# Comparative study of Assessment of Capital Adequacy Ratio (CAR) for Islamic Banks in Pakistan under Basel II and IFSB formulae for Capital Adequacy

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Basel II Capital Adequacy framework for banks aims at building a solid foundation of prudent capital regulation, supervision, market discipline, along with enhancing risk management and financial stability. However, as per the views of some practitioners and scholars it does not appropriately address the concepts used in Islamic finance (IFSB and IRTI). Accordingly, Islamic Financial Services Board (IFSB) which is the international standard-setting organization of the Islamic financial industry, issued standards on Capital Adequacy as IFSB-2 in December 2005 and IFSB-7 in January 2009 which are largely based on the Basel approach, with necessary modification and adaptation to cater for specific nature and characteristics of Shariah compliant products and services.

This research paper analyzes the implications of implementation of Basel-II Capital Adequacy Requirements and IFSB Standards to Islamic Banks, and recommends proposals for developing a Capital Adequacy framework that better account for their activities. The data frame for the study is the Islamic Banks of Pakistan.

The comparison reveals that CARs worked out under IFSB Standard Formula are relatively higher than CARs under Basel-II of each bank. This industry needs relaxation under the supervisory discretionary formula as this is an emerging industry, growing at a rapid speed of YoY growth of 30% (SBP-2011), this will enhance its capacity to penetrate its branch network in all over the country; it will also help to get the economy of scale to better serve the people of Pakistan on the basis of equity, justice and transparency.

The study will provide a foundation for further research in the field of determination of regulatory capital requirements and more prudent regulations for Islamic banks which will enhance the resilience of the industry and ensure soundness and stability of the overall economy.

Key Words: Tier 1 & 2 Capital, Credit, Market and Operational Risk, IFSB , Basel II, Islamic Financial Institutions

#### 1. Introduction:

Banking is the most regulated industry in the financial sector of a country because it deals with the public money. Therefore, Central Banks employ different prudential regulations to safeguard

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the interest of depositors and to ensure monetary, financial and economic stability (i.e. to avoid systemic risk) (Mishkin, 2010). In Pakistan, the State Bank of Pakistan (SBP) has been inter alia entrusted with the responsibility for an ongoing effective supervision of the banking sector. The State Bank has framed Prudential Regulations for banks including Islamic banks and Rules of Business for DFIs that present a prudent operating framework within which banks and Developing Finance Institutions (DFIs) are expected to conduct their business in a safe and sound manner taking into account the risks associated with their activities. These regulations incorporate the spirit and essence of BIS (Bank for International Settlement) and Islamic Financial Services Board regulations and are constantly watched for possible improvement so that their enforcement yields the best results to promote the objectives of supervision.

Capital is considered as the loss and shock absorbing capacity of a bank and plays a vital role in the smooth functioning of a bank. For the efficient functioning of markets require participants to have confidence in each other's stability and ability to transact business. Capital-rules help foster this confidence because they require each member of the financial community to have, among other things, adequate capital.

This capital must be ample to protect a financial organization's depositors and counterparties from the risks of the institution's on-balance sheet & off-balance sheet risks. Top of the list are credit, operational and market risks; not surprisingly, banks are required to set aside capital to cover these three main risks. Capital standards should be designed to allow a firm to absorb its loses, and in the worst case, to allow a firm to wind down its business without loss to consumers, counterparties and without disrupting the orderly functioning of financial markets.

Hence, regulators from time to time set different levels of regulatory capital adequacy, initially identified by capital-ratio defined as: Total Capital/Total Assets but imposition of a unified capital is not a prudent act, accordingly this ratio was evolved to Total Capital/ Total Risk Assets. Similarly, the Bank for International Settlements (BIS) (situated in Basel, Switzerland) which is an international standards setting body, constituted a Basel Committee consisted by the central-bank Governors of the Group of ten countries at the end of 1974 to prepare a uniform and prudent standards for the soundness and stability of the international financial system. The underlining purpose of this committee was to bring standardization and financial stability as well as a level playing field to all the banks across the world. It formulates broad supervisory standards and guidelines and recommends statements of best practice in the expectation that individual authorities will take steps to implement them through detailed arrangements - statutory or otherwise - which are best suited to their own national systems which were not intended to be legally enforceable.

State Bank of Pakistan is one of the world's most enthusiastic enforcer of the Basel II bank regulatory regime and the anti-money laundering information networking. Basel II Capital Adequacy framework for banks aims at building a solid foundation of prudent capital regulation, supervision, market discipline, as well as enhances risk management and financial stability. However, according to some scholars it does not appropriately address the concepts used in Islamic finance (IFSB and IRTI). According to principles of Islamic finance, Islamic banks cannot engage in Haram (impermissible) transactions, and therefore, cannot charge or pay interest on loans or deposits.

Since Shariah-compliant transactions are not properly covered in Basel II, there was a strong need to introduce such a framework which can address unique risks of Islamic financial

transactions. Islamic Financial Services Board (IFSB) which is the international standard-setting organization that promotes the soundness and stability of the Islamic financial industry, issued standards on Capital Adequacy Standards as IFSB-2 in December 2005 and IFSB-7 in January 2009 which are largely based on the Basel approach, with necessary modification and adaptation to cater for specific nature and characteristics of Shariah compliant products and services as a result of collaborative efforts of industry professionals from a large number of Islamic countries, including Malaysia, Saudi Arabia, Indonesia, Jordan, Kuwait, Lebanon, Bahrain and Pakistan, etc. This standard provides a template for treatment of Islamic finance under Basel II. It captures the areas that are not covered by Basel II - for example, contracts such as Murabaha, Musharakah and Mudarabah, etc.

