated Islamic bonds, the largest convertible bond issues in Asia in 2006,[4] Malaysia's state-investment agency *Khazanah Nasional Berhad* is now planning to debut the first U.S. dollar-denominated Islamic bond issue in the course of 2007 in a bid to attract Middle East investors who previously have avoided similar sales due to different interpretations of Islamic law.

[1]*Cagamas Berhad* is a government-controlled secondary mortgage facility, which provides short- and medium-term finance and capital market access to mortgage lenders. Cagamas purchases mortgage loans from mortgage originators, with full recourse, at a fixed or floating rate for three to seven years. This is in effect a secured financing with Cagamas looking first to the credit of the financial institutions when mortgage loans default. The indirect government sponsorship of mortgage credit implies direct participation of Cagamas in the performance of the acquired mortgage pool. It refinances itself through the issuance of unsecured conventional debt securities (fixed or floating rate bonds or short-term notes) or, more recently, through Islamic bonds without pre-specified investment return.

[2]Malaysia also staged the first Islamic commercial mortgage-backed securitization (CMBS), which was issued by property developer *Talam Corp.* in February 2005 for an amount of RM150 billion (US$ 33 million).

[3]Note that that first Islamic sovereign securitization in Malaysia was issued in February 2005 by *Pasir Gudang Local Authority* as a mudharabah sukuk on RM80 million (US$18 million) of future property tax revenues (Jobst, 2006c).

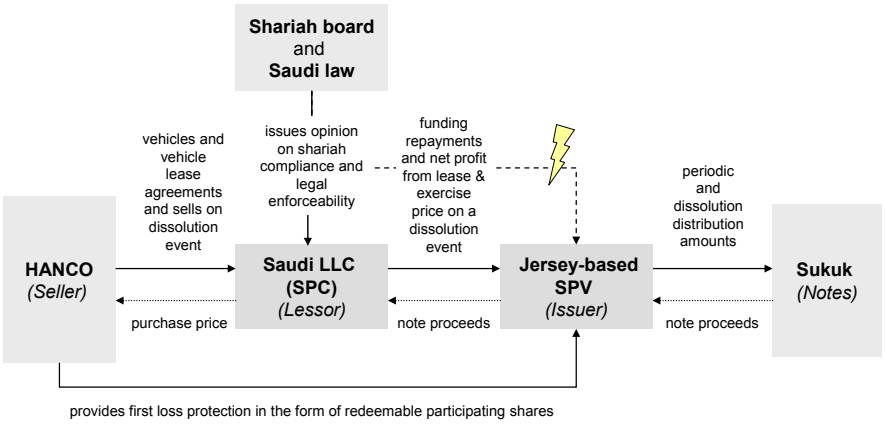
[4]Although it was widely assumed that Muslim investors had bought most of the sukuk bonds, non-Islamic institutional investors turned out to drive most of the demand of the heavily oversubscribed issues (Khala et al., 2007).

Box 2. Two-Tier SPV *ijarah* Securitization—CARAVAN I Limited

In March 2004, Beirut based *BSEC Investment Bank* and the Bahrain based *Shamil Bank* issued a 102 million Saudi Riad (SR) (US$27 million) shariah-compliant ijarah investment sukuk to securitize a Saudi-Arabian car fleet inventory (CARAVAN I Limited) over a three-year maturity term from the proceeds of synthetic risk transfer through a dual SPV structure to overcome the legal risk of true-sale recognition under Islamic law, the impact of local laws on the securitization structure's key contractual terms, and strict laws on foreign ownership[1] (see Exhibit. 4). BSEC acted as the deal arranger and structurer, while Shamil Bank was the underwriter of Caravan 1 Limited. The transaction was over collateralized by SR15.09 million and secured by (i) a first loss protection provided by HANCO of 4.25 percent via SR4.17 million redeemable participating shares, and (ii) an excess spread reserve account of SR4 million, whose residual value can be claimed by HANCO after redemption of the issued sukuk notes.

