Impact of Basel Accord on Banking System
(Evidence from Islamic Banks of Pakistan)

Mr.Muhammad Mehtab Azeem[1],Prof.Dr.Akin Marsap[1]&Assist.Prof.Dr.Cigdem Ozari[1]

[1]Department of Economics and administrative Science, Istanbul Aydin University, Pakistan.

Corresponding:Muhammad Mehtab Azeem, Istanbul Aydin University & Francois Rabelais University, MBA, Pakistan.

Abstract

Banks and bank regulatory authorities are vital players for the stability of economy and financial system in potential way. Basel III and its related to capital's requirement obligations have been effective useful tool for the banking system. Since, this is tough job for the bankers to maintain the liquidity for hedging the future risk but it also been expensive for bankers to keep the extra capital and become more liquid since this discourage the provision of loans but promote the credit ratings. However, it has become necessary to investigate the impact of Basel III on Islamic banking system and analyze the trade off. The study analyzes empirically on the (Financial) anomalies in term of three factors (i) Financial size (ii) Spread and (iii) Provisions for non performing financing. The study also discusses the impact of Basel III on Islamic banking performance if applicable, in context of trade off and impact on country's economy. We can ask that Basel III framework is difficult to be consistent for conventional banks; we can also realize that either new regulation will be flexible for Islamic banks under Basel III while Islamic and Conventional banks are totally different. Further, we shall estimate if the Basel III is more or less important in Islamic banks of Pakistan than conventional banks. At the end, we shall see from theoretical framework either the impact of Basel III is important for Islamic banks if and only if Islamic banks adopt to follow Basel III regulations and analyzing the potential influence on conventional banks.

Keywords: Basel Accord III, Islamic banks, Behavioral Finance

1. Literature Review

There are numerous studies of Basel accord on commercial banks and implication on conventional banks along with impact of these banks on behavioral finance. Islamic banks seem to be unsurpassed in this research. Several studies on Basel accord has been done by Furlong (1992), Haubrich (1993), Bernake (1995), Peristiani (1996), Furfine (2000), Ferri (2001). They summarized that banks that are unable to maintain Basel accord regulations are tougher regulations for them but advantageous at least to safer their financial crisis and retaining capital adequacy ratio. They also investigated that result of credit crisis are due to supplying limited loans and keeping higher capital because of basel accord regulations but these studies are phenomenon. Further studies have been conducted by Bernanke & Gertler (1995). They found that difficult requirements of capital produce barriers on bank's performance to acquire extra fund if they needed. Ismail (2003) concluded in context of Malaysian Islamic banks that banks can maintain capital requirement if only converting their financial volumes in shape of securities while adopting Basel accord II. He also concluded that by following this regulation, bankers can reduce riskier assets increase capital adequacy ratio by transferring their assets into 20 percent risk weighted category from larger risk weighted categories.

Similarity report has been done by Kim & Moreno (1994) on Japanese commercial banks that financial regulatory institutions impose on Japanese banks to be careful on their capital requirements that resulted on turn off their lending position later on. Contradict of this opinion, each banks in Japan should have tendency to reduce lending if their capital adequacy ratio is lower (Ito & Sasaki, 1998). International regulatory requirements on banks slightly reduce loan expansion in Japan than domestic standardized requirements (Honda, 2002).

The superior studies of Japanese banks based on Basel accord is conducted by Montgomery (2005). He found that maintaining capital adequacy ratio on Japanese banks has shifted their financial portfolio away from the high weighted risk assets. Angelini (2011) investigated through theoretically that there could be significant cost of maintaining capital requirement and it increase bank's marginal cost of loans that resulted marginal cost of loans become higher than marginal cost of depositing fund. Higher cost of equity requirement to financing debt increase the cost of credit growth

and slow down the stability of economy.

United States banks identified the impact of increasing equity to asset ratio and have found an increasing of spreads numerically upper bound six points that cause to increase capital to asset ratio by adopting Basel III (Kashyap, Stein & Hanson, 2010). The higher increase in lending spread has been estimated by BIS (2010b) based on gap points of 12.2 & 15.5, by using thirty eight macro-economic models stabilize by central banks of developed countries.