IFSB standards on Capital Adequacy issued Risk weights derived from those proposed in Basel II because of lack of historical data to modify risk weights for: Credit Risk - Standardized approach, Market Risk- 1996 Market Risk Amendment, Operational Risk - Basic Indicator approach. Capital Adequacy Standard is structured in a Matrix format to cater for transformation of risk at different stages of contract and treatment of Profit Sharing Investment Account (PSIA) and assets financed by PSIA in CAR.

The IFSB's Capital Adequacy Standards (CAS) are specifically applicable on IFIs excluding Takaful companies. Though these standard are largely based on principles of Basel-II, some major amendments have been incorporated to cater to specific risks associated with certain Shariah-complaint Islamic modes of financing / investments and to address the specific structure & contents of the Shariah-compliant products and services not duly covered under existing Basel-II framework.

Besides, the unique and most distinguishing feature of the IFSB Capital Adequacy Standard is that it recognizes the risk mitigating role of Shariah-compliant PLS Restricted & Un-restricted Deposits by excluding assets funded by these deposits (fully or partially) from Total Risk Weighted Assets (TRWA) for determination of Capital Adequacy Ratio. However, it does not address the requirements covered by Pillar 2 (Supervisory Review Process) and Pillar 3 (Market Discipline) of Basel-II, as these two have been covered by separate standards which are covered by under the separate standards of IFSB issued later.

The main objective of this study is to study the implications of implementation of Basel-II Accord to Islamic Banks, and IFSB guidelines and to recommend proposals for developing a Capital Adequacy framework that better account for their activities.

The paper is organized in seven sections. Section 1 present the introduction of the study and capital requirements, Section 2 presents Literature Review, Section 3 presents Methodology, Section 4 Data Collection, Section 5 Limitation of the study, Section 6 discuses the analysis and findings of the study and Section 7 presents Recommendation and Conclusion.

## **Literature Review:**

With the advent of Islamic Banking as a new field of study, different research studies were carried out in order to analyze the performance and regulatory mechanism of this industry. The views of the scholars are conflicting regarding the regulatory and supervisory mechanism of Islamic banks. El-Gamal and Inanoglu (2005) regarding the analysis of Turkish Banks (1990-2000) compare the efficiency of banks including Islamic banks and find no significant

difference. In conformity to this, Choong and Liu (2006) argue that Islamic Banking as practiced in Malaysia deviating from the profit and loss paradigm and in practice it is not very different from the conventional banking system and therefore, it should be treated similarly for the purpose of financial sector analysis.

While according to Cihak and Hess (2008) in their study find out that small size of Islamic banks are more stable than small conventional bank while larger conventional banks are more stable than larger Islamic banks. In a study, Olson and Zoubi(2008) find out that the Islamic banks are more profitable by comparing the accounting ratios of Islamic and conventional banks for the Gulf Cooperation Council countries.

The current paradigm of Islamic banking industry is functioning under the philosophy of Socioeconomic justice having a regulatory control on local and international level (i.e. AAOIFI and IFSB). The industry is having prudent corporate governance rules and practices which ensure that Islamic banks have proper risk management, greater reliance on equity rather than debt and investment in ethical venues (Rasem N. and M.Hassan K. 2009).

In a recent working paper of IMF(September, 2010), declared Islamic Banking as the fastest growing segment of the global financial market and in some countries it is systematically important while in so many it is hard to ignore it. In the same paper the following growth factors were identified i.e. strong demand from the customers side, enabling and regulatory framework for Islamic banks as well as the investment made by the conventional investor in the industry due to the capacity of this emerging industry.

In another study Bashir (2000) analyzed the performance of Islamic banks in eight countries and assessed the characteristics of some important banks and its impact on economy. The finding of his study are that Islamic banks profitability are positively related to its equity and loan. Resultantly, if leverage is high and loan to assets is also high, then Islamic banks will be more profitable. Further he concluded that favorable macroeconomic conditions accelerate the profitability of Islamic banks.

Bashir and Hassan(2004) in a research study argued that the Islamic banks have a better capital asset ratio as compared to conventional banks which means that Islamic banks are well capitalized. In a similar study, (Iqbal M., 2001 and 2004) Islamic and Conventional banks were compared . It concluded that the profit ratio of Islamic banks are more favorable as per international standards. However the rate of return of conventional banks are fixed and the depositors of conventional banks are safe as compared to the depositors of Islamic banks where the rate of return is not fixed and they are at risk. That is why they demand more rate of return.

According to Alkassim (2005), higher capital ratios support Islamic banks profitability whereas total loans for both types of system have a positive relationship with profitability while deposits have a positive relation with profitability for conventional banks but negative with Islamic banks and it contributes more in the profitability of conventional banks.

Numerous literatures are available on the role of banks in the economic and financial stability of a country financial system. The economic activities remain the focal point of human life in every civilization of mankind across the world. But the modern banking system becomes the engine of economic activities (Mishkin, 2010). As Banks are dealing with the Public money, therefore, it is important for government to regulate this industry in a very effective way because the collapse of single bank can create systemic effects and can dismantle the whole economy. Consequently,

stringent supervision and regulatory framework were designed by the governments on domestic and international level.

Sat and Venkatesh (2010) highlighting the importance of CAR for Islamic bank as a measures of capital (as defined by Basel) the banks have to maintain in relation to their total risk weighted assets (RWA), including off-balance sheet exposure. This is considered as the most important ratio for banks and the buffer against heavy losses that could question the very existence of a bank. As banks are heavily leveraged institutions, they must maintain sufficient capital to cover their RWA. This ratio is more meaningful during an economic crisis as this ratio acts as a predictor of bank failure .To reduce this probability, a bank may strengthen its capital over time.