In this transaction, a Saudi Arabian *special purpose company* (SPC) funds the acquisition of a pool of vehicles and vehicle lease agreements from HANCO Rent A Car, a leading Saudi Arabian car leasing and rental company via an offshore SPV, based in Jersey (U.K. Channel Islands), which issues sukuk notes to investors. This arrangement is essential, because under Saudi law an offshore SPV is barred from buying or leasing vehicles, while a locally domiciled SPV is not bankruptcy remote and cannot issue securities. The relationship between the SPC and the SPV is governed by a "funding agreement", which includes periodic funding repayments and the transfer of net profits from the SPC to the SPV. While deferrals are possible, in the default event, investors have recourse to the underlying assets and can force the sale of the cash-flow-generating assets. Although the transaction structure implies business risk from identified and direct investor participation in the asset performance of permissible real economic activity without payment or receipt of interest consistent with shariah law, legal risk from Islamic jurisprudence continues to impinge on the legal enforceability of investor interests. Saudi courts and other adjudicatory authorities might apply different interpretations of shariah principles to the transaction. Since shariah law remains the governing law of the transaction, legal uncertainty might compromise the ability of the Jersey-based SPV to enforce investor interests. Moreover, the integrity of the funding agreement in this dual-SPV structure of Caravan 1 Limited hinges on the capacity of the SPV to oblige the SPC to make pre-specified and contingent payments from lease revenues to repay sukuk investors—a guarantee whose enforcement runs against the condition of investment risk under the basic tenets of shariah law. All of these aspects taken together have precluded an official rating of the transaction.

Figure 4. The dual SPV structure-based ijara sukuk (Caravan 1 Ltd.).



[1]Besides the jurisdictional uncertainty, strict laws on foreign ownership pose another salient problem to securitization in Saudi-Arabia and other jurisdictions in the region. In such a situation, the most feasible (but more costly) securitization structure would be predicated on a two-tier arrangement with two SPVs, one located in the country of origination ("owner SPV") and the other registered in a foreign country with adaptable legislation and offshore treatment of capital gains. The creation of an "owner SPV" as a subsidiary of the originator is not an option, as this would compromise the economic and legal conditions of a *true sale* and *substantive consolidation*.

Box 3. Securitization and Capital Market Development in Emerging Markets

Generally, issuers may find asset securitization attractive because of an improved access to funds and lower capacity constraints. Besides the frequently hackneyed objective of lower borrowing costs, originators benefit particularly from (i) the *market-based valuation* of securitized assets and the prospect of an enhanced credit rating; (ii) *better asset-liability management*, as cash flows from securitized assets can be perfectly matched to the repayment of investors until redemption; (iii) the *active management of designated asset portfolio*; (iv) *increased competition of financial institutions* in traditional credit markets; and (v) the *capacity to create new end products* for the consumer.

The evolution of efficient securitization markets serves to *mitigate disparities in the availability and cost of credit* in primary lending markets by linking singular credit facilities to the aggregate pricing and valuation discipline of the capital markets (Jobst, 2006c). Securitization helps financial institutions to meet credit demands through the creation of new financial products that disaggregate, customize, repackage and distribute asset risk if suitable hedging instruments are absent.

Demand for credit in a country sometimes exceeds the ability of the local banking system to originate sufficient amounts of consumer and commercial loans due to capital adequacy rules and limits to risk concentration. Securitization *alleviates credit constraints* of asset originators and places asset exposures with entities that are more willing and able to hold them, such as insurance companies, mutual funds or other institutional investors via off-balance sheet asset sale or synthetic risk transfer. Securitization can also facilitate the market entry specially of new finance companies, whose specialization on assets that are easily securitizable helps break up traditional money markets that have been dominated by a few large players exerting oligopolistic control and limiting the availability of credit.

Securitization also "completes" domestic fixed income markets where financial institutions cannot issue straight bonds to optimize their cost of capital due to an insufficient credit standing, forcing domestic investors to accept government paper for want of alternative investments. Originators of securitized debt in emerging market countries can raise funding at a cost of capital that was once beyond their own credit rating thanks to the ability of securitization to detach asset risk from the asset originator.

Amid regulatory, tax and legal reforms in many emerging market countries, securitization helps accommodate a growing investor base, particularly pension and insurance fund investors with the need of long-term, highly-rated local currency bond investments to match their liabilities. Thus, it improves risk diversification within the financial sector, increases overall financial sector sophistication and contributes to the development of a more liquid yield curve in poorly developed financial systems.

