Challenges in Implementing Capital Adequacy Guidelines:

A case study of an Islamic Bank

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Abstract

Throughout the past thirty years or so, the practice of Islamic banking has proved to be a viable alternative and is growing at an estimated annual rate of 15%. However, many challenges still lie ahead for Islamic banks to be able to comply with international standards and guidelines. A key issue relates to the implementation of Pillar 1 of the Basel II accord, or capital adequacy requirements that were originally set to capture different types of risks faced by conventional banks, and which do not cater for the risk specificities of Islamic banks. The objective of this paper is to provide an empirical fieldwork to study the implications of applying Pillar 1 to a major Islamic bank following the recent Islamic Financial Services Board guidelines for risk management and capital adequacy. We specifically raise serious issues related to the nature of risks arising from the uses of funds of Islamic financial institutions and their implication on the banking book of the Islamic financial institution. Still other challenges lie ahead of international regulatory bodies in order to cater for other types of risks that are unique to Islamic financial institutions.

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1. Introduction

In three decades of evolution of the Islamic banking industry, a number of Islamic banks were established under heterogeneous social and economic environments. What started as a small rural banking experiment in a remote village in Egypt has now reached a level where both local and international banks are committed to offering a wide range of Islamic banking products and services. The practice of Islamic banking spreads from East to West all the way from Indonesia and Malaysia towards Europe and the Americas. The successful operations of these institutions and their growth have established that Islamic banking is a viable and robust alternative to commercial banking practices. Islamic finance gained additional momentum when multinational Western banks as well as medium and small conventional banks developed Islamic banking techniques[1].

Historically the regulation of other financial institutions and non-profit institutions has typically had a focal point different from that of conventional banks, and its implementation is not always given or delegated to the same regulatory bodies. In contrast, in many countries where Islamic banks coexist with conventional banks, there is a pressure to apply the same regulation for both types of banks and a common legal framework is generally developed. No separate regulatory laws have yet been set to govern the operations of Islamic banks, which have been trying to benefit from the support that the conventional framework can provide. Even in Saudi Arabia, a country that is *Sharia* compliant by nature, the regulatory framework makes no distinction between conventional and Islamic banks. Both types of financial institutions are supposed to follow *Sharia*, but the Saudi Arabian Monetary Agency has not assumed obligations regarding such compliance[2]. In this context, it is not uncommon for Islamic banks to operate under the laws governing commercial banks, which in many

[1] In 1998, Hong Kong Shanghai Banking Corporation (HSBC), one of the leading banks in the financial intermediation international landscape opened *HSBC Amanah*, a global Islamic division dedicated to catering for the demand for *Sharia* compliant products.

[2] Only Malaysia or Indonesia have made efforts to develop a separate legal framework under which Islamic banks can operate in a dual banking system.

instances do not support specific or tailored issues that are inherent only to Islamic banking. Iqbal and Khan (1998) propose a "functional approach" to regulate financial institutions, where the functions performed by Islamic banks are analyzed and attempts are made to modify regulation in a way to provide them with better support.

However, in a global world economy, Islamic banks have to face key challenges in order to effectively compete with conventional banks. As of January 2008, commercial banks in OECD countries will start implementing the Basel Committee on Banking Supervision's documents on the Amendment to the Capital Accord to Incorporate Market Risks (January 1996) and on the *International Convergence of Capital Measurement and Capital Standards: A Revised Framework* (June 2004), hereby referenced as Basel II Accord, which set standards for capital adequacy and sound banking practices. This implies that eventually, Islamic banks will need to follow up quickly and abide by international standards as well. Capital adequacy has become the key stone for safety that reflects supervisory concerns. The adoption of international standards by Islamic banks will help enhance their credibility and fuel their growth worldwide. Under the standardized framework, Basel II sets clear guidelines for the calculation of adequate capital. The balance sheet underlying the rules of the Basel Capital Accords, however, belongs to a conventional bank whose structure completely differs from that of an Islamic bank, both in terms of assets and liabilities. No specific requirements addressing the particularity of Islamic banks' balance sheet structure were introduced under Basel II. As a result of the particular nature of their activities, the risks borne by Islamic banking institutions differ to a greater or lesser extent from those outlined in Basel II. Serious attempts are made by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI, 1999) and the Islamic Financial Service Board (IFSB, 2005) to develop a better capital adequacy framework that addresses the risk profile of Islamic banks.

The aim of this paper is to provide an empirical fieldwork to study the implications of implementing Pillar 1 of the Basel II accord to Islamic banks following the IFSB and the

AAOIFI guidelines, and to recommend proposals for developing a capital adequacy framework that better accounts for their activities. The risks faced by Islamic banks arising from different uses of funds are examined in order to assess if and how they are catered for by international guidelines. Much of the AAOIFI and IFSB efforts to develop a regulatory framework for Islamic banks rest on already existing guidelines for conventional banks. We show that many issues still need to be clarified and addressed, given the specific nature of financing techniques developed by Islamic banks.

The rest of the study is organized as follows. Section two reviews the Basel II capital accord. Section three introduces the AAOIFI and IFSB proposals for developing a capital adequacy framework applicable to Islamic banks. Section four examines the risk exposure of Islamic banks that arises from the different uses of funds. Section five provides a fieldwork for investigating the impact of applying Basel II and the AAOIFI and IFSB guidelines to an Islamic bank, and section five concludes.

2. Overview of the Basel Capital Adequacy Framework

Capital is often considered as a cushion that helps banks absorb their losses and thus avoid failure in the long run. Capital adequacy ratios are a measure of the amount of capital that a bank must hold expressed as a percentage of the bank's total risk weighted assets. Under Basel I and Basel II agreements, in order to be classified as "adequately capitalized", banks are required to hold a minimum of 8% (Tier 1 representing at least 4%) capital to assets ratio[3]. The objective is to promote financial system stability by first encouraging and later requiring banks to hold strong capital positions. In fact, the purpose of Basel I capital agreement signed in 1988, was to encourage leading banks around the world to keep strong

[3] Tier 1 capital is defined as core capital that comprises common stock, non cumulative perpetual preferred stock and reserves. Tier 2 is often referred to as supplementary capital and it includes financing funds such as long term subordinated debt, preferred stock (not included in tier 1) and loan loss reserve, all up to 100% of tier 1.

capital positions and to promote fair competition by reducing inequalities in capital requirements among different countries (Basel Committee on Banking Supervision, 1998). The key stone of this accord is that banks have to maintain a capital adequacy ratio (CAR) of at least 8%. The CAR can be computed by dividing total capital by total risk-weighted assets.

Basel I agreement classified assets into five risk groups (0%, 10%, 20%, 50% and 100%) based on credit and counterparty risks. However it was later found that the 1998 Accord has many deficiencies that appealed for further review. For instance, short-term funding was considered less risky than long-term financing and thus received a weight of 20%, while anything with a maturity greater than one year was risk-weighed at 100%. Such a risk weighting system might have contributed to financial instability by encouraging short-term lending at the expense of longer term, stable credit.

