

A Work Project, presented as part of the requirements for the Award of a Master's degree in
Finance from the Nova School of Business and Economics.

**Financial Engineering of Western Equities, Derivatives and Fixed Income into Shariah-
Compliant Special Purpose Vehicle's for Islamic Investor's**

JOSHUA ALEXANDER GIL

Work project carried out under the supervision of:

Professor Giorgio Ottonello

20/12/2023

Abstract

The evolution of Islamic finance has witnessed global expansion rooted in *Shariah* principles. SPVs serve as crucial mechanisms facilitating diverse, *Shariah*-compliant financial arrangements. To enhance profiles, expectations and diversity, Islamic investors seek entry into Western markets, employing innovative financial engineering tools as Equity *Murabaha*'s, Islamic Profit Rate Swaps, and various sukuk types (*al-ijara*, *al-murabaha* and *al-wakalah*). This study delves into the imperative strategy, *Shariah* alignment and the potential augmentation of prospects for Western Financial in Islamic Finance systems. It represents a conceptual academic exploration at the crossroads of Western Finance assimilation and integration into the Islamic Finance landscapes.

Keywords: Islamic Finance, Special Purpose Vehicle (SPV), Shariah-Compliant, Sukuk, Western Finance, Financial Engineering, Assets, Equity Mudaraba, Islamic Profit Rate Swap

Introduction

Islamic finance has rapidly expanded globally, expected to significantly impact various jurisdictions as they embrace this emerging sector. With an estimate value of USD 3.06 trillion and an anticipated annual growth rate of 11.3%, the industry demonstrates robust growth (IFSB, 2022). It gained traction, especially after the recent financial crisis, showcasing greater stability compared to Western finance (Akhtar and Jahromi, 2017; Almanaseer et. al., 2014). However, due to its distinctive principles and niche markets, Islamic finance faces stigma and operates differently from Western finance due to its principles and jurisprudence.

The building block of Islamic finance falls on the premise of *Shariah* law, where investments take the form of profit and lost sharing instead of the mostly known interest-based (debtor-creditor) finance. The interdiction of interest (*riba*) is widely acknowledged as the paramount and esteem mission inherent to Islamic Finance. Following that, anything that substantiates speculation (*maysir*) and uncertainty (*gharar*) are null under Islamic finance. Which consequently restricts Islamic investors, who are only to engage in activities that are subject to a financial contractual agreement. This, therefore, excludes instruments such as the equity market, bonds, and some derivatives to which no contractual agreement emerges. So, anything from the Western market like equities, bonds, and some derivatives, they cannot invest directly since it violates the *Shariah* law. Such restrictive covenants as the ones imposed by *Shariah* law have been avoided using some financial engineering with the usage of Special Purpose Vehicles (SPVs) to bundle assets of different geographic regions, market sectors, and profile expectation which widens the investment horizon of Islamic investors (Kumar, 2014).

The utilization of Special Purpose Vehicles (SPVs) constitutes a fundamental element within the framework of securitization evident across both Islamic and Western financial practices. Some define SPVs as tools that segregate risk or isolate particular activities within a collective pool

of exposures. They subsequently reallocate these segmented elements to investors who demonstrate a readiness to bear such exposed risks or engagements. By doing so, it allows investors access to more investment opportunities which would not otherwise exist; plus, it generates a new source of revenue generation for the sponsoring entity (PWC, 2011). The definition denotes the purpose of the vehicle to undertake the transaction into a securitization process, and the method of how the transactions are implemented is different from one form of finance to the other. Therefore, the focus of this study will be on how one can financially engineer Western equities, bonds, and derivatives under SPVs to make such investment available in the Islamic market so they can have a wide variety of options at their display if they want to accommodate their investment profiles and expectations, without violating the central premise of Islamic law.

This dissertation is structured into six sections. The opening section lays out the groundwork with a literature review of some fundamental terminology in Islamic finance. Then, it focuses on their application within the equities, derivative, and fixed income market, highlighting the unique principles and laws governing these domains. This section also refers to the role of SPVs in facilitating securitization, underscoring their importance in both the Western and Islamic world. Section two and three dives deeper into the financial engineering required to align Western equities and derivatives with Islamic investment parameters. These sections emphasize strategies and methods aimed at ensuring compliance with Islamic principles while retaining the accessibility of these instruments within the Islamic market. The fourth section focuses on the adaptation of some Western bonds and debt obligations into SPVs customized for Islamic investment purposes. It meticulously explores the intricacies of maintaining compliance with Islamic finance guidelines while ensuring the tradability of these instruments in the Islamic market. Lastly, the analysis and conclusion section consolidates the dissertation's key insights, reaffirming the significance of integrating Western Financial instruments into Islamic Finance through SPV-based financial

engineering. It underscores the potential of these strategies to bridge the gap between Western and Islamic financial paradigms while upholding the principles integral to Islamic finance.

Literature Review

Islamic investors tend to perceive Western financial principles as offering superior potential for amplifying their portfolios in contrast to their own investment strategies. This perceiving advantage is rooted in the flexibility inherent in conventional finance, allowing investment without the stringent adherence to underlying principles. Conversely, Islamic investment principles are governed by the premise of *Shariah law*, mandating strict adherence to specified guidelines and constraints (Al Maddah, 2017).

Foundational to Islamic finance are four primary prohibitions. The initial three prohibitions are concerned with transactional activities, while the fourth pertains to products and services. The prohibition of *riba* stipulates that profits must be derived from genuine effort or risk-taking. This precludes the inclusion of effortless guaranteed interest akin to Western finance mechanisms within business transactions. The prohibition of *maysir* prohibits wealth accumulation through speculative games or rapid capital generation. The prohibition of *gharar* prohibits involvement in financial transactions characterized by uncertainty or risk due to ambiguous terms in contracts or exchanges, such as derivatives, short-selling, and insurance. Finally, the prohibition of investing in *haram* products and services necessitates avoiding investments conflicting with Islamic principles (Warde, 2010; Al Maddah, 2017).

1.1 Prospective of Equity in Islamic Finance

In the realm of Islamic equity investment, a meticulous approach is adopted to ensure adherence to *halal* essence. This process involves a rigorous two-step screening procedure, encompassing industry-specific and financial assessments. The criteria for screening are

established by a *Shariah* advisory board, typically comprised of experts in Islamic law. The initial industry screening is designed to exclude entities engaged in activities deemed morally objectionable or harmful to societal welfare. While not universally consistent, there exists a consensus among *Shariah scholars* regarding industries considered as ethically unsound. Common sectors prohibited from Islamic investment include alcohol, entertainment, pork-related products, gambling, prostitution and pornography, tobacco and the weapons industry (Derigs and Marzban, 2008).

In contrast to other socially conscious investment paradigms, Islamic investors face limitations not only in terms of social considerations but also due to stringent financial criteria. The scrutiny of a company's financial statements is driven by the prohibition of *riba* in any form within Islamic tenets. Yet, a significant portion of Western publicly traded companies are closely entwined with interest-based banking systems. A complete avoidance of interest payments would substantially reduce the pool of eligible investments. To tackle such challenges, *Shariah* scholars have established threshold levels for some specified accounting ratios to be in accordance with the Islamic law (El-Gamal, 2006; Adamsson et. al., 2017).

Typically, Islamic index providers assess companies based on four primary financial indicators:

1. Liquidity: To comply with the requirement that profits must primarily stem from non-liquid assets, a firm's liquid assets should not unduly dominate its overall market value.
2. Interest: *Shariah's* strict prohibition of interest as a source of income necessitates identification of the proportion of total profits generated from interest-based activities.
3. Debt: In addition to being prohibited as a source of income, interest is also disallowed as a payment form. Consequently, companies with high leverage do not meet the criteria.

4. Non-permissible income: Acknowledging that multinational firms engage in various activities, some of which may involve non-compliant practices, *Shariah* boards allow a certain threshold of income from such activities. But this income is subject to purification through charitable giving (goodwill) for the good of society.

