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DETERMINANTS OF BANKS PROFITABILITY & LIQUIDITY AND THE ROLE OF BASEL III IN ISLAMIC & CONVENTIONAL BANKING SECTOR OF PAKISTAN: A CASE STUDY OF NBP

Sitara Bibi[1]
Fatima Mazhar[2+]

[1,2]*Department of Management Sciences, Govt Sadiq College Women University Bahawalpur, Pakistan.*
[1]*Email: rameenawan77788@gmail.com*
[2]*Email: famz81@gmail.com*

(+Corresponding author)

ABSTRACT

This study aimed to examine and compare the performance of Islamic and Conventional banking sector of Pakistan in terms of the impact of BASEL III reforms on the profitability and liquidity of Islamic and conventional banks of Pakistan. For this purpose, National bank of Pakistan has been taken as a unit of analysis and eight year's financial data has been collected from the official website of NBP. BASEL III standard's ratios including CAR, CER and LCR have been used as an independent variable while the bank's profitability and liquidity have been taken as a dependent variable. Descriptive statistics have been performed first to examine and compare the performance of both Islamic and conventional banking sector before and after the induction of BASEL III. After that T-Test has been performed to investigate the differences between the impact of BASEL III on the profitability and liquidity of Islamic and conventional banking sector. The regression analysis has been performed to examine whether BASEL III has a strong relationship with Islamic or conventional banking sector. The results found that BASEL III has a significant positive relationship with the profitability and liquidity of the Islamic sector. Islamic banks are higher in terms of the impact of BASEL III on profitability and liquidity. They are more profitable, more liquid and highly capitalized with BASEL III standards. While Conventional banking sector needs to redesign their policies and make them more compliant with BASEL III to generate more profit and be more liquid as Islamic banks are.

Contribution/Originality: This study is one of the very few studies which have investigated the impact of BASEL III on the profitability and liquidity of Islamic and Conventional banking sector through comparative analysis. The results reveal that Islamic banks are more profitable, more liquid, more compliant and highly capitalized with BASEL III standards.

1. INTRODUCTION

The concept of BASEL accord came into being in 1988 when banking regulators of G10 countries and Basel committee of banking supervision (BCBS) decided to introduce a regulatory framework for all internationally active banks.[1] This framework was named as BASEL accord I and according to this, it was necessary for all internationally

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[1] The backdrop abolition of Breton Woods International Monetary System of fixed exchange rates and the bankruptcy of Bankhaus Herstatt caused a domino effect of collapses in the financial markets and caused the creation of the committee. The committee of Basel was established in 1974 by the group of G10 countries. The

active banks to maintain adequate capital to meet uncertain losses (Teply and Cernohorska, 2016). The concept of risk-weighted assets (RWA) was introduced by BASEL I in which core capital ratio to total RWAs was at least 4% (Rizvi *et al.*, 2018). Regardless of the achievements of this accord, there was a need to update the framework as it covered credit risk only while banking sector was facing many other risks like market risk and operational risk along with credit risk (Teply and Cernohorska, 2016). The deficiencies of BASEL accord I led to the foundations of BASEL accord II (Rizvi *et al