Later, a new framework known as Basel II accord was developed based on three reinforcing pillars: minimum capital requirement, supervisory review, and market discipline. Under Pillar One, banks still must hold a CAR of 8%, but the methodology for calculating this ratio is completely different from the approach adopted by Basel I. Pillar Two set key supervisory principles to help banks maintain adequate capital and Pillar Three, also known as market discipline, addresses public information disclosure issues in order for market participants to evaluate banks' strengths (Basel Committee on Banking Supervision, 2004).

The definition of capital has not changed with the new capital accord. Rather, it is the computation of risk weighted assets that is modified with the inclusion of two additional types of risk: market risk and operational risk[4]. Market risk results from the risk of losses in on and off-balance sheet positions arising from movements in market prices. Of the innovations under Basel II, bank activities are classified into either banking or trading books

[4] Under the old accord, market risk was only applied to off-balance sheet items such as derivatives. The new accord extends the applicability of market risk to the trading book activities of a bank as well, i.e. to cover the investments held with a trading intend. For more details, see *International Convergence of Capital Measurement and Capital Standards: a Revised Framework,* Basel Committee on Banking Supervision, 2005.

for the purpose of calculating the capital adequacy ratio. While the banking book consists of all banking activities such as the transformation of depositors' funds into loans or instruments provided to users of funds, the trading book clusters the activities that involve buying and selling of securities. Banks' exposure to market risk is reflected in their portfolio of securities and is therefore estimated based on its trading book. On the other hand, operational risk refers to the risk of loss resulting from inadequate internal processes

For conventional banks, the capital adequacy ratio as stipulated in Pillar One of Basel II is expressed as:

$$CAR = \frac{Tier\ 1 \text{Capital} + Tier\ 2 \text{ Capital}}{\text{Risk Weighted Assets}} \quad (1)$$

The methodology for calculating risk weighting assets is highly important since riskier assets imply that a bank will need to increase its capital base in order to stay adequately capitalized. Pillar 1 of Basel II set a detailed framework for calculating risk weighted assets to cater for the different levels of risks that conventional banks are exposed to in their daily activities.

Basel II standards, however, do not account for the specific risks related to the nature of Islamic banks' activities. The fundamental tenet of Islamic finance is that of fairness, and Islamic financial institutions at a most basic level are often structured towards fee based revenues for services rendered and profit and risk sharing structures. Thus, in essence, Islamic financial institutions are closer in spirit to asset management companies than to conventional banking institutions, and the impact of their operations on the balance sheet are unique. Further, Islamic banks differ from conventional banks in that their activities are not confined to financial intermediation. An Islamic bank acts as an investor, a trader, a financial advisor, a consultant and a financing house. As a result, there exist a variety of Islamic modes of financing, each one having its own risk characteristics affecting both sides of the bank's

balance sheet. These particularities highlight the unique characteristics of Islamic banks and raise serious concerns regarding the applicability of the Basel methodology to Islamic banks.

3. Early Capital Adequacy Framework Proposals for Islamic Banks

3.1 *The AAOIFI Proposal*

The risks that arise from Islamic banks' operations differ from the conventional risks faced by their peers and are not accounted for in Basel II. In 1999, AAOIFI issued the "*Statement on the Purpose and Calculation of the Capital Adequacy Ratio for Islamic Banks"*. This was the first initiative towards developing a tangible framework that properly addresses the risks faced by Islamic banks. The document proposed a method for calculating the capital adequacy ratio for Islamic banks. Much of the suggested methodology is based on Basel II standards, with the key difference relating to the liabilities side of Islamic banks' balance sheet.

It is common knowledge that the sources of funds of Islamic banks differ from those of conventional banks. Table 1 below summarizes the different sources of funds that appear on the balance sheet of both types of institutions and their implication on the CAR.

[Table 1 about here]

When evaluating Islamic banks' CAR according to equation (1), the calculation of capital is not really problematic since there are neither preferred shares nor subordinated debt, meaning that Islamic banks' capital is only made up of Tier 1 share capital and reserves.

According to Table 1, Islamic banks fund their financing and investing activities through three types of accounts in addition to shareholders' equity: current accounts, saving accounts and unrestricted investment accounts. Similar to conventional banking, current and saving accounts are guaranteed of full payment upon customer request. In contrast, investment account holders require less protection, since their funds are held on a profit and loss sharing (PLS) basis and they agree to bear the risks associated with investing these funds.

Investment accounts are of two types, restricted and unrestricted. Funds collected under restricted investment accounts represent fiduciary services because depositors make all investment decisions and the Islamic bank simply collects a fee for playing the role of agent. Since those funds are invested according to clients' directives and are not at the discretion of the banks, they cannot be part of a bank's source of funds. In this context, the AAOIFI recommends that restricted investment accounts be included as off-balance sheet items. The implication is that such investment funds will not be included in the calculation of CAR.

On the other hand, unrestricted investment accounts should be included on the balance sheet of Islamic banks and have to be considered in the capital adequacy ratio. As previously mentioned, the foremost particularity of Islamic banks' liabilities is that unrestricted investment account holders agree to share in the profit and loss with the bank. This implies that such funds cannot be guaranteed by assigning them 100% weight in calculating the CAR, or else this will be contrary to the *Sharia* principle of participation. The purpose of the AAOIFI document on capital adequacy is to address this issue and to determine appropriate risk weights to unrestricted investments.

In conventional banking, shareholders assume all risks arising from financing activities. If a bank's CAR is below requirement (8%), shareholders must increase equity capital[5]. In contrast, in Islamic banks, although unrestricted investment account holders share risks with bank shareholders, their funds cannot be considered as equity. The rationale is that investment depositors can withdraw their funds upon maturity and reduce the sources of funds available to the bank, but the equity base remains unchanged when shareholders "withdraw their funds" by selling their shares to other investors. Another reason that explains why restricted investment accounts cannot be classified under equity or Tier 1 capital is that such account bearers have no voting rights. To sum, unrestricted investment accounts lie "in

[5] Another possibility is for the bank to shift its asset allocation to a less risky distribution although this might impact its profitability.

between" deposits and equity, and they should be properly acknowledged for capital adequacy purposes.

In the proposed risk sharing scheme of AAOIFI, investment account holders share part of the risk with shareholders, and the CAR for an Islamic bank is calculated as:

$$CAR = \frac{Total\ Capital}{RWA_{K\&CA} + 50\%(RWA_{UIA})} \quad (2)$$

Where $RWA_{K\&CA}$ represents the average risk weighted assets financed by the bank's capital and depositors current accounts, and RWA_{UIA} represents the average risk weighted assets financed by the unrestricted depositors' investment accounts.

3.2 *Other Proposals*

The limitation of the approach developed by the AAOIFI is that it simply focuses the sources of funds for Islamic banks, overlooking the importance of detailing the calculation of risk weighted assets. Other proposals are suggested for capital adequacy requirements and for the risk management of Islamic banks. The idea is to put less emphasis than the AAOIFI scheme on developing a framework that has basic similarities with Basel II. For instance, one approach is to "treat Islamic banks for regulatory purposes as mutual funds, whose obligation is to repay not the original sum invested but that remaining after taking account of gains or losses at the time of redemption" (Cunningham, 2000). However, it can be argued that such an approach will underestimate the account holders' perceptions of their deposits and investments.