Besides asset price competition, asset class diversity, and the presence of an sophisticated investor base, certain general criteria need to be satisfied for a viable use of asset securitization—from a supply and demand side perspective: (i) *structural market imperfection* due to fiscal constraints and high borrowing costs; (ii) an *adequate and bankable legal and regulatory framework* for bankruptcy, tax, and corporate governance issues; and (iii) transparent transaction structures that ensure *demonstrable and unimpeded control over securitized assets* subject to persistent monitoring by rating agencies, trustee and guarantors.

In emerging markets, securitized issuance and investment activity is generally hampered by problems of limited and narrow asset supply, light prudential standards in terms of disclosure and transparency requirements, and the absence of enabling regulation. In many countries, these characteristics have prevented the emergence of a mature investor base, a sound credit culture and market practice, established standards of investor protection, and the equitable tax treatment between structured finance and conventional investment products. Also problematic is a lack of data on corporate defaults in emerging markets, which hinders issuers from deriving reliable estimates for default probabilities and recovery rates for the structuring of transactions. Also high execution costs, structural complexity and the potential principal-agency problems between issuers and investors as well as administration, collection and fraud risks have tempered the growth of securitization in underdeveloped capital markets.

IV. Challenges and Opportunities of Islamic Securitization

A. Legal Uncertainties

Structured finance in Islamic jurisdictions is beset by stringent restrictions and uncertainties at many levels due to legal frameworks that are not always securitization-friendly. Although there are no restrictions on the transfer of assets or receivables, or on who can issue or invest in sukuk bonds, the main obstacles to further growth of securitization revolve around legal uncertainties that entail procedural and substantive difficulties—and potentially unfavorable externalities—on both the supply and demand side.

Shariah-compliant securitization requires two layers of assessment. From an investor's perspective, both the underlying reference assets *and* the transaction structure need to satisfy *two* legal regimes: applicable commercial law as well as Islamic law. Islamic investors are not only concerned with the legal enforceability under contract and commercial law but also the compliance of securitized assets with the shariah. Islamic finance and financial instruments under Islamic law are subject to the approval of a shariah board, which evaluates the religious compliance of the substance and the structure of the transaction and pronounces its compliance with the shariah. Religious boards are comprised of at least three acclaimed experts or scholars of Islamic law. These groups of shariah scholars are an integral part of Islamic institutions and advise banks on how to ensure shariah compliance. The religious compliance of transactions and operating procedures of financial institutions under Islamic finance is supervised by a shariah board. According to the *Institute of Islamic Banking and Insurance*, religious boards in Islamic banks have supervisory and consultative functions. They review the day-to-day operations of banks in an investigative role and examine proposals for new transaction types and financial products to ensure their conformity to the shariah.[43]

Unfortunately, Islamic jurisprudence is not definite and still lacks of homogeneous interpretation and uniform recognition. Islamic jurisdiction is not bound by precedent and legal opinions may deviate from previous decisions made by other shariah scholars. Shariah law is open to interpretation and religious boards frequently hold divergent views on key shariah issues. There is no consistent ruling of Islamic courts on the religious compliance of the eligibility of certain assets and transaction structures for securitization. Moreover, Islamic law

[43] Operating procedures of Islamic financial institutions need to ensure that all forms of business activity and investments have been approved in advance by the religious board; so any new type of transaction needs to be reviewed. Management is also required to periodically certify the compliance of its actions to the religious board.

itself is divided in different juristic schools of thought *(madhahib)*, which provide guidance in the interpretation and application of the general principles of the shariah based on interpretation *(ijtihaad)* or analytical reasoning *(qiyas)* (Batchvarov and Gakwaya, 2006). For instance, even though the *hanbali* school is dominant in Saudi-Arabia, a shariah board has considerable discretion in the interpretation of Islamic law and may choose any other school of thought to inform their decision-making process.

