Proceedings of the Fourth Harvard University Forum on Islamic Finance: Islamic Finance: The Task Ahead
Cambridge, Massachusetts. Center for Middle Eastern Studies, Harvard University. 2000. pp.165-171

The Scope of Off-Balance-Sheet Transactions in Islamic Finance

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ABSTRACT

Conventional finance experienced rapid growth as a result of financial innovation, including the introduction of off-balance-sheet transactions such as swap agreements. Such activities enabled financial intermediaries to enhance liquidity and returns on otherwise dormant assets, to manage portfolios through diversification, and to better manage market, price, and credit risk. This paper examines the scope of a subset of off-balance-sheet activities within the context of Islamic finance and explores the ways these can be either emulated or developed using existing instruments of Islamic finance. The paper demonstrates the construction of a floating-to-floating or fixed-to-floating swap agreement using *murāba®a* and/or *ijāra* contracts. It further examines the mechanism of introducing currency swaps using the same instruments. Finally, the paper argues that with the introduction of such off-balance-sheet activities, financial institutions or intermediaries in an Islamic financial system can achieve improved liquidity, portfolio diversification, and risk management.

I. INTRODUCTION

During the 1980s, a wide range of innovative financial products emerged to meet the rapidly changing demand of international financial markets. Financial innovation was triggered by increased interest and exchange rates, volatility as result of the breakdown of the Bretton Woods system, change in monetary policy targets, and the continued liberalization of global capital flow. In addition, tax asymmetries, regulatory changes resulting in increased competition, breakthroughs in telecommunication and computing technology leading to lower cost of information and transaction, as well as advances in financial theory (option pricing), further helped rapid application of financial engineering to develop and to innovate complex, flexible, and liquid instruments.[i] As a result, exchange traded derivative products in form of futures and options, and off-balance-sheet activities such as over-the-counter (OTC) contracts including forward contracts, swap agreements and synthetic instruments have dominated international financial markets.

Off-balance-sheet activities enabled financial intermediaries to enhance liquidity and returns on otherwise dormant assets. It helped them manage portfolios through diversification and better manage market, price and credit risk. This paper examines the scope of off-balance-sheet activities within the context of Islamic finance. It explores possible ways an off-balance-sheet instrument can be either emulated or developed using existing instruments of Islamic finance. The paper demonstrates construction of a currency forward contract using instruments sanctioned by principles of Islamic finance. Finally, the paper argues that by engaging in off-balance-sheet activities, financial institutions or intermediaries in Islamic financial system will be able to achieve improved liquidity, portfolio diversification, and risk management.

II. OFF-BALANCE-SHEET ACTIVITIES AND FINANCIAL RISK

The increasing complexity of domestic and international financial markets has led to greater awareness and realization of the critical role of risk and risk management in modern finance. Whereas financial innovations dominated the markets during the past two decades, most innovations were demand driven and were within areas of risk management so as to combat high levels of volatility in the financial markets. This result is due to the dramatic increase in volatility of interest rates, exchange rates and of commodity prices beginning in the late 1970s. Undertaking derivative transactions, such as swaps, options, and futures to manage financial risk are often referred to as off-balance-sheet (OBS) activities. Its activities typically include the business of a financial institution or other organization that does not book assets and liabilities on its balance sheet in the classical way.

By the early 1990s, the average exposure to off-balance-sheet transactions for each of the 30 largest banks in the world—American, European, and Japanese—was estimated to be equivalent of $1.1 to $1.4 trillion.[ii] The fact that the balance sheet is not affected does not mean that the instrument is not reported. The size and impact of these

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instruments in the aggregate is usually summarized in a footnote in the financial statement. With increasing usage and standardization of once exotic off-balance-sheet products, the Financial Accounting Standards Board (FASB) has recently recommended that balance sheet should include the impact of any off-balance-sheet activity.[iii] As a result, these off-balance-sheet activities are gradually making their way onto the balance sheet.