The liquidity management centre established in February 2002, enable Islamic banking industry to manage an asset, mismatch of liquidity, create and improve asset quality, promote sharia credibility and create cooperative framework in achieving assets from government bodies, corporations and financial institutions. It enables to achieve higher return from investors and provide liquid investment opportunities for IFSIs.

The international Islamic Financial Market facilitate to create Islamic financial products and to auditing the liquidity requirement for Islamic banking industry. Its overall strengthen in achieving foreign direct investment and facilitate investment opportunities for foreign investors. It enhances the efficiency in regard to manage liquidity. The accounting and Auditing organization for Islamic banking industry also facilitate in the development of standards and regulations for Islamic banks and working with IMP, International accounting standards board & Basel committee.

2. Basel Accord III

Financial crunch of 1970 & 1980 imposed G-10 countries to take strict actions and find parameters by which banks can safe their risks. In response of it, Basel committee for banking regulations in (1988) introduced a minimum capital requirement in banking sector in order to secure the future risk for bankers known as Basel Capital Accord BIS (2010). The Basel I & II implemented in response of these financial crisis, later on securing non performing loans in developing countries (Kandil, 2008).

Financial crunch again in 2007-08 urged banks for settlements to construct new regulations known as Basel III. The aim of implementing Basel III is to stabilize the economy and prevent from financial shocks strictly. This section aims on nature of Basel III impact on Islamic banks. Basel III is actually different from Basel I and II because it connects micro and macro advisory reforms and it address institutional level and system level risk together. Under Basel III, banks are forced to increase capital requirement Tier 1 to minimum 6 percent of risk weighted assets and this capital must be in form of equity. Further, banks are required to posses' capital conservation buffer of 2.5 percent in order to stand with future crunch. The aim of these requirements is in line with securing future losses. There will also be countercyclical buffer range from 0 to 2.5 percent of common equity. Financial Instruments with 10 years maturity according to Basel III will be executed and those 5 years maturity period according to Basel II Tier 2 will no longer exist in Basel III and phased out. Banks will be required to delete excessive investment in the capital instruments under the deductive approach.

On the other side, Islamic banks are limited in numbers. Basel III will be less impacting on Islamic banking system. For instance, Governor of National Bank of Malaysia addressed in 'Global Financial Magazine' that Malaysian Islamic banks already maintaining high liquidity coverage ratio and its relatively similar to Basel II framework. Thomas and Dalia (2011) has been examined the banks behavior in developed countries from 2001-2009 and found the result that larger banks would increase the lending rates by sixteen basis points in order to reach the equity to asset ratio by 1.3 percent points and seven percent equity to new risk weighted asset ratio and this impact the cost of equity nearly 16 basis points other than alternative bank resources under Basel III. Rajhi, (2012) empirically assessed the insolvency risk between Islamic and conventional banks using stability indicator (Z-Score as an exogenous variable) in North America, Middle east and Southeast Asia and found that Islamic banks are more stronger than conventional banks. Cihak and Hesses in (2010) found that small Islamic banks that concentrate only on low risk investments are stable and large Islamic banks that focus on profit sharing investments are less stable than small Islamic banks. Kara in (2011) investigated that Islamic banks are more capitalize due to Sharia compliance and holding large capital under Tier 1.Actually,Islamic bank's source of financing consist on 'Own capital' , 'Demand deposit' &'Profit sharing investment' so deposited insurance is not necessary and reduce the cost of financing (Boumediene,2011). Mohammad Bitar, (2011) assessed the impact of Basel III on Islamic and Conventional banks using panel date of 11487 conventional banks and 146 Islamic banks in 76 countries during the period of 2005-2011 and found that impact of liquidity, leverage and capital is not significant correlated between Islamic and conventional banks and their risks also varies.