A second proposal is to structure liabilities and assets along different objectives following the risk appetite of account holders (El-Hawary, Grais and Iqbal, 2004). Funds belonging to account holders that have high risk aversion and high liquidity needs would be invested in asset-backed securities with low risk and acceptable marketability, while funds of account holders having higher risk appetite would be placed in light of their investment objectives.

A third proposal which has some support among regulators in the United Kingdom is to involve the structuring of liabilities according to a scheme of subordination of the rights of different categories of account holders. This would lead to an appropriate categorization of risks on the asset side and take into account the actual risk experience of Islamic banks (Davies, 2004). These studies are important contributions to the unexplored topic of how to account for the risk exposure of Islamic banks and develop a reliable capital adequacy framework. However, none suggest an approach to deal with the specific nature of Islamic banks assets and their related particular risks, probably due to the lack of implementation of industry-wide accepted standards for Islamic banking practices.

3.3 *The IFSB Proposal*

An important step towards the development of the Islamic finance industry was carried out on November 3, 2002, with the foundation of the Islamic Financial Services Board (IFSB) headquartered in Kuala Lumpur. The decision to establish such a body was taken by a group of governors, senior officials of central banks and monetary authorities of several Islamic countries, supported by the Islamic Development Bank, the AAOIFI and the International Monetary Fund. The general objective of the IFSB is "*promoting, spreading and harmonizing best practices in the regulation and supervision of the Islamic financial services industry*" (Foot, 2004). The IFSB serves as an international standard setting body of regulatory and supervisory agencies that have an interest in ensuring the reliability and stability of the Islamic financial services industry. It is specifically concerned with the standardization of *Sharia* committee rulings on Islamic banking practices. The IFSB also aims at standardizing the approach in identifying risks in *Sharia* compliant products and services and in assigning risk weights that meet internationally acceptable prudential standards.

Like the AAOIFI proposal, the IFSB capital adequacy framework serves to complement the Basel Committee on Banking Supervision's guidelines in order to cater for the

specificities of Islamic financial institutions. However, while the AAOIFI focuses on the sources of funds of an Islamic bank, the IFSB goes a step further by considering the uses of funds and assigning appropriate risk weights to each asset item. The major contribution of the IFSB is to acknowledge that the uses of funds for Islamic banks, which are by nature *Sharia* compliant, differ from the typical asset side of the balance sheet for a conventional bank. The IFSB frame of work aims at:

- Identifying the specific structure and contents of the *Sharia* compliant products and services offered by Islamic banks not considered under Basel II or by the AAOIFI.
- Standardizing *Sharia* compliant products and services by assigning risk weights to them that meet internationally acceptable prudential standards.
- Setting a common structure for the assessment of Islamic financial institutions' capital adequacy requirements.
- Including market risk not only in the trading book, but also in the banking book of Islamic banks due to the nature of the banks' assets such as *Murabahat*, *Ijara*, *Salam*, *Musharaka* and *Mudharaba*.

In December 2005, the IFSB issued the "Capital Adequacy Standard for Institutions (Other than Insurance Institutions) Offering Only Islamic Financial Services" (IFSB, 2005). The recent standard takes into consideration the specificity of investment account holders who share part of the risk with shareholders as follows:

$$CAR = \frac{\text{Tier 1} + \text{Tier 2}}{RWA_{(\text{Credit Risk} + \text{Market Risk} + \text{Operational Risk})} - RWA \text{ funded by PSIA}_{(\text{Credit Risk} + \text{Market Risk})}} \quad (3)$$

Where $\text{RWA}_{(\text{Credit Risk + Market Risk + Operational Risk})}$ include those financed by both restricted and unrestricted Profit Sharing Investment Accounts (PSIA). The capital amount of PSIA is not guaranteed by the Islamic financial institution and any losses arising from investments or assets financed by PSIA are to be borne by the Investment Account Holders, and thus do not command a regulatory capital requirement. This implies that assets funded by either

unrestricted or restricted PSIA should be excluded from the calculation of the denominator of the capital ratio.

4. Risk Exposure in Islamic Banking

4.1 *Risk Specificities of Islamic Financial Institutions*

Islamic banks' activities differ in substance and in form from conventional banks' operations and they thus face a different risk profile. Basel II identified three types of risk exposures for conventional banks: credit risk, market risk and operational risk. Table 2 draws a comparative risk profile for conventional and Islamic banks.

[Table 2 about here]

Credit risk is the default payment risk and risk weights are assigned based on the counterparty risk. Market risk results from the risk of losses in on and off balance sheet positions arising from movements in market prices. It applies to the portfolio of financial instruments held by the bank and is composed of four elements: interest rate risk (further divided into specific and general market risk), equity position risk, foreign exchange risk and commodity risk. Finally, operational risk represents the risk of loss resulting from inadequate internal processes.

Early attempts by scholars to cater for the specificities and characteristics of *Sharī`ah* compliant products and services identified at least four different types of risks that are not accounted for under Basel II (Chapra & Khan 2000). This section introduces the risk implication on the trading and banking book of Islamic banks, and the next section presents the recent IFSB identification of Islamic financial institutions risk categories.

While it can be argued that credit and operational[6] risks can be accounted for in a similar way for both Islamic and conventional banks, special attention has to be made for market risk. Although Islamic banks' operations are free of interest, interest rate risk is present to a

[6] Islamic banks are exposed to a unique type of operational risk, or Sharia compliance risk.

certain extent because the London Interbank Offering Rate (LIBOR) is generally used as a benchmark in pricing. Thus a change in the reference rate is likely to affect the rate of return that the bank expects to collect on its uses of funds and pay to its depositors. This is referred to as *rate of return risk* (Chapra & Khan 2000).

Three additional risks identified for Islamic banks include price, fiduciary and displaced commercial risks (Chapra & Khan 2000). Price risk refers to the risk that the price of the underlying asset might change over the course of the transaction. When a conventional bank acquires a commodity for trading purposes, it is exposed to a form of price risk, or market risk. In contrast, in order to be compliant with the *Sharia* rule that "one cannot sell what one does not own", Islamic banks have to own different assets before they can sell them to clients in need of financing. This exposes the majority of Islamic banks' transactions to price risk resulting from the acquisition of various assets which, in turn, introduces a new risk dimension to the banking book of Islamic banks. Basel II recommends that banks keep track of their activities on the basis of either the banking book or the trading book of the institution. Figures 1 and 2 illustrate the implications of the different risk exposure of conventional and Islamic banks on their banking book and trading book.

[Figures 1 and 2 about here]

Figures 1 and 2 illustrate that, for conventional and Islamic banks, market risk exposure is calculated in a similar manner (except for interest rate risk) on the basis of their trading book, and that credit risk is computed using their banking book. Figure 2, however, further shows that commodity price risk exposure of Islamic banks resulting from the acquisition of various physical assets is also reflected in the banking book of the Islamic bank. This introduces a new specificity that is not addressed by Basel II, namely that market risk exposure has to be calculated not only on the basis of the trading book of the financial institution, but on the basis of the banking book as well.

