Basel II Capital Adequacy Requirements: 
Implementation Challenges for Islamic Banks

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Abstract

During the last three decades the Islamic banking has evolved impressively in the global financial environment and it has now become a globalized reality. The Islamic financial system is based on participatory approach and risk sharing. This creates new financial relationship, devoid of conventional debtor creditor relationship, and poses different kinds of risks for Islamic banks. The main objectives of the study are to investigate the true nature of risk characteristics of Islamic financial products and underlying challenges facing Islamic banks in implementation of Basel II capital adequacy requirements. Islamic banks face many challenges to be able to comply with international standards and guidelines for risk management. The study showed that the Islamic banks while facing unique and somewhat extra risks, compared to conventional banks, can implement Basel II capital adequacy requirements with certain modifications according to the distinct nature of Islamic financial activities, with accommodating differences in liability side with special treatment to investments account holders (IAH) and devising different risk weights for assets.

Key words: Shariah, Islamic banks, risk management, Basel II Capital Adequacy Requirements
1.0 Introduction

Islamic finance emerged as novel phenomena in the financial world in over the last three decades with establishment of Dubai Islamic Bank (DIB) as a financial intermediation in the private sector and Islamic Development Bank (IDB) as development financial institution by OIC sponsored in 1975. Since then the Islamic Financial Services Industry witnessed a robust growth and increasing acceptability in Muslim and non-Muslim world. The Islamic Financial Services Industry has assets over US$175 billion with equity of US$15 billion and has a remarkable growth of 23% per annum over the last 10 years (Shahul 2007).

Islamic finance has now become a globalized reality with its presence in over 60 countries in all the continents except South America. The leading Islamic banks are fast expanding their network from home base to develop a regional and global reach. Some of the Middle East banks are establishing into African and Central Asian markets¹. Besides Islamic banks, this global reach is because of embracing Islamic finance with conventional operations by the international banking giants such as HSBC, Citigroup, UBS, Standard Chartered, Societe Generale, Credit Suisse and Deutsche Bank.

The Islamic banks are required to adhere to Shariah precepts in all their operations. The predetermined fixed return on loans and deposits is not allowed according to Shariah principals. Thus, the Islamic banks’ resource mobilization and financing are based on profit and risk sharing. Risk is basic element in Islamic business transactions but uncertainty (gharar) is considered unlawful. Therefore, contrary to conventional banks, financing for speculation purposes is prohibited in Islamic banking. The asset backing is an essential element for financing transactions in Islamic banking. For instance, sukuk or Islamic bond is asset based rather than debt based. Furthermore, Islamic banks are not allowed to finance for haram activities such as liquor, pornography, tobacco, and gambling etc.

Although Islamic banks operate in competitive environment with their conventional counterparts, there are major distinctions between the two types of banks. The sources and uses of funds of Islamic banks have different characteristics than the conventional banks. On the liability side of the balance sheet, the distinct item from conventional banks is investment accounts which can further be divided into restricted investment accounts and unrestricted investment accounts. On the asset side there are many items which are quite different from conventional banks. The Islamic banks have financing and investing activities instead of loans and advances in conventional banks. The financing activities include murabahah, salam, istisna and ijarah while investing activities consist of mudarbah and musharkah partnerships.

The difference between Islamic banks and conventional banks is more apparent in the area of risks and risk management. The distinct nature of relationship with customers and different kinds of financing and investing activities entail unique risks besides general risks faced by the Islamic banks. The common risks faced both by Islamic and conventional banks are credit risk, market risk, operational risk and liquidity risk while unique risks such as displaced commercial risk and Shariah compliance risk are related to Islamic banks only.

¹ “Islamic Finance-Growth, Competiveness and Sustainability” speech delivered by Dr. Shamshad Akhtar, Governor, SBP, at 14th World Islamic Banking Conference, Bahrain, 9-10 December 2007.
Many conventional banks comply with the requirements of Basel II capital adequacy requirements in managing their credit risk. Such requirements include determining the risk weights through standardized approach or Internal Ratings-Based (IRB) approach. Under the standardized approach the banks are required to use ratings from External Credit Rating Agencies to quantify required capital for credit risk. While the banks which have more advanced risk management capabilities are allowed to adopt Internal Ratings-Based (IRB) approach to measure credit risk. Under this approach the risk weights are derived from four quantitative data risk components such as probability of default (PD), loss given default (LGD), exposure at default (EAD) and maturity (M). The risk weights vary according to the nature of the risk. However, in both the approaches the total capital adequacy ratio must not be lower than 8%.

Though Basel II capital adequacy requirements are designed to suit the needs of the conventional banks, their implementation can be very challenging in the case of Islamic banks. This is because the items both at liability and asset sides of Islamic banks are quite different from liabilities and assets of conventional banks. Moreover, the unique nature of risks faced by the Islamic banks involves different challenges for compliance with Basel II capital adequacy requirements.

1.1 Research Objectives

This study aims specifically at achieving the following objectives:

1. To explain the risks that Islamic financial institutions face and show how they are different from the risks faced by conventional banks.
2. To explain the Basel II guidelines relating to Capital Adequacy Requirements (CAR).
3. To discuss the challenges Islamic banks face in implementing CAR and to explore the possible ways Islamic banks can adopt to overcome these challenges and implement Basel II standards effectively.

