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Risk Management and Mitigation Techniques in Islamic Finance A conceptual framework

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Abstract

Studying risk management issues of the Islamic Financial industry is an important but a complex subject. The paper discusses and analyzes a number of issues on risk management and mitigation strategies and challenges in the Islamic Finance Industry. First, it presents an overview of the concepts of risks and nature of risk in Islamic Financial Industry. Second, unique risks of the Islamic Financial services industry and its products have been explored. Third, challenges concerning risk management in the Islamic financial services industry have been discussed. Finally, risk management and mitigation techniques for selected Islamic financial products, has been suggested. The study concludes that financial markets liberalization is associated with an increase in risks and financial instability. The study shows that the Islamic financial institutions face two types of risks. The first type of risk they have in common with traditional banks as financial intermediaries, are credit risk, market risk, liquidity risk and operational risk. However, due to Sharī'ah compliance the nature of these risks changes. The second type is a new and a unique risk that the Islamic banks face as a result of their unique asset and liability structures. Consequently the processes and techniques of risk identification and management available to the Islamic banks could be of two types – standard techniques which are not in conflict with the Islamic principles of finance and techniques which are new or adapted keeping in view their special requirements. Due to their unique nature, the Islamic institutions need to develop more rigorous risk identification and management systems. The paper suggests a number of risk mitigation measures available to overcome three major types of risks namely: Credit risk, Liquidity risk and Market risk. There is a great need to enhance the process of consensus formation on a priority basis so that the Islamic financial institutions can develop Sharī'ah compliant risks management systems as early as possible.

Keywords: Risk, Risk Management, Islamic Finance, Conventional Banking, Financial Products, Risk Mitigation Measures

1. Introduction

The beginning of the millennium witnesses fast development in Islamic finance products. Professional bankers and Shari'ah specialists have been breathlessly racing to invent new Islamic financial products that mimic or replace every single interest-based contract that comes in the conventional market in a

rushing attempt to fill in all gaps and satisfy every financing need that may be thought of. While this is not an un-healthy sign as it indicates vividness and growth in the Islamic financial market and thinking, it is necessary to investigate the means and processes of risk mitigation that the Islamic financing paradigm offers to help this ever growing movement of financial products creation.

2. Objectives of the Paper

Given the complexity, dynamism, and transformation in the financial sector there are several questions that can be raised related to Islamic banks. The objective of the present paper is to address some of these questions. Specifically the paper aims at the following:

i. Presenting an overview of the concepts of risks and nature of risk in Islamic financial products.
ii. Discussing the unique risks of the Islamic financial services industry
iii. Discussing and analyzing the challenges concerning risk management in the Islamic financial services industry and
iv. Risk mitigation techniques for selected Islamic financial products.

3. Islamic Financial Institutions: Nature and Risks

3. 1. Structure / Model of Islamic Financial Institutions

In the conventional banking sector, financial intermediaries are broadly classified as depositary institutions, investment intermediaries, and contractual intermediaries.commercial banks, forming bulk of the depositary institutions, specialize in intermediation obtaining most of its loanable funds from deposits of the public. Investment intermediaries offer liquid securities to the public for long-term investment. Contractual intermediaries constitute insurance firms and pension funds. [1] (refer appendix for a list of Islamic financial products, terms referred and used in the paper)

Iqbal et. al. [2] (1998) distinguish two models of Islamic banks based on the structure of the assets. The first is the two-tier *Mudārabah* model that replaces interest by profit-sharing modes on both liability and asset sides of the bank. This model of Islamic banking will also take up the role of an investment intermediary, rather than being a commercial bank only. [3] The second model of Islamic banking is the one-tier *Mudārabah* with multiple investment tools. This model evolved because Islamic banks faced practical and operational problems in using profit-sharing modes of financing on the asset side. [4] As a result the industry opted for fixed-income modes of financing.

Islamic banking offers financial services by complying with the religious prohibition of *Ribā*. *Ribā* is a return (interest) charged in a loan *(Qard hasan)* contract. In the former case, the repayment on demand of the principal amount is guaranteed without any return. The owners of current accounts do not share with the bank in its risks. In case of investment deposits, neither the principal nor a return is guaranteed. Investment accounts can be further classified as restricted and unrestricted, the former having restrictions on assets that the funds can be used for and on withdrawals before maturity date. The owners of investment accounts participate in the risks and share in the bank's profits on *pro rata* basis. The contracts of *Qard hasan* and *Mudārabah* are thus the fundamental pillars of Islamic banking and their characteristics must fully be protected for the preservation of the uniqueness of Islamic banks.

The Islamic bank described above appears to have characteristics of both an investment intermediary and a commercial bank. The ownership pattern of the Islamic bank resembles that of a commercial bank as the depositors do not own the bank and do not have voting rights. In Islamic finance parlance, this means while *Mushārakah* contract characterizes the equity owners, deposits take the form of *Mudārabah* contracts. An Islamic bank, however, has similarities with an investment intermediary as it shares the profit generated from its operations with those who hold investment accounts. After paying the depositors a share of the profit, the residual net-income is given out to the shareholders as dividends. Using profit-sharing modes in Islamic banks changes the nature of risks these institutions face.