The lamentable absence of practical and hard-wired guidance as to shariah-compliant Islamic finance transactions infuses significant legal uncertainty and may affect the legal integrity of Islamic finance and securitization transactions. Although the Malaysian market has been the beneficiary of most innovation in Islamic securitization in the form of various sukuk structures with the approval of local shariah boards, the approval of these structures with regard to religious compliance is not universal throughout the rest of the Islamic world. For instance, in Saudi-Arabia, the trading of sukuks is prohibited. In the effort to address some of these uncertainties, the *Islamic Financial Services Board* (IFSB)[44] was inaugurated in Malaysia on November 3, 2002 after a two-year consultative process initiated by central banks and national monetary authorities together with the support of the *Islamic Development Bank* (IDB), the *Accounting and Auditing Organization for Islamic Financial Institutions* (AAOIFI) and the *International Monetary Fund* (IMF). It serves as an international standard-setting body of regulatory and supervisory agencies with the aim to ensure stability and soundness of Islamic financial services industry by developing new, or adapting existing, international finance standards consistent with shariah principles and harmonization of practices within the Islamic finance service industry.[45]

The distinction between whether Islamic law governs a securitization transaction by *substance* or *form* determines legal and structural risks associated with untested bankruptcy remoteness of certain security arrangements, which are often innovative and therefore subject to some residual uncertainty. The absence of shariah compliance and possible disagreement of shariah boards is likely to temper investor interest and affect the liquidity of a transaction. However, in principle, it would not preclude legal enforceability of investor claims if Islamic law is treated as a *matter of substance* and upholds what was created in form (defined by commercial law)—a necessity in structured finance (Boustany and others, 2005). If shariah compliance is the governing law as a *matter of form* (i.e., the transaction is governed solely by shariah law), the opinion of Islamic courts could override commercial legal concepts and re-qualify the legal nature of a securitization transactions, such as the recognition of the *true sale* securitization of assets from the sponsoring entity via a bankruptcy-remote SPV (see Box 2).[46]

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[44] The IFSB comprises of 88 members, including 21 regulatory bodies, 62 financial institutions from 16 countries and international organizations, such as the World Bank and the International Monetary Fund (Coomber, 2006).

[45] On March 15, 2005, the IFSB issued exposure drafts of prudential standards on risk management and capital adequacy for the Islamic financial service industry, and preparations are underway to issue an exposure draft of standards on corporate governance by the end of 2005. In April 2005 the IFSB also started preparing standards on the supervisory review process as well as transparency and market discipline.

[46] The robustness of the transaction to bankruptcy proceedings requires that (i) securitized assets have been absolutely transferred from the originator to the SPV, so that they are detached from the bankruptcy estate (usually referred to as *true sale*), and (ii) originator and SPV are separate entities so that the assets and liabilities of the latter would not be substantively consolidated with the originator in the event of insolvency proceedings (commonly referred to as *substantive non-consolidation*). A SPV can take different legal forms, mainly trusts, funds and corporations. A transaction satisfies the conditions of a *true sale* and *substantive consolidation* if the facts and

(continued…)

The requirement of a direct linkage between identifiable assets and investors under Islamic law belies the commercial interest of establishing a legal separation of assets from the bankruptcy estate of the asset originator.[47] Thus, the *ex post* legal interpretation carries the possibility of bankruptcy courts or insolvency officials to "re-characterize" asset sale as an unsecured loan.[48] Failure of an asset transfer to be defined as a true sale may also result in the voiding of the sale and the transfer of assets back to the original owner, which would undermine the economic purpose of the securitization and compromise investor protection under the premises of substantive non-consolidation pursuant to commercial law. While it seems that synthetic securitization (patterned after the German PROMISE transactions) would be a practical approach to sidestep the legal issues associated with the perfection of legal transfer in establishing both bankruptcy remoteness (perfected security interest) and true sale properties for direct asset ownership, market participants and regulators in Islamic countries are not ready to take that step. In addition, the legal uncertainty from Islamic jurisprudence is frequently amplified by that fact that bankruptcy and dispute resolution processes of Islamic securities are largely untested due to rare default cases.

Legal uncertainties as regards shariah-compliant securitization structures and unresolved issues that are inherent in all Islamic jurisdictions, such as bankruptcy-remoteness, often limit official ratings only to those Islamic securities that are sufficiently supported by government guarantees.[49] Most shariah-compliant securitizations have been unrated, as major rating agencies have been reluctant to issue credit ratings on local structures. While the practical assessment of Islamic securitization seems to focus on the potential of either securitized assets and/or the securitization structure to transgress Islamic law, *shariah compliance itself has no bearing on the external assessment by rating agencies* of their credit quality unless Islamic jurisprudence potentially impedes their credit quality as a matter of form.