3. Islamic Banks and Basel accord Implication in Pakistan

The Basel committee decided to increase the capital ratio during period 2013-2018 with minimum level of common equity will be arisen from 2 percent to 4.5 percent and minimum capital adequacy ratio will be exceeded from 9 to 12 percent. Islamic banks in Pakistan mix with religious forces and playing an active role in growth of country's economy. Currently there are 14 conventional banks (Report of Islamic Banks Bulletin, 2013) that hold license of Islamic sharia to work accordingly. Conventional banks also in response to operate according to Islamic banks if and only if they hold
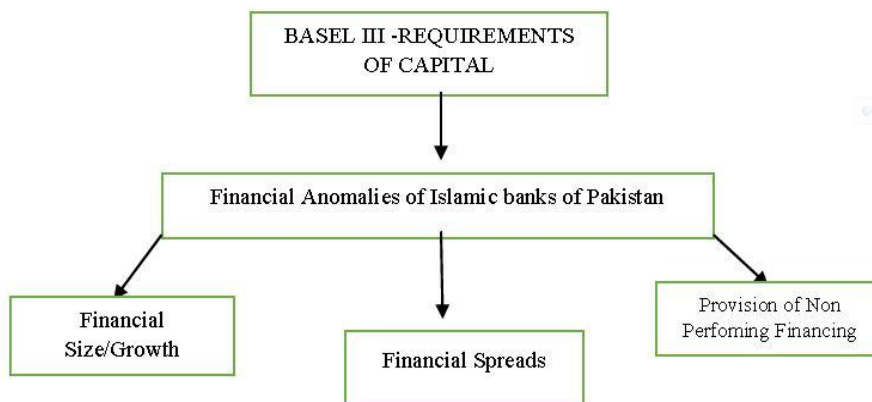
license of it. Islamic Banks holding total assets amount 1014 billion dollar and market shares 8.8 percent as reported by State bank of Pakistan on December 2013.There are more than 1225 branches (State Bank of Pakistan Annual Report,2013)in Pakistan and it is increasing consecutively. State bank of Pakistan plays an important role in line with regulation of Islamic Sharia compliance is parallel to international standardized regulations.

Capital framework of Islamic banks is not similar as conventional banks. In Islamic banks, Capital consists of Tier 1 Capital and some extent of Tier 2. Best capitalized system on global parameter belongs with Islamic banks Capital compared to advanced countries.Tier1 and capital requirement policies currently amply at eight percent to twelve percent which is already higher than the expected ratio of 2019, set by Basel III as capital structure is more derivatives and low level selling is forbidden. Islamic banks can not follow Basel III until Islamic Financial services should modify in Basel III according to their specifications and permit to Islamic banks to follow new International standards.

State bank of Pakistan has imposed of practicing Basel II, using standardized approach for both Islamic and conventional banks in order to avoid risk from 1st Jan, 2008 and Internal rating based (IRB) approach from Jan, 2010. State Bank has derived the parallel program to execute1 and half year standardized approach and 2 years IRB program from 2006-2008 respectively.

This paper shed lights on examining Basel I and II empirically on financial practices (Financial size, Spread & Provision for non performing financing and interpretation the impact of Basel III on Islamic banking system. The remainder section '4' and '5' explain the methodology and conclusions and recommendations.

Basel III Model

4. Methodology

Several past studies have been conducted in line with adoption of Capital standards of Basel I, II and III with respect to emerging economic countries and advanced countries in the context of conventional banks (Bizer, 1993; Haubrich & Wachtl, 1993; Baer & McElravry, 1994; Berger & Udell, 1994; Peek & Rosengran, 1995). In order to investigate the impact of Basel accord on financial crisis attributed with forceful actions from the regulatory authorities, the study has been constructed through annual time series and cross sectional panel of Islamic banks of Pakistan. The study investigate three parameters on bank's financial behavior (Financial spreads, Provision of nonperforming loans and financial size in terms of growth).The investigation of empirical study based on Basel I and II is also counterpart of this paper. Data consist of 9 Islamic banks within a period of 2010 to 2013.Model explore the proceeding nature of analysis

(i)…………………………….$FS_{it} = \propto_+ \beta_1 CR_{it+} \varepsilon_{it}$

(ii)…………………………...$Spead_{it} = \propto_+ \beta_1 CR_{it+} \varepsilon_{it}$

(iii)…………………………...$Provision_{it} = \propto_+ \beta_1 CR_{it+} \varepsilon_{it}$

Dependent Variables= Financial Anomalies (Financial Size (FS), Spreads & Provisions)

Independent Variable= Capital to asset ratio according to Basel accord.