Further as per Santmero and Watson (1977), the lower the capital the higher the probability of failure. This ratio gauges the safety and soundness of a bank (Estrella, Park and Persitiani, 2000) and as such a comfortable CAR, especially during a crisis, adds confidence to the stability and soundness of a bank.

According to Basel-II Accords (2004), for the purpose of calculation of capital fund, the capital of the banks is divided into two components core capital and supplementary capital. Core capital consists of share capital, share premium, non-redeemable preference shares, general reserve fund and accumulated profit/loss. Supplementary capital consists of general loan loss provision, exchange equalization reserve, assets revaluation reserve, hybrid capital instruments, unsecured subordinated term debt, interest rate fluctuation fund, and other free reserves. The sum of these two components is considered to be total regulatory capital.

The sum of risk-weighted assets is the sum of total on-balance sheet risk-weighted assets and total off-balance sheet risk-weighted items. Keijser and Haas (2001) have summarized the Basel Capital Accord of 1988 was an important first milestone in the regulatory treatment of collateralized transactions. However, the role played by risk mitigating factors in this Accord, such as the use of financial collateral, is still rather limited. The same holds for the European Directives and national regulations derived from the Basel Accord (EU 2008).

The use of a wider range of collateral is allowed in the Basel-II Accord and the banks are able to choose either the comprehensive or the simple approach for the treatment of collateral. Whereas the simple approach resembles the current Basel substitution methodology in its treatment of collateral, the comprehensive approach is more innovative. It assigns a central role to collateral haircuts, which may be used on banks' own internal estimates of collateral volatility. By making a wider range of collateral available for credit risk mitigation and making the calculation of risk-weighted assets more risk-sensitive, the revision of the Basel Accord is intended further to align regulatory capital which banks must hold and their actual economic risk structure(BCBS, 2005). The process of credit risk management starts from the formation of appropriate credit policy/guidelines/rules and also comprises of credit appraisals, mitigation of the credit, credit and timely recovery actions. When any of these steps is compromised, the loan may convert into Non Performing Loan.

Luca Errico and Mitra Farahbaksh (1998) observed that regulatory supervision of Islamic banks by their respective monetary authorities tends to follow standards and tools applicable to conventional banks though Islamic banks differ from their conventional counterparts in several ways. Although they accepted that capital adequacy should be based on assets composition, i.e., the PLS investments versus non-PLS investment, they argued that the capital minimum requirement needed for risks coverage and should be higher in Islamic banks because their PLS assets are not collateralized. They further added: "it can reasonably be argued that the minimum capital adequacy ratio for Islamic banks should be somewhat higher than the Basel Committee's minimum level of 8%." They also argued that with regard to the criteria of each of the asset, management and liquidity Islamic banks also need more stringent supervision than conventional banks. Finally, Errico and Farahbaksh recognized that Islamic banks, in practice does not follow their fantasized puritarian two-tier or two-window paradigms and they called for re-evaluating each of their conclusions in regard to CAMEL estimation for Islamic banks.

Furthermore, Khan and Ahmed (2001), argued that Islamic banks not only face the type of risks that conventional banks face but they are also confronted with "new and unique risks as a result of their unique asset and liability structures." According to Khan and Ahmad, this new type of risks is an immediate outcome of their compliance with the Sharia'h requirement. They added that even in regard to common risks, the nature of conventional risks that Islamic banks face is different from those counterpart risks faced by conventional banks. The obvious implication of this argument is that Islamic banks need variant "risk identification processes" and different risk management approaches and techniques and require different kind of supervision as well.

Kahf (2006) concluded that Islamic bank has qualitatively similar credit risk to conventional banks, thus the processes of the calculation of capital adequacy for credit risk exposure should not be different from the proposed methodologies of conventional banks. This means that the Islamic Banks can go along with this part of the Basel II Accord and the supervisory authorities would be fair in asking them to abide by these proposals. Further, in Islamic banks, equity must be interpreted to include the equity of shareholders and the equity of the owners of unrestricted deposits because the latter carry their share of the risk of losses by virtue of the Mudarabah contract. Elements of fairness must be taken into consideration in distributing the losses and equity charges between the share holders and owners of unrestricted deposits. Besides this, the portion of operational-risks charge to equity holders in Islamic banks is apparently lower than conventional counterpart. Trading book risks, in their literal sense, rarely exist in Islamic banks but quasi-trading book risks are very high in Islamic Banks than in conventional. Again, capital charges should be carried by both shareholders and owners of unrestricted deposits. Although the supervisory authorities in countries where there are Islamic banks did not yet fully apply the review procedures suggested in Pillar II of the Basel-II, the application of these proposals does not pose any theoretical or practical hurdle to Islamic banking or to Islamic modes of financing. The same also applies to the disclosure requirements of Pillar II since whatever the existing level of disclosure in Islamic bank may be, the additional information and their standardization do not pose any theoretical or practical impediments more than they do for conventional banks.

In its initial stages of the Islamic banking, equity participation was the primary credit utilization procedure, whereas such participations at present constitute a low percentage of the assets (around 6.0 % and 19%) (Chapra and Khan, 2000). This trend can be attributed to various factors, the major factor is the fact that Islamic banks operate within interest bearing economies and compete with conventional banks. All regulatory framework and supervision is intended for products of conventional banks. Instruments such as Murabaha and Ijara'h are more convenient to employ within these circumstances. Also, the risk level associated with equity participations makes Islamic banks very conservative in terms of project selection and creates an inclination towards trade related instruments (Chapra and Khan, 2000).