On the other hand, Islamic banks are also confronted with unique risks resulting from the management of investment accounts. Fiduciary risk refers to the probability of the bank being guilty of negligence or misconduct in implementing the deposit (*mudāraba*) contract. The depositors may, as a result, lose confidence in the bank and withdraw their deposits.

Finally, displaced commercial risk arises from the probability of the bank not being able to compete with other Islamic or conventional banks (Chapra and Khan, 2000). To counter such risk, it is proposed that Islamic banks should hold a profit equalization reserve account. A provision is deducted from the investment account holder's earnings and is set apart for later distribution. Thus, Islamic banks can still pay a competitive return on these accounts even if they yield lower rate of profits than market interest rates. The question that arises is to which extent this practice might be *Sharia* compliant.

4.2 *IFSB's Six Categories of Risk*

As discussed above, Islamic banks are exposed to additional risks that are not catered for under Basel II, and which need to be considered in developing an appropriate capital adequacy framework. Scholarly efforts culminated in December 2005 with the publication by the IFSB of a standard for the "Guiding Principles of Risk Management for Institutions (Other than Insurance Institutions) Offering Only Islamic Financial Services" (IFSB, 2005). The document includes a set of guidelines of best practice for establishing and implementing effective risk management in fully-fledged Islamic financial institutions. The latter are prohibited from generating profits without bearing any risks, and their fiduciary duty to account holders requires them to implement permissible risk mitigation techniques. The IFSB document harmonized and standardized the risk exposure of Islamic financial institutions by identifying the following six risk categories: credit risk, equity investment risk, market risk, liquidity risk, rate of return risk and operational risk.

Credit risk is generally defined as the potential that a counterparty fails to meet its obligations in accordance with agreed terms. It is associated with specific features of Islamic

financing contracts, such as the financing exposures of receivables and leases (for example, *Murābahah, Diminishing Mushārakah and Ijārah*) and of working capital projects (for example, *Salam* and *Istisnā*). Credit risk is also applicable to profit sharing assets (*Mudārabah* and *Mushārakah*), which are classified under equity investments.

Equity investments are exposed to the risks associated with the quality of the *Mudārib* or *Mushārakah* partner, underlying business activity and operations. Equity investment risk thus arises from entering into a partnership in which the provider of finance shares in the business risk. As noted above, equity risk is classified by Basel II under market risk. Since the spirit of Islamic finance resides in providing finance on a PLS basis, the IFSB accounted for equity risk independently from market risk.

Market risk refers to the potential impact of adverse price movements in benchmark rates, foreign exchange rates, equity prices and commodity prices, on the economic value of an asset. It is applicable to on-balance sheet positions (tradable, marketable or leaseable assets, including *sukūk*) and off-balance sheet individual portfolios (for example restricted investment accounts).

Islamic banks have various obligations ranging from repaying current account holders on demand, to providing committed funds in *Mushārakah* transactions, and meeting expenses or profit payments. Liquidity risk is the potential loss to the Islamic banks arising from their inability either to meet their obligations or to fund increases in assets as they fall due without incurring unacceptable losses. Basel II did not account for this type of risk exposure for conventional banks, who can benefit from the lender of last resort function of central banks or borrow from the interbank market to meet any shortfall in liquidity. Islamic banks, in contrast, cannot borrow at a predetermined rate of interest and are hence exposed to a major liquidity risk.

The rate of return risk is a strategic risk management issue for the Islamic bank. It is generally associated with overall balance sheet exposures where mismatches arise between

assets and balances from fund providers. Basel II accounts for this type of risk as interest rate risk under market risk exposure. In Islamic banking, however, a rise in benchmark rates exposes the institution to a rate of return risk by increasing providers of funds' expectations of a higher rate of return. Such a scenario creates a new type of risk not faced by conventional banks, or *displaced commercial risk*, where the Islamic financial institution may have to pay a return that exceeds the rate that was generated by underperforming assets in order to remain competitive. It may also have to decide to waive its rights to part or to its entire share of profits in order to attract and retain investment account holders.

Finally, operational risk refers to the loss potential resulting from inadequate or failed internal processes, people and systems or from external events. Here again, new operational risks are identified for the specificities of Islamic banks and which are not catered for under Basel II. Operational risks specifically address losses resulting from *Sharī`ah* non-compliance and the failure in fiduciary responsibilities. Fiduciary risk is the risk that arises from the Islamic financial institution's failure to meet its fiduciary responsibilities by safeguarding the interests of fund providers. If the Islamic bank fails to act with due care when managing investments, it is exposed to the risk of possible forgone profits to investment account holders.

5. Capital Adequacy Analysis of an Islamic Bank

This section investigates the implication of applying the IFSB recommendations on the capital adequacy of a major Islamic bank in the Gulf Cooperation Council region. The contribution of the paper lies in considering separately each use of fund on the balance sheet of the Islamic banks and assigning a proper risk weight to it in order to calculate the CAR following international guidelines. Under Basel II, two different methods for calculating risk weighted assets are proposed: the standard approach and the internal ratings based (IRB) approach. This paper focuses on the standardized approach for two reasons. First, although

Islamic banks might find it more appropriate to use the IRB instead of the standardized method, the use of this method depends solely on the approval of regulatory authorities. Second, the cost of developing the IRB method is very high, imposing a financial constraint on Islamic banks. The case study pertains to Dubai Islamic Bank (DIB) in the United Arab Emirates (UAE), which is among the oldest institution in the Islamic finance industry. In this section, we present a brief overview of the Islamic banking industry in UAE, followed by the calculation of risk-weighted assets of DIB.

5.1 *Overview of Islamic Banking in the United Arab Emirates*

Islamic Banking in UAE was launched with the establishment of the largest Islamic bank in the country, Dubai Islamic Bank, in 1975[7]. Its foremost competitor, Abu Dhabi Islamic bank (ADIB), started operating in 1997[8]. Since then, two more banks have joined the drive, namely Sharjah Islamic Bank and Emirates Islamic Bank. New entrants in the Islamic banking industry realized its huge growth potential and are trying to get a slice of the lucrative market through either an Islamic window or through a fully dedicated Islamic financial institution[9].

Figures 3 and 4 show the assets and equity segmentation in the UAE Islamic banking sector. DIB accounts to more than 60% of the sector's total assets, and its capitalization level almost reaches half of total industry capitalization.

[Figures 3 and 4 about here]

It is worth mentioning that DIB is growing at a much faster rate than the major conventional bank operating in UAE, or National Bank of Abu Dhabi (NBAD). Between the years 2000 and 2004, NBAD's total assets grew from AED 36.434 to 56.331 billions while

[7] The central bank of UAE was only established in 1980 after the collapse of 2 banks in 1977.
[8] In 2004, total assets amounted to AED 30.613 and 12.687 billions respectively for DIB and ADIB.
[9] Four new entrants- RAKBank, Mashreqbank, Union National Bank and First Gulf Bank- have pending applications to start Islamic financial institutions (Khaleej Times, October 31, 2005).