Table 1.Total financing to Asset ratio with Capital to asset ratio for Islamic Banks of Pakistan

Sample Period: 2010-2013

Dependent Variable: Total Financing to Asset ratio

Variables	Coefficient	Standard Error	T-Statistics	Prob.
C	0.1714	0.0581	3.0050	0.0051
Capital to asset Ratio	2.2773	0.4810	4.7340	0.0000
Effects Specification (Cross sectional fixed, dummy variables)				
Durbin-Watson Stat	1.8000		F-Statistics	3.4490
Log Likelihood	27.9067		Prob (F-Statistics)	0.0038
R-Squared	0.5190		Mean Dep Variable	0.4190
Adjusted R-Squared	0.4018		S.D.Dep Variable	0.1810
S.E of Regression	0.1550		Akaike info Criterion	-0.8200
Sum squared resid	0.6980		Schwarz Criterion	-0.4050

Method: Panel Least square

Cross sectional included: 9

Total panel unbalanced observations: 44

Table 2.Islamic Banking Industry of Pakistan Progress (Rupees in Billions)

Average total assets in 2010 were Rs.477 billion which increased to Rs1014 billion in 2013.Net Investments also grew from Rs.338 to Rs.709 billion from the period 2010 to 2013.

	2010	2011	2012	2013
Total Assets	477	641	837	1014
Deposits	390	521	706	868
Net Financing & Investment	338	475	626	709
Provision to Non performing financings	70.6%	67%	71.8%	78.4%
Return on Equity	9.8%	15%	14.7%	12.7%

Source: Islamic Banking Bulletin December, 2013

Table. 01 assessed the empirical model of (i).There is significant positive relationship between total investment to asset ratio and capital to asset ratio from the period 2010-2013 in response to Islamic banks Pakistan. The result is opposite of the empirical studies conducted by Chiuri, Ferri & Majnoni in (2001) in context of conventional banks for developing countries. According to them, maintaining capital requirement under Basel III may lead slowly down lending actions that later on can cause credit crisis. This lending activities can become more worsen in case if there are not lending institutions other than banks and it impact on country's economy at large. Basel III imposes to increase capital adequacy ratio that resulted credit crunch under Basel accord. But Islamic banks of Pakistan contrary to the opinion of Chiuri, Ferri and Majnoni (2001) are still growing their financial volumes since implemented Basel accord and their capital adequacy ratio is stabilize .Table.02 shows that Investments of Islamic banks grew from Rs.338 billion to Rs.709 billion from 2010-2013 that concluded that Islamic banks are investing their assets in less riskier categories and stabilizing their capital adequacy ratio. This study is relevant to study of Ismail (2003) who says that Islamic banks should invest their fund into government securities (e.g., Government securities, bonds that have less risky weighted assets and increases capital to asset ratio easily).

Table 3.Spread to Asset ratio with Capital to Assets ratio for Islamic banks of Pakistan

Dependent Variable: Spread

Sample Period: 2010-2013

Variables	Coefficient	Standard Error	T-Statistics	Prob.
C	0.00930	0.00820	1.1380	0.2770
Capital to asset Ratio	0.3330	0.0710	4.6057	0.0001
Effects Specification (Cross sectional fixed, dummy variables)				
Durbin-Watson Stat	2.1651		F-Statistics	6.4555
Log Likelihood	114.2600		Prob (F-Statistics)	0.0002
R-Squared	0.6369		Mean Dep Variable	0.0440
Adjusted R-Squared	0.5674		S.D.Dep Variable	0.0333
S.E of Regression	0.0224		Akaike info Criterion	-4.6710
Sum squared resid	0.0191		Schwarz Criterion	-4.2550

Method: Panel Least squares

Cross sectional included: 9

Total panel unbalanced observations: 44

Table. 03 estimated the empirical model (ii).There is significant correlation between spread ratio and capital to asset ratio for Islamic banks in Pakistan. The study is relevant with kashyap etc, (2010) &Angelini (2011) for conventional banks in emerging economic countries. They found that for the increase of U.S banking spreads by upper bound of 6 basis increase capital to asset ratio under Basel III.