Turk and Sarieddine(2007) emphasized that Islamic banks are meeting their capital requirements but still have to face other challenges such as liquidity risk, non-availability of hedging instruments, standardization of contracts and Shariah compliance mechanism.

Wafik and Anoma concluded that Islamic Banks are strengthening their stability and competitiveness through improvements in risk management capabilities which will enable Islamic banks to assess their capital requirements that would permit them to use their resources efficiently and offer services that contribute effectively towards the development of their communities.

Another study of Shaikh and Jalbani(2009) concluded that there is a strong relation of ROE of both IB and conventional banks proving both are profitable and have an adequate risk management system to run smoothly the day-to-day operations. Ashfaq et al (2010) in a study regarding empirical investigation of Islamic banking in Pakistan based on perception of service quality find out that customers have more expectation from Islamic bank as it is gaining popularity due to interest free products, risk sharing activities and strong ties with religion. They further suggest that IB should meet the expectations of customers by creating awareness in the customers and creating new products/services which caters the needs and requirements and satisfy their customers by providing them long term benefit.

A number of scholars and practitioners debated Basel agreements, including some economists (Cornford 2004, El-Hawary 2004, Muljawan et al., 2004, Hussain 2002, Chiuri et al. 2002) and financial institutions, such as the Islamic Financial Service Board (IFSB) started discussing extending bank capital adequacy ratios to Islamic banks. Strong opposition emerged against those who were favoring introduction of minimum capital requirements. Some academics claim that the requirement of capital adequacy is excessive and discriminating from the Islamic Finance point of view, since the risk sharing nature of Islamic credit contracts is indeed, an efficient and suitable instrument of risk absorption. (Pellegrina, 2008)

Abul Hassan (2008) discusses that Islamic Banks are trying to adopt Basel-II but facing different kinds of impediments such as liquidity risk, complex mechanism of profit and loss, product standardization, and absence of Shariah compliant short term instruments for management of assets and liabilities mismatch.

Obaidullah arguing in his paper that as the business of Islamic bank is totally different from the conventional banks, same application of the Basle capital adequacy norms to both may be discriminatory and erode the very purpose of the regulations, that of ensuring a "level playing field" for banks all over the world.

Hassan and Dice (2007) while discussing Basel-II and regulatory framework for Islamic banks argued that the risks associated with Islamic credit transactions, their illiquid nature, lack of lender of last resort and inability to utilize short term money markets are some of the impediments in the implementation of Basel-II Accord. But still, Islamic banks should introduce compatibility for adoptions of its guidelines. Further, in order to maintain financial stability and control risk, regulators should ensure the adoptions of international regulations such as Basel II that will also help Islamic banks to compete internationally and enjoy privileges of compatibility.

It is argued that by implementing Basel-II, this industry will save capital and experience improvement in its risk management practices and that Capital treatment is dependent on the type of Shariah contracts underlying the transaction. In addition, profit sharing investment accounts (PSIAs) as well as physical collateral are recognized as risk mitigants along with others eligible securities. (2008, Abu Baker. D.,).

#### Methodology of the Study:

The design of the proposed study is both qualitative as well as quantitative in nature. During the study a review of all the documents of BIS and IFSB i.e. Basel committee on Banking Supervision (issued in 1988, 2006 and 2010) as well as IFSB-2 (2005) and IFSB-7(2009) (IFSB Standards on CAR), was done. Further, Ratio Analysis as well as trend Analysis of the Islamic Banks' CAR was done and compared with their peers of same size.

### **Qualitative Study:**

On the qualitative side, review of both IFSB and Basel-II standards/was made for the calculation of Capital Adequacy Ratio and exploring the differences in their standards. For this purpose, Basel-II (i.e. three published documents as per BIS website in 2004, 2005 and 2006) were comprehensively analyzed for calculation of CAR and then IFSB standards i.e. IFSB-2 (2005) and IFSB-7(2009) have been scrutinized for the calculation of CAR.

### **Quantitative Study:**

On the other hand, quantitative method were also used to find out the solution for the identified problem. On the quantitative side, in first stage CAR for the Islamic Banking Industry of Pakistan has been calculated through IFSB standards formula and Supervisory Discretionary formula as well as under Basel-II formula using Excel Sheets and the results were presented in a tabular form. In order to further strengthen the findings of the study, different ratios and trend analysis were employed such as overall market share of IBIs in capital and Business, Capital Adequacy trend analysis and comparison of CAR of IBIs with its peer group.

#### **Data Collection:**

The sample, selected for this study is the six<sup>3</sup> full fledged Islamic Banks and twelve Islamic Banking Branches operating in Pakistan. The data (for the years 2007, 2008, 2009 and in some cases for 2010) of these banks is empirically analyzed by using the regulatory method of calculating Capital Adequacy under Basel-II Accord and the IFSB standards. Primary data is collected through personal observations, discussions and interviews with different stakeholders, whereas secondary data is collected through study of newspapers and magazines as well as from different publications of Bank for International Settlement (BIS), International Monetary Fund (IMF), Islamic Financial Services Board (IFSB), Islamic Development Bank (ADB), Islamic Research and Training Institute (IRTI) and State Bank of Pakistan and annual accounts of Banks.