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circumstances of the transaction, i.e., the operative provisions contained within the transaction documents and the actions of the deal parties, and its structure conform to the following legal conditions. For *true sale*, important factors in this regard are: (i) the payment of fair consideration for the assets by the SPV (i.e., the purchaser of assets) to the originator (i.e., the seller); (ii) the SPV bears the risk of loss on the transferred assets; (iii) the SPV has no recourse to the originator for losses on the transferred assets; (iv) the intent of the parties (i.e., do the transferor and the transferee explicitly intend for the transfer to be a sale); (v) the accounting treatment (i.e., does the originator treat the transfer as on or off balance sheet); asset control (i.e., does the originator have the obligation or option to repurchase the securitized assets); and (vi) the servicing of the transferred assets (i.e., does the originator continue to act as servicer by collecting debtor repayments on the assets). Factors that are used in the analysis of whether the originator and the SPV should be substantively consolidated include: (i) the degree to which the affairs of the originator are distinguishable from those of the SPV; (ii) the reliance of third parties on assets of the SPV to satisfy obligations of the originator and vice-versa; and (iii) the liability (or guarantee) of the originator to pay the liabilities of the SPV and vice-versa (Dorris and Potenza, 2004).

[47] There are also issues with the enforceability of the obligations of the underlying obligors, including unclear creditor rights. For example, in Saudi Arabia, homeowners who have fallen into arrears on their home loans cannot be removed from their homes.

[48] In addition, if the SPV is not "bankruptcy remote", the carefully constructed subordination mechanism of profit and loss sharing amongst investors, which effectively defines the transaction structure, may be invalidated in the event of an SPV payment default.

[49] Dommisse and Kazi (2005) give an example of a shariah-complaint Middle Eastern securitization transaction ("Solidarity Trust Services Limited") that it rated, receiving a "AA" rating, but only on the strength of a guarantee by the AA-rated *Islamic Development Bank*.

The rating of an Islamic transaction does not address shariah compliance as a matter of legal enforceability through commercial tribunals. Rating agencies are only concerned with credit aspects and neither pronounce on the suitability of a particular obligation from the perspective of shariah compliance nor review the validity of a shariah board's recommendations and decisions. Ratings reflect solely the compliance of any transaction with applicable commercial law, i.e., the resultant investment risk from the degree of legal enforceability of investor claims. Against this background, certain shariah-compliant transactions have disavowed the shariah governing law (although they may satisfy the shariah as a matter of substance) (Richard, 2005 and 2006). For instance, ijara sukuks tend to be assigned the same ratings as the lessee creating the underlying payment stream of lease receivables to the lessor (Richard, 2006). This practice reflects the unconditional, irrevocable nature of the lease, any third-party guarantees, sale and repurchase agreements, and/or financial hedges that are found in the transaction. An ijara sukuk is usually rated lower than the lessee if there are diminished recovery prospects, greater risks associated with the lease payments, or other factors that would warrant such a distinction. Higher ratings are rare without additional risk-mitigating features, such as sovereign guarantees, or secured repayment obligations that conform to the principles of shariah law.

B. Economic and Structural Impediments

Amid weak reliance on capital market financing in many Islamic countries, issuers are faced with several critical *economic* impediments to the efficient execution of structured finance transactions as a way to mitigate market imperfections and financing constraints. The main economic difficulties of Islamic securitization are pertinent to the identification of (i) reference assets that meet shariah requirements (i.e., no impediment in the form of *haram* (sinful activity)) and offer attractive returns, and (ii) substitutes for standard structural features in conventional securitization structures, such as credit enhancement and liquidity support provisions, which are not permissible in the Islamic context.

Limited sourcing and structuring of securitizable asset portfolios has inhibited even faster growth of Islamic securitization. The scrutiny of securitized collateral is more complicated and less accurate when there is a requirement for shariah compliance of assets. Most Islamic finance products require issuers to originate own Islamically acceptable assets (rather than buy asset pools in the market) due to the absence of eligible collateral assets.[50] Moreover, the comparative paucity of historical data on defaults hinders reliable estimates for recovery rates used in pricing and rating tranched products, and leads rating agencies to use very conservative assumptions, especially if lender credit scoring and infrastructure are not up to the standards usually sought by the rating agencies. In addition, the region's banks, which are the most likely securitizers/sellers of risk, are flush with liquidity and capital, so there is not a strong funding or balance sheet rationale for securitizing.