1.2 Literature Review

Luca and Mitra (1998) described that Islamic principles influence the structure and activities of banks in several ways. The most important is the prohibition against the payment and receipt of fixed or predetermined rate of interest, which is replaced by profit and loss sharing arrangements. The rate of return is neither fixed nor known prior to the undertaking of each transaction. Kahf (2005) stated that Islamic bank have qualitatively similar credit risk to conventional banks. Therefore the processes of the calculation of minimum equity requirement for credit risk exposure should not be different from the methodologies proposed for conventional banks. This means that the Islamic banks can go along with this part of the Basel II Proposed Accord. Rima and Yolla (2007) explained that under Islamic banking, depositors are not neutral providers of funds and the majority of deposits fall under unrestricted investment accounts. Such depositors instead supply investment accounts and participate in the bank investment activities through risk-sharing schemes. As such, Islamic bank depositors require less protection than conventional bank depositors. Karim (1996) was of the view that PSIAs should play a major role in the calculation of the CAR for Islamic banks.
However, if the Basle framework is to be applied to Islamic banks in its present form, then regulatory authorities would face the problem of how to treat PSIs. Hassan and Dicle (2005) considered different approaches for credit evaluation and risk measuring for the banking system. Basel II aims to establish financial stability and level playing field in financial industry. In terms of lowering the risk that Islamic banks pose on financial systems and on the Islamic banking per se, adopting Basel II and coping with capital adequacy measures is vital for Islamic banks.

1.3 Structure of the Study

The study has been divided into four sections. The section one is comprised of introduction. The defining risk, general risks and unique risks faced by Islamic banks are described in section two. The section three is concerned about the Basel II capital adequacy requirements and challenges faced by Islamic banks in implementation. The analysis of different approaches available to Islamic banks in respect to implementation of Basel II is also covered in this section. Finally the conclusion and implications are discussed in section four.

2.0 Defining Risk

Risk arises when there is a possibility of more than one outcome and the ultimate outcome is unknown (Kan, 2001). In Oxford Advanced Learner’s Dictionary risk is defined as ‘the possibility of something bad happening at some time in the future; a situation that could be dangerous or have a bad result’.

According to Wikipedia, ‘Risk is a concept that denotes a potential negative impact to some characteristic of value that may arise from a future event, or we can say that ”Risks are events or conditions that may occur, and whose occurrence, if it does take place, has a harmful or negative effect’. Exposure to the consequences of uncertainty constitutes a risk. In everyday usage, risk is often used synonymously with the probability of a known loss.

Ross, Westerfield and Jordan (2007) explained that risks can be classified into systematic and unsystematic components. The systematic risk is one that influences a large number of assets, each to a greater or lesser extent. Because systematic risks have marketwide effects, they are sometimes called market risks. The unsystematic risk is one that affects a single asset or a small group of assets. Because these risks are unique to individual companies or assets, they are sometimes called unique or asset-specific risks. In al-Quran the entire life of this world is considered a risk (3:185). For the purpose of the study, we shall adopt a definition given by Ross, Westerfield and Jordan.

All businesses including financial institutions face risk and uncertainty. However, Islamic financial institutions face some special kinds of risks given their nature of activities. There are different types of risk faced by the financial institutions. Some risks are common to both Islamic banks and conventional banks such as credit risk, market risk, operational risk and liquidity risk but some risks are unique to Islamic banks only such as displaced commercial risk and Shariah compliance risk. Amongst common risks the degree and intensity vary between Islamic banks and commercial banks due to unique business nature of Islamic banks. For instance, the conventional banks face market risk in the trading book transactions only whereas Islamic banks face market risk in both banking and trading books transactions.
2.1. General Risks

2.1.1 Credit Risk

The IFSB (2005a) defines credit risk as ‘the potential that counterparty fails to meet its obligations in accordance with agreed terms’. Haroon and Hock stated that ‘the possibility of counterparties not fulfilling predetermined obligations is as distinct a risk to Islamic banks as to conventional banks’.

Banks are exposed to credit risk through default by counterparties in settlement and repayment of due considerations either whole or part and either principal or earning. For example, a customer at a loan agreement will expose the bank with credit risk due to not fulfilling his commitments on time or unable to meet his obligations at all. Therefore, the bank may face a credit risk of not receiving its principal back and/or the earnings. Hassan and Dicle (2005) described that banks are not only exposed to credit risk in loan agreements but also in other areas such as on treasury operations and foreign exchange dealings. In the case of securities trading businesses, the settlement may not be effected. Bonds carry the default risk of the issuer for the coupon payments and for the principal as well. In foreign exchange dealings the banks are exposed to credit risk due to adverse movement of exchange rates or the currencies are not exchanged simultaneously and at the same physical place. Credit risk limits the amount of transaction that will be conducted with a specified counterparty. Banks can also be exposed to credit risk in off-balance sheet items such as guarantees and letters of credits. The contingent liability may be converted into monetary upon non meeting of commitments of banks’ customers to their counterparties to whom banks are supposed to step in the shoes of customers for fulfilling real obligations in case of their default.