Table 4.Results of the Provisions for financing Asset ratio with Capital to Assets ratio for Islamic banks of Pakistan

Sample Period: 2010-2013

Dependent Variable: Provisions for non performing loans

Variables	Coefficient	Standard Error	T-Statistics	Prob.
C	-0.0091	0.0040	-2.1080	0.0501
Capital to asset Ratio	0.1740	0.04050	4.1974	0.0004
Effects Specification	(Cross sectional fixed, dummy variables)			
Durbin-Watson Stat	2.3300		F-Statistics	6.1050
Log Likelihood	140.0150		Prob (F-Statistics)	0.0009
R-Squared	0.6260		Mean Dep Variable	0.0090
Adjusted R-Squared	0.5201		S.D.Dep Variable	0.0201
S.E of Regression	0.0118		Akaike info Criterion	-5.8222
Sum squared resid	0.0050		Schwarz Criterion	-5.4220

Method: Panel Least squares

Cross sectional included: 9

Total panel unbalanced observations: 44

Table No.04 shows the result of model (iii). There is significant positive correlation between provisions and capital to asset ratio during the period 2010-2013.The result is similar to study of Ismail (2003) for Malaysian Islamic Banks. If banks invest on riskier projects then maintaining higher capital adequacy ratio is necessary. Increase of provision for non performing loans with regard to require higher capital ratio in Islamic banks of Pakistan resulted that banks board of directors are engage in more riskier projects and perceive higher risks also calculate more provisions for capital reserves.

5. Conclusions and Recommendations

Islamic banks in Pakistan promote their investment approach intentionally by maintaining capital adequacy ratio under Basel Accord II&II. This approach arise the motivation for Islamic banks to diversify their investment into government securities and increase capital ratio through less weighted risks activities and stabilize their financial portfolio. In

addition, Islamic banks in Pakistan increase their spreads along with increase capital ratio under Basel I and II. As under Basel III ,the capital requirement become more curious, it is estimated that dependent variables (Financial size, spreads & Provision for non performing loans) will be adversely affect by an increasing capital adequacy ratio. Future research will be investigating the impact of Basel III along with capital simulation approach. Policy makers should realize the adverse and positive impact by implementing Basel III on banking sectors especially in term of (Investments, Financial size, Speads, Provisions and tradeoff). Basel III will have impact on business strategies and plans especially for conventional banks and need to introduce new modification such as computation of risks, new ratios on solvency, Asset value relationship, new capital buffers and new terminologies in term of leverage and liquidity. Despite of those facts, Basel III has failed to create distinction between Islamic and Conventional banks and collaboration is curios matter between Basel committee and Islamic Financial service board. The majority of Islamic banks already maintaining sufficient capital requirement instead of Basel accord requirements.

We can justify through example that was pasted on 'Investor guide magazine' in 2011, In Qatar the average Tier 1 ratio is approx. 22.7 percent for 18 Islamic banks while Morgan Stanley Research department did survey under Basel III in three banks of Qatar and easily found that Basel III has limited impact on risks, own capital and ratios. The reason is that, lot of conventional banks will undergo a difficult time to adopt new Basel III regulatory requirements. Comparison of that, Conventional banks will be suffered higher risk in term of own funds and return on investment and with expected financial crisis these banks should rethink to reform the Basel III that should be more effective and efficient like in France, where local lending institutes is effected by commercial banks because maturities time was too high.