Although both conventional and Islamic markets share similar risks, the level of risk is different and certainly higher in the case of today's Islamic financial markets. The higher risk is often attributed to the lack of risk management tools and the absence of institutional arrangements and infrastructure. Some researchers even claim that risk analysis for Islamic banks is underdeveloped and not sophisticated to the necessary extent.[iv] The absence of risk management tools in Islamic finance will have a significant impact on the current and future growth of the market. This is because (i) a firm in Islamic financial markets will lose its business competitiveness due to its inability to handle variability in its cost, revenues and profitability by way of managing financial risk; (ii) a firm without active risk management will be perceived as a high-risk firm and thus will be subject to higher funding costs and to higher expected rates of return; (iii) there will be fewer optimal investment and diversification opportunities; (iv) a firm will be subject to high risk of financial distress; (v) a firm will be exposed to higher risk during a system-wide financial crisis; and finally, (vi) it will be difficult for Islamic financial institutions to integrate within the international financial markets.[v]

Long-term sustainable growth of Islamic markets largely depends on well-functioning secondary markets and on the introduction of liquidity-enhancing and risk-sharing products.[vi] Introduction of risk management tools, which may be in the form of off-balance-sheet instruments, will require application of financial engineering in Islamic finance. It will not be an exaggeration to say that the development of financial engineering is at this time one of the most critical needs of Islamic financial markets in general and of risk management in particular.

III. APPLICATION OF FINANCIAL ENGINEERING

Financial engineering and financial innovations are the forces driving the global financial system toward the goal of greater economic efficiency. They expand opportunities for risk sharing, lower transaction costs, and reduce asymmetric information and agency costs.[vii] The process of financial engineering can be viewed as a process of building complex instruments utilizing basic building blocks, or unbundling and repackaging different components of existing financial instruments, e.g., return, price risk, credit risk, country risk, etc.[viii]

A close examination of instruments sanctioned by Islamic financial systems reveal that they offer features similar to many of today's basic building blocks. It is the financial engineer's task to design and to innovate more complex instruments without violating any of the boundaries defined by the Islamic system. Freedom and the permissibility of contracts in Islam, on a basis other than profit-sharing agreements, can open an extended menu of products for engineering. Throughout history, Islamic scholars have stipulated detailed terms of contracts dealing with a variety of types such as spot and future sales, leasing, trade, and partnership. It is generally accepted in matters of civil and economic dealings that economic agents have freedom of contract. Any agreement not specifically prohibited by the *sharīᶜa* is valid, binding on parties and enforceable by the courts.[ix]

The Islamic financial system is primarily an equity-based system that has a set of basic building blocks in the form of asset-backed financial claims, like *murāba®a, bayᶜ muājjil* or *bayᶜ salām*, and behave similar to fixed-return instruments. Since these "asset-backed" instruments' risk/return profile are similar to fixed-income debt securities, it is possible to construct other synthetic securities, including derivatives, using these instruments without violating any of the principles of Islamic finance. In addition to basic "asset-backed" instruments, it is critical that the Islamic concepts of *juᶜāla* and *Kafāla* are fully understood and exploited. A financial intermediary will therefore be able to package basic tools to offer instruments and services to manage risk. *Kafāla* is a form of guarantee to perform against a financial liability, and it can play a critical role in underwriting credit enhancement. *juᶜāla* is a contract where one party undertakes to pay a specified amount of money to the other for rendering a specified service in accordance with stipulated terms agreed between the two parties. It can be applied to transactions such as consulting services, professional fees, fund placements, and trust services. Unique characteristics of *Jo'alah* allow contracting on an object not certain to exist or to come under a party's control to be utilized in innovative ways in Islamic finance.[x] So that entrepreneurs and investors can meet their specific funding, investment and hedging needs, financial intermediaries should develop customized services under the contract of *Jo'alah*. The design and implementation of risk management can be sold as a service in return for a fee by financial intermediaries that specialize in understanding and hedging that risk.

The following section will analyze how a currency forward contract—a basic off-balance-sheet instrument—can be constructed synthetically using basic Islamic instruments of *mu∞āraba, murāba®a*, and *juᶜāla*.