Credit Risk in Islamic Banking Products

The Islamic Banks are exposed to credit risk in murabahah financing while exchanging of the products between the bank and the customer. The customer may not honour his commitment of payment according to the agreement thus arising default risk/ settlement risk. Haron and Hock (2007) stated that in case of salam contract, the Islamic banks may face settlement and delivery risk while commodities are not according to the specification envisaged in the contract, delays in delivery or altogether default in delivery whereas the bank has already made payments so resulting loss of partial or full investment. In case the bank has urboun against the salam contract, bank may face a risk that urboun amount may not be sufficient to cover the invested capital of the bank. In istisna contract while the work is in progress but the counterpart may not honour his payment obligations to the bank for deferred installments or progress billing exposing the bank to risk of loss of amount receivable due from customer. The bank may face completion risk in parallel istisna when the sub-contractor has been paid in advance for manufacturing of the goods/project. The delay may increase cost of the project and refusal to carry out the work may aggravate the situation if no other sub-contractor is available to complete the work. The bank may be exposed two way risk, non recovery of amount paid to sub-contractor and other to meeting his obligations to the ultimate customer. In ijarah, the lessee may not pay the rental as and when it due for payment or not fulfilling his other obligations for keeping asset in working condition due to his negligence.
Though the banks have right to repossess the asset, however, the banks face difficulties in exercising this right due to their nature of financial intermediaries. Thus the banks are exposed to risk of recovery of rentals and impairment of assets in possession of the lessee. The musharakah and mudarabah contracts are more risky than the financing contracts. In musharakah partnership the bank is exposed to lose its entire invested capital in case of liquidation of the partners’ business as equity share ranks lower than the debt. Even in normal conditions the divergence of partners from agreed terms and condition may pose serious consequences as withdrawals from the partnership may result loss of substantial amount of invested capital. In case of mudarabah the bank is exposed to capital impairment risk if the partnership business incurred losses or the mudarib defaults in payments of due share to the bank (rab ul maal).

2.1.2 Market Risk

According to IFSB (2005a), the market risk is defined as ‘the risk of losses in on-and off-balance sheet positions arising from movements in market prices’. Market risk is originated from the market itself. Haron and Hock (2007) explained that it can be bifurcated into systematic risk and unsystematic risk. The systematic risk arises due to overall changes in the market conditions whereas movement in specific asset will generate unsystematic risk. Any change in the price of domestic currency is systematic risk while changes in the price of oil or cotton will affect only those who have positions in these commodities. There are many market conditions which affect the banks to expose to the market risk. For instance, changes in prices of commodities, interest rates and foreign exchange rates etc. Conventional banks are exposed to market risk due to holding of positions for financial instruments to secure short term profits from movement of price or interest rate variations or to hedge against other elements of the trading book only.

Market Risk in Islamic Banking Products

Islamic banks are not permitted earning returns from speculative transactions and transactions containing high gharar such as hedging or other derivatives. However, Islamic banks are exposed to market risk in other trading book transactions on its balance sheet. The Islamic banks adhere to asset backed transactions with sharing of risk and rewards take ownership of physical assets. They are exposed to market risk for movement of assets’ prices. Thus, the Islamic banks are exposed to market risk both in their trading books and banking books.

Haron and Hock (2007) described that in non-binding murabahah for the purchase orderer contract the customer has an option not to purchase the goods so in the case of cancellation of order by the customer the Islamic banks are exposed to market risk. The bank has to sell the goods in open market and the selling price may be lower than the purchase price. The Islamic may also incur marketing and selling expenses to dispose of the cancelled orders. Salam is a contract of spot payment with deferred delivery of goods. Thus the bank at the inception of the contract is exposed to market risk of movement of prices at the maturity of contract. The spot price of the agreed commodity at the time of delivery may be lower than price paid at the time of contract. In parallel salam contract the bank has to deliver the goods at the maturity date. In case of supplier under salam contract failed to deliver the goods, the Islamic bank has to purchase the goods from the market to meet its obligations in parallel salam contract. Thus the Islamic bank is exposed to market risk besides credit risk from the supplier side. The market price may be higher than the price under the salam contract.
The Islamic bank may also face the situation that it receives the delivery under salam but the customer at parallel salam may back out to take delivery. The bank in this situation has to search other buyer or sell the goods in market and may hold some time. In istisna and parallel istisna, the Islamic bank is exposed to the similar market risk as discussed in salam and/or parallel salam contract. In operating ijarah the fair value of the leased asset may be lower than the residual value estimated by the Islamic bank at the time of lease contract. And in ijarah muntahia bittameelk, the lessee may refuse to continue the lease contract after some period much prior to the end of the lease period and not willing to purchase the assets, Islamic bank is exposed to market risk for disposal of the asset in open market or to find new customer for lease of the asset. The price fetch through sale or lease again to other lessee may be lower than the cost of the assets.

2.1.3 Operational Risk

The Basel Committee on Banking and Supervision (2004) defined operational risk as ‘the risk of losses resulting from inadequate or failed internal processes, people and systems or from external events. This includes legal risk but excludes strategic and reputational risk’. Khan (2001) explained that process risk may result due to various reasons such as inaccurate transaction execution and violating operational standards. People risk may arise due to incompetence and fraudulent actions by people while system risk may occur from information technology and system breakdown.

According to IFSB (2005b), ‘Islamic banks should consider the full range of material operational risks affecting their operations, including the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. They should also incorporate possible causes of loss resulting from Shariah non-compliance and the failure in their fiduciary responsibilities’.

Operational Risk in Islamic Banking Products

Islamic banking is in infancy stage where appropriate systems, processes and products are being developed. Archer and Karim (2007) described that the Islamic banks’ products tend to be more complex than the conventional banking system. These require more processing steps and seem to be more chances of error. Islamic banks normally hold more physical assets on their balance sheets than conventional banks and are more exposed to operational risks. Moreover, operational risks in terms of information technology are likely more than conventional counterparts due to non availability of standardized software to the Islamic banks. However, the reputational risk including Shariah compliance falls outside the definition of Basel II regarding operational risk, which entails challenges to the Islamic banks. Legal risk may occur either from Islamic bank’s operations or problems of legal uncertainty in interpreting and enforcing Shariah contracts.