1.2 Prospective of Derivatives in Islamic Finance

Derivatives, renowned for their role in managing risk in Western financial systems, pose a significant challenge within Islamic finance due to their non-alignment with fundamental Islamic legal principles. This divergence arises from the inherent uncertainties in derivatives, which contradicts the imperative for transparency and certainty mandated by Islamic law. Despite the established effectiveness of derivatives in conventional finance, their acceptance within Islamic finance is limited due to their perceived deviation from *Shariah*'s requisites for a just and equitable financial system. The unpredictability inherent in derivative payoffs conflicts with the Islamic law's demand for clarity and certainty in financial transactions, aimed at ensuring fairness and justice in economic dealings while preventing ignorance-based exploitation (Sole & Jobst, 2012).

Recognizing the significance of hedging instruments in mitigating risks, the absence of *Shariah-compliant* equivalents presents a deficiency in risk management tools within Islamic financial institutions. The lack of *Shariah-compliant* derivatives hampers these institutions from leveraging the advantages offered by Western derivatives, particularly in managing liquidity and efficiently allocating funds. Differing perspectives among *Shariah* scholars have led to varied regulatory approaches across different countries. While the more restrictive countries have opted for a comprehensive ban on derivatives, others with more ease have permitted their restricted use through complex structures, like SPV's or swap contracts. Islamic finance entities have responded by either utilizing Western derivatives or developing specialized *Shariah-compliant* hedging solutions, referred to as "wrappers," to address the imperative of risk management while adhering

to *Shariah* principles (Jobst, 2007).

The complexity of standardizing Shariah-compliant derivatives by the absence of common grounds under Islamic law has caused transactional delays within Islamic finance and its ability to stay competitive or open to new horizons in comparison to Western finance; however, initiatives are ongoing from both regulatory bodies and private sector entities to establish steadfast Islamic finance principles, aiming for consistent adherence to Islamic norms and advancing the development and standardization of Shariah-compliant derivatives.

1.3 Prospective of “Bonds” in Islamic Finance

Islamic finance confronts challenges steaming from religious injunctions against debt exchange and the requisite involvement of actual ownership stakes to engage in commercial venture exposure, impeding the further evolution of financial mechanisms adhering to Islamic principles. However, *sukuk* bonds have emerged as a substantial solution, adeptly navigating these obstacles through astute interpretation and application of *Shariah* principles. These *sukuk*, adhering to *Shariah* law, manifest as tradable, asset-backed, medium-term notes issued globally by governments, quasi-sovereign entities, and corporations. Their advent symbolizes the amalgamation of securitization constructs with intricate tenets of *Shariah* principles, offering structured financial instruments subjected to competitive pricing.

Sukuk notes confer upon investors an equity interest facilitated by a call option mechanism that specifically relates to the partial or complete ownership of underlying reference asserts. These assets encompass a gamut of Islamic finance transactions, imparting ownership to investors through two principal structures: a direct issuance by asset originators supported by existing Islamic assets or issuance by a Special Purpose Vehicle (SPV) subsequent to acquiring these assets. The SPV methodically organizes anticipated cash flows from these assets into *sukuk* payments obligations, furnishing investors with proportional stake in the SPV and its generated proceeds

(Safari, 2011).

While the bulk of *sukuk* issues originate from sovereign or quasi-sovereign entities in Islamic domains, they have encountered scrutiny from Islamic scholars concerning their adherence to *Shariah* principles. Predominant concerns revolve around the potential for guaranteed investment income, notably represented using zero-coupon bonds, which might run contrary to *Shariah* principles against interest and lack of exposure to investment risk (Jobst et. al., 2008; Safari, 2011).

The prevalent form of *sukuk*, particularly *ijarah* (asset-based) *sukuk*, relies primarily on cash flows from lease receivables. This structure entails the SPV holding legal ownership of assets, leasing them back to the originator, and maintaining a repurchase obligation to safeguard the transaction against adverse asset performance. Additionally, the headlease-sublease model transfers credit risk from the issuer to the sub-lessee often incorporated a quasi-guarantee to mitigate non-performance risk (Jobst et. al., 2008; Afshar, 2013).

The *sukuk* bonds have evolved into a substantial facet of Islamic Finance, harmonizing the complexities of securitization with the essentials of *Shariah* law. But their alignment with Islamic legal precepts remains a subject of scholarly debate, particularly concerning the assurance of investment returns and the exposure to investment risk. Diverse structures, notably the *ijarah* (asset-based) *sukuk*, furnish varied mechanisms to ensure *Shariah* compliance while providing more extensive financial opportunities within the parameters of Islamic law.

1.4 Prospective of Securitization for Western and Islamic Finance

The Special Purpose Vehicle (SPV) constitutes a pivotal element in the securitization processes of both Islamic and Western financial systems. As elucidated by some academics and professionals, and SPV, also denoted as Special Purpose Entity (SPE), embodies a legally established entity formed by sponsoring or originating firm, hereafter referred to as the sponsor.

This process encompasses the conveyance of assets to the SPV, with a specific and circumscribed purpose, often entailing a series of transactions. SPVs are distinguished by their exclusive dedication to the transactions for which they are created, devoid of autonomous decision-making capabilities. The predetermined rules governing SPVs meticulously delineate and restrict their activities. It's noteworthy that SPVs lack a physical presence and personnel (Gordon, 2007; Soleimani & Shadab, 2020).

The aforementioned definition of the SPV distinctly outlines its role as a mechanism for executing transactions within a securitization process. However, the intricacies of transaction implementation diverge depending on the securitization mode, whether in the Islamic or Western financial domain. Islamic finance, founded on the bedrock of risk-sharing, demands a collaborative absorption of risks and benefits among contractual stakeholders. This distinctive ethos sharply contrasts with the tenets of Western finance, where risk commonly migrates from financier to borrower. Within the financial paradigm, the financier not only upholds dominion over the principal and interest but, as well lays claim to any collateral fortifying the financing arrangement, notably evident in interest rate-based debt contracts, either through direct means or via securitization (Askari et al., 2012; Soleimani & Shadab, 2020).

The principal of risk-sharing assumes paramount significance in the context of securitization, profoundly influencing the role of the SPV. In Western finance, a bank establishes an SPV and transfers assets from its balance sheet to it. This process, known as off-balance sheet financing, utilizes the assets as collateral for issuing new debt-like instruments. Conversely, in the Islamic Finance model of securitization, ownership of the underlying assets resides with security holders, while the SPV functions exclusively as a conduit for managing cash flows. The resulting securitized assets, termed asset-linked securities, deviate from Western debt instruments, lacking guarantees or insurance against risks in terms of both principal and returns (Soleimani & Shadab,

2020). These distinctions, rooted in the principles of risk-sharing and asset ownership, wield substantial implications for the operational dynamics of SPVs within the Islamic finance framework.

Methodology

2. Financial engineering of Western equities to Islamic equities via SPV's.

2.1. Equity *Murabaha*

2.1.1 General description of an Equity *Murabaha*

Equity *Murabaha* stands as a crucial instrument within Islamic finance, facilitating the acquisition of shares or equity while adhering rigorously to *Shariah* principles. A fundamental aspect of this transactional model involves the deployment of two distinct *murabaha* contracts – a mechanism designed to ensure strict compliance with Islamic Finance tenets, such as liquidity, debt, interest and non-haram equities and, to foster transparency throughout the transactional process.

Central to the structure of this framework are the parallel *murabaha* contracts. The inaugural contract marks the commencement of the financial institution's acquisition of requested shares in representation of the client, thus temporarily vesting ownership to the institution. This initial phase is meticulously structured to resemble a conventional interest-based financial instrument.

The subsequent second *murabaha* contract orchestrates the sale of the acquired shares to the client at an agreed-upon price, meticulously accounting for the initial cost and an agreed-upon profit margin. The adherence to transparent terms and conditions is paramount in ensuring unwavering compliance with *Shariah* law, thereby enabling the acquisition of shares for the client without recourse to interest-based financial instruments.

The structural integrity of employing parallel *murabaha* contracts serve to carefully align with *Shariah* principles, by segregating ownership phases and eschewing interest-based elements. This intricate framework affords Islamic Financial Institutions the capacity to assist investors in acquiring desired equity holding upholding *Shariah* adherence while providing equitable, transparent and compliance-driven process in the acquisition and subsequent sale of shares or equity.