Another result, from the theoretical point of view, Islamic banks are less effective than conventional banks and conventional banks are more effective in term of leverage ratio, liquidity ratio, liquidity coverage ratio while Islamic financial institutions hold global appeal in its provision of Sharia complaints.

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Appendix

Table 5. List of Islamic banks as of December, 2013

S.No.	Name	No. of Branches
	Islamic Banks	
1.	Meezan Bank Limited	349
2.	AlBaraka Bank (Pakistan) Limited	108
3.	Bank Islami Pakistan Limited	112
4.	Dubai Islamic Bank Pakistan Limited	124
5.	Burj Bank Limited	74
Islamic Branches of Conventional Banks		
1	Askari Bank Limited	39
2	Bank Alfalah Limited	139
3	Habib Bank Limited	38
4	MCB Bank Limited	27
5	The Bank of Khyber	44
6	Bank Alhabib Limited	17
7	Faysal Bank Limited	53
8	Habib Metropolitan Bank Limited	6
9	National Bank of Pakistan	20
10	Silk Bank Limited	10
11	Soneri Bank Limited	9
12	Standard Chartered bank	10
13	The bank of Punjab	7
14	United bank Limited	22

Table 6. Classification of Capital according to Basel I, II & III

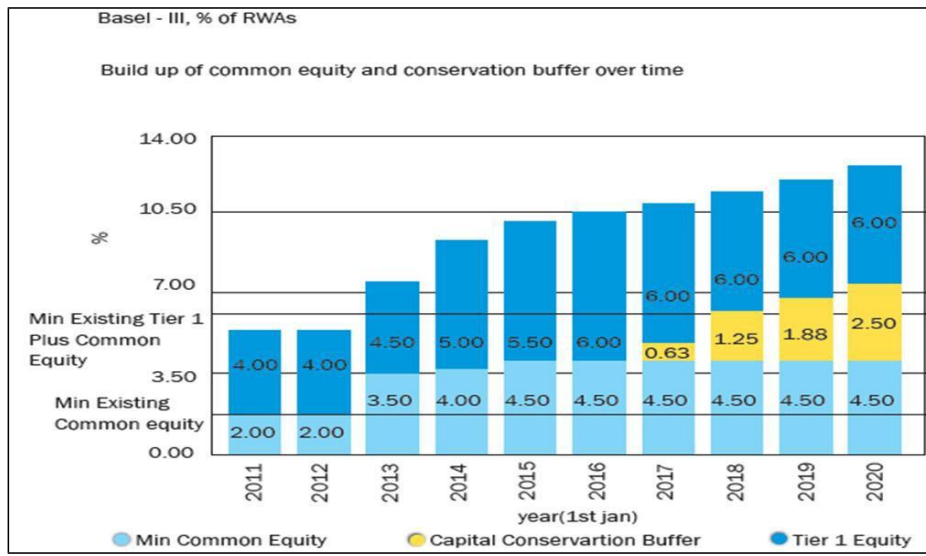| BII (current version)		Proposed new standard	
Tier 1	Common Stock and other forms of Tier 1 (including perpetuals)	Tier 1	Common Equity (common stock plus retained earnings and OCI)
	Disclosed reserves (including from minority interests)		Additional going concern capital
	15% innovative instruments (Annex 1 to BII)		n.a.
	Deduct goodwill and equity from securitizations		Deduct goodwill and many other items 1:1 from common equity
	Deduct 50% of investments in other financial institutions		Transformed into 1:1 adjustment
Tier 2 max 100% of Tier 1	Undisclosed reserves and asset revaluation	Tier 2	Only one form of Tier 2 capital remains
	General loan-loss reserves		Unrealized gains will be reviewed by BCBS until y/e 2010
	Hybrid capital instruments		n.a.
	Subordinated debt (max 50% of Tier 1)		n.a.
Tier 3	For market risk coverage (limitations apply)	Tier 3	n.a.

Source: Deloitte

Fig.01

Figure1. Basel III new ratios

Source: http://www.basel-ii-risk.com/new-basel-iii-common-equity-by-year/