At the time of murabahah contract, the Islamic banks are required to have ownership and possession (physical or constructive) of the assets. They should ensure the legal implications of the contract. Furthermore, due to the different viewpoints of murabahah permissibility, the Islamic bank has to meet the requirements of certain jurisdictions. In salam the bank has to accept delivery earlier than the stipulated period which may result extra cost of warehousing, damage or insurance in case of inability to prompt selling. In case of parallel salam, the bank is exposed to legal risk due to non delivery/delayed delivery of goods as specified time.
Similar to salam, in istisna contract the Islamic banks face non-delivery, delayed delivery and difference in specifications of products. Furthermore, the cost may be escalated over the completion time, thus the Islamic bank may face legal risk and cost overrun risk etc. In ijarah the Islamic bank has to recourse to legal proceedings to repossess the asset in case of default or misconduct by the lessee especially when the leased asset is house or vehicle. The Islamic bank being financial intermediary may not have appropriate technical expertise to evaluate the project at the time of musharkah venture or may not carry out the adequate monitoring performance of the joint venture during the execution period. In mudarabah funding the Islamic bank has no control over the management of the venture. In case of moral hazards from the mudarib side, the bank (rab ul maal) may have to bear unpredicted losses.

2.1.4 Liquidity Risk

Liquidity is required for payments of daily banking activities such as withdrawals by depositors through cheques or ATMs, credit and investment payments and regulatory payments etc. Banks are responsible to have adequate liquidity arrangements for meeting their obligations of different types of payments on a timely manner. Failure to come up with obligations of payments is the liquidity risk. To manage liquidity the central banks require banks to maintain reserve requirement (RR) at a certain percentage of assets in liquid assets. Some of these liquid assets are required to be kept at the banks while some are kept as liquidity reserves at the central banks. Banks also manage their liquidity risk through cash flow management. If there is a reasonable difference between the duration of assets and duration of liabilities the bank will face liquidity crunch. For instance if a bank has credit deals with maturity of six months and deposits with a maturity of one month then the liquidity mismatch will arise and the bank can face liquidity risk. The conventional banks, short in liquidity, borrow from interbank money market or from central banks provided that funds are not available in money market.

Liquidity Risk in Islamic Bank

According to IFSB (2005b) ‘liquidity risk is the potential loss to Islamic banks arising from their inability either to meet their obligations or to fund increases in assets as they fall due without incurring unacceptable costs or losses’.

As Islamic money markets are not yet developed and conventional interbank money markets operate on interest, therefore, Islamic banks cannot borrow from interbank money market. Central banks also have not yet provided facility of interest free lending of money to Islamic banks. Therefore, the lender of last resort facility, available to conventional banks, is very limited to the Islamic banks. Conventional banks often keep a certain portion of their liquid assets in fixed income interest bearing securities which can easily be converted into cash in case of need. Therefore liquidity options available to conventional banks are usually higher than Islamic banks. The Islamic banks are exposed greatly to liquidity risk in liquidity crunch. Similarly in case of excess liquidity the Islamic banks have few options to invest in short term money market. Hassan and Dicle (2005) described that major financing of Islamic banks is in contracts such as murabahah and ijarah transactions which have fixed scheduled payments. The conventional banks have policy options to call back credit facilities from their customers at any time. The Islamic banks, however, cannot liquidate easily their financing facilities.
Istisna and salam contracts have very long maturity arrangements and collection of principal amount is not possible before the maturity of the contract. However, in mudarabah and musharakah transactions, principal amount can be collected in case of termination of the contract. But financing in these contracts is nominal to total financing. Thus liquidity risk is the most important risk that an Islamic bank faces in case of need.

2.2.0 Unique Risks

2.2.1 Displaced Commercial Risk

Displaced Commercial Risk (DCR) is unique to Islamic banks. Under certain situations Islamic banks may be compelled to pay a higher return to investment account holders (IAH) than they actually earned on IAH assets. This may force the Islamic banks to forgo their right of profit partly or entirely in order to satisfy and retain their IAH. In this way the Islamic banks “smooth” the return to IAH at the expense of others. This risk is a result of rate of return risk. The increase of benchmark rates in conventional banks may cause rising of expectations of IAH to have higher return at their investments. However, rate of return risk differs from interest rate risk as Islamic banks expect exact result at the end of investment holding period, which may be different from predetermined interest rates.

According to IFSB (2005a), ‘the term displaced commercial risk refers to the risk arising from assets managed on behalf of IAH which is effectively transferred to the Islamic banks’ own capital because the Islamic banks follow the practice of foregoing part or all of its mudarib share of profit on such funds, when it considers this necessary as a result of commercial pressure in order to increase the return that would otherwise be payable to the IAH’.

Haron and Hock (2007) stated that displaced commercial risk occurs when IAH funds are invested in assets such as murabahah or ijarah with long term maturity periods and the rate of return may not be competitive with alternative investments. Though Islamic banks are not supposed to do such income smoothing but due to commercial pressure, they are virtually forced to do for IAH. To manage displaced commercial risk the Islamic banks create reserves such as profit equalization reserve (PER) and investment risk reserve (IRR) (FAS 11: AAOIFI, 1999) and may forego bank’s mudarib share of profit. Profit equalization reserve is an amount set aside from the gross profit before allocating profit share to bank and IAH. Whereas investment risk reserve is the amount maintain out of profit share of IAH only. The purpose of PER is to smooth return for IAH and IRR is to create cushion against future losses for IAH.

2.2.2 Shariah Compliance Risk

IFSB (2005a) described that ‘Shariah non-compliance risk is the risk that arises from Islamic banks’ failure to comply with the Shariah rules and principles determined by the Shariah Board of the bank or the relevant body in the jurisdiction in which the Islamic banks operate’. Shariah is subject to interpretation particularly in the field of fiqh al-muaamalat which includes economic and financial transactions and different madhabs (schools of thought) may have different opinions on the same matter. Shariah scholars of a country may permit a financial transaction which may differ substantially from the point of view of Shariah scholars of other country. This heterogeneity on similar matters may cause greater harm to the development of standard products in Islamic banking across the board.
The perception of investors and customers of Islamic bank may be stranded. The non compliance of Shariah principles by the Islamic bank or perception of customers thereof may leads to reputational risk which may trigger starting withdrawals of funds and cancellation of investment contracts. Such situation would not only harmful for concerned Islamic bank but may have contagion effect on the Islamic banking industry.