2.1.2 Detailed structure and flow of an Equity *Murabaha*

The Equity *Murabaha* structure comprises several agreements orchestrated to align Western financing with *Shariah*-compliant principles, and it is illustrated in Figure 1:

1. A conventional interest-bearing facility agreement is established between a financier and a Special Purpose Vehicle (SPV) within an orphan structure, providing senior debt.
2. An arrangement between the SPV and a company occurs via a Master *murabaha* agreement (MMA). The funds sourced from the MMA constitutes junior debt or “equity” for asset acquisition.
3. The SPV utilizes funds from the facility agreement and the *murabaha* proceeds to acquire the asset, providing direct security to the financier, including security over the asset.
4. Income generated by the asset services the interest on the facility agreement. Any surplus, after servicing the interest and amortization, is earmarked for payment to the company, structured within the terms of the MMA.
5. The structure segregates the left-hand side as conventional financing and the right-hand side as *Shariah* compliant, ensuring alignment from a *Shariah* fund’s perspective.
6. Cash flows allocate surplus income from the SPV to the company on the *Shariah* compliant right-hand side. No contractual connection exists between the company and the financier, prohibiting intercreditor arrangements. Thus, subordination clauses in the MMA favor

amounts owed under the facility agreement.

7. A purchase option agreement between the SPV and the company enables the latter to purchase the asset at any time for a variable “strike price” equivalent to the SPV’s outstanding debt to the financier. This mechanism allows recovery of the MMA’s equity injection, capturing capital appreciation on the Shariah-compliant side. The SPV repays the financier, releases the security, and transfers the asset to the Company, enabling profit realization.

In essence, this intricate structure integrates Western financing and *Shariah* compliance through segregated agreements and mechanisms, facilitating asset acquisition, income distribution, and eventual sale within the parameters of Islamic Finance.

3. Financial engineering of Western derivatives to Islamic derivatives

3.1. Islamic Profit Rate Swaps (IPRS)

3.1.1 General description of the IPRS

A profit rate swap concept bears conceptual similarity to the conventional interest rate swap, wherein participating parties enter into a contractual agreement to exchange periodic fixed and floating payments rooted in a predetermined notional value. Specifically, an interest rate swap denotes an arrangement where two entities mutually consent to exchange one stream of interest payments for another within a determined and stipulated timeframe.

In the context of Islamic finance, a profit rate swap represents an agreement aimed at exchanging profit rates between a party committed to a fixed rate and another adhering to a floating rate, or vice versa. This arrangement is executed via a series of underlying contracts designed to trade specific assets. Each party’s payment obligations are computed using distinct pricing methodologies. Crucially, in an Islamic profit rate swap, the notional principal remains

unexchanged, being offset against each other. The term *murabaha* delineates a procedure aimed at generating consistent fixed payments encompassing both a cost price and an unchanged profit component. Concurrently, a sequence of corresponding reverse *murabaha* contracts facilitate the creation of variable leg payments, where the cost price remains constant while the profit component fluctuates.

It is imperative to note that an agreement where the payer of the floating rate merely undertakes to make variable payments, often correlated with benchmarks like LIBOR, on predetermined dates would fall short of *Shariah* compliance due to the inherent uncertainty (*gaharar*) embedded in such framework. However, to address this concern, a series of sequential secondary reverse *murabaha* contracts is introduced, effectively tying linking each floating-rate payment to an underlying purchase and sale of commodities or assets. This technique alleviates the apprehension regarding uncertainty by establishing the foundation of the variable-rate payment on tangible transactions.

Upon each payment date when the fixed-rate payer fulfills their obligation to the floating-rate payer within the primary term *murabaha*, a corresponding sequential secondary reverse *murabaha* contract activates, reciprocating the payment. This parallel transaction maintains parity in the commodity aspect, wherein the cost price in the primary *murabahah* payment aligns with the entire commodity value in the secondary reverse *murabaha* contract.

However, distinction arises in the profit elements: the fixed rate governs the calculation of the profit element within the primary *murabaha*, while the floating rate dictates the profit element in the secondary reverse *murabaha* contract. This nuanced approach ensures adherence to *Shariah* principles while establishing cash flows that, through *Shariah*-compliant, bear resemblance to the structural dynamics observed in conventional interest rate swaps.

3.1.2 Detailed structure and flow of an IPRS

To construct an IPRS, the process comprises two distinct operational procedures: a primary term *murabaha* and a secondary reverse *murabaha* contract (Figure 2 & Figure3), demonstrated comprehensively in the schematic illustration within Figure 4.

Primary Term Murabaha:

1. The variable-rate payer engages a commodity broker (Broker 1) to acquire specific commodities.
2. These commodities are sold to the swap counterparty, the fixed-rate payer. The transaction's pre-determined cost price defines the value of these commodities, which are delivered upon agreement initiation.
3. Upon receiving the purchase commodities, the fixed-rate payer (or its representative) promptly sells these commodities to another commodity broker (Broker 2) to obtain immediate liquidity.
4. The fixed-rate payer fulfills payment for the acquired commodities through a term *murabaha* arrangement, in deferred instalments scheduled on pre-determined dates. Each instalment comprises two components: a cost price element (reimbursing a set percentage of the cost price) and a fixed profit portion (representing a segment of the floating-rate payer's profit from the transaction).

Secondary Reverse Murabaha Contract:

5. On day one, coinciding with the initiation of the primary term *murabaha*, the fixed-rate payer engages in the inaugural secondary reverse *murabaha* contract (SRMC). This involves employing an amount equivalent to the forthcoming cost price owed by the variable-rate payer on the subsequent deferred payments date within the primary term *murabaha*. This sum is utilized to procure commodities from a designated commodity broker. It's important to note that each SRMC transaction pertains to a fractional segment

of the total value of commodities acquired under the primary term *murabaha*.

6. The fixed-rate payer promptly executes the sale of these commodities to the floating-rate payer, ensuring immediate delivery.
7. The variable-rate payer expeditiously conducts the sale of said commodities to Broker 1 with the primary objective of generating immediate cash proceeds.
8. The payment structure by the floating-rate payer is designed as a deferred single bullet payment, encompassing two components:
 - a) The complete value of the commodities obtained through the SRMC.
 - b) The fixed-rate payer's profit, computed through a variable-rate formula correlated with benchmark like LIBOR, thereby establishing the floating rate element.

Each installment of the SRMC payment is aligned with subsequent deferred payment dates specified within the primary term *murabaha* agreement. These payments follow a recurring schedule, occurring at three-month intervals.

3.1.3 Pricing the Islamic Profit Rate Swaps

The valuation of an Islamic Profit Rate Swap (IPRS) necessitates the assessment and determination of three key components:

- Calculation of the cash flows associated with the floating rate leg (Equation 1).
- Estimation and application of appropriate discount factors to these cash flows, thereby computing their present value (Equation 2).
- Evaluating and determination of the counterparty's default spread amount (Equation 3).

4. Financial engineering of Western bonds to Sukuk's via SPV

4.1. *Al-Ijara Sukuk*

4.1.1 General description of the *Sukuk*

The *ijara* contract stands as an integral exchange agreement in Islamic finance, involving the acquisition and leasing of assets by one party to fulfill the needs of another party, with a predetermined rental fee. Ownership of the asset remains vested in the lessor throughout the leasing period. A prominent application of *ijara* is witnessed in property, plant and equipment financing within Islamic banking, where the bank procures the PPE for a customer and leases it, with the customer paying a rental fee until full payment is made, subsequently leading to asset transfer.

The anticipated return in certain forms of *ijara* contracts may lack complete fixity owing to factors like maintenance and insurance expenses, which are challenges to precisely determine upfront. This inherent variability has rendered the contract negotiable and tradable in the secondary market.

Ijara sukuk denotes securities representing ownership rights to specific, identifiable assets tied to a lease contract, with returns payable to sukuk holders. Notably, payment of *ijara* rentals need not align precisely with the period of asset utilization by the lessee; rather, it can occur before, during, or after the lease period, contingent upon mutual agreement. This adaptable structure allows for the evolution of diverse contract forms and sukuk designs serving varying purposes.