DIB total assets grew from AED 11.753 to 30.613 billions. In absolute terms NBAD and DIB asset base both grew by an amount close to 20 billions AED. However, the assets of DIB grew over this period at a much faster rate of 27.04% compared to the 11.51% asset growth for NBAD[10].

5.2 *Risk Weighted Assets of an Islamic Bank: the Case of DIB*

This section calculates risk weighted assets Dubai Islamic Bank using the IFSB proposed guidelines for capital adequacy and following equation (3). As mentioned above, all assets of conventional banks are subject to credit risk that is calculated based on the banking book of the institution. Market risk only arises from holding securities and is therefore applicable to the trading books. Assets of Islamic banks, however, are exposed to both credit and market risk because they engage in financing activities for which they have to own the underlying asset before trading it. The implication is that market risk has to be applied to the banking book of the Islamic bank and not only to their trading books as is the case for conventional banks. To illustrate, *musharaka* agreements, a banking book asset, are exposed to equity risk. This gives rise to an exposure to market risk that has to be calculated on the basis of the trading book. Commodity *murabaha*, another banking book asset, also exposes the Islamic bank to commodity risk, which carries market risk that should also be estimated based on the trading book. To that end, both credit risk and market risk will be applied to book assets in order to calculate the appropriate capital charge.

The methodology applied for calculating risk weighted assets, and consequently the CAR of DIB, consists of considering each asset item on the balance sheet. Data is taken from DIB Annual Report for the year 2004. We briefly discuss the treatment of the different uses of funds followed by the set of assumptions required for the CAR calculation.

a) Sources of Funds

   i) *Cash and Balances with U.A.E. Central Bank*

[10] As measured by the geometric mean over a period of five years.

The treatment of this item is similar to both Islamic and conventional banks. Basel II guidelines recommend assigning a risk weight of 0% to "cash on hand". Further, given that UAE government is rated A-rated, "cash held with central bank" is allocated a 20% credit risk weight.

ii) *Balances and Deposits with Banks*

This category of assets corresponds to claims on banks. Such balances are split into two maturities: short-term deposits (< 3 months) are subject to a credit risk weight of 20%, and claims with maturity exceeding 3 months are weighted at 50%. The treatment of the first two asset items is not problematic, and the application of credit risk weights is straight forward.

iii) *International Murabahat, Short Term*

Borrowing from the interbank market is forbidden under *Sharia*, and Islamic banks engage in International *Murabahat* to satisfy their short term liquidity needs. However, unlike conventional banks' short term funding, *International Murabahat* are based on an underlying commodity, which, in turn, is exposed to both credit and market risk. Such contracts can be either binding or non-binding to the buyer. In case of binding promise, the associated risk weight is the simple default or credit risk. If the contract is non-binding, the bank faces the risk resulting from holding the underlying asset or the commodity. To account for credit risk, a 20% capital charge is applied to short term *International Murabahat* and 50% to longer term contracts. With respect to market risk, it arises from volatility in the commodity's market price; it is accounted for by assigning a 15% capital charge to *International Murabahat* and a 3% *Basis Risk & Forward Gap Risk.*

iv) *Islamic Financing and Investing Assets*

This item amounts to more than 50% of the uses of funds and comprises both financing and investing activities. While financing activities include *Commodities*

Murabahat, *International Murabahat*, *Vehicles Murabahat*, *Real Estate Murabahat*, *Istisna'a* and *Ijara*, investing activities cover *Musharakat in Buildings*, *Mudarabat* and *Wakalat*. In order to assign this major asset appropriate capital charges, items are classified by industry group. Credit risk is assigned depending on the counterparty, in line with Basel II recommendations. The proposal by the IFSB is to assign these activities market risk as well, based on the asset backing the transaction.

In line with our conservative assumptions, *retail and personal financing* is assigned a weight of 75% and commercial and *business financing* is allocated a 100% capital charge.

Real Estate financing is subject to two different risk weights based on the counterparty: Corporate entities are 100% risk weighted, while residential properties are assigned a risk weight of 35%[11]. Financing provided to the government and to banks (maturity ≤ 3 months) is allocated the country's risk weight of 20%. Consistent with previous items, financing for periods exceeding 3 months is assigned a 50% capital charge. All financing activities are considered net of deferred income.

With respect to Islamic investing activities, they mainly consist of investments on a PLS basis including *Musharakat* and *Mudarabat*. *Musharakat* represent an agreement between the bank and the customer to contribute to the ownership of a certain property either permanently or according to a diminishing schedule, ending up with the full acquisition of the asset by the customer. During the time period of the contract, asset ownership and the risks associated with it remain with the bank. Under *Mudarabat,* profits are shared between the bank and the customer according to pre-agreed proportions, and financial losses are born by the financier only. The appropriate capital charges for *Mudarabat* undertaken in a business venture are

[11] The Bahrain Monetary agency recommends assigning a 100% capital charge to real estate financing.

calculated using the slotting method following IFSB (Note 190b, p.44, 2005) recommendations.

As for *Musharakat,* they are in real estate, thus a 100% and 35% capital charges are assigned to commercial and residential investments respectively. All investing positions are considered net of provisions.

v) Off Balance Sheet commitments:

Inline with Basel II recommendations, off-balance sheet items are converted into credit exposure equivalents through the use of credit conversion factors (CCF).

Given the different sources of funds listed above, appropriate risk weights are assigned on the basis of the economic functions of their counterparties. The data provided in Dubai Islamic Bank annual report is limited. Therefore conservative assumptions are made in the next section to calculate the bank's capital adequacy ratio.

b) CAR Assumptions

Credit Risk Assumptions:

- DIB deals only with national banks rated "A" or above.
- DIB deals with "AAA" rated foreign banks located in OECD countries.
- International *murabahat* are treated as interbank deposits, since this item is listed under cash and cash equivalents (note 28 from the annual report)
- All collaterals meet the conditions set by the IFSB, i.e they are well documented.
- All investing and financing activities exposure are scaled and split over industrial sectors (Note 12, DIB Annual Report)
- All individual and corporate companies do not have a preferential risk weight compared to UAE sovereign risk. They are assumed to be unrated and given a RW of 100%

- Commodity and Vehicle *Murabahat* are provided to Financial Institutions, Government, Corporate Clients (Manufacturing Services) and Retail Clients (Personal Financing and Others)
- *Ijara* financing is allocated to Real Estate, Corporate Clients (Trade & Manufacturing Services) and Retail Clients (Personal Financing and Others). As per note 2 of the Annual Report, *real estate Murabahat, Istisna'* and *Musharakat in Buildings* are included under real estate financing and investing. Their total amount is AED 4,505,420.98.The remainder portion of real estate financing or AED 1,257,712.61 is assumed to be allocated to Ijara Financing. The residual amount of the *Ijara* financing is assumed to be equally divided between retail and commercial activities
- Islamic financing and investing in Real Estate sector is split between commercial property lending (25%) and residential property lending (75%)
- All *Musharakat* contracts are signed with partners on a permanent basis (Note 169, p.38, IFSB)
- All *Mudarabat* contracts are assumed to be signed with private commercial enterprises to undertake a business venture (Note 188b, p.42 IFSB). Further these contracts are mapped into the satisfactory category of the slotting method for equity risk in the banking book, and are therefore allocated a 135% risk weight.
- All *Wakalat* contracts are assigned a capital charge based on the counterparty risk (Note 2, DIB Annual Report)
- The deferred income fraction per financing activity is allocated based on its share in total financing.
- All held to maturity investments are *Sukuks* issued for the UAE government of DIB (Note 15, DIB Annual Report), implying that only a credit risk will be applied to them.