**Basel II:**

**Background**

Capital is the key source to be used to protect the depositors’ money from unpredicted losses. It is an important source for funding of earnings assets and vital for stability cushion. Bank capital may be consisted of equity and non-deposit liabilities or debt capital. In order to ensure that banks are adequately funded and capitalized, the Basel Capital Accords came up with a minimum capital requirement. Wafik and Anoma (2007) stated that the focus of the original 1988 accord was on a cushion for credit risk which was amended in 1996 to include capital requirements to cover market risk. However, in Basel II framework, operational risk has also been taken into account with a related requirement of capital adequacy.

**3.1 Overview of Basel II**

Basel Committee on Banking Supervision\(^2\) finalized the New Capital Adequacy framework commonly known as Basel II in June 2004. Basel II offers comprehensive methodology for calculation of capital requirements for major risk categories. The new Accord is based on three mutually reinforcing pillars. The pillar 1 deals with minimum capital requirement that is adequate to cover the risks of a bank. The Pillar 2 is concerns with the supervisory review process that assures capital adequacy and Pillar 3 covers the market discipline that aims to complement the Pillar 1 and Pillar 2 by enhancing market assessment of a bank and its capital adequacy. In Basel II, bank activities are classified into banking and trading books for the purpose of calculating the capital adequacy ratio. The banking book consists of all banking activities such as the transformation of depositors’ funds into loans and advances while the trading book covers the activities of buying and selling of securities.

**3.2 Pillar 1 Minimum Capital Requirement**

According to Basel Committee on Banking Supervision (2004), the Basel II specified two approaches for calculation of capital adequacy ratios (CAR) for credit risk: the standardized approach and internal rating based approach. The banks have options between these two approaches for calculating their capital requirements.

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\(^2\) The Basel Committee on Banking Supervision is a committee of banking supervisory authorities that was established by the central bank governors of the Group of Ten countries in 1975. It consists of senior representatives of bank supervisory authorities and central banks from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom, and the United States. It usually meets at the Bank for International Settlements in Basel, where its permanent Secretariat is located.
3.2.1 The Standardized Approach

Under the standardized approach the measurement of credit risk is supported by external credit assessments standardized manner. Hassan and Dicle (2005) stated that the standardized approach provides guidance to regulators in adopting appropriate source of external ratings for banks. In determining the risk weights, banks are required to use assessments made by the external credit assessment institutions (ECAI) which have been recognized for assessment purposes by the regulators. The assessments of ECAIs may be recognized on a limited basis, e.g. by type of claims or by jurisdiction. The supervisory process for recognizing ECAIs should be made public to avoid unnecessary barriers to entry. ECAI to be eligibility criteria must satisfy each of the six criteria set by Basel II including objectivity, independence, international access/transparency, disclosure, resources and credibility. The Basel II Accord classified assets of banks into 13 categories which include a) claims on sovereigns, b) claims on non-central government public sector entities, c) claims on multilateral development banks, d) claims on banks, e) claims on securities firms, f) claims on corporates g) claims included in the regulatory retail portfolios h) claims secured by residential property i) claims secured by commercial real estate j) past due loans k) higher-risk categories l) other assets m) off-balance sheet items. For the purpose of calculating the minimum capital requirement, exposures should be risk-weighted net of specific provisions. The accord suggests a given weight corresponding with each rating. The table given below gives a simplified view of the risk weights for some of asset categories mentioned above.

### Simplified Sample of Risk Weights Assigned to Ratings

<table>
<thead>
<tr>
<th>Rating Kind of Assets</th>
<th>AAA to AA-</th>
<th>A+ to A-</th>
<th>BBB+ to BBB-</th>
<th>BB+ to B-</th>
<th>Below B-</th>
<th>Unrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 2 Claims on sovereigns and PSE</td>
<td>0%</td>
<td>20%</td>
<td>50%</td>
<td>100%</td>
<td>150%</td>
<td>100%</td>
</tr>
<tr>
<td>3 Claims on multilateral dev. banks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 &amp; 5 Claims on banks &amp; security firms</td>
<td>20%</td>
<td>50%</td>
<td>100%</td>
<td>100%</td>
<td>150%</td>
<td>100%</td>
</tr>
<tr>
<td>6 Claims on corporates</td>
<td>20%</td>
<td>50%</td>
<td>100%</td>
<td>150%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Kahf (2005)

The capital ratio is calculated using the definition of regulatory capital and risk-weighted assets. According to Basel II, the total capital ratio must be no lower than 8%. The formula for calculation of CAR for Pillar 1 is specified as:

\[
\text{CAR} = \frac{\text{Tier 1 Capital} + \text{Tier 2 Capital}}{\text{Risk Weighted Assets}}
\]

Source: Rima and Yolla, (2007)
The basis of calculation of risk-weighting assets is extremely important as in case of more riskier assets a bank will require to increase its capital in order to meet capital adequacy requirements. The Pillar 1 of Basel II set a detailed framework for calculating risk-weighted assets as mentioned above for conventional banks. Capital structure of the banks is classified into three categories:

**Tier 1 or Core Capital** comprises of paid up share capital/common stock, disclosed reserves from post-tax retained earnings, non-cumulative perpetual preferred stock (goodwill to be excluded).