3. 2. Type/Nature of Risk

Islamic financial institutions face two types of risks. The first type of risk they have in common with traditional banks as financial intermediaries, are Credit Risk, Bench Mark Risk, Liquidity Risk, Operational Risk, Legal Risk, Withdrawal Risk and Market Risk. However, due to *Sharīʻah* compliance the nature of these risks changes. The second type is of new and unique risks that the Islamic banks face as a result of their unique asset and liability structures.

3. 2. 1. General Risk Faced by Islamic Banks

CREDIT RISK would take the form of settlement/payment risk arising when one party to a deal pays money (e. g. in a *Salam* or *Istisnāʻ*contract) or delivers assets (e. g., in a *Murābahah* contract) before receiving its own assets or cash, thereby, exposing it to potential loss. In case of profit-sharing modes of financing (like *Mudārabah* and *Mushārakah*) the credit risk will be non-payment of the share of the bank by the entrepreneur when it is due. This problem may arise for banks in these cases due to the asymmetric information problem in which they do not have sufficient information on the actual profit of the firm. As *Murābahah* contracts are trading contracts, credit risk arises in the form of counterparty risk due to non-performance of a trading partner. The non-performance can be due to external systematic sources.

BENCHMARK RISK: As Islamic banks do not deal with interest rate, it may appear that they do not have market risks arising from changes in the interest rate. Changes in the market interest rate, however, introduce some risks in the earnings of Islamic financial institutions. Financial institutions use a benchmark rate, to price different financial instruments. Specifically, in a Murābahah contract the mark-up is determined by adding the risk premium to the benchmark rate (usually the LIBOR). The nature of fixed income assets is such that the mark-up is fixed for the duration of the contract. As such if the benchmark rate changes, the mark-up rates on these fixed income contracts cannot be adjusted. As a result Islamic banks face risks arising from movements in market interest rate.

LIQUIDITY RISK: Liquidity risk arises from either difficulties in obtaining cash at reasonable cost from borrowings or sale of assets. The liquidity risk arising from both sources is critical for Islamic banks. As interest based loans are prohibited by *Sharīʻah,* Islamic banks cannot borrow funds to meet liquidity requirement in case of need. Furthermore, *Sharīʻah* does not allow the sale of debt, other than its face value. Thus, to raise funds by selling debt-based assets is not an option for Islamic financial institutions.

OPERATIONAL RISK: Given the newness of Islamic banks, operational risk in terms of person risk can be acute in these institutions. Operational risk in this respect particularly arises as the banks may not have enough qualified professionals (capacity and capability) to conduct the Islamic financial operations.

LEGAL RISK: Islamic banks face risks related to their documentation and enforcement. As there are no standard form of contracts for various financial instruments, Islamic banks prepare these according to their understanding of the *Sharīʻah*, the local laws, and their needs and concerns. Lack of standardized contracts along with the fact that there are no litigation systems to resolve problems associated with enforceability of contracts by the counterparty increases the legal risks associated with the Islamic contractual agreements.

WITHDRAWAL RISK: A variable rate of return on saving/investment deposits introduces uncertainty regarding the real value of deposits. Asset preservation in terms of minimizing the risk of loss due to a lower rate of return may be an important factor in depositors' withdrawal decisions. From the bank's perspective, this introduces a 'withdrawal risk' that is linked to the lower rate of return relative to other financial institutions.

FIDUCIARY RISK: A lower rate of return than the market rate also introduces fiduciary risk. Fiduciary risk can be caused by breach of contract by the Islamic bank. For example, the bank may not be able to fully comply with the *Sharīʻah* requirements of various contracts. While, the justification for

the Islamic banks' business is compliance with the *Sharīʻah,* an inability to do so or not doing so wilfully can cause a serious confidence problem and deposit withdrawal.

MARKET RISK is the risk originating in instruments and assets traded in well-defined markets. Market risks can result from macro and micro sources. Volatility of prices in various markets gives different kinds of market risks. Thus market risk can be classified as *equity price risk, interest rate risk, currency risk*, and *commodity price risk*.

3. 2. 2. Unique Nature of Islamic Banking Risks

Theoretically, it has been an aspiration of Islamic economists that on the liability side, Islamic banks shall have only investment deposits. On the asset side, these funds would be channelled through profit sharing contracts. Under such a system, any shock on the asset side shall be absorbed by the risk sharing nature of investment deposits. In this manner, Islamic banking offers a more stable alternative to the traditional banking system. The nature of systemic risks of such a system would be similar to the risks inherent in mutual funds.

The practice of Islamic banking, however, is different from the theoretical aspirations. On the assets side, investments can be undertaken using profit sharing modes of financing (*Mudārabah and Mushārakah)* and fixed-income modes of financing like *Murābahah* (cost-plus or mark-up sale), instalment sale (medium/long term *Murābahah*), *Istisnāʻ/ Salam* (object deferred sale or prepaid sale) and *Ijārah* (leasing). The funds are provided only for such business activities which are *Sharīʻah* compatible. On the liability side, deposits can be made either in current accounts or in investment accounts. The former is considered in Islamic banks as *Qard hasan* (interest-free loan) or *Amānah* (trust). These have to be fully returned to depositors on demand. Investment depositors are rewarded on the basis of Profit and Loss sharing (PLS) method and these deposits share the business risks of the banking operations. Using profit sharing principle to reward depositors is a unique feature of Islamic banks. This feature along with the different modes of financing and the *Sharīʻah* compliant set of business activities change the nature of risks that Islamic banks face.