Market Risk Assumptions

- Securities available for sale are assumed to be invested in a well diversified and liquid portfolio and are therefore assigned a risk weight of 4% and 8% for “specific risk” and “general market risk” respectively (Note 45a, p.13, IFSB).
- All *Murabahat* are assumed to be binding contracts, and no market risk is allocated to them.
- All Work in Process Istisna'a contracts are assumed to be billed to customers (Note 62, p.16, IFSB).
- DIB does not enter into parallel Istisna'a contracts, so their exposure involves both credit and market risk.
- Ijara contracts are based on a binding promise folllowing acquisition of the asset and therefore no price risk is applied (p.33, note 148, DIB Annual Report)
- Maturity profile of all securities held with the bank is the same for all categories. All securities are held with UAE government
- Currency of equity securities are based on scaled concentration of total assets and liabilities (Note 19c, DIB Annual Report)
- The outstanding foreign exchange positions in real estate (Note 14, DIB Annual Report) are structural position and therefore are not subject to foreign exchange risk.
- Banking book *International Murabahat, Commodities* and *Vehicles Murabahat* are subject to a directional risk of 15%. *International Murabahat* are further exposed to 3% basis risk (Note 55, p.15, IFSB)
- Open Position in US Dollars and Saudi Riyals are provided by DIB (DIB Annual Report, Currency Risk, p.49)

Given the above assumption, Table 3 presents the calculation of risk-weighted assets (RWA) capital adequacy ratio for Dubai Islamic Bank following the new IFSB Capital Adequacy Standard (2005).

[Table 3 about here]

In obtaining the CAR as per equation (3), the regulatory capital (the numerator) is computed in relation to the total risk-weighted assets (the denominator). The total of RWA is determined by multiplying the capital requirements for market risk and operational risk by 12.5 (which is the reciprocal of the minimum CAR of 8%) to convert into risk-weighted equivalent assets, and adding the result to the sum of RWA calculated for credit risk. Since the bank's funds are commingled, the RWA funded by PSIA are calculated based on their pro-rata share of the relevant assets.

The results of the lengthy calculations above show that DIB is very well capitalized according to international guidelines since its current capital ratio following ISFB guidelines is 12.78% and which exceeds the recommended minimum of 8%. It appears that DIB is carrying enough adequate capital to cover market, credit and operational risk. Further, if DIB is to abide by the 10% minimum capital requirement of the UAE central banks, it is still over capitalized by ADD 584,015,000.

6. *Conclusion*

The prime role of any supervisory monetary body is to protect depositors. Pillar 1 of the Basel II Accord set capital adequacy recommendations for internationally active banks. The proposed guidelines disregard the sources of funds of a conventional bank and assess the risk of its activities arising from the uses of funds. The objective is to ensure the safeguard of deposits that are at the disposition of the bank and which should be guaranteed of full payment. Thus when a conventional bank invests depositors' funds into yielding assets, it must bear all risks associated with such activities.

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.

The proposed solution by AAOIFI is to include only 50% of the risk weighted assets financed by investment accounts (instead of 100%) in the calculation of the required capital adequacy ratio. A major shortcoming of the AAOIFI proposal, however, is the lack of consideration to the asset side of the Islamic bank's balance sheet. Islamic banks are exposed to different risks than conventional banks which arise from the uses of funds. Islamic financing activities are generally backed by real assets, exposing them to substantial commodity price risk. Their financing and investing activities are thus exposed to a new market risk dimension that is applicable to their banking book (and not only to their trading book as is the case for conventional banks), leading to an overall higher market risk exposure. Consequently, the risk-weighted assets of Islamic banks are likely to be higher than their peers.

Recently, the IFSB published a Capital Adequacy Standard based on Basel II guidelines. The Standard addresses different risks faced by Islamic banks arising from the nature of their activities and assigns adequate risk weights to different Islamic financing modes. The new framework considers credit, market and operational risks of the Islamic bank's assets and, most importantly, does not require regulatory capital for risk-weighted assets which are funded by profit sharing investment accounts.

This study focuses on the implication of the new IFSB capital adequacy recommendation to a major Islamic bank in the GCC region. The analysis rests on a set of conservative assumptions in order to calculate credit and market risks, given the insufficiency of information provided by the Annual Report. The results show that the Islamic bank is very well capitalized and will confidently meet the recommended level of 8% set by international regulatory bodies and the 10% level set by UAE central bank.

Islamic banks, however, still have to face other challenges. They are exposed to a significant liquidity risk, which is not yet catered for by current proposals. Islamic financial markets are still in the infant stage of development, and the only money market instruments that Islamic banks can rely on are Short Term Murabahat. More work is needed in order to better account for liquidity risk exposure.

Further, Islamic banks are not allowed to use the wide range of derivative instruments such as swaps available to conventional banks for hedging purposes or transfer of risks. Basel II set guidelines to reduce the amount of capital needed by a bank that effectively uses hedging techniques to mitigate the risk exposure of conventional banks[12]. Islamic financial institutions can, however, implement *Sharia* compliant hedging techniques, and it is recommended that future proposals consider the impact of such activities on the calculation of adequate regulatory capital.

Finally, more complications arise when attempting to measure *Sharia* compliance risk. Islamic financing and investing activities are not standardized across Islamic financial institutions or across countries. *Sharia* compliance risk is present in every single transaction conducted by an Islamic bank. Yet, no regulatory body has yet figured out a way to measure such risk.

[12] For instance, allowances to the market risk capital charge are made for derivatives held for the sole purpose of hedging or when the value a two leg instrument moves in the opposite direction and "broadly to the same extent" (BIS, 2005)

List of Tables and Figures

Table 1: Sources of Funds for Islamic and Conventional Banks

ISLAMIC BANK	CONVENTIONAL BANK
Current Accounts	Current Accounts
Savings Accounts	Saving Accounts
Unrestricted Investment Accounts (UIA)	Time Deposits, Certificate of Deposits…
Equity => Share capital + Reserves => Tier 1	Equity => Share Capital + Reserves =>Tier 1
Donated Land Reserve (No Preferred Shares or Subordinated Debt allowed) => Tier 2	Cumulative Preferred Shares + Subordinated Debt => Tier 2
No Tier 3	Tier 3 portion of subordinated debt available only for market risk

Table 2: Risk Profile of Conventional vs. Islamic Banks

Conventional Bank		Islamic Bank	
1. Credit risk		1. Credit risk	
2. Market risk:	Equity risk	2. Market risk:	Equity risk
	Commodity risk		Commodity risk
	Interest rate risk		Rate of return risk
	Foreign exchange risk		Foreign exchange risk
3. Operational risk		3. Operational risk	
-		4. Price risk	
-		5. Fiduciary risk	
-		6. Displaced commercial risk	