**Tier 2 or Supplementary Capital** includes undisclosed reserves, asset revaluation reserves, general provisions/general loan-loss provisions, hybrid (debt/equity) capital instruments and subordinated term debts. Eligible Tier 2 capital may not exceed total Tier 1 capital and long term subordinated debt may not exceed 50% of the Tier 1 capital.

**Tier 3 Capital** consists of unsecured debt which include subordinated and fully paid up, to have an original maturity of at least two years and not to be repayable before the agreed repayment date unless the supervisory authority agreed. This type of capital will be limited to 250% of a bank’s Tier1 capital, which is required to support market risks.

### 3.3 Implementation of Basel CAR in Islamic Banks

The Islamic banking is a part of international banking industry. The Islamic banks are as sensitive to risks in their operations as conventional banks. Therefore, Islamic banks while complying with the international regulatory requirements would meet best international risk management standards. Various efforts, at institutional and individual levels, were made to adopt Basel accords for Islamic banks keeping in view their different nature of assets and liabilities.

#### 3.3.1 The AAOIFI Approach

The first initiative towards developing the framework for capital adequacy for Islamic banks was taken by Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). The AAOIFI issued the ‘Statement on the Purpose and Calculation of the Capital Adequacy Ratio for Islamic Banks’ in 1999. This statement proposed the methodology for calculating capital adequacy ratios for Islamic banks. Hassan and Dicle (2005) stated that the AAOIFI’s proposals are based on Basel standards which were same on assets side but different for liabilities. However, the AAOIFI maintained the same capital adequacy requirement to be equal to 8% for Islamic banks.

The sources and nature of funds available to Islamic banks differ from those of conventional banks. The funding sources to Islamic banks include owners’ equity, current deposits, saving deposits, restricted investment accountholders and unrestricted account holders’ funds. The first three categories of funds are same as conventional banks but latter two categories are specific to the Islamic banks. The treatment and implication of these funds are also quite different. The current and saving accounts are guaranteed and repayable in full upon demand of the depositors. Whereas investment accountholders funds are held by the Islamic banks on profit and risk sharing and do not have guaranteed return or principal repayment in full.
There are two types of investment accounts: unrestricted and restricted accounts. The funds received under unrestricted accounts can be invested by Islamic banks without any restrictions. The Islamic banks have the right to comingle unrestricted investments with its own funds and have rights to use these funds unconditionally. Unrestricted investments accounts are considered as an element of the financial position of the Islamic banks and should be considered for calculation of capital adequacy ratio. However, the AAOIFI considered 50% weights for these funds in calculating the CAR. Rima and Yolla (2007) argued that the possible rationale for not giving 100% weights might be that investment depositors can withdraw their funds upon maturity, which reduces the base of the funds available to the bank. Whereas the owners’ equity remains unchanged even if they withdraw their funds by selling their shares to other investors. Moreover, unrestricted investment accounts do not have voting rights, therefore, these funds are not considered part of equity. According to AAOIFI, unrestricted investments accounts lie in between deposits and equity.

On the other hand the Islamic banks have not right to use or dispose of restricted investment accounts unconditionally. Funds collected under restricted investment accounts represent fiduciary services because depositors make all investment decisions. As those funds are invested according to the investors’ directives and are not at the discretion of the banks, they are not part of the financial position of the Islamic banks. The AAOIFI recommends that restricted investment accounts should be included as off-balance sheet items. The implication of such treatment is that these investment funds will not be included in the calculation of capital adequacy ratio.

In the AAOIFI’s framework for capital adequacy, unrestricted investment account holders are considered to share part of the risks with shareholders for calculation of CAR. The proposed formula for CAR for an Islamic bank is as under:

$$\text{CAR} = \frac{\text{Total Capital}}{\text{RWA}_{\text{C&CA}} + 50\% \ (\text{RWA}_{\text{UIA}})}$$

Source: Rima and Yolla, (2007)

Where \(\text{RWA}_{\text{C&CA}}\): Risk weighted assets of owners’ equity and current accounts and 
\(\text{RWA}_{\text{UIA}}\): Risk weighted assets of unrestricted depositors’ investment accounts

Rima and Yolla (2007) described that the limitation of the AAOIFI’s approach is that it focuses on the sources of funds for Islamic banks whereas overlooking the importance of detailed calculation of risk weighted assets. Chapra and Khan (2000) stated that the AAOIFI perhaps formulated the CAR based upon accounting principles instead of systematic considerations. The discounting of the risk assets held against investment accounts by 50% may provide an opportunity for capital arbitrage. Karim (1996) discussed four different possible options of treatment for investment accounts, keeping in view their distinct nature for calculating CAR:

The first option is that investment accounts should be added to the core capital. The main reason for this treatment is the fact that investment accounts absorb any operating losses and enable the bank to absorb risks and sustain shocks just as core capital does. In the second option the investment accounts should be deducted from the total risk weighted assets of the Islamic bank.
This method implies that Islamic banks would be encouraged to keep increase the share of the investment accounts because more the funds rose through these accounts, the less would be the total risk weighted assets. The third scenario suggested to add investment accounts to Tier 2 capital. However, the constraint that Tier 2 capital should not be increased to Tier 1 capital implied that in case these accounts are already 100% of Tier 1 capital, there is no incentive to attract more funds through these accounts. The fourth situation entailed to maintain status quo-no adjustment in CAR due to investments accounts. The Islamic bank which has below 8% CAR is unlikely to use investments accounts for CAR and has no choice but to increase equity capital or restructure its assets to reduce their risk weights. These options presented detailed analysis for possible use of investment accounts in risk exposure of Islamic banks and develop a reliable capital adequacy framework.