Consequently the processes and techniques of risk identification and management available to the Islamic banks could be of two types – standard techniques which are not in conflict with the Islamic principles of finance and techniques which are new or adapted keeping in view their special requirements.

3. 2. 2. 1. Unique Counterparty Risks of Islamic Modes of Finance

Some of the unique risks inherent in some Islamic modes of financing are discussed:

3. 2. 2. 1. 1. *Murābahah* Financing

Murābahah is the most predominantly used Islamic Financial contract. Based on similarity in risk characteristics of the contract with the risk characteristics of interest-based contracts, *Murābahah* is approved to be an acceptable mode of finance in a number of regulatory jurisdictions. However, such a standardized contract may not be acceptable to all *Fiqh* scholars. The different viewpoints can be a source of counterparty risks as a result of the atmosphere of an ineffective litigation.

The main point in this regard stems from the fact that financial *Murābahah* is a contemporary contract. It has been designed by combining a number of different contracts. There is a complete consensus among all *Fiqh* scholars that this new contract has been approved as a form of deferred trading. The condition of its validity is based on the fact that the bank must buy (become owner) and after that transfer the ownership right to the client. The order placed by the client is not a sale contract but it is merely a promise to buy. Most Islamic banks treat the promise to buy as binding on the client. Some other scholars, however, are of the opinion that the promise is not binding on the client; the client even after putting an order and paying the commitment fee can rescind from the contract. The most important counterparty risk specific to *Murābahah* arises due to this unsettled nature of the contract, which can pose litigation problems.

Another potential problem in a sale-contract like *Murābahah* is late payments by the counterparty as Islamic banks cannot, in principle, charge anything in excess of the agreed upon price. Non-payment of dues in the stipulated time by the counterparty implies loss to banks.

3. 2. 2. 1. 2. *Salam* Financing

There are at least two important counterparty risks in *Salam*. Brief discussions of these risks are provided here:

(i) The counterparty risks can range from failure to supply on time or even at all, and failure to supply the same quality of good as contractually agreed. Since *Salam* is an agricultural based contract, the counterparty risks may be due to factors beyond the normal credit quality of the client. Since agriculture is exposed to catastrophic risks, the counterparty risks are expected to be more than normal in *Salam.*

(ii) *Salam* contracts are neither exchange traded nor these are traded over the counter. These contracts are written between two parties to a contract. Thus all the *Salam* contracts end up in physical deliveries and ownership of commodities. These commodities require inventories exposing the banks to storage costs and other related price risk. Such costs and risks are unique to Islamic banks.

3. 2. 2. 1. 3. *Istisnā'Financing*

While extending *Istisnā'finance* the bank exposes its capital to a number of specific counterparty risks. These include for example:

i. There could be a contract failure regarding quality and time of delivery.
ii. The default risk on the buyer's side is of the general nature, namely, failure in paying fully on time.
iii. If the *Istisnā'* contract is considered optional and not binding as the fulfilment of conditions, there is a counterparty risk as the supplier maintains the option to rescind from the contract.
iv. If the client in the *Istisnā'contract* is given the option to rescind from the contract and decline acceptance at the time of delivery, the bank will be exposed to additional risks.

These risks exist because, an Islamic bank while entering into an *Istisnā'contract* assumes the role of a builder, a constructor, a manufacturer and supplier. Since the bank does not specialize in these traits, it relies on subcontractors.

3. 2. 2. 1. 4. *Mushārakah - Mudārabah* (M-M) Financing

Many academic and policy oriented writings consider that the allocation of funds by the Islamic banks on the basis of the *Mushārakah* and *Mudārabah* is preferable as compared to the fixed return modes of *Murābahah*, leasing and *Istisnā'*. But in practice the Islamic banks' use of the M-M modes is minimal. This is considered to be due to the very high credit risk involved. The credit risk is expected to be high under the M-M modes due to the fact that there is no collateral requirement, there is a high level of moral hazard and adverse selection and banks' existing competencies in project evaluation and related techniques are limited. Institutional arrangements such as tax treatment, accounting and auditing systems, regulatory framework are all not in favour of a larger use of these modes by banks.

4. Risk Management in Islamic Financial Institutions: An Assessment

The discussion of risk management techniques vis-à-vis Islamic banking is a challenging one. In a study like this, these challenges can neither be identified fully, nor can these be resolved even partially. The objective of this section is to initiate a discussion on some aspects of the unique Credit, Liquidity and Market risks faced by Islamic banks with a view to highlight the challenges and prospects of mitigating these within the framework of the Islamic principles of finance.