#### Limitation of the Study:

The limitation of the study is that the Islamic banking industry is a nascent industry in Pakistan introduced in 2001 and enough time series data is not available for its time series analysis. Further, the Islamic banks in Pakistan at present following the regulatory guidelines for calculating CAR as per Basel-II format and reported their data according to Basel-II standards

<sup>&</sup>lt;sup>3</sup> As of 28 Feb 2011, there were only five Islamic banks, due to acquisition of Emirates Global Islamic Bank Limited by AlBaraka bank

and calculation of IFSB CAR are done as per the authors understanding of the standards rather than its actual calculation by the banks.

#### Analysis and Findings of the Study:

#### **Qualitative Analysis:**

The IFSB's Capital Adequacy Standard (CAS) is specifically applicable on IFIs excluding Takaful companies. Though this standard is largely based on principles of Basel-II, some major amendments have been incorporated to cater specific risks associated with certain Shariah-complaint Islamic modes of financing / investments and to address the specific structure & contents of the Shariah-compliant products and services not duly covered under existing Basel-II framework.

The unique and most distinguishing feature of the IFSB Capital Adequacy Standard is that it recognizes the risk mitigating role of Shariah-compliant PLS Restricted & Un-restricted Deposits by excluding assets funded by these deposits (fully or partially) from Total Risk Weighted Assets (TRWA) for determination of Capital Adequacy Ratio. However, it does not address the requirements covered by Pillar 2 (Supervisory Review Process) and Pillar 3 (Market Discipline) of Basel-II, as these two have been covered by separate standards. A comparison of the IFSB and Basel-II is presented in tabular form for Credit, Market and Operational Risks after the review of both the documents. The general comparison of Basel-II and IFSB standards is presented in a tabular form in the next pages followed by Credit, Market and Operational Risks.

Table -1 Comparison of IFSB and Basel-II Standards			
	IFSB Capital Adequacy Standard	Basle II	
Start and Issue dates	Work started in July 2003 and Final document issued in December, 2005 (IFSB2)	Work stated in June 1999 and Final document issued in November, 2005	
Basis for Risk weights	Although attuned on the basis of external ratings (such as the ECAI approved by SBP) the Basel committee, but risk weights vary according to the Contract stage and underlying Islamic mode of finance	Calibrated on the basis of external ratings by the Basel committee.	
Scope	<ul> <li>Only covers some aspects of Minimum Capital Requirements. For other Pillars of Basel-II, separate standards are being developed like:</li> <li>Supervisory Review Process (December 2007)</li> <li>Transparency and Market Discipline (December 2007)</li> <li>Recognition criteria for ECAIs suitable for rating Islamic finance institutions, and instruments(March 2008)</li> <li>Capital Adequacy Requirements for Sukuk, Securitizations and Real Estate investment (January 2009)</li> </ul>	<ul> <li>Comprehensive document covering the Three Pillars in detail:</li> <li>Minimum Capital Requirements</li> <li>Supervisory Review Process</li> <li>Transparency and Market Discipline</li> </ul>	
Treatment of Profit Sharing Investment Accounts	A %age of Assets financed from PSIA are allowed to be deducted from Total Risk weighted Assets for the sake of CAR	No effect on Capital Adequacy, despite their loss sharing nature	

Comparison of IFSB and Basel-II Standards			
	IFSB Capital Adequacy Standard	Basle II	
Eligible Capital	Standard is silent on definition of capital. Only Tier 1 and Tier 2 capital are	Detailed definition and treatment of deductions from capital are given. Tier 3	
	mentioned at one place in the document	is also included in Eligible Capital	
Minimum Tier1	Not defined	4%	
Tier 2	Not defined	4%	
Total Capital	8%	8%	
Off Balance	Credit Conversion Factors method used	Treatment for OTC, SFT and Credit	
Sheet Exposure	like Basle II. No treatment specified for	Derivatives given in the standard.	
1	OTC and Securities Financing		
	Transactions (SFT)		
	No treatment of Credit Derivatives		

Credit Risk

Table -2	IFSB Capital Adequacy Standard	Basle II
Credit Risk	Follows Standardized approach of Basel- II. No guideline for use of other approaches, but left to the discretion of supervisory authority	Measurement Approaches are: Simple standardized approach, Standardized Approach (Comprehensive),Foundation IRB and Advance IRB.
	Takes into account the nature and contract stage of underlying Islamic mode	Not considered
	Credit Risk Mitigation Techniques include <i>hamish jiddiyyah, urbun</i> , PSIA or cash on deposit with IIFS, guarantees, financial collateral, pledge assets.	Risk mitigation Techniques includes financial collateral, credit derivatives, guarantees, netting (on and off balance sheet).
	Musharaka and Mudaraba Simple risk weight method (RW300% or 400%) or supervisory slotting method (RW 90%- 270%)	$\geq$ 150% for financing of venture capital and private equity investments in the Banking book.
	Credit Risk under Securitization Framework not covered in this standard, however, a new Working Group is preparing a standard on this issue	Detailed guidelines available for Securitization framework
	Treatment of On-Balance Sheet netting not specified	On Balance sheet netting treatment specified in the standard

Market Risk

market Risk			
Table-3 Market	IFSB Capital Adequacy Standard	Basle II	
Risk	Standardized measurement method	Standardized Measurement	
		Internal model Based	
	In the case of asset-based instruments, the price risk of bank during its holding period is recognized as Market risk.	Not required under Basel II.	
	Foreign exchange risk encompasses the holding of position in gold & silver.	Treats silver & gold as commodity	
	IFSB has chosen to allow the use of either the Basel maturity ladder approach or the simplified approach.	The Basel framework outlines a methodology for calculating minimum capital requirements for commodities	

**Operational Risk** 

Table-4	IFSB Capital Adequacy Standard	Basle II
Operational Risk	1) Basic Indicator Approach recommended	Three approaches to measure operational Risk:
	<ol> <li>2) Standardized Approach can be used by supervisors if they have defined lines of businesses for Islamic financial institutions.</li> <li>3) Two additional risks: Shariah noncompliance risk Breach of the fiduciary risk.</li> </ol>	<ol> <li>Basic Indicators Approach</li> <li>Standardized Approach</li> <li>Advanced Measurement Approach</li> </ol>

#### 6.1.2 Quantitative Analysis:

In this section analysis has been made on the basis of IFSB Standard and Supervisory discretionary formulas and then Basel-II conventional formula for the calculation of Capital Adequacy Ratio for Islamic banks viz-a-viz further trends and comparative analysis were also done.