In the issuance of *ijara sukuk*, a specialized entity, typically a Special Purpose Vehicle (SPV) or trust, issues the *sukuk* to finance the acquisition of assets from the obligor. These assets are then leased to a lessee, with lease payments serving as periodic returns to investors (*sukuk* holders). Upon maturity, the obligor repurchases the assets at a predetermined price, and the proceeds from this transaction are disbursed to the *sukuk* holders.

The *ijara* contract, in this *sukuk* framework, serves as a structured mechanism in Islamic Finance facilitating assets securitization via lease arrangements and providing flexible payments

modalities tailored to a spectrum of financial needs.

4.1.2 Detailed structure and flow of *Al-Ijara Sukuk*

The issuance of the *Al-Ijara Sukuk* follows a structured process adhering to Islamic finance principles, and such representation can be seen in Figure 5:

1. The operational framework for its issuance involves the establishment of a Special Purpose Vehicle (SPV) issuer by the Company. This SPV issues the sukuk in the form of trust certificates, representing ownership interests or usufruct rights over specific assets, accompanied by an obligation to distribute income generated by the SPV from these assets to Sukuk holders.
2. Upon subscription, sukuk holders provide proceeds to the SPV issuer, which then creates a trust over these funds and the assets acquired through them, in favor of the sukuk holders. The SPV issuer utilizes these proceeds to acquire designated assets from the Company or a third party.
3. Subsequently, the SPV issuer leases these acquired assets to the company through an *ijara* contract, aligning with the sukuk's tenure. The company, in turn, makes periodic rental payments (either fixed or variable based on benchmarks like LIBOR) to the SPV issuer, prompting corresponding distributions to the *sukuk* holders.
4. Safeguards such as put, and call options are instituted to ensure asset transfer in case of default or maturity. In such instances, the SPV issuer sells the assets to the Company at predetermined price, utilizing the proceeds to reimburse the *sukuk* holders.
5. Additionally, as service agency agreement between the SPV Issuer and the company outlines the latter's responsibilities regarding capital maintenance and insurance for the assets, further defining their operational relationship within this sukuk arrangement.

4.1.3 Pricing a *Sukuk Al-Ijara*

The valuation of a *Sukuk al-Ijara* necessitates the assessment and determination of three key component equations:

- Present Value of Periodic Lease Payments (Equation 4).
- Present Value of Proceeds from Sale of Underlying Asset (Equation 5).
- Expected Sale Price [if sale price is not predetermined] (Equation 6).

4.2. *Murabaha Sukuk*

4.2.1 General description of the *Sukuk*

Murabaha, stemming from the Arabic term “*ribh*” denoting an increase, represents a significant Islamic trust contract based on a sale arrangement. In this contract, it is incumbent upon the seller to divulge the markup to the purchaser, elucidating the profit margin in relation to the seller’s purchase price for a specifically specified asset. The validity of a *murabaha* contract hinges upon the means through which profit is realized, primarily encompassing two distinct methods.

The first method, known as “*bay al-musawamah*” or bargaining sale, stipulates a define price to the seller followed by a negotiation process regarding the final price. Conversely, the second method, termed “*bay al-amnah*” or trust-based sales, involves the seller revealing the actual cost of the commodity, prompting the buyer to propose a fair price based on the seller’s disclosed cost. It is under the normative condition that *murabaha* occurs when the price at which the good is sold exceeds its cost.

Murabaha sukuk denotes a form of securities issuance wherein the fundamental contract between the issuer and the obligor revolves around the sale and subsequent purchase of an asset at markup. The generation of *murabaha sukuk* can materialize through various methods, including a factual purchase and sale involving three distinct parties facilitating the movement of the asset from the seller to the buyer, akin to *bay al-inah*, represents another method. Lastly, a three-party agency

sale employing commodity *murabaha*, also known as *tawarruq*, stands as an alternative approach in establishing *murabaha sukuk*.

4.2.2 Detailed structure and flow of *Murabaha Sukuk*

The issuance of the *murabaha sukuk* follows two distinct structured processes adhering to Islamic finance principles. The first approach involves a *Murabaha* structure via a *bay al-inah* arrangement, and such representation can be depicted in Figure 6 and, the second approach that will be discussed involves a *murabaha* structure through a *tawarruq* and, also such representation can be depicted in Figure 7.

Bay Al-Inah: The sequence of *murabaha sukuk* initiation commences with the company's sale of a specified asset to the Special Purpose Vehicle (SPV), acting as the *sukuk* issuer, in exchange for cash. Subsequently, the SPV issues *sukuk* to procure funds from investors, thereby facilitating the acquisition of the aforementioned asset. Following this, the SPV executes the sale of the asset back to the company at an elevated price structured for deferred payment. Subsequently, the company undertakes periodic payments to the SPV, which in turn disburses these payments among the investors.

Tawarruq: The sequence of the *sukuk* commences with the Special Purpose Vehicle initiating the issuance of *sukuk* on behalf of the company. The SPV issuer issues the *sukuk* in the form of a trust certificates, symbolizing an indivisible ownership stake in specific assets, along with an obligation to distribute income generated from these assets to the *sukuk* holders. *Sukuk* holders subscribe to the offering and provide funds to the SPV issuer. Subsequently, the SPV issuer establishes a trust over the acquired asset and raised funds in favor of the *sukuk* holders. Using the raised capital from the *sukuk* issuance, the SPV issuer procures commodities to the Company supplier through immediate spot transactions. The SPV issuer promptly engages in *murabaha*-based sales of these commodities to the company, typically scheduled, for repayment within three

months. The deferring pricing comprises the commodity cost plus and added premium using a benchmark (e.g. LIBOR) along with a specific margin. The company, upon acquiring the commodities, immediately conducts spot sales, effectively holding the proceeds from the *sukuk* issuance, incurring a liability to repay the principal amount along with an extra profit component, coming from the LIBOR plus margin, within the three-month timeframe. Upon the repayment deadline, when the company settles the deferred *murabaha* payment to the SPV issuer, a new *murabaha* contract is initiated. Through netting procedures, the company remits solely the profit component to the SPV issuer, then the SPV issuer utilizes this profit to fulfill corresponding periodic distributions to the respective *sukuk* holders.

4.3. *Al-Wakalah Sukuk*

4.3.1 General description of the *Sukuk*

Al-Wakalah, a prominent form of Islamic bond (*sukuk*) in the global Islamic financial market, operates based on the Islamic concept of *wakalah* – an arrangement where one-party acts as an agent on behalf of another. This *sukuk* structure involves a principal appointing an agent (*wakeel*) to deploy their capital into various investment, which may encompass Islamic, Western, or a combination thereof, not strictly restricted to *Shariah*-compliant assets. The *wakeel* manages this asset portfolio to yield and agreed-upon return within a specific timeframe aligned with the investor's objectives. For compliance with *wakalah* conditions, both the principal and the *wakeel* must enter a formal *wakalah* agreement.

Al-Wakalah *sukuk* typically use a Special Purpose Vehicle (SPV) to distribute periodic profits to investors. Any surplus cash generated from these distributions become as incentive fee for the *wakeel*. Upon maturity, the SPV entity liquidates the *sukuk*'s investment pool, disbursing the collected amount to the principal before distributing the dissolution amount to respective investors.

In structure, *Al-Wakalah* shares similarities with the *mudharabah* framework, yet it differs notably in the absence of a pre-determined profit ratio. Instead, the *wakeel* receives an incentive fee solely from the surplus capital gain beyond the agreed profit.

4.3.2 Detailed structure and flow of *Al-Wakalah Sukuk*

The issuance of the *Al-Wakalah Sukuk* follows a structured process adhering to Islamic finance principles, and such representation can be viewed in Figure 8:

1. Investor-SVP Relationship: Commencing with trust certificates, a formal relationship is established between investors and the Special Purpose Vehicle (SPV).
2. Wakalah Agreement: The SPV, acting as the *sukuk* issuer, engages in a *wakalah* agreement with a *Wakeel* to manage and invest funds.
3. Sukuk Issuance: *Sukuk* represents undivided ownership stake in *wakalah* assets, entitling investors to periodic distribution amounts and dissolution amounts (once it reaches maturity). Investors subscribe by providing fixed principal amounts to the SPV.
4. Sukuk Proceeds Investment: The *wakeel*, serving on behalf of the SPV, strategically invests the *sukuk* proceeds into a predefined portfolio according to specific criteria.
5. Wakalah Assets Acquisition: Utilizing the *sukuk* proceeds, the *wakeel* procures *wakalah* assets from various sellers.
6. Asset Management: The *wakeel*, representing the SPV, manages the acquired assets to generate agreed-upon returns within specified timeframes. Profits derived from these *wakalah* assets are held by the *wakeel* for the benefit of the SPV.
7. Profit Distribution: Profits realized from the managed assets are used to pay the periodic distribution amounts to investors. Any surplus returns serve as incentive or performance fee for the *wakeel*. Contingency mechanisms may be in place to address scenarios where asset returns fall short from the periodic distribution payment.