4. 1. Credit Risks

Credit risk is the most important risk faced by banks, because defaults can also trigger liquidity, interest rate, downgrade and other risks. Therefore, the level of a bank's credit risk adversely affects the quality of its assets in place. Do the Islamic banks face more credit risks as compared to conventional banks or less? A preliminary answer to this question depends on a number of factors, such as:

1) General credit risk characteristics of Islamic financing,
2) Counterparty risk characteristics of specific Islamic modes of finance,
3) Accuracy of expected credit loss calculation, and
4) Availability of risks mitigating techniques.

The first two points have been discussed in section three of the paper. The last two factors are discussed in more detail.

4. 1. 1. Importance of Expected Loss Calculation

The process of credit risk mitigation involves estimating and minimizing expected credit losses. Calculation of expected credit losses requires the calculation of probability of default, maturity of facility, loss given default (LGD), exposure at default and the sensitivity of the assets' value to systematic and non-systematic risks. Expected loss calculation is relatively easier for simple and homogenous contracts as compared to relatively complex and heterogeneous contracts. Since the Islamic financial contracts are relatively complex as compared to the interest-based credit, the accurate calculation of expected losses is supposed to be relatively challenging for the Islamic contracts. The lack of consensus in dealing with a defaulter, illiquid nature of debts etc., adds to the complexity of this matter. This challenge can be overcome by adapting the foundation Internal Rating Based approach (IRB). Studies reveal that it is too early for Islamic banks to qualify for the IRB approach for regulatory capital allocation. Islamic banks will be expected to initially follow the supervisory benchmark LGD and the risk weights as given and develop their own systems of calculating the LGD and can graduate to the advanced IRB approach.

4. 1. 2. Credit Risk Mitigation Techniques

A number of standard systems, methods, and procedures for credit risk mitigation are also relevant for the Islamic banks. In addition, there is also a need to keep in view the unique situation of these banks. A selected number of the standard systems and some additional considerations are discussed here in relation to the credit risk management of Islamic banks.

4. 1. 2. 1. Loan Loss Reserves

Sufficient loan loss reserves offer protection against expected credit losses. The effectiveness of these reserves depends on the credibility of the systems in place for calculating the expected losses. Recent developments in credit risk management techniques have enabled large traditional banks to identify their expected losses accurately. The Islamic banks are also required to maintain the mandatory loan loss reserves subject to the regulatory requirements in different jurisdictions. However, as discussed above the Islamic modes of finance are diverse and heterogeneous as compared to the interest-based credit. These require more rigorous and credible systems for expected loss calculation. Furthermore, for comparability of the risks of different institutions there is also a need for uniform standards for loss recognition across modes of finance, financial institutions and regulatory jurisdictions. The AAOIFI Standards # 1[5] provides for the basis of income and loss recognition for the Islamic modes of finance. However, except for a few institutions, banks and regulatory organizations do not apply these standards. In addition to the mandatory reserves some Islamic banks have established investment protection reserves.

The Jordan Islamic Bank has pioneered the establishment of these reserves. The reserves are established with the contributions of investment depositors and bank owners. The reserves are aimed at providing protection to capital as well as investment deposits against any risk of loss including default. However, investment deposit holders are not permanent owners of the bank. Therefore, contributions

to the reserve by old depositors can be a net transfer of funds to new depositors and to the bank capital. In this manner these reserves cannot ensure justice between old and new depositors and between depositors and bank owners. This problem can be overcome by allowing the depositors to withdraw their contributions at the time of final withdrawal of deposits. However, such a facility will not be able to provide a protection in the case of a crisis.

4. 1. 2. 2. Collateral

Collateral is also one of the most important securities against credit loss. Islamic banks use collateral to secure finance, because *al-rahn* (an asset as a security in a deferred obligation) is allowed in the *Sharī'ah*. According to the principles of Islamic finance, a debt due from a third party, perishable commodities and something, which is not protected by the Islamic law as an asset, such as interest-based financial instruments are not eligible for use as collateral. On the other hand, cash, tangible assets, gold, silver and other precious commodities, share in equities, etc., and debts due from the finance provider to the finance user are assets eligible for collateral. The general characteristics of the collateral, which is available in the Islamic financial industry, are discussed below:

a) In the proposed New Basel Accord certain types of collateral are given regulatory capital relief depending on the quality of the collateral. These standards show that cash and treasury bills are the most valuable collateral and can be given very high regulatory capital relief. The Islamic banks not being able to take the certain type of collateral will be considered more risky.
b) There may be some assets, which from the Islamic banks' point of view are good collateral and deserve a regulatory capital relief. Since the Islamic bank's asset is not in the list of eligible collateral, it is subject to a 100% haircut.
c) Due to restrictions on sale of debts, there are no liquid Islamic debt instruments. However, in view of their liquid nature debt instruments like treasury bills etc., are generally considered as good collateral. These assets are not available to the clients of Islamic banks to offer.
d) The Islamic banks have limited recourse to the assets they finance. As compared to this the conventional banks can have unlimited recourse to the assets of their clients. On a stand-alone basis, a particular asset financed by the Islamic bank may depreciate fast even though during the same time the firm's assets may gain value in general. Thus due to its limited recourse nature, the quality of the Islamic banks' collateral may in fact be lower as compared to the collateral of the peer group conventional banks. Moreover, the value of limited recourse collateral is normally highly correlated with the exposure of the credit. If the credit goes bad, the collateral value depreciates too. Good quality collateral should not have such a characteristic. Furthermore, if stand-alone collateral depreciates faster in value as compared to the firm's other assets; there is an incentive to default.