3.3.2 The IFSB Approach

Islamic banks have assets in almost all the 13 assets categories of conventional banks mentioned above. However, the nature of these assets in Islamic banks is different. Archer and Karim (2007) stated that Islamic financing assets are not easily accommodated within the credit risk methodology of the Basel Accord and therefore called for particular attention from the IFSB in its Capital Adequacy Standard. The IFSB (2005a) described that the credit risk exposures in Islamic banks arise in accounts receivable in murabahah contracts, counterparty risk in salam contracts, accounts receivable and counterparty risks in istisna contracts. However, investments by means of musharakah or mudarabah contracts in assets in the banking book are to be treated as credit risk in the form of capital impairment risk.

The IFSB (2005a) proposed credit risk weights (RW) for individual claims based on external credit assessments for counterparties similar to the Basel II ranging from 0% to 150%. For off-balance-sheet items commitments with an original maturity up to one year and commitments with an original maturity over one year will receive credit conversion factors (CCF) of 20% and 50% respectively. However, CCF will be 0% for any commitments that are unconditionally cancelable at any time by the Islamic bank without prior notice. The RW for exposures in investment made under profit and loss sharing (musharakah/mudarabah) may be calculated either by simple risk-weighted method or slotting method. In slotting method Islamic bank is required to map its internal risk grades into four supervisory categories.

The IFSB (2005a) also proposed preferential risk weights if the underlying assets are sold under Murabahah or leased under Ijarah e.g RW may be 75% if murabahah receivable from an individual or small business provided that the subject matter is sold on the basis of murabahah which is pledged with Islamic banks. The RW may be 35% in case subject matter of real estate is pledged with Islamic banks but in case of commercial real estate the RW should be 100%. However, the supervisory authorities have discretion to apply RW that can be higher than these risk weights. The IFSB also maintained the same level of 8% capital adequacy requirement for Islamic banks in line with Basel II and Tier 2 capital is limited to 100% of Tier 1 capital. The IFSB capital adequacy framework aims to complement the Basel II guidelines in order to meet the specific requirements of Islamic financial institutions for calculating CAR.
The AAOIFI focused on the sources of funds of the Islamic banks for CAR whereas the IFSB tried to meet the Basel requirements focusing on asset side of the Islamic banks also. It has considered the uses of funds and assigning appropriate risk weights to each asset item. The issue of investment accounts of the Islamic banks has also been adequately considered in the IFSB capital adequacy framework. The IFSB developed following standard formula for CAR:

$$\text{CAR} = \frac{\text{Eligible Capital}}{\{\text{RWA} \ (\text{Credit+ Market Risks}) + \text{Operational Risks} \text{ less RWA funded by PSIA} \ (\text{Credit+ Market Risks})\} }$$

Source: IFSB, (2005a)

The total risk weighted assets (RWA) include those financed by both restricted and unrestricted Profit Sharing Investment Accounts (PSIA). Credit and market risks include both for on- and off-balance sheet exposures. Where the funds are commingled, the RWA funded by PSIA are calculated based on their pro-rata share of the relevant assets. PSIA balances include PER and Investment risk reserve (IRR) or equivalent reserves.

### 3.4 Internal Rating Based Approach

According to Basel Committee on Banking Supervision (2004) the banks which have more advanced risk management capabilities and can meet stringent supervisory standards are allowed to adopt Internal Ratings-Based (IRB) approach to measure credit risk. Under this approach the risk weights are derived from four quantitative data risk components such as probability of default (PD), loss given default (LGD), exposure at default (EAD) and maturity (M). Probability of default is the probability that a borrower will default within a time period. Loss given default is a percentage of the risk exposure that will be loss in case of default. Exposure at default is the amount of risk exposure at the time of default and maturity is the days left for the risk exposure to end.

The calculation of the risk components is based on allocation of internal ratings to individual exposures. This approach differs substantially from the standardized approach. The internal assessment of key risk drivers is a primary input for capital calculation. The IRB approach can be classified into two versions which include a foundation version and an advanced version. Under the foundation approach banks develop their own estimates of PD and rely on supervisory estimates for other risk components. But under the advanced approach, banks provide more of their own estimates of PD, LGD and EAD, and their own calculation of M subject to meeting minimum standards. Furthermore, banks are required to categorize their exposures into broad classes of assets with different underlying risk characteristics. Basel Committee on Banking Supervision (2004) described that these classes of assets are comprised of corporate, sovereign, bank, retail, and equity. Within each class there are different sub-classes e.g. the corporate class is divided into five sub-classes such as project finance, object finance, commodities finance, income-producing real estate and high-volatility commercial real estate.
The corporate exposure can be defined as a debt obligation of a corporation, partnership, or proprietorship. Under Basel II banks are permitted to distinguish separately exposures to small and medium sized entities (SME) and can develop separate risk weights. IRB approach in this category may be useful for Islamic banks as they have relatively larger risk exposure in SMEs as compared to financing in corporates. In retail exposures, IRB approach includes a) collateralized by residential mortgages, b) qualifying revolving retail exposures and c) other retail exposures. Islamic banks have different collateral structure for different products.

Hassan and Dicle (2005) stated that in Islamic Banks, murabahah transactions may have residential mortgages that can be classified in first classification. The revolving credits are not Shariah compliant; therefore, Islamic banks do not have credits exposures in this category. However, other category includes many credit types that may be convenient for Islamic banks. For instance, project financing is categorized as specialized lending under other retail exposures. Islamic banks may categorize salam and istisna instruments under specialized lending and should take the lead to describe risks associated with such credit relationships and establish a risk weight foundation. Equity exposures are defined on the basis of the economic substance of the instrument. They include both direct and indirect ownership interests. Islamic financial instruments based on equity financing such as mudarbah and musharkah fall under equity participation category of IRB.