6.1.2.1 IFSB Capital Adequacy Standard:

IFSB has defined following two formulas to calculate CAR: Standard Formula:

Eligible Capital

Total Risk-weighted Assets (Credit+ Market Risks) Plus Operational Risks

Less

Risk-weighted Assets funded by PLS A/C(Credit + Market Risks)

Supervisory Discretion Formula:

This formula is applicable in jurisdictions where supervisory authority considers the IFIs are obliged to smooth income to the PLS Account Holders as part of a mechanism to minimize withdrawal risk and is concerned with systemic risk. Under this formula CAR is equal to:

Eligible Capital

Total Risk-weighted Assets (Credit + Market Risks) Plus Operational Risks

Less

Risk-weighted Assets funded by Restricted PLS A/C (Credit + Market Risks)

Less

 $(1 - \alpha)$  [Risk-weighted Assets funded by Unrestricted PLS A/C (Credit + Market Risks)]

Less

 $\alpha$  [Risk-weighted Assets funded by PER and IRR of Unrestricted PLS A/C (Credit + Market Risks)]

## 6.1.2.2 Conventional Basel-II Formula:

Under Basel-II, banks are required to calculate their Risk Weighted Assets (RWAs) in respect of Credit, Market and Operational Risks. The Capital Adequacy Ratio is then calculated by taking eligible regulatory capital as numerator and total RWA as denominator.

CAR = Regulatory Capital/ Risk Weighted Assets

Capital Adequacy Ratios are calculated for all the six full fledge Islamic banks and for 12 Islamic Banking Division offering Islamic services and products. The IFSB standard and discretionary formulas have been employed. CAR under the supervisory discretionary formula for different values of alpha ( $\alpha$  is the fraction of assets funded by unrestricted PSIA which is to be decided by the supervisory authorities, and the value of  $\alpha$  will vary on a case-by-case basis ) i.e. 0.5, 0.7,0.8 and 1.0 are calculated as well as under Basel-II formula. The data are obtained from their annual accounts and in order to maintain the secrecy of the banks' data and their market reputation, the disclosure of the bank's names is avoided and accordingly the 6 IBIs are referred to as A, B, C, D, E and F; and the 12 IBBs are referred to as G, H, I, J, K, L, M, N, O, P, Q and R.

## **6.2 Findings of the Study:**

As per IFSB's Standard Formula, the Total CAR maintained by the 6 IBIs i.e. {Total Eligible Tier-1 Capital / [TRWAs bearing Credit, Market and Operational Risks less TRWA funded by PLS Deposits (bearing Credit & Market Risks) is in the range of 23.54% to 98.08% for the year ended December 31, 2007 (based on their audited accounts).



CAR maintained by the six Banks declined to range between 11.02% and 65.91% after applying supervisory discretionary formula, assuming  $\alpha$ = 0.70 (Alpha is corresponding proportion of RWAs funded by un-restricted PLS Deposits), i.e. {Total Eligible Tier-1 Capital / [TRWAs bearing Credit, Market & Operational Risks less the following:

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- 1) RWA funded by Restricted PLS based Deposit
- 2) RWA funded by Un-restricted PLS based Deposit
- 3) RWA funded by Profit Equalization Reserves & Investment Risk Reserves]}



maintained by the 12 IBBs was in the range of 9.48% to 46.48% for the year ended December 31, 2007 (based on their audited accounts). It is observed that CAR determined under IFSB Standard Formula of all IBs and IBDs are above the prevailing minimum requirement of 9%.



However, after applying supervisory discretionary formula (assuming  $\alpha$ = 0.70) the Total CAR maintained declined to the range of 8.62% to 46%. The rationale for this supervisory discretion is to allow partial benefit of PLS based deposit (to be deducted from Risk Weighted Assets). As per the findings, CAR of only 2 IBBs has gone down to minimum prevailing requirement of 9% which they can improve either by; raising PLS based deposit or reducing its RWA.



As per IFSB Standard Formula, the consolidated Total CAR maintained by the six IBIs was 43.1%. However, after applying the supervisory discretionary formula (assuming  $\alpha$ = 0.70) the consolidated Total CAR maintained by the six IBIs declined to 21.5%.



As per IFSB Standard Formula, the consolidated total CAR maintained by the IBBs was 21.03% and after applying supervisory discretion formula (using same value of  $\alpha$ ) the same declined to 13.56%.



overall consolidated Total CAR (as per IFSB Standard Formula) of 6 IBIs and 12 IBBs was 35.83%. However after applying supervisory discretion formula (using same value of  $\alpha$ ), the same declined to 21.55%.



Bank / IBD (Supervisory discretionary formula) has also been worked out in different scenarios like up and down changes in the Alpha value.