Figure 1: Trading Book: Islamic vs. Conventional Banks

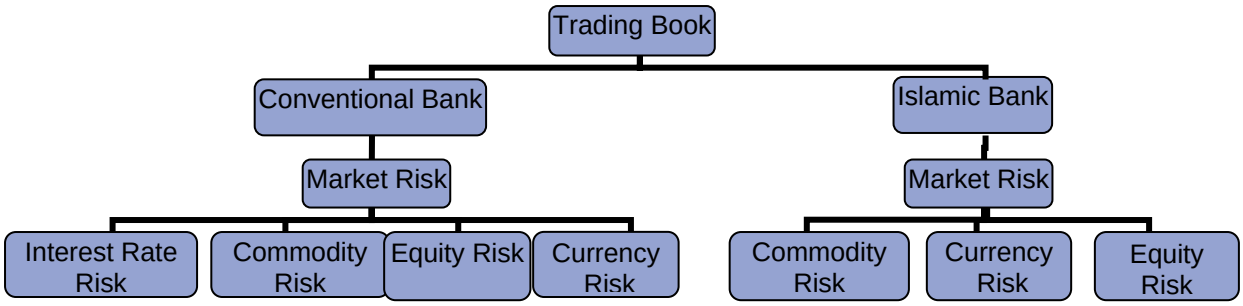


Figure 2: Banking Book: Islamic vs. Conventional Banks

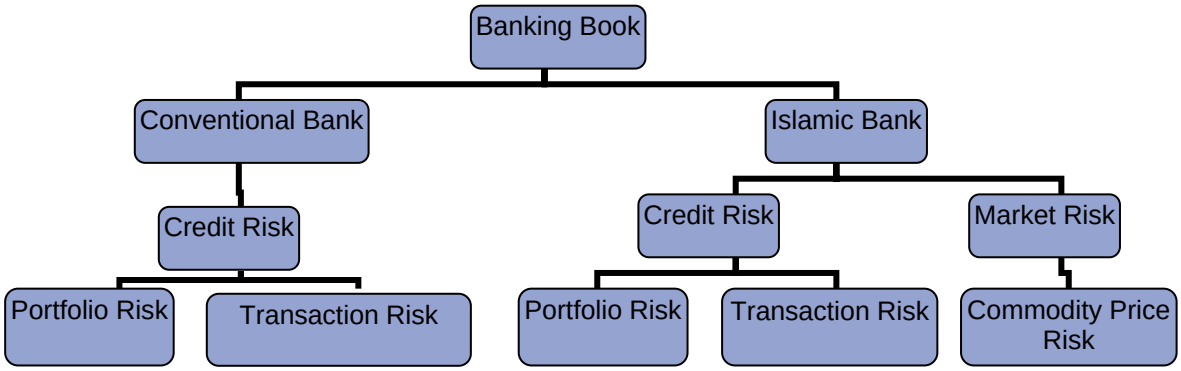
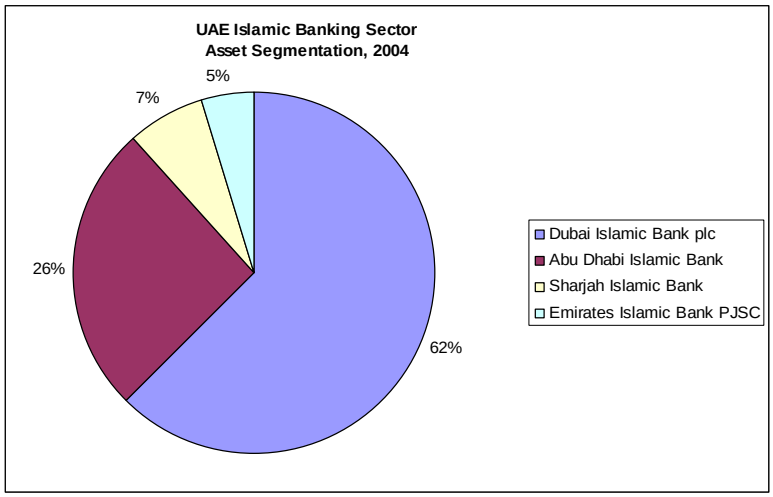
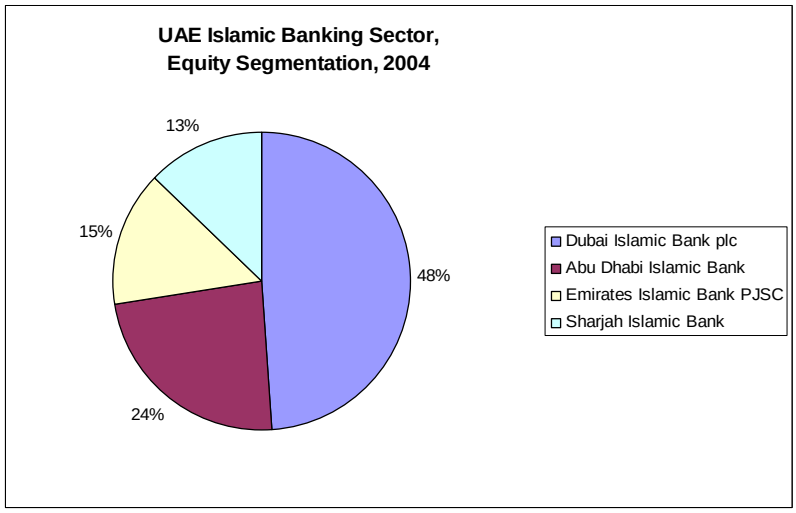


Figure 3



Source: Bankscope

Figure 4



Source: Bankscope

Table 3: Calculation of RWA for DIB (Figures in AED '000)

Credit Risk (for details see Appendix 1)	**Amount**		**Credit Risk Weight**	**Capital Charge**
Cash and balances with Central Banks	2,067,210			
Cash on hand		233,218	0%	-
Balances with Central banks		1,833,992	20%	366,798
Balances and deposits with banks	225,759			
within 3 months deposits		189,029	20%	37,806
greater than 3 months		36,730	50%	18,365
International Murabahat (Short term)	7,502,571			
within 3 months deposits		4,905,383	20%	981,077
greater than 3 months		2,597,188	50%	1,298,594