8. Maturity and Dissolution: Upon maturity, the SPV exercises options stipulated in the purchase undertaking. This obligates the one managing the SPV to purchase assets at the price equal to the dissolution amount payable to investors. Acting as a trustee, the SPV disburses dissolution amounts to investors, using the exercised price received, effectively concluding the trust.

Analysis

In the scope of Islamic Finance, the application of financial engineering intersects with the discernment and conduct of investors, shaping their approaches and strategies amidst the adherence to *Shariah* principal. This fusion allows investors to navigate the Western market while aligning with ethical guidelines, utilizing innovative financial instruments and structures devised through financial engineering, often employing SPVs. This approach empowers investors to comprehend and respond to markets dynamics, integrating Islamic principles into investment strategies. Financial engineering in Islamic finance thus facilitates the development of investment avenues that cater to ethical considerations while considering investor behavior. It enables the formulation of strategies grounded in the *Shariah* finance principles of fairness, risk-sharing, and asset backing.

Equity *Murabaha* represents a financial mechanism deeply rooted in Islamic finance principles, offering *Shariah*-compliant avenue for investors to engage with Western assets (i.e. equities, real estate, commodities and trade finance) without resorting to interest-based transactions. This instrument presents distinct advantages, notably its adherence to *Shariah* guidelines, aligning with ethical considerations while enabling risk management through a transparent cost-plus-profit arrangement. However, its implementation poses challenges, including complexity in structuring transactions, potential pricing intricacies, and lack of standardized practices, which may lead to dispute or ambiguities in interpretation. Despite these complexities,

Equity *Murabaha* stands as an invaluable tool for portfolio diversification, albeit with considerations of its nuanced nature and potential limitations in certain markets, urging prudent assessments and meticulous understanding before integration within investments strategies.

The implementation of Islamic Profit Rate Swaps (IPRS) significantly influences trading dynamics for investors within Islamic finance. Firstly, IPRS enables investors to engage in profit-rate exchange transactions compliant with *Shariah* principles instead of interest-rate transactions which are not acceptable, broadening the scope of available financial instruments. This expands the avenues for risk management, allowing investors to hedge against profit rate fluctuations without contravening religious beliefs. However, the complexity involved in structuring IPRS, coupled with potential liquidity constraints and higher associated costs, might impact trading volumes and accessibility. Investors' engagement with IPRS is intricately linked to their risk appetite, market expertise, and commitment to *Shariah* compliance, ultimately influencing trading strategies. Additionally, the availability and adoption of IRPS influence market behavior, shaping perceptions regarding Islamic instruments and fostering a more diverse and nuanced trading landscape with this method.

Sukuk al-ijara offers investors a solid blend of stability and asset-backed security. Its advantages lie in the tangible assets underpinning the *sukuk*, providing a sense of reliability as regular rental income streams are generated from properties or equipment. This asset-based nature not only ensures a stable income for investors but also allows for diversification within portfolios. However, disadvantages include vulnerability to risks associated with the underlying assets, such as depreciation or damage, which can affect returns. Additionally, limited secondary market liquidity might hinder ease of trade. Despite these drawbacks, investors gravitate towards these *sukuk*'s due to its tangible and secure asset backing, offering a balance between stability and portfolio diversification within the realm of *Shariah*-compliant investments.

Sukuk al-murabaha present investors with a structured and predictable profit model, offering clear advantages in terms of transparency and defined returns. The appeal lies in the explicit profit margin agreed upon at the inception of the transaction, ensuring clarity for investors. Additionally, its flexibility in maturity and indirect asset ownership further attract investors seeking tailored and adaptable investment vehicles. However, challenges arise from potential price opacity in underlying assets or commodities, impacting trust and valuation. Market fluctuation also poses risks, influencing returns and resale values. Despite these drawbacks, investors favor these *sukuk*'s for its structured returns, flexibility, and potential alignment with specific financing needs, providing a balance between predictability and adaptability within *Shariah*-compliant investment portfolios.

Sukuk al-wakalah offers a unique blend of flexibility and risk management, making it attractive to investors seeking adaptable *Shariah*-compliant instruments. Its advantages stem from agency agreements, enabling effective risk transfer and versatility in meeting diverse investment needs. However, this flexibility comes with challenges, including reliance on the credibility of involved parties and complexities in ensuring strict adherence to *Shariah* principles. Despite these drawbacks, investors are drawn to these *sukuk*'s for its potential to manage risks efficiently and its adaptable nature, providing a balance between risk mitigation with Islamic investment portfolios.

Conclusion

Certainly, the evolution of Islamic finance has been characterized by its remarkable global expansion, firmly anchored in the principles of *Shariah*. To reach to a different stage, the utilization of Special Purpose Vehicles (SPVs) has emerged as an essential mechanism, facilitating a diverse spectrum of *Shariah*-compliant financial arrangements. These arrangements have not only demonstrated the resilience of the Islamic finance but also underscored its adaptability to modern financial tools and structures, which can become available to any investor, particularly Islamic

investors.

The aspirations of Islamic investors to broaden their profiles, expand expectations, and foster greater diversity in investment opportunities have led them to actively seek entry in the Western market in a creative and interesting manner. This endeavor necessitates the strategic deployment of innovative financial engineering tools like Equity *Murabaha* (purchase of assets in portfolio via two distinct contracts sitting adjacent to each other), Islamic Profit Rate Swaps (agreed profits swap in similar fashion as an interest rate swap), and a range of *sukuk* types such as *al-ijara* (leasing agreements), *al-murabaha* (asset management with a mixed of geographical and sectorial assets) and *al-wakalah* (agency portfolio management agreement). These tools serve as bridges, facilitating the convergence of *Shariah*-compliant finance with Western financial frameworks, thereby enabling in some cross-cultural financial integration.

By exploring the concept of financial engineering using SPVs as facilitators not only represents an examination of strategies and *Shariah* alignments but also signifies an important intersection between Western finance's assimilation and its integration into the intricate fabric of Islamic financial landscape. The finding of this study holds some profound implications, not only for the theoretical underpinning of finance but also for the practical dynamics of global and geographical financial markets for a better integration of investors profiles and expectations.

Moreover, this dissertation doesn't just emphasize the significance of alignment and integration; it also showcases the potential synergies that can arise between these two distinct yet increasingly interdependent financial system. By providing just a glimpse of what can be achieved, financial engineering with the using SPVs still has a significant margin to grow, as there are aspects that remain underdeveloped and can be captured through such processes. With this in mind, it could set stage for a new chapter in the evolution of Islamic finance, enabling investors to take advantage of emerging opportunities in this space.