So far, many sukuk issues have utilized sovereign guarantees to redress the prohibition of credit enhancement or any other form of provision that mitigates business risk. While tranche subordination can be replicated by the combination of sale-leaseback contracts in conformity to Islamic law, other forms of credit enhancement in conventional securitization, such as over

[50] This would make Islamic ABS a secondary tool and not primary tool to service/underwrite third-party financial institutions; however, it holds the prospect of restructuring non-shariah-compliant assets into permissible investments.

collateralization, reserve and spread accounts ("excess spread"), and the retention of equity claims appear more difficult to implement within the limits of shariah compliance. If the issuer acts as residual claimant and retains undistributed cash flows generated from securitized assets as excess spread, the transaction would not qualify as a complete pass-through structure with full ownership by investors and might be deemed incompatible with shariah principles (Abdi Dualeh, 1998). Instead, under the tenet of direct participation in underlying business risk Islamic investors would need to contribute own income to fund a reserve account to cover possible losses.

The Islamic securitization market is still plagued by illiquidity due to limited depth and breadth, which inhibits efficient price discovery and information dissemination (Archer and Karim, 2002). Although the commoditization of illiquid asset exposures through securitization facilitates the disciplining effect of capital markets on risk management, the lack of information from private sources about securitized assets in many sukuks impairs fair market valuation. Moreover, the distribution for smaller corporate deals has often been restricted to one "buy-and-hold" investor in the past, while the prevalence of sovereign guarantees has made asset risk incidental to counterparty risk and credit support mechanisms sponsored by sovereign goodwill, hampering market maturity and investor sophistication.

C. Advantages of Islamic Securitization

Notwithstanding the structural complication and the legal uncertainty imposed by Islamic jurisprudence, Islamic securitization offers the same economic benefits conventional structured finance purports to generate, such as the active management of designated asset portfolio due to greater control over asset status, as well as the isolation of certain assets in order to make them self-financing at a fair market rate. In addition, conventional securitization is virtually absent in Islamic countries, where Islamic home finance and sukuks provide a potentially untapped market for structured finance. Islamic securitization complements the conventional ABS universe as an alternative and more diversified funding option that broadens the pricing spectrum and asset supply as high demand for alternative investment products causes greater lending width amid a low-yield market environment. In some circumstances, the shariah compliance also entails tax exemptions when investors hold direct ownership interest in the securitized assets.

V. Conclusion

In the previous sections, we explained the basic tenets of Islamic finance (debt, asset, and equity-based) and presented a simple valuation model that illustrated the essential elements of shariah-compliant synthetication of conventional finance. Subsequently, we reviewed the implications of shariah compliance on the legal and economic properties of both reference assets and transaction structures of Islamic securitization, which informed out discussion of the most salient benefits and drawbacks of structured finance under Islamic law.

Islamic finance is no longer confined to specialized institutions and has expanded both geographically and in product richness, with structured credit finance receiving most of the attention. Islamic securitization has been largely the domain of government issuers as a stepping stone in the evolution of a market for shariah-compliant fixed income instruments. Although the recent oil rally has rendered fiscal funding through debt issuance less important in some Islamic countries, governments recognize the important externalities of public debt for the creation of effective pricing benchmarks for corporations in the course of local capital market development.

With Malaysian issuers leading the way, now more private entities are expected to consider shariah-compliant securitization structures to accommodate high demand from prolific investment funds in both Islamic and non-Islamic countries.