Financing activities				
1) Commodoties and Vehicles Murabahat	5,240,865			
To Government		1,573,960	20%	314,792
To Corporate		2,038,430	100%	2,038,430
To Retail Sector		1,628,475	75%	1,221,356
2) International Murabahat	2,433,891.92			
To Government		867,192	20%	173,438
To Corporate		1,123,097	100%	1,123,097
To Financial Institutions		443,603	20%	88,721
3) Real Estate Murabahat	810,580.06			
Commercial sector (50%)		405,290	100%	405,290
Residential sector (50%)		405,290	35%	141,852
4) Istisnaa	1,598,078		100%	1,598,078
5) Ijara	4,127,958			
To Real Estate	1,257,713			
Commercial sector (25%)		314,428	100%	314,428
Residential sector (75%)		943,284	35%	330,150
To Corporate Clients		1,979,574	100%	1,979,574
To Retail Clients		890,671	75%	668,003
Investing Activities				
1) Mudarabat	1,298,388		135%	1,752,824
2) Wakalat	283,665		100%	283,665
3) Musharakat in buildings	1,677,192.56			
Commercial sector (25%)		419,298	100%	419,298
Residential sector (75%)		1,257,894	35%	440,263
Investment in Securities				
Held to Maturity (Sukuk with UAE gov.)	50,103		20%	10,021
Investment in Associates (Other Investments)	73,566		100%	73,566
Off Balance Sheet Items		Credit Conversion Factor		
Total Guarantees (Notes 26-2, p.6, IFSB)	2,235,337			
With maturities less than one year	1,117,668	20%	100%	223,534
With maturities over one year	1,117,669	50%	100%	558,835
Total Letters of credit	549,924	20%	100%	109,985
Total Credit Weighted Assets				**16,971,839**

Market Risk	**Amount**	**Market Risk Weight**	**Capital charge**
1) Equity Risk			
a) Specific Risk			
Available for Sale			
Quoted securities	330,123	4%	13,205
Unquoted securities	931,326	4%	37,253

b) General Market Risk				
Available for Sale				
Quoted securities		330,123	8%	26,410
Unquoted escurities		931,326	8%	74,506
2) Price Risk				
Istisnaa Price Risk	1,598,078		8%	127,846
3) Commodity Risk				
International Murabahat	2,433,892			
Price Risk for International Murabahat			15%	365,084
Basis Risk & Forward Gap Risk			3%	73,017
Commodoties and Vehicles Murabahat	5,240,865			
To Government		1,573,960	15%	236,094
To Corporate		2,038,430	15%	305,765
To Retail Sector		1,628,475	15%	244,271
4) Foreign Exchange Risk				
Open Position in US Dollars and Saudi Riyals		12,072,000	8%	965,760
Total Market Risk Weighted Assets				**2,469,210**
Market Risk Capital Charge (x12.5)				**30,865,130**
Operational Risk (for details see Appendix 2)				
Average Gross Income for 3 years	369,848		15%	55,477.25
Operational Risk Capital Charge (x12.5)				**693,465.63**
Total RWA (Credit + Market + Operational)				***48,530,434.51***
Tier 1 Capital				**2,402,728**
Share Capital			1,500,000	
Statutory Reserves			625,566	
Treasury shares			(8,226)	
Retained Earnings			5,378	
Minority Interests			10	
General Reserve			280,000	
Tier 2 Capital				**284,701**
Donated Land Reserve			284,701	
Tier 1 + Tier 2				**2,687,429**

Total Liabilities and Equity	**30,613,361**	
Investment Accounts (PSIA)	**17,596,304**	
Customers Investment Deposits		16,100,128
Profit Equalization Provision		126,102
Banks Investment Deposits		1,370,074
Current Accounts & Equity	**13,017,057**	

Ratio: (Tier 1+ Tier 2) / (RWA - PSIA RWA)	**12.78%**
Required Capital: 10% * (RWA-PSIA RWA)	**2,103,414**
Excess Capital	**584,015**

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Appendix 1: Calculation Details for Credit Risk

Financing and Investing Activities[1]
Financing Activities

		Amount	% of total	Deferred Income[2]	**Murabahat net of Deferred Income**
1	*Murabahat*				
	Commodities Murabahat	3,578,551	21.45%	436,951	3,141,600
	International Murabahat	2,772,411	16.62%	338,519	2,433,892
	Vechicles Murabahat	2,391,242	14.33%	291,977	2,099,265
	Real Estate Murabahat	923,320	5.53%	112,740	810,580
	Total Murabahat	*9,665,524*			**8,485,337**
2	*Istisna'a*	2,298,274	13.77%	280,626	2,017,648
	Less Urbuns & Contracts			(419,570)	**1,598,078**
3	*Ijara*	4,702,097	28.18%	574,139	**4,127,958**
4	*Others*	18,787	0.11%	2,294	**16,493**
	Total Financing	**16,684,682**		**2,037,246**	**14,227,866**

Investing Activities

		Amount	% of total	Provisions	**Investing Activities net of Provisions**
1	*Musharakat in buildings*	1,709,610	51.5%	32,417	**1,677,193**
2	*Mudarabat*	1,323,484	39.8%	25,096	**1,298,388**
3	*Wakalat*	289,148	8.7%	5,483	**283,665**
	Total Investing	**3,322,242**		62,996	**3,259,246**

Total Financing & Investing **20,006,924**

Total Financing & Investing by Industry Groups

	Amount	% of total	Provisions, Deferred Income and Urbuns	**Net Financing & Investing Assets**
Financial Institutions	1,432,294	7.16%	150,356	**1,281,938**
Real estate	6,439,081	32.18%	675,947	**5,763,134**
Trade	2,812,415	14.06%	295,235	**2,517,180**
Government	2,799,965	13.99%	293,928	**2,506,037**
Manufacturing and Services	3,626,226	18.12%	380,666	**3,245,560**
Personal Financing and Other	2,896,943	14.48%	304,109	**2,592,834**
Total Financing & Investing	**20,006,924**		2,100,242	**17,906,682**

Notes
1 Note 12 of Annual Report
2 As per note 12 of the 2004 Annual Report, deferred income is applied to Financing Activities only

Physical Assets Murabahat Financing

Commodities Murabahat	3,141,600
Vechicles Murabahat	2,099,265
Total Physical Assets Murabahat	**5,240,865**

Sector Financing		% of total	Murabahat Sector Share
Government	2,506,037	30.0%	1,573,960
Corporate (Manufacturing)	3,245,560	38.9%	2,038,430
Retail (Personal Financing)	2,592,834	31.1%	1,628,475
Total Sector Financing	**8,344,431**		**5,240,865**

Ijara Financing

Ijara Financing	4,127,958
Real Estate Ijara Financing	(1,257,713)
Ijara, net of Real Estate Ijara	**2,870,245**

Sector Financing		% of total	Ijara Sector Share
Corporate (Trade & Manufacturing)	5,762,740	68.97%	1,979,574
Retail (Personal Financing)	2,592,834	31.03%	890,671
Total Sector Financing	**8,355,574**		**2,870,245**

International Murabahat

Sector Financing		% of total	Intl Murabahat Sector Share
Government	2,506,037	35.6%	867,192
Corporate (Manufacturing)	3,245,560	46.1%	1,123,097
Finanacial Institutions	1,281,938	18.2%	443,603
Total Sector Financing	**7,033,535**		**2,433,892**

Appendix 2: Calculation Details for Operational Risk

	2004	2003	2002
Income from financing and investing activities	1,016,573	709067	649714
Fee income	112,844	86160	45870
Total Gross Income	1,129,417	795,227	695,584
Less Depositors' share of Profits	(553,339)	-516208	-441136
Gross Income	576,078	279,019	254,448
Average Gross Income			**369,848**