Table-5	CAR (SDF) Range	CAR (SDF) Range	CAR (SDF) Range	CAR (SDF) Range
	α= 0.50	α= 0.70	α= 0.80	α= 1
IBIs	13.8% to 72%	11.8% to 59%	11.% to 63%	9.7% to 57.4%
IBBs	8% to 46%*	7.4% to 46%	7.12% to 46%	6.8% to 46%

The CARs maintained under Standard Formula as per IFSB Standard by the six IBIs have been compared with the CARs maintained for the same period under Basel-II as under:



<sup>\*46 %</sup> is mainly due to 2 IBBs having no PLS Deposit as on 31-12-2007



The comparison revealed that CARs worked out under IFSB Standard Formula are relatively higher than CARs under Basel-II of each bank. Therefore, IFSB CAR should be relatively less than CAR under Basel-II keeping in view the fact that IFSB has adopted more conservative approach towards risk profiling of Islamic banking products entailing more sensitivity. However, CARs under supervisory discretionary formula (Alpha =0.70) of these banks are almost closer to CARs under Basel-II, with exception of one bank for the same period.

Conclusion and Recommendations:

CAR values under supervisory discretionary formula was worked out by changing value of Alpha. As per the findings, CAR values determined under supervisory discretionary formula (Alpha =0.70) of the IBIs are almost closer to CAR values under Basel-II, with exception of one bank for the same period.

The main purpose of this supervisory discretion is to provide either full or partial benefit of unrestricted PLS deposits for calculation of CAR by allowing deduction of such deposits from Risk Weighted Assets. Since, Islamic Banking Industry in Pakistan is still in its infancy, it seems difficult for them to pass on losses (if any) to its un-restricted PLS based deposit holders due to competition with Islamic as well as conventional banks. Therefore, it is suggested that under supervisory discretion, the value of Alpha may be prescribed at 0.80 in order to extend partial benefit of PLS based deposits (un-restricted). However, this benefit shall be gradually enhanced as soon as they start passing losses to such deposits holders. However, CAR under Standard formula (as defined in IFSB Capital Adequacy Standard) for Islamic Banking Institutions may be kept at par with the CAR prescribed under Basel-II.

Islamic Banking is functioning as a parallel system in Pakistan and facing competition from both its conventional as well as Islamic banks. Therefore, in order to provide a level playing field, it is important for regulatory authorities to understand the nature of its business and accordingly develop a prudent regulatory mechanism. Transparency should be ensured at any cost, in calculation, allocation and distribution of profit as per Shariah and Supervisory requirement. Similarly treatment of expenses (Direct & Indirect) in calculation of profit is also very critical and there should not be any manipulation / reverse calculation to adjust the desired profit rates; principle of equity and justice and fiduciary responsibility, there should not be any dilution in the interest of IAH & Shareholders.

#### Concluding Remarks:

The banking industry is one of the most regulated industry all over the world as it deals with public money. Regulators and international standards settings bodies from time to time set different ratios for maintain regulatory capital in order to ensure the soundness and stability of this industry. The issuance of Basel Accords by BIS is considered as milestones in this regard. BIS issued Basel-I in 1988 and then Basel-II in 2006 and now at the end of 2010 Base-III which enhances the capital requirements for banks. As Islamic banks are the fastest growing sectors and being the part of global financial system, they are also bound to adopt the international best practices. In this regard, IFSB which is an international standards settings body for Islamic financial institutions adopted Basel-II for Islamic banks with some modifications that cover the unique risk involved in Islamic banks i.e. IFSB-2 and IFSB-7.

Thus, the focus of the study was the calculation of regulatory capital i.e. Capital Adequacy Ratio (CAR) for Islamic banks in Pakistan under the Basel-II and IFSB guidelines. The findings are suggesting that Islamic banks are more resilient and loss absorbing due to its profit and loss sharing mechanism. Moreover, Basel-II provides solid foundation of prudent capital regulation, supervision, and market discipline, and enhanced risk management and financial stability. Since Shariah-compliant transactions are not properly covered in Basel II, there was a strong need to introduce such a framework which can address unique risks of Islamic financial transactions.

Therefore, IFSB issued standards on Capital Adequacy Standards as IFSB-2 in December 2005 and IFSB-7 in January 2009 which are largely based on the Basel approach, with necessary modification and adaptation to cater for specific nature and characteristics of Shariah compliant products and services.

As at present the Islamic Banking industry is just around 7% of the total banking system, in Pakistan. Therefore, Capital Adequacy of IBIs is at par with their conventional counterpart. As and when this industry reaches a comparable level, then it should be given relaxation in the maintenance of regulatory capital requirements, which will enhance its capacity to penetrate the market and extend its services all over the country. They shall ensure proper risk management, transparency, and good governance in their day to day business. Further, this study will provide a foundations for further research in the areas of supervision and regulations for Islamic banking industry which is one of the fastest growing segment of the financial system.

## References

- 1. Basel Committee on Banking Supervision (2010). Basel III : A Global Regulatory Framework for more Resilient Banks and banking System. Issued by Bank for International Settlements December 2010.
- 2. Sat Paul Parashar and Jyothi Venkatesh (2010). How did Islamic banks do during global financial crises? Journal of Banks and Bank Systems, Volume 5, Issue 4, 2010.
- 3. Maher Hassan and Jemma Dridi(2010). The Effects of the global Crises on Islamic and Conventional Banks: A Comparative Study. IMF Working Paper 10/2010.