However, without efficient and transparent capital markets and bankable legal frameworks to operate within, Islamic securitization will not continue to grow meaningfully in the near future. Certain inalienable economic, regulatory, and infrastructural conditions are universal to any evolving and sustainable securitization market (see Box 3), irrespective of shariah compliance or other additional constraints or impediments. One of the longstanding barriers to sound and transparent growth is associated with legal uncertainty caused by regulatory disparity among national supervisors, with each regulator working independently and refusing to recognize the validity of judgments made by foreign counterparts. This teething problem is expected to wane as key Islamic regulators in Bahrain and Malaysia are taking efforts to address this issue. Moreover, greater importance of the *Islamic Financial Services Board* (IFSB), the *Accounting and Auditing Organization of Islamic Finance Institutions* (AAOIFI), the *General Council for Islamic Banking and Finance Institutions* (GCIBFI), and the *Islamic International Rating Agency* (IIRA) will add consistency of shariah interpretations by religious boards and enhanced market practice, while the retention of conventional finance documentation standards and the supremacy of bankable governing law as a matter of form remain essential to further growth of Islamic securitization.

Given greater interest in Islamic securitization, structural innovation will contribute to further development and refinement of sukuks and similar Islamic structured finance products that may be offered at an exceedingly competitive level with conventional investments. Islamic financial institutions, particularly in Bahrain, Kuwait, Malaysia and Sudan have been gearing up for shariah-compliant financial innovation—both on the asset and liability side. New financial instruments are increasingly used in market activity, such as equity and bond trading, as well as in investment, such as Islamic insurance *(takaful)* and re-insurance *(re-takaful)*, Islamic syndicated lending, collective investment schemes, and other asset management products. For instance, in February 2006, *Abu Dhabi Commercial Bank* (ADCB) introduced a shariah-compliant takaful and savings scheme, called *meethaq*,[51] in a joint arrangement with the *Dubai Islamic Insurance and Reinsurance Company* and Germany-based *FWU AG*.

[51] This scheme is a money market investment instrument, whose open savings plans provide access to shariah-compliant mutual funds.

REFERENCES

Abdi Dualeh, Suleiman 1998, "Islamic Securitization: Practical Aspects," (Geneva: Presentation at the World Conference on Islamic Banking).

Archer, Simon and Rifaat A. A. Karim (eds.), 2002, "Islamic Finance: Growth and Innovation," (London: Euromoney Books).

Batchvarov, Alexander and Nicolas Gakwaya, 2006, "Principles and Structures of Islamic Finance," Merrill Lynch, European Structured Finance—ABS, (8 September), London.

Black, Fischer and Myron Scholes, 1973, "The Pricing of Options and Corporate Liabilities," *Journal of Political Economy*, Vol. 81, pp. 637–54.

Boustany, Iad G., Sleiman Roula, and Elias Sayegh, 2005, "Securitization in MENA/GCC: Activity Overview by Asset Class," in L. Callie (ed.), *Global Securitization and Structured Finance 2005*, Globe White Page Ltd., London.

Business Monitor International Ltd, 2006, "Changing Times in the Middle East," *Emerging Markets Monitor*, Vol. 12, No. 6, 1, and pp. 5–6.

Charlton, Bob, and Rita Garcia-Bennett, 2004, "Islamic Asset Finance," Freshfields Bruckhaus Deringer, *Briefing*, (July).

Choudry, Nurun N., and Abbas Mirakhor, 1997, "Indirect Instruments of Monetary Control in an Islamic Financial System," *Islamic Economic Studies*, Vol. 4, No. 2, pp. 27–66.

Coomber, Natalie, 2006, "Shariah and Shariah Alike," FOW Magazine,(September), pp. 32–34.

Dickerson, Marla , 1999, "The Price of Peity in Islam," *Los Angeles Times*,(17 March), A1.

Dommisse, Adrian, and Wasif Kazi, 2005, "Securitization and Shari'ah Law," Fitch Ratings Emerging Markets Special Report, (24 March).

Dorris, Malcolm S., and Valerie A. Potenza, 2004, "Securitisation for First-time Issuers," in L.Callie (ed.), *Global Securitization and Structured Finance 2004*, Globe White Page Ltd., London.

El-Hawary, Dahlia, Grais Wafik, and Zamir Iqbal, 2004, "Regulating Islamic Financial Institutions: The Nature of the Regulated," World Bank Policy Research Working Paper No. 3227, (25 February), Washington, D.C.

El-Qorchi, Mohammed, 2005, "Islamic Finance Gears Up," *Finance and Development,* (December), International Monetary Fund, pp. 46–9.

Errico, Luca, and Mitra Farrahbaksh, 1998, "Islamic Banking: Issues in Prudential Regulation and Supervision," IMF Working Paper No. 98/30, (Washington: International Monetary Fund).