IV. THE SYNTHETIC CURRENCY FORWARD CONTRACT

The concept of arbitrage pricing and the ability to replicate a security synthetically have played a critical role in the development of derivatives and risk management tools in conventional finance. The concept of arbitrage is extensively used to demonstrate that in an efficient market two instruments with identical risk-return characteristics cannot have different prices. The ability to construct and to replicate a security or portfolio synthetically helped in the development of derivative products. It was demonstrated that two portfolios—one with derivative and the other with securities constructed synthetically—would have identical risk/return profiles. These principles and financial engineering can be applied to the basic building blocks of Islamic finance. They can also be used to devise derivative instruments that are priced fairly and efficiently.

The Islamic financial system permits forward contracts (future delivery at pre-agreed price) in commodities provided that certain *sharī*ᶜ*a* conditions are followed. Islamic forward contracts, *bay*ᶜ *salam*, permit one party to purchase a commodity at a pre-determined price for future delivery. The purchaser is required to make full payment at the time of contract. However, the application of *bay*ᶜ *salam* to foreign currencies is not allowed simply because Islam treats currency primarily as a medium of exchange. There are no other instruments, which allows hedging against future volatility of exchange rates. Advances in financial engineering have shown that a derivative instrument can also be constructed synthetically by using some of basic instruments. The following section demonstrates how a currency forward can be constructed without a standard forward contract.

A simple example of constructing a currency forward contract without use of any conventional currency forward or futures contract demonstrates how currency risk can be hedged in Islamic finance. Suppose that an importer in an Islamic country wants to hedge against the volatility of a foreign currency. In the absence of a currency forward contract, the importer will be exposed to risk due to appreciation of foreign currency. Assuming that there are no market frictions such as taxes, capital controls and transactions costs and that there exists financial intermediaries who have access to both local and foreign capital markets, a forward contract can be constructed synthetically using the Islamic contract of *murāba®a*. A *murāba®a* contract results from an asset-backed security or financial claim directly linked to a real asset. However, since the margin above cost (mark-up) is agreed upon in advance, the expected rate of return is pre-determined.

Suppose that the importer requires to hedge X amount of foreign currency for a period of time T from today. Current market rates of return on three-month *murāba®a* contracts in domestic and foreign markets are R_d and $R_{f,}$ respectively.

The following steps can be taken by the importer to hedge a currency risk by taking positions in assets in foreign markets with the collaboration of a local investor.

At the date of contract (T_0):

Step 1: Find an investor in the domestic market who is willing to participate in arranging a currency forward for maturity T.

Step 2: Determine the amount required to hedge X amount of foreign currency. That should be equal to the value of a *murāba®a* at time T_0 such that cost plus the profit margin in foreign market is equal to required hedge amount of X in foreign currency at time T. Therefore, the amount required today to hedge X amount of foreign currency would be equal to x in foreign currency as shown

$$x = \frac{X}{(1 + R_f)}$$

below.

Step 3: Local currency (L) required at time T_0 will be equal to x * spot exchange rate between domestic and foreign currency. Importer asks the investor to enter into an equity partnership for initial investment of L. Importer invests the funds in a *murāba®a* in foreign currency whose cost in domestic currency at t_0 is L.

Step 4: Investor and importer agree that at the end of period, importer pays investor back in local currency such that the investor's return on investment is equal to return on *murāba®a* in local currency, i.e., R_d. This will be same as selling X amount of foreign exchange to the importer at a pre-determined

exchange rate of F at the end of period. The forward exchange rate (F) will be determined such that forward discount/premium on currency is equal to the differential of the expected rates of return, in domestic and foreign capital markets, on *murāba®a* contracts of equal risk. This rate (F) is not only the best estimate of future spot exchange rate but is also an arbitrage free forward rate for the currency.

At the date of delivery (T):

Step 5: Investor receives X amount of foreign currency against the *murāba®a* investment.

Step 6: Importer pays back to investor at pre-agreed rate an amount equal to X*F.

This synthetic forward is fully backed by an asset. As a result, investor earns R_d on the investment. Importer benefits from exchange rate hedge in case exchange rate moves unfavorably. Figure 1 gives a graphical and numerical illustration of how a currency forward contract can be created synthetically.