References

- Abubakar, Y. S., Nafees, S. M., Dorloh, S., & Aji, R. H. 2023. "The Concept of Sukuk and its Applications in Contemporary Islamic Financial System". *Law and Humanities Quarterly Reviews*, 2(3): Pages 39-54.
- Adamsson, H., Bouslah, K. & Hoepner, A. G. F. 2014. "Profiting from Principles? The Curious Case of Islamic Equity Indices". Available at SSRN: <https://ssrn.com/abstract=2390347>.
- Afshar, T. A. 2013. "Compare and contrast sukuk (Islamic bonds) with conventional bonds, are they compatible?". *Journal of Global Business Management*, Volume 9: Pages 44-52.
- Addleshaw Goddard. 2017. "Islamic Finance Guide". Addleshaw Goddard LLP.
<https://www.addleshawgoddard.com/globalassets/specialisms/finance/islamic-finance/islamic-finance-guide.pdf>.
- Akhtar, Shumi & Jahromi, Maria. 2017. "Risk, return and mean-variance efficiency of Islamic and non-Islamic stocks: evidence from a unique Malaysian data set". *Afaanz Accounting & Finance*, Volume 57, Issue 1: Pages 3-46.
- Al-Jallad, R. T. 2018. "The Effect of Innovative Islamic Profit Rate Benchmark on Pricing Islamic Derivatives Securities. *The Educational Review*, Volume 2: Pages 427-431.
- Al Maddah, F. A., 2017. "Islamic Finance and the Concept of Profit and Risk Sharing". *Middle East Journal of Entrepreneurship, Leadership and Sustainable Development*, Volume 1, No.1.
- Almanaseer, Mousa, Al Mahamed, Shoish & Matarneh, Bashar. 2014. *Islamic Finance as an Alternative for Supplementary Loans in Commercial Banks: A Descriptive and Analytical Study of Alternatives*. *Research Journal of Finance and Accounting*, Volume 5, No.15: Pages 142-147.
- Askari, H. 2012. *Islamic Finance, Risk-Sharing, and International Finance Stability*. *Yale Journal of International Affairs*, Volume 7: Pages 1-8.

- Askari, H., Iqbal, Z., Krichene, N., & Mirakhor, A. 2012. Risk Sharing in Finance. The Islamic Finance Alternative. Singapore: Wiley.
- Bacha, O. I., & Mirakhor, A. 2013. Islamic capital markets: A comparative approach. Singapore: Wiley.
- Derigs, Ulrich, and Shehab Marzban. 2008. "Review and Analysis of Current Shariah-Compliant Equity Screening Practices". International Journal of Islamic and Middle Eastern Finance and Management, Volume 1: Pages 285-303.
- El-Gamal, Mahmoud A. 2006. Islamic Finance Law, Economics and Practice. Cambridge University Press.
- Gorton, Gary B. & Souleles, Nicholas S. 2007. "Special Purpose Vehicles and Securitization". NBER Working Paper No. W11190.
- Islamic Financial Service Board. 2022. "Stability Report". Islamic Financial Service Industry <https://www.ifsb.org/download.php?id=6571&lang=English&pg=/index.php>.
- Ismail, Abdul G., Kusairi, Suhal & Arshad, Noraziah C. 2009. "Sukuk Structure". Universiti Kebangsaan Malaysia. Working Paper in Islamic Economics and Finance No WIEF0903.
- Jabeen, Zohra & Javed, Mohammad T. 2007. "Sukuk-Structure: An Analysis of Risk-reward Sharing and Wealth Circulation". The Pakistan Development Review, Volume 49, No. 4: Pages 405-419.
- Jobst, A. A., Kunzel, P., Mills, P., & Sy, A. 2008. Islamic bond issuance: what sovereign debt managers need to know. International Journal of Islamic and Middle Eastern Finance and Management, Volume 1: Pages 330-344.
- Jobst, Andreas A. 2007. "The Economics of Islamic Finance and Securitization". IMF Working Paper No. 07/117.

- Jobst, Andreas A. & Sole, Juan A. 2012. “Operative Principles of Islamic Derivatives – Towards a Coherent Theory.” IMF Working Paper No. NO.12/63.
- Kumar, Rajesh. 2014. Theories and Cases. Strategies of Banks and Other Financial Institutions. Elsevier Inc.
- Omar, Mohd A., Abduh, Muhamad & Sukmana, Raditya. 2013. Fundamentals of Islamic Money and Capital Markets. Singapore: Wiley.
- PWC. 2011. “The Next Chapter: Understanding of Special Purpose Vehicles”. PWC LLP. <https://www.pwc.com/gx/en/banking-capital-markets/publications/assets/pdf/next-chapter-creating-understanding-of-spvs.pdf>.
- Razak, Sarah S., Saiti, Buerhan, & Dinç, Yusuf. 2019. “The contracts, structures and pricing mechanisms of sukuk: A critical assessment”. Borsa Istanbul Review, Volume 19: Pages S21-S33.
- Safari, Meysam. 2011. “Are Sukuk Securities the Same as Conventional Bonds?”. Foundation of Islamic Finance Series – Second Conference.
- Soleimani, Mohammad & Shadab, S. M. 2020. “Roles and functions of special purpose (SPV): A comparison between Islamic and Conventional finance”. Journal of Emerging Economics & Islamic Research, Volume 8: Pages 1-11.
- Warde, I. 2010. “Islamic Finance in the Global Economy”. Edinburgh University Press.