4. 1. 2. 3. On-Balance Sheet Netting

On-balance sheet netting implies the matching out of mutual gross financial obligations and the accounting for only the net positions of the mutual obligations. The netting process could include discounting, selling and swapping the gross obligations. Carefully prepared, netting overcomes credit risk exposures between the two parties. With the participation of a third party, playing as a clearinghouse for the obligations, the arrangement becomes a powerful risk mitigating technique.

The Islamic banks so far have not designed any such mechanism. It can be considered as an important area for future cooperation between the Islamic banks particularly, if the market for two-step contracts expands in which banks will have more mutual obligations.

4. 1. 2. 4. Guarantees

Guarantees supplement collateral in improving the quality of credit.commercial guarantees are extremely important tools to control credit risk in conventional banks. Those banks whose clients can provide good commercial guarantees and who can fulfil other requirements can qualify for regulatory

capital relief under the proposed New Basel Accord. Although some Islamic banks also use commercial guarantees, the general *Fiqh* understanding goes against their use. In accordance with the *Fiqh*, only a third party can provide guarantees as a benevolent act and on the basis of a service charge for actual expenses. Due to this lack of consensus, therefore, the tool is not effectively used in the Islamic banking industry.

4. 1. 2. 5. Credit Derivatives and Securitization

Through credit derivatives the underlying risk of a credit is separated from the credit itself and sold to possible investors whose individual risk profile may be such that the default risk attracts their investment decision. It has become so effective that under certain conditions it is expected to fully protect banks against credit risks. The development of comparable instruments depends on the permissibility of sale of debts. There are a number of proposals under discussion to overcome the sale of debt issue.

a. Some studies call for making a distinction between a fully secured debt and an unsecured debt. It is argued that external credit assessment makes the quality of a debt transparent.
b. Some scholars suggest that although sale of debt is not possible as such, but the owner of a debt can appoint a debt collector. For example, if the due debt is $ 5 million58 and the owner considers that as a result of default 0. 5 million may be lost. The owner can offer some amount lesser than this estimated loss, say for example 0. 4 million to a debt collector. The arrangement will be organized on the basis of *Wakālah* (agency contract) or *Ju'ālah* (service contract). There seems to be no *Fiqhī* objection to this.
c. Debt can be used as a price to buy real assets. Suppose, bank A owes debts worth $1m to bank B, which are due after 2 years. Meanwhile bank B needs liquidity to buy real assets worth $1m from a supplier C on deferred basis for 2 years. In this case, subject to the acceptance of C, the payments for bank B's instalment purchase can be made by bank A. Due to instalment sale from C to B, C will charge *Murābahah* profit of say, 5%. This profit can be adjusted in two ways. First, upon mutual agreement the supplier may supply goods worth $0. 95 million to bank B and the supplier will receive $1m cash from bank A in 2 years. Or as a second option, C will receive $1m from A and $0. 05m directly from B. The implication of this is important. B receives assets worth $1m at the present instead of receiving $1m after 2 years, but after paying 5%. As a result, in net terms, B receives $0. 95m today for $1m after 2 years. Thus the arrangement facilitates a *Fiqh* compatible discount facility.

The example cited above is based on the permission of the use of debts in buying goods, services and other real assets. This permission can further be extended to design quasi debt (equity) financial instruments by embedding convertibility options. For instance in writing an Islamic debt contract, the user of funds can inscribe a non-detachable option in the contract that subject to the preference of the financier the receivables can be used to buy real assets or shares from the beneficiary. This option in fact changes the nature of collateral from a limited recourse to a full recourse as the option can be utilized depending on the will of the financier. In this manner, it enhances the quality of credit facility by reducing its risk. The potential of these instruments increases in the framework of two-step contracts. However, the Islamic banks at the present do not write such instruments.

4. 1. 2. 6. Contractual Risk Mitigation

Gharar (uncertainty of outcome caused by ambiguous conditions in contracts of deferred exchange) could be mild and unavoidable but could also be excessive and cause injustices, contract failures and defaults. Appropriate contractual agreements between counterparties work as risk control techniques. A number of these can be cited as an example.

a) Price fluctuations after signing a *Salam* contract may work as a disincentive for fulfilling contractual obligations. Hence if the price of, for example, wheat appreciates substantially after signing the contract and receiving the price in advance, the wheat grower will have an incentive to default on the contract. The risk can be minimized by a clause in the contract showing an

agreement between the two parties that a certain level of price fluctuation will be acceptable, but beyond that point the gaining party shall compensate the party, which is adversely effected by the price movements. In Sudan, such a contractual arrangement known as *Band al-Ihsān* (beneficence clause) has now become a regular feature of the *Salam* contract.

b) In *Istisnā‘,* contract enforceability becomes a problem particularly with respect to fulfilling the qualitative specifications. To overcome such counterparty risks, *Fiqh* scholars have allowed *Band al-Jazāa* (penalty clause).
c) Again in *Istisnā‘financing*, disbursement of funds can be agreed on a staggered basis subject to different phases of the construction instead of lumping them towards the beginning of the construction work. This could reduce the banks’ credit exposure considerably by aligning payments with the progress of the work.
d) In *Murābahah*, to overcome the counterparty risks arising from the nonbinding nature of the contract, up-front payment of a substantial commitment fee has become permanent feature of the contract.
e) In several contracts, as an incentive for enhancing re-payment, a rebate on the remaining amount of mark-up is given.
f) Due to non-presence of a formal litigation system, dispute settlement is one of the serious risk factors in Islamic banking. To overcome such risks, the counterparties can contractually agree on a process to be followed if disputes become inevitable. This is particularly significant with respect to settlement of defaults, as interest-based debt rescheduling is not possible.
g) It can be proposed that to avoid the default by the client in taking possession of the ordered goods, the contract shall be binding on the client and not binding on the bank. This suggestion assumes that the bank will honour the contract and supply the goods as contractually agreed, even if the contract is not binding on it. An alternative proposal could be to establish a *Murābahah* clearing market (MCM) to settle cases, which may not be cleared due to the non-binding nature of the *Murābahah* contract.
h) Since the *Murābahah* contract is approved with the condition that the bank will take possession of the asset, at least theoretically the bank holds the asset for some time. This holding period is almost eliminated by the Islamic banks by appointing the client as an agent for the bank to buy the asset.

All these features of contracts serve to mitigate counter party default risks. Similar features can enhance the credit quality of contracts in different circumstances. It is desirable to make a maximum benefit of such features wherever new contracts are being written.

4. 1. 2. 6. Internal Ratings

All banks undertake some form of internal evaluation and rating of their assets and clients, particularly, for maintaining the regulatory loan loss provisions. In general, an internal rating system can be described to be a risk-based inventory of individual assets of a bank. These systems identify credit risks faced by the banks on an asset-to asset basis in a systematic and planned manner instead of looking at bank's risk on an entire portfolio basis. The asset-to-asset coverage of the system makes it more relevant for banks whose asset structures are less homogenous. The Islamic modes of finance are diverse and have different risk characteristics. Therefore, due to the diversity of the Islamic modes of finance, it is appropriate for the Islamic banks to measure the risk of each asset separately. For establishing a basic internal rating system in a bank to assess the clients’ credit quality, two basic information are required - maturity of the facility and credit quality of the client.

Most Islamic banks are technically capable to initiate some form of internal credit risk weighting of all their assets separately. In the medium and longer-run these could evolve into more sophisticated systems. Initiation of such a system can be instrumental in filling the gaps in the risk management system and hence enhancing the rating of these by the regulatory authorities and external credit assessment agencies.

4. 2. Market Risks

Market risks comprise of interest rate risks, exchange rate risks, and commodity and equity price risks. These are briefly discussed here in perspective of Islamic banks.

4. 2. 1. Business Challenges of Islamic Banks: A General Observation

It is generally accepted that the non-availability of financial derivatives to Islamic banks is a major hindrance in their way to manage market risks as compared to the conventional banks. The direct competitors of Islamic banks are however, Islamic banking windows of conventional banks. But the conventional banks are offering the Islamic products simultaneously with their own products.competition no doubt enhances efficiency and a levelled playing field is a prerequisite for a healthy competitive environment.

4. 2. 2. Challenges of Benchmark Rate Risk Management

Among interest rate derivatives, swaps are the most dominant contracts. Swaps facilitate dual cost reduction role simultaneously. The effective utilization of swaps undisputedly enhances competitive efficiency. Since swaps are primarily interest-based contracts, these have not attracted the attention of Islamic scholars.

Chapra and Khan (2000)[6] argue that any increase in new earnings has to be shared with depositors, but it cannot be re-adjusted on the assets side by re-pricing the receivables at higher rates particularly, due to restrictions on the sale of debts. The implication is that the net *Murābahah* income of the Islamic bank is exposed to the mark-up price risk. Two step contracts and GAP analysis techniques to mitigate the *Murābahah* (mark-up) price risk are discussed below. Apart from this market also offers various techniques to manage risk namely swaps, netting, currency forward and futures, synthetic forward and the like.

4. 2. 2. 1. Two-step Contracts and GAP Analysis

One of the most common and reliable tools to manage interest rate risk is the technique of *GAP analysis*. The GAP analysis technique is used to measure the net income and its sensitivity with respect to a benchmark. Risk management tools then target at ideally making the net income immune to any changes in the benchmark rate, i. e., a target net income is achieved whatever the market benchmark may be. If such an objective is achieved, an increase in the benchmark will not pose any risks to the targeted net income. The cash flows of the bank remain stable at a planned level ensuring stability of net income. The effectiveness of a GAP management strategy for the Islamic banks requires flexibility from the two extremes on both liability and assets sides.

In a two-step contract, the Islamic bank can play the role of a guarantor in facilitating funds to the users. Since guarantee cannot be provided as a commercial activity, in a two-step contract, it can be provided by the Islamic bank's participation in the funding process as an actual buyer. In the existing *Murābahah* contracts the bank makes an up-front payment to the suppliers on behalf of the client. In the two-step contract the bank will have two *Murābahah* contracts, as a supplier with the client and as a buyer with the actual supplier. The bank will hence not make an up-front payment to the actual supplier. The two-step *Murābahah* contract will have a number of implications for the banks.

a. It can serve as a source of funds. In a longer maturity contract, such funds can be considered as tier-2 capital of the bank, based on the criteria allocated to such capital by the Basel Accord.
b. The contracts will enhance the banks' resources under management.
c. This will enhance the liquidity position of Islamic banks.
d. It will provide flexibility in liability management by offering different maturity of liabilities.
e. The banks will actually guarantee the re-payment of the funds by the clients. Hence guarantee is provided in a more acceptable and transparent manner.
f. The concept of the two-step contracts is not restricted to *Murābahah,* it is equally applicable to *Istisnā'*, leasing and *Salam*.

4. 3. Liquidity Risk

A recent study commissioned by the Bahrain Monetary Agency (BMA 2009) [7]shows that in general Islamic banks are facing the phenomenon of excess liquidity. The liquidity position of Islamic banks is much in excess of the regulatory requirements. This means that these liquid funds are either not earning any return at all or earning a return much lesser than the market rates. Thus the excess liquidity position of the Islamic banks generates for these banks a serious business risk as it adversely affects the rates of returns offered by them as compared to their conventional competitors. Furthermore, in most cases these banks largely rely on current accounts, which is a more stable source of free liquidity. However, possession of less-liquid assets and inability to raise funds quickly from the markets by the Islamic banks can cause serious liquidity risks.

5. Conclusions

The paper has discussed a number of important areas concerning risk management unique risks, issues and challenges in managing risk in the Islamic financial industry. The study concludes that financial markets liberalization is associated with an increase in risks and financial instability. The study shows that the Islamic financial institutions face two types of risks. The first type of risks they have in common with traditional banks as financial intermediaries, such as credit risk, market risk, liquidity risk and operational risk. However, due to Sharī'ah compliance the nature of these risks changes. The second type is of new and unique risks that the Islamic banks face as a result of their unique asset and liability structures. Consequently the processes and techniques of risk identification and management available to the Islamic banks could be of two types – standard techniques which are not in conflict with the Islamic principles of finance and techniques which are new or adapted keeping in view their special requirements. Due to their unique nature, the Islamic institutions need to develop more rigorous risk identification and management systems. The paper identifies a number of risk mitigation measures available to overcome three major types of risks namely: Credit risk, Liquidity risk and Market risk. There is a great need to enhance the process of consensus formation on a priority basis so that the Islamic financial institutions can develop Sharī'ah compliant risks management systems as early as possible.

The future of these institutions, however, will depend on how they cope with the rapidly changing financial world. With globalization and informational technology revolution, activities of different financial institutions have expanded beyond national jurisdictions; furthermore, there has been an unprecedented development in computing, mathematical finance and innovation of risk management techniques. All these developments are expected to magnify the challenges that Islamic financial institutions face particularly as more well established conventional institutions have started to provide Islamic financial products. Islamic financial institutions need to equip themselves with the up-to date management skills and operational systems to cope with this environment. One major factor that will determine the survival and growth of the industry is how well these institutions manage the risks generated in providing Islamic financial services.

Appendix 1. List of Islamic Financial Instruments

CERTIFICATE	BRIEF DESCRIPTION
Declining participation certificates	Redeemable *Mushārakah* certificates were designed by the IFC for providing funds to the Modaraba companies in Pakistan.
Islamic Deposit Certificates	Based on *Mudārabah* principle, the proceeds of these certificates are meant for general purpose utilization by the issuing institution.
Installment sale debt certificates	Installment sale debt certificate is proposed to finance big-ticket purchases by making a pool of smaller contributions. The certificate represents the principal amount invested plus the *Murābahah* income. These are issued mostly in Malaysia as Islamic debt certificates.

Islamic Investment certificates	Similar to Islamic deposit certificates, but the proceeds are meant to be utilized in a specific project.
Istisnā' debt certificates	Like the instalment sale debt certificate, this certificate represents the investors' principal amount investment in the *Istisnā'* project plus the *Murābahah* income and is proposed for financing infrastructure projects.
Leasing certificates	Leasing certificate represents ownership of usufructs leased out for a fixed rental income. Since usufructs are marketable, this certificate can be bought and sold.
Mudārabah certificates	*Mudārabah* certificate represents ownership in the beneficiary company without a voting right issued so far by several institutions.
Muqārada certificates	*Muqaradah* certificate is a hybrid between *Mudārabah* certificate and declining participation certificates to be issued by the government for the development of public utility projects. A *muqārada* certificate law was enacted in Jordan during the early Eighties, but these certificates were never issued.
Mushārakah certificates	*Mushārakah* certificates are common stocks of companies doing *Sharī'ah* compatible business. In Iran the government for financing infrastructure projects issues these certificates. In Sudan these are issued as an instrument of monetary policy.
National participation certificates	National participation certificates are proposed by the IMF staff as an instrument for mobilizing resources for the public sector. These proposed instruments are based on the concept of *Mushārakah* certificates are issued in Iran. The certificates are assumed to represent as an ownership title in public sector assets of a country.
Property income certificates	Property income certificate is a *Mudārabah* income note with a secure stream of income from an ownership in a property without a voting right.
Participation term	Participation term certificates were issued by the Bankers' Equity Pakistan in the Eighties. These had some common characteristics of declining *Mushārakah* and *Muqarada* certificates.
Rent sharing certificates	The holder of this certificate shares in the rental income of the asset against which the certificate has been issued.
Revenue sharing certificates	Revenue sharing certificates were issued in Turkey for re-financing the privatized infrastructure projects.
Salam certificates	The holder of a *Salam* certificate claims commodities, goods and services in a specified future date against the payments the holder has made.
Two-step contracts – Leasing, Murābahah,,Istisnā', Salam	In these contracts the bank pays to the suppliers in instalment and creates a fixed liability in its balance sheet instead of paying up-front to the suppliers.
Hybrid certificates	Hybrid instruments allow the holder of any of the debt certificates to exchange the certificate for other assets of the issuing entity or in any other entity subject to the offer prescribed on the hybrid certificate

Appendix 2. Glossary

(ARABIC TERMS REFERED AND USED IN THE PAPER)

al khirāju bi al- damān & al ghunmu bi al ghurm	These are the two fundamental axioms of Islamic finance implying that entitlement to return from an asset is intrinsically related to the liability of loss of that asset.
'arboon, bay' al-:	A sale contract in which a small part of the price is paid as an earnest money (down payment), the object and its remaining price are exchanged in a future date. In case the buyer rescinds from the contract he has to forego the earnest money compensating the seller in causing a delay in sale.
Band al-Ihsān:	Beneficence clause in a *Salam* contract used in the Sudan. It is aimed at compensating the party to the contract that is adversely affected due to changes in prices between signing the contract and its final settlement.
Band al-Jazāa:	Penalty clause in an *Istisnā 'to* ensure contract enforceability.
Fiqh:	Refers to the whole corpus of Islamic jurisprudence. In contrast with conventional law, *Fiqh* covers all aspects of life, religious, political, social or economic. In addition to religious observances like prayer, fasting, *Zakāh* and pilgrimage, it also covers family law, inheritance, social and economic rights and obligations, commercial law, criminal law, constitutional law and international relations, including war. The whole corpus of *Fiqh* is based primarily on interpretations of the Qur'an and the *Sunnah* and secondarily on *Ijmā'(*consensus) and *Ijtihād* (individual judgement). While the Qur'an and the *Sunnah* are immutable, *Fiqhī* verdicts may change due to changing circumstances.

Gharar:	Uncertainty of outcome caused by ambiguous conditions in contracts of deferred exchange.
Istisnā', bay' al-:	Refers to a contract whereby a manufacturer (contractor) agrees to produce (build) and deliver a certain good or premise at a given price on a given date in the future. This is an exception to the general *Sharī'ah* ruling which does not allow a person to sell what he does not own and possess. As against S*alam*, the price here need not be paid in advance. It may be paid in instalments, in steps with the preferences of the parties or partly at the front end and the balance later on as agreed.
Muḍārabah:	An agreement between two or more persons whereby one or more of them provide finance, while the others provide entrepreneurship and management to carry on any business venture whether trade, industry or service, with the objective of earning profits. The profit is shared by them in an agreed proportion. The loss is borne only by the financiers in proportion to their share in total capital. The entrepreneur's loss lies in not getting any reward for his/her services.
Murābahah, bay' al-:	Sale at a specified profit margin. The term is, however, now used to refer to a sale agreement whereby the seller purchases the goods desired by the buyer and sells them at an agreed marked-up price, the payment being settled within an agreed time frame, either in instalments or lump sum. The seller bears the risk for the goods until they have been delivered to the buyer. *Murābahah* is also referred to as *bay'al mu'ajjal.*
Mushārakah:	An Islamic financing technique whereby all the partners share in equity as well as management. The profits can be distributed among them in accordance with agreed ratios. However, losses must be shared according to the share in equity.
Qarḍ hasan:	A loan extended without interest or profit sharing.
Rahn:	Collateral.
Ribā:	Literally means increase or addition, and refers to the 'premium' that must be paid by the borrower to the lender along with the principal amount as a condition for the loan or an extension in its maturity. It is regarded by a predominant majority of Muslims to be equivalent to interest.
Salam, bay' al-:	Sale in which payment is made in advance by the buyer and the delivery of goods is deferred by the seller. This is also, like *Istisnā',* an exception to the general *Sharī'ah* ruling that you cannot sell what you do not own and possess.
Sharī'ah:	Refers to the divine guidance as given by the Qur'an and the *Sunnah* and embodies all aspects of the Islamic faith, including beliefs and practices.
Wakālah:	Agency - appointment of someone else to render a work on behalf of the principal for a fee.

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