Local currency:	Pakistani Rupee (Rs.)
Foreign Currency:	U.S. Dollar ($)
Period:	3 months
Rate of Return on 3 month *murāba®a* in domestic market (R_{Rs}):	10%
Rate of Return on 3 month *murāba®a* in foreign market ($R_{\$}$):	5%
Spot Rate:	Rs. 55/$
Amount to hedge:	$100,000.00

Amount of investment required in local currency:

$$\frac{HedgeAmount}{(1+R_{\$})} * SpotRate = \frac{100{,}000}{(1.05)} * 55.00 = Rs.5{,}238{,}095$$

Arbitrage free forward rate for importer will be:

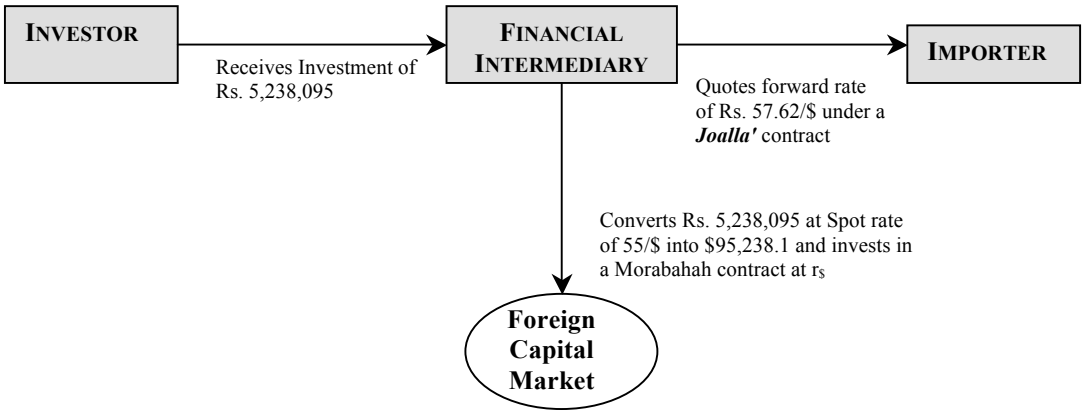
$$\frac{HedgeAmount * Spot * (1+R_{Rs})}{HedgeAmount * (1+R_{\$})} = \frac{100{,}000 * 55 * (1.1)}{100{,}000 * 1.05} = 57.62/\$$$

Importers' expected cost of imports = Hedge Amount * Forward Rate
= 100,000 * 57.62
= Rs. 5,762,000

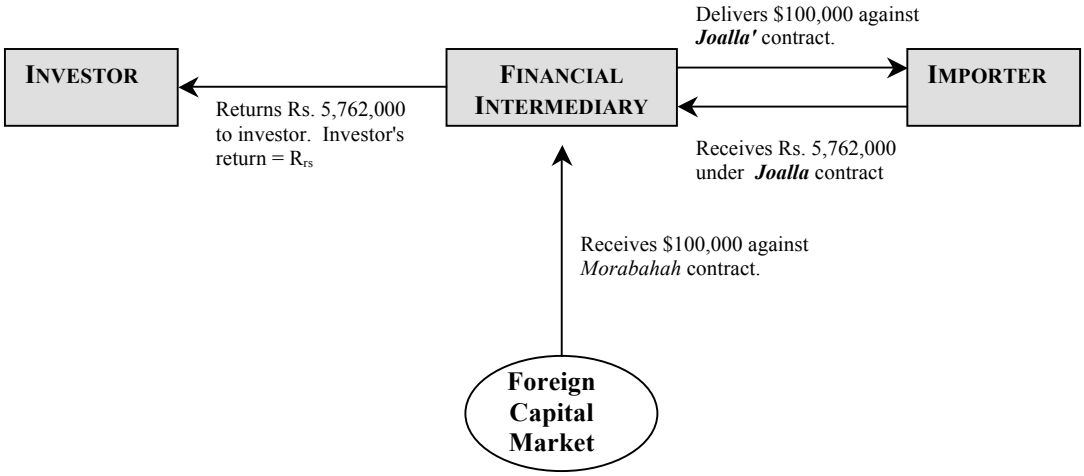
The above example is a simple version of how to construct currency forward synthetically. In a capital market where there are large numbers of users and providers of capital, a financial intermediary can serve the purpose of matching the needs to both entrepreneurs and investors. A financial intermediary who has wider access to capital markets can perform the function more efficiently by standardizing the products, enhancing credit through underwriting (*kafāla*) and offering clients risk management services for a reasonable fee (in form of *Joa'lah*). The following diagram illustrates the function of a synthetic forward with the inclusion of a financial intermediary.