- 4. State Bank of Pakistan Quarterly Bulletins 2003-2010, Pakistan's Islamic Banking Sector review
- 5. Zairy, Z and Salina H.Kassim (2010). An Analysis of Islamic Banks' Exposure to Rate of return Risk. Journal of Economic Cooperation Development, 31,1(2010), 59-84.
- 6. Frederics Mishkin (2010). The Economics of Money, Banking and Financial Markets. Business School 2<sup>nd</sup> Edition.
- 7. Ashfaq Ahmed et.al (2010), An Empirical Investigation of Islamic banking in Pakistan Based Perception of Service Quality.
- 8. Zairy, Z and Salina H.Kassim (2010). An Analysis of Islamic Banks' Exposure to Rate of return Risk. Journal of Economic Cooperation Development, 31,1(2010), 59-84.
- 9. Toseef Azid (2010). Anthology of Islamic Economics: Review of Some Basic Issues. International Association for Islamic Economics review of Islamic economics, Vol.13, No.2, 2010,pp.165-194.
- 10. Taqi Usmani (2010). An introduction to Islamic Finance. Darrul-e-Aloom, Karachi.
- 11. Adequacy ratio. IFSB(2009). Capital Adequacy Standards for Institutions (Other than Insurance Institutions) Offering Only Islamic Financial services. Special Issues in Capital Adequacy (IFSB-7). Kuala Lumpur, Malaysia: IFSB.
- 12. Abdul Ghafoor Awan (2009). Comparison of Islamic and Conventional Banking in Pakistan. Proceedings 2nd CBRC, Lahore, Pakistan.
- Rahmatina A. Kasri and Salina Hj.Kassim (2009). Empirical Determinants of Saving in the Islamic Banks : Evidence from Indonesia. JKAU: Islamic economics Vol.22 No.2, pp:181-201 (2009 A.D./1430 A.H).
- 14. JCVR-SBP (2009). Impact Study of Capital Adequacy for Islamic Banks. Unpublished Study of SBP and JCVR.
- 15. Dalila Abu Baker (2008). Basel II Enhances Islamic Banks .Journal of Islamic Finance Asia August September 2008.pp-25-27.
- 16. Martin Chihak (2008). Islamic Banks and Financial Stability : An Empirical Analysis. International Monetary Fund Working paper WP/08/16.
- 17. Greuning, H.V., and Iqbal, Z.(2008). Risk analysis For Islamic banks Washington D.C.: The World bank
- 18. Luca Dalla Pellegrina (2008). Capital Adequacy Ratios, Efficiency and Governance : a Comparison Between Islamic and Western Banks.
- 19. Dr Natalie Schoon (2008). Islamic Banking and Basel II: Challenges ahead. NewHorizon January-March 2008.
- 20. Greuning, H.V., and Iqbal, Z.(2008). Risk analysis For Islamic banks Washington D.C. The World bank
- 21. Waseem Ahmed (2008). "Islamic Banking in the United Kingdom: Opportunities and Challenges". Kingston Business School: Kingston University, London.
- 22. Nisar Ahmad(2008). Basel II Capital Requirements: Implementation Challenges for Islamic Bank. 6th International Islamic Finance Conference 2008, Peer review Paper.
- 23. Rima and Yolla Sarieddine (2007). Challenges in implementing Capital Adequacy Guidelines to Islamic Banks . Journal of Banking Regulation Vol.9, 146-59.
- 24. Juan Solé (2007). Introducing Islamic Banks into Conventional Banking Systems. 2007 International Monetary Fund Working paper WP/07/175.
- 25. M Kabir Hassan and Mehmet F Dicle( University of New Orleans, 2007). Basel II and Regulatory Framework for Islamic banks.

- 26. Rima Turk and Yolla Serieddine (2007). Challenges in Implementing Capital Adequacy Guidelines to Islamic Banks. Journal of Banking Regulation Vol.9, 146-59.
- 27. Basel Committee on Banking Supervision(1988 and 2006). "International Convergence of capital Measurement and Capital Standard", issued by Bank for International Settlement in June 2006.
- 28. Mohammad Nejatullah Siddiqi (2006). Islamic Banking and Finance in theory and practice: A survey of State of the Art. Islamic Economic Studies, Vol.13, No.2, February 2006.
- 29. Monzer Kahf (2005). Basel II: Implications for Islamic Banking. Paper written for the 6th International Conference on Islamic Economics and Banking, Jakarta, Nov22-24, 2005.
- 30. Islamic Financial Services Board (2005). Guiding Principles of Risk Management for Institutions Offering Only Islamic Financial Services. Kuala Lumpur, Malaysia: IFSB.
- 31. IFSB(2005). Capital Adequacy Standards for Institutions( Other than Insurance Institutions) Offering Only Islamic Financial services. Kuala Lumpur, Malaysia: IFSB
- 32. Umer Chapra and Tariqullah Khan (2000). Regulation and Supervision of Islamic Banks. Islamic development Bank, IRTI, Jeddah-Saudi Arabia 2000.
- 33. Craig Furfine et. Al (1999). Capital requirements and Bank behavior: The Impact of the Basel Accord. Basel Committee on Banking Supervision Working Paper of BIS, Switzerland.
- 34. Wafik Grais and Anoma Kulathunga () Capital Structure and Risk in Islamic Financial Services. Published in Working Papers of World bank.
- 35. Abul Hassan . Jumping Hurdles: Adopting Basel II Standards in Islamic Banks.
- 36. Luca Errico and Mitra Farahbaksh (1998). Islamic Banking : Issues in Prudential Regulations and Supervision. IMS Working Paper WP/98/30 1998.
- 37. Dr. Seyed Nezamuddin Makiyan. Risk management and Challenges in Islamic Banks. Economics department, Yazd University, Iran.
- 38. Mohammad Obaidullah (1998). Capital Adequacy Norms for Islamic Financial Institutions. Journal of Economic Studies, Vol.5, No.1, 1998.