Hales, Alice, 2005, "Tapping Surplus Liquidity," *Risk Magazine*, (Autumn), pp. 4–6.

International Capital Markets Department (ICM),."*Global Financial Stability Report," Chapter IV, Development of Corporate Bond Markets in Emerging Market Countries*. (September 2005), pp. 126–28.

International Organization of Securities Commissions, 2004, "The Islamic Capital Market: Fact Finding Report, and Report of the Islamic Capital Market Task Force of the International Organization of Securities Commissions, Madrid.

Iqbal, Zamir, and Hiroshi Tsubota, 2006, "Emerging Islamic Capital Markets," Islamic Finance Review, Euromoney Handbook, and Euromoney Institutional Investor PLC, London, pp. 5–11.

Iqbal, Zamir, and Abbas Mirakhor, 2006, "An Introduction to Islamic Finance—Theory and Practic*e,"* Wiley Finance Editions, John Wiley & Sons, Inc., Hoboken, New Jersey.

Iqbal, Munawar, and David T. Llewellyn (eds.), 2000, "Islamic Banking and Finance: New Perspective on Profit Sharing and Ris*k", Edward Elgar Publishing, Ltd.*, Cheltenham, United Kingdom, 4th edition.

Jobst, Andreas A., 2006a, "Correlation, Price Discovery, and Co-movement of ABS and Equity," *Derivatives Use, Trading & Regulation*, Vol. 12, No. 1, pp. 60–101.

Jobst, Andreas A., 2006b, "Asset Securitisation: A Refinancing Tool for Firms and Banks," *Managerial Finance*, Vol. 32, No. 9, pp. 731–60.

Jobst, Andreas A., 2006c, "Sovereign Securitization in Emerging Markets," *Journal of Structured Finance*, Vol. 12, No. 3, (Winter), pp. 2–13.

Jobst, Andreas A., 2006d, "What is Structured Finance? An Analysis of Derivatives, Securitization and Islamic Finance," *The Securitization Conduit*, Vol. 8, No. 1. Reprinted in *ICFAI Journal of Risk Management* (2007) (forthcoming).

Karsten, Ingo,1982, "Islam and Financial Intermediation," *IMF Staff Papers*, (March, 29), (1), pp. 108–42.

Kendall, Leon T., 1996, "A Primer on Securitisation," *MIT Press*, Cambridge, Massachusetts.

Khalaf, Roula, Tett Gillian, and David Oakley, 2007, "Eastern Promise Turns to Western Delight," *Financial Times*, (17 January).

Merton, Robert, 1973, "Theory of Rational Option Pricing," *Bell Journal of Economics and Management Science*, Vol. 4, pp. 141–83.

Merton, Robert, 1974, "On the Pricing of Corporate Debt; the Risk Structure of Interest Rates," *Journal of Finance*, Vol. 29, pp. 449-70.

Mirakhor, Abbas and Zaidi Iqbal (1988), "Stabilization and Growth in an Open Islamic Economy," IMF Working Paper No. 88/22, International Monetary Fund (IMF), Washington, DC.

Richard, Kristel, 2006, "Two Aspects of Rating Sukuk: Shariah Compliance and Transaction Security," Standard and Poor's, Research.

Richard, Kristel, 2005, "A Closer Look at Ijara Sukuk," Standard and Poor's, Research.

Telpner, Joel S., 2003, "A Securitisation Primer for First Time Issuers," *Global Securitisation and Structured Finance 2003,* Greenberg Traurig (http://www.gtlaw.com/pub/articles/2003/telpner03a.pdf).

The Accounting and Auditing Organization of Islamic Finance Institutions (AAOIFI), 2005, "Accounting, Auditing & Governance Standards for Islamic Financial Institutions, 2004 –5th Edition (Financial Accounting Statements)," Bahrain.

Wighton, David, 2005, "Credit Protection: Lightyear Set to Exploit the CDO Market," *Financial Times*, (January 3), pp. 10.

Wilson, Rodney, 2004, "Overview of the Sukuk Market," in: Adam, N. J. and A. Thomas (eds.) *Islamic Bonds: Your Guide to Issuing, Structuring and Investing in Sukuk*. Euromoney Books, London.