Appendix

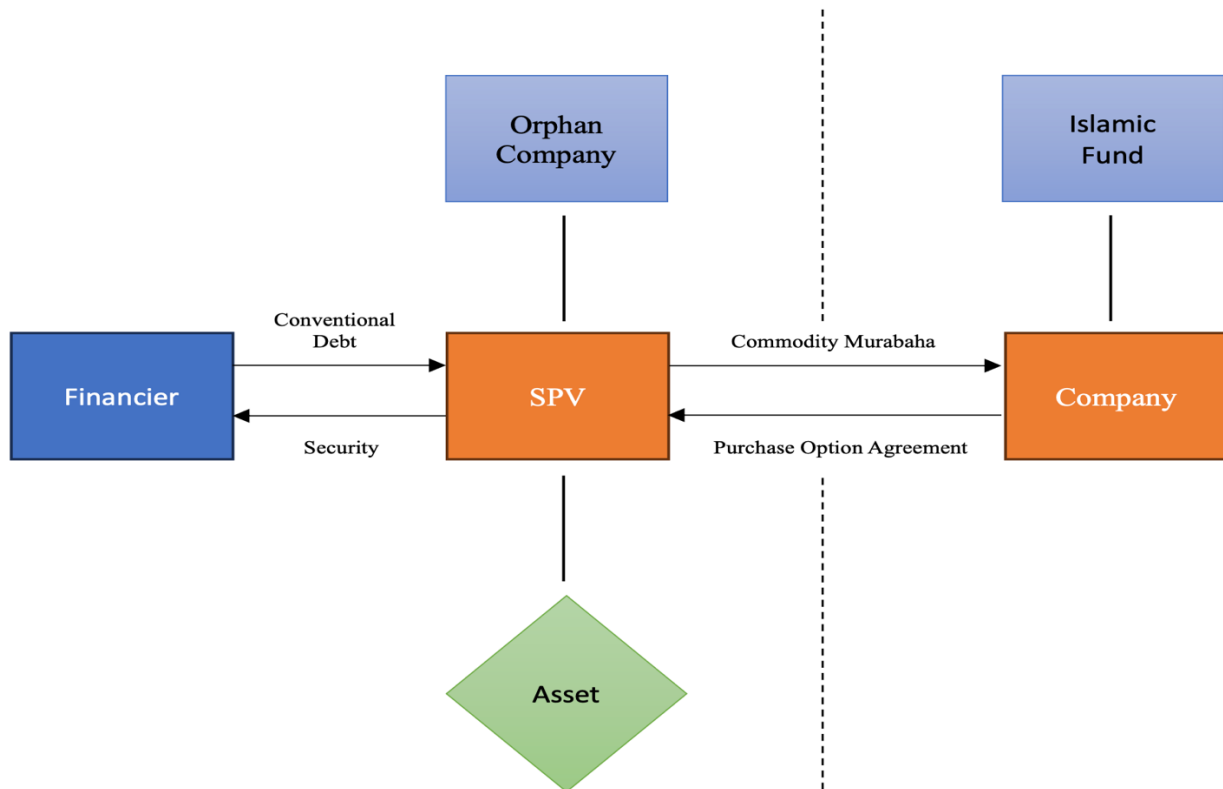


Figure 1: Flow diagram of an Equity *Murabaha*

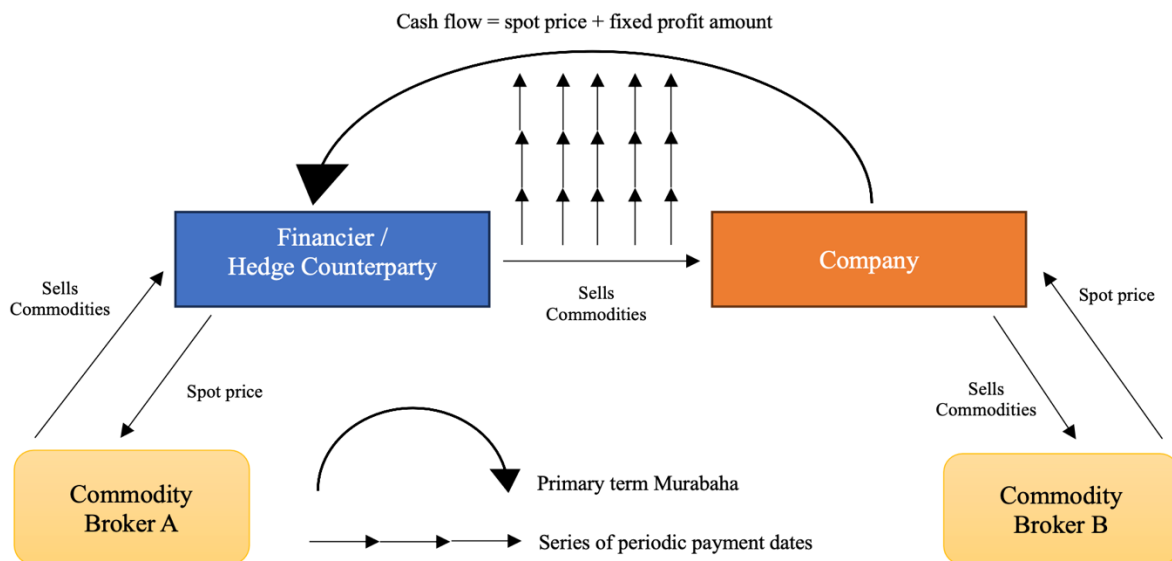


Figure 2: Flow diagram of the Primary Term *Murabaha*

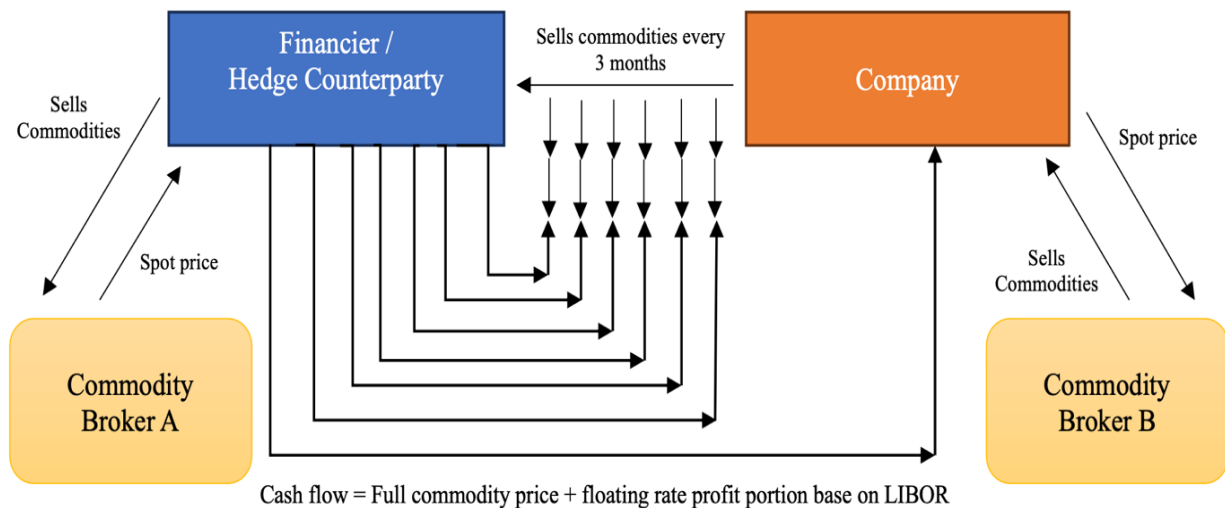


Figure 3: Flow diagram for a Secondary Reverse *Murabaha* Contract

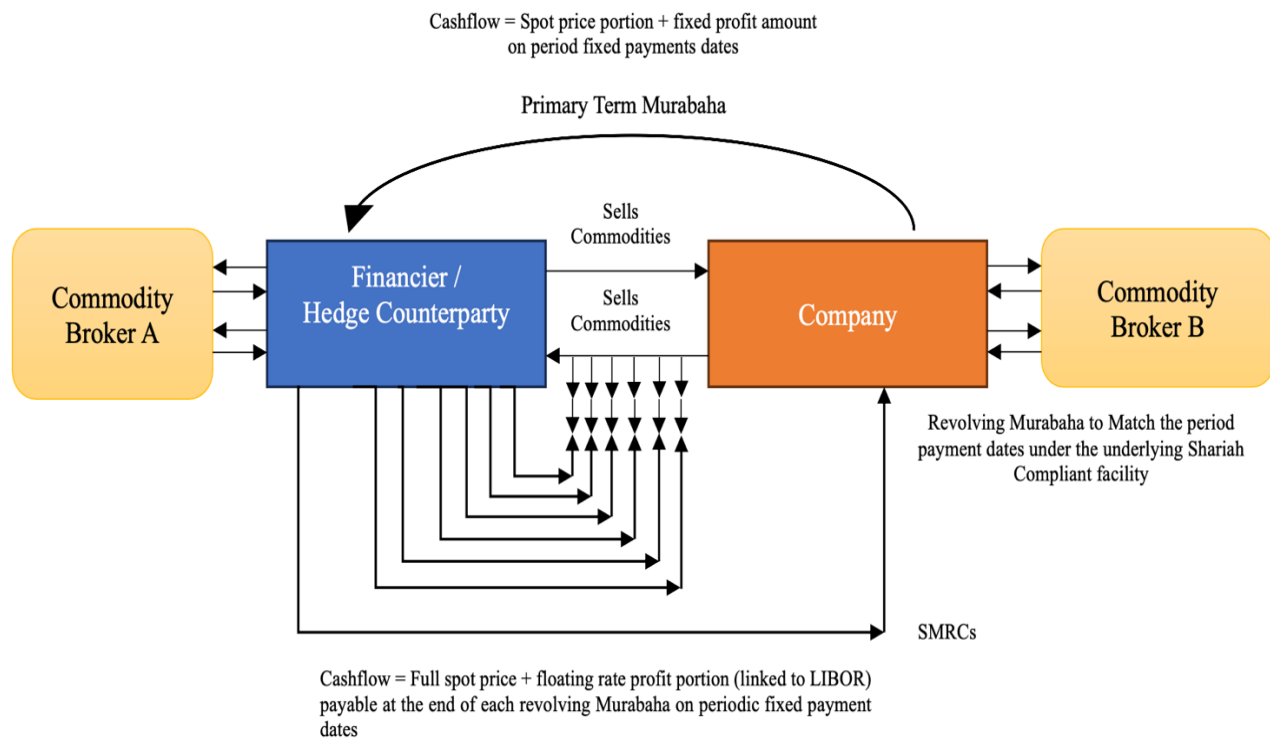


Figure 4: Flow diagram of an *Islamic Profit Rate Swap*

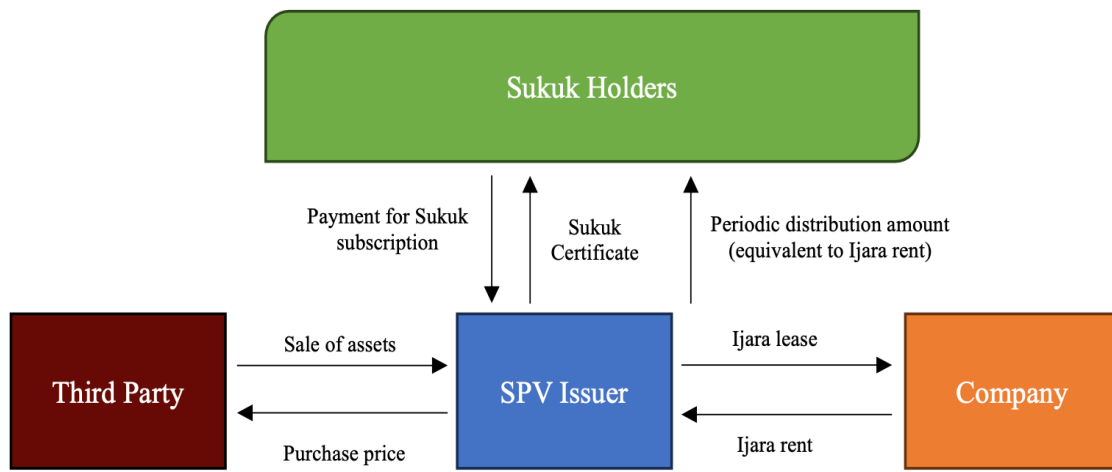


Figure 5: Flow diagram of a *Sukuk Al-Ijara*

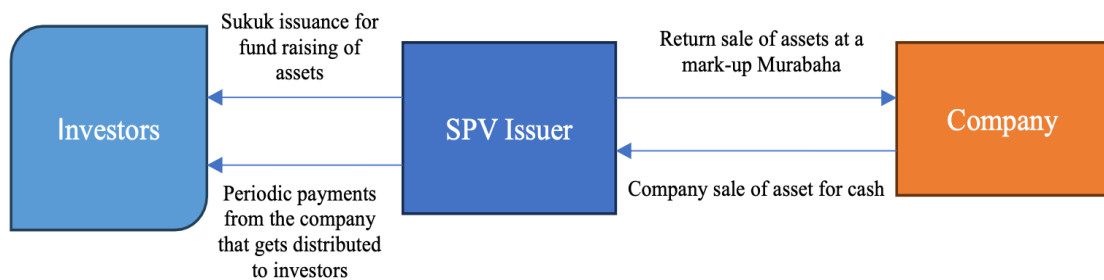


Figure 6: Flow diagram of a *Sukuk Al-Murabaha (Bay Al-Inah)*

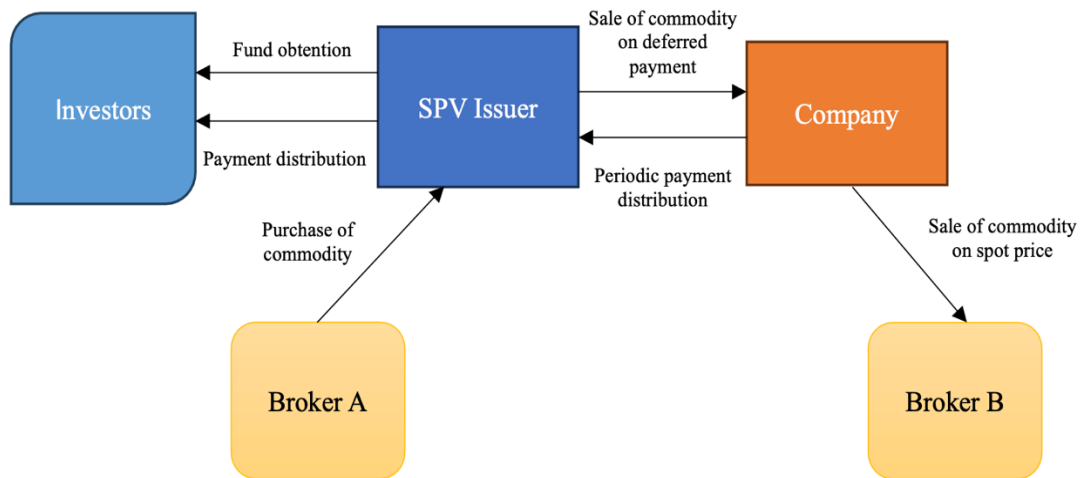


Figure 7: Flow diagram of a *Sukuk Al-Murabaha (Tawarruq)*

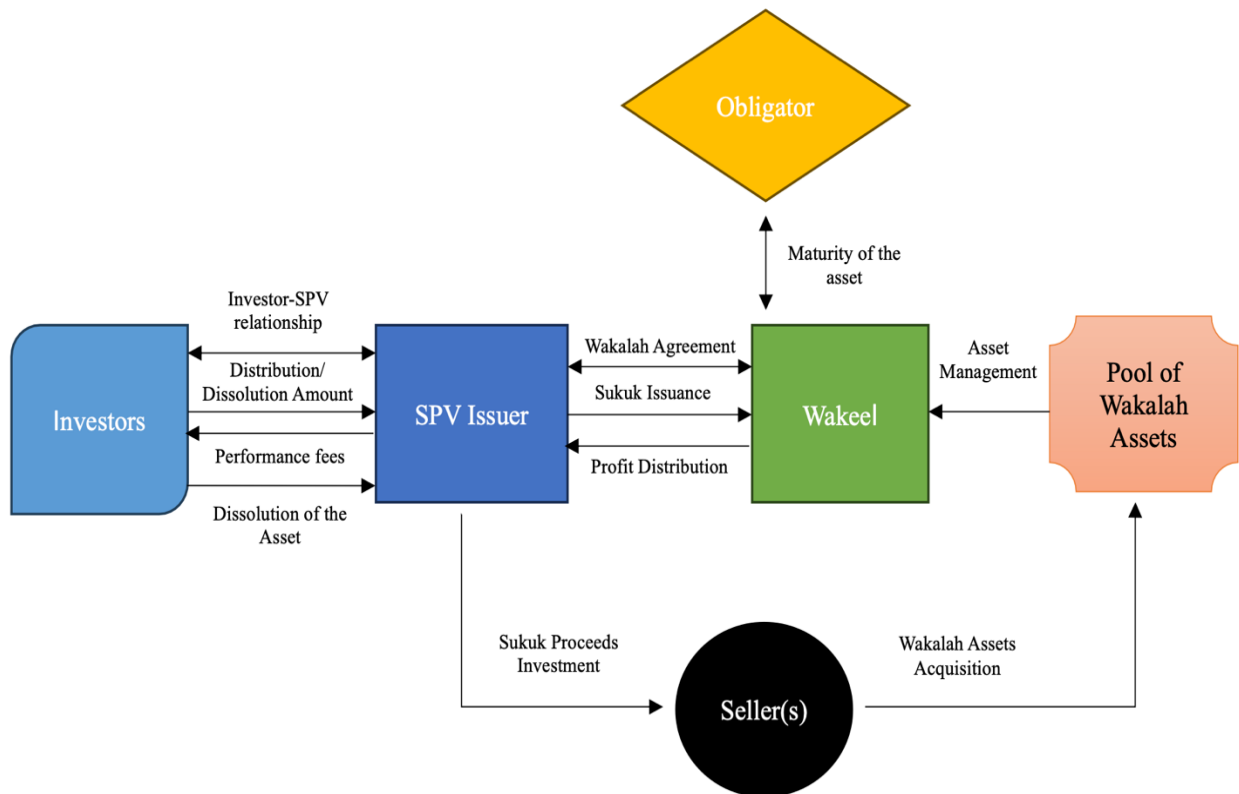


Figure 8: Flow diagram of Sukuk Al-Wakalah

Equation 1: $P_0^{IPRS} = \frac{CF_1 + P_N}{(1 + r_1)}$

Where:

P_0^{IPRS} = market price of floating leg.

CF_1 = Cash flow of first scheduled payment, amount equals to notional principal multiplied by profit rate available at initiation date.

P_N = Notional principal of the contract.

r_1 = profit rate period one.

Equation 2: $PV = \sum_{t=1}^n \frac{CF_t}{(1+r)^t}$

Where:

PV = Present Value

CF_t = Cash Flow at time t

r = Discount rate

n = Number of Periods

Equation 3: Default Spread = Government rates – LIBOR rates

Equation 4: $PV_{lease} = \frac{C}{(1+r)^n}$

Where:

PV_{lease} = Present value of periodic lease payments

C = Cash flow from the periodic lease payment

r = Discount rate (opportunity cost)

n = Time period when the cash flow will occur

Equation 5: $PV_{sale} = \frac{S}{(1+r)^t}$

Where:

PV_{sale} = Present value of proceeds from the sale of the underlying asset

S = Sale price of the asset

r = Discount rate (opportunity cost)

t = Time when the cash flow will occur

Equation 6: $Expected\ Sale\ Price = \sum_{i=1}^n P_i \times SP_i$

Where:

P_i = Probability of each potential sale price

SP_i = Potential sale price associated with probability P_i