FIGURE 1. THE CREATION OF A SYNTHETIC FORWARD CONTRACT

At Time of Contract (t_0):



At Time of Delivery (After Three Months):



Note: This illustration does not take into account any transaction costs or fees of financial intermediaries.

V. CURRENCY SWAPS

One of the most popular off-balance-sheet instruments is the currency swap, which is used frequently to hedge against currency risks, to lower funding costs through arbitrage in different markets or to gain access to markets otherwise not accessible. A currency swap can help an institution reduce its exposure to a particular currency by allowing it to swap existing assets or liabilities for ones that are more desirable. Although Islamic financial institutions may develop a comparative advantage in assets or liabilities in a particular currency, their advantage can lead to increased exposure to that currency. Therefore, there is a need to develop instruments similar to off-balance-sheet instruments such as the currency swap to manage currency exposure and also achieve better asset/liability management, thus reducing overall financial risk.

Although a currency swap is simply a series of forward contracts. Currency swaps are not practiced in Islamic financial markets mainly due to prohibition of currency trading in forward markets. However, there are other ways of creating currency swaps without using currency forward rates. As mentioned earlier, the foundation of an Islamic financial system is asset-backed securities linking each financial claim to an underlying asset. Each financial claim in an Islamic financial system can be considered as a contingent claim whose return/performance depends on return/performance of an underlying real asset. Therefore, financial engineering can be applied with a set of asset-backed financial claims to develop instruments similar to a currency swap to hedge currency risk.

For example, two *ijāra* (leasing) contracts can be used to construct a currency swap agreement. *Ijāra* contract is a well-established and widely practiced Islamic instrument that comes in both fixed and floating rates. Its structure is acceptable to conventional financial markets. A financial intermediary can arrange a swap between two holders of *ijāra* security in two different currencies such that each party's exposure to a particular currency or type of return (fixed or floating) is reduced as desired.

VI. CONCLUSION

Introduction of off-balance-sheet instruments in Islamic finance will help entrepreneurs to hedge against market and price risk. This will ultimately lead to an increase in the value of their firm. Islamic finance offers a set of "asset-backed" securities whose characteristics are similar to a fixed-income security. These basic building blocks can be used to create hedging instruments synthetically without using any derivative instruments. This paper offered an example of synthetically constructing a currency forward, which can be used to hedge foreign exchange risk. Islamic financial markets need to introduce new products to cater to the needs of firms so as to hedge against different risks. This will help maintain their competitive edge against their counterparts in conventional markets.

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[i] Marshall and Bansal, 1993.

[ii] Chorafas and Steinmann, 1994.

[iii] For further information, refer to FASB Statement No. 133, "Accounting for Derivative Instruments and Hedging Activities (FAS 133)," issued in 1998.

[iv] Al-Omar and Abdel-Haq, 1996.

[v] Iqbal, 2000 (Alexandria).

[vi] Askari and Iqbal, 1995.

[vii] Merton.

[viii] For a good summary of financial engineering, see Finnerty, 1988. In modern financial markets, financial engineering was motivated by such factors as tax advantages, reduced transaction and agency costs, risk allocation, increased liquidity, the regulatory and legislative environment, the level and volatility of interest and exchange rates, the level and volatility of prices, advances in financial theory, accounting benefits, and technological developments.

[ix] See Mirakhor, 1989, and Khan and Mirakhor, 1992.

[x] Vogel and Hayes, 1998.