Currently Islamic banks are small in size, extremely scarce in human resource expertise and lack requisite operational infrastructure especially independent IT systems that can cater special requirements of Shariah compliant products. Islamic banks require additional risk management resources compared to conventional banks to implement IRB approach and will have to overcome obstacles in terms of size and risk management in order to obtain supervisory approval to implement the IRB approach.

### 3.5 Credit Risk Mitigation Techniques

Basel Committee on Banking Supervision (2004) described that there are several characteristics of standardized approach which enhances its scope over the old accords to mitigate credit risks. Banks can use a number of techniques to mitigate the credit risks through collaterals, guarantees by a third party and credit derivatives. Additionally banks may agree to net loans owed to them against deposits from the same counterparty.

The IFSB (2005a) explained that credit risk mitigation techniques available to Islamic banks are somewhat different from the risk mitigation of conventional banks. The Islamic bank can adjust or reduce exposure in respect of a debtor or counterparty by taking into account the credit risk mitigation (CRM) techniques such as a) Hamish jiddiyah which is refundable security deposit taken prior to establishing a contract with the customer, b) Urbun that is a form of earnest money held after a contract is established as collateral to guarantee contract performance, c) Guarantee from a third party, d) Pledge of assets as collateral which must be a Shariah compliant asset of monetary value that can be lawfully owned and free of encumbrance e) Leased assets under Ijarah or IMBT contracts perform same function as collaterals because they can be taken back by the lessor in case of default by the lessee.
The financing transactions such as murabahah and ijarah have some resemblance to conventional banks. The collaterals in these contract form real estate and commodities which are not problematic. However, Hassan and Dicle (2005) described that definition of collateral for partnerships such as mudarabah and musharakah are very difficult to match with Basel accord. These partnership contracts may not require collateral for expected profits or against principal investments. In a musharakah transaction, both the parties contribute capital and management, therefore, how Islamic bank could ask its partner for collateral. Furthermore, such collateral may be against the Shariah principles. Although there are no Islamic financial instruments defined as derivative products, parallel salam may be used to hedge against risks arising from salam contracts. Parallel salam contract may not be a derivate products but the application of salam is in line with the intent of derivatives. However, the limited availability of Shariah compliant risk mitigation techniques and risk mitigation instruments to Islamic banks may impede risk management resulting in identified but unaddressed risks

4.0 Conclusion

The Islamic banks are not allowed predetermined fixed return from debt or loan according to Shariah principals. They mobilize funds on the basis of profit and risk sharing. The relationship between Islamic banks and its customers is not of debtor and debtee rather it is of investor and investee based on partnership. The distinct nature of relationship with customers and different kinds of financing and investing activities entail unique risks besides general risks faced by the Islamic banks. Furthermore, the scope and intensity of different risks are not similar to both type of banking. For instance, Islamic banks face market risk both on their banking book and trading book transactions whereas conventional bank face market risk only on their trading book transactions. Such differences in liability side and asset side items of Islamic banks from conventional banks and unique nature of risks face by the Islamic banks involve various challenges for compliance of Basel II capital adequacy requirements for Islamic banks. Basel II guidelines disregard the sources of funds for conventional banks and assess risks arising from uses of funds to safeguard the interest of depositors for full repayment of their money. However, in Islamic banks the investment accounts are profit and risk sharing contracts. The Islamic banks neither guarantee payment of any return nor liable to repay principal in full. In case of losses, both the shareholders equity and investment accounts absorb losses. According to AAOIFI standards, the restricted investment accounts are classified as off balance sheet items and unrestricted investment accounts are lie between deposits and equity. This unique nature of investment accounts as sources of funds create challenges to comply with the guidelines of Basel II capital adequacy requirements. The AAOIFI proposed to include 50% of the risk weighted assets financed by the investment accounts in calculation of capital adequacy ratio.

However, this proposal overlooked the asset side of the Islamic bank. The assets of Islamic banks are generally backed by real estate or commodities which entail more risks than conventional banks. Thus risk weighted assets of Islamic banks are likely to be more than conventional banks. The IFSB, however, in its standard for capital adequacy proposed to cover the different risks faced by the Islamic banks in line with the Basel II guidelines such as credit, market and operational risks and assign risk weights to different Islamic financial activities. While considering profit and risk sharing sources of funds, it excludes the risk weighted assets that are financed by the investment accounts.
Both AAIFI and IFSB agreed to maintain 8% CAR proposed by the Basel II for Islamic banks. However, some of the research studies proposed higher level of capital adequacy for Islamic banks than the conventional banks. The Islamic banks are also facing some other challenges which include non availability of alternatives to derivatives and exposed to more liquidity risk compared to conventional banks. Basel II capital adequacy requirements emphasize using derivatives for hedging but Islamic banks are not allowed to use such instruments due to non Shariah compliant nature. The alternatives to these hedging instruments are still limited to Islamic banks. Furthermore, the Islamic banks are exposed more liquidity risk due to undeveloped short term money market for Islamic financial instruments.

The Islamic banks while facing unique and somewhat extra risks, compared to conventional banks, can implement Basel II capital adequacy requirements with certain modifications according to the distinct nature of Islamic financial activities, with accommodating differences in liability side and devising different risk weights on asset side of their balance sheets. Nonetheless they have to focus on developing short term money market for liquidity management, to develop alternative to Shariah compliant derivatives, and last but not least to develop standardized Islamic products to avoid Shariah non-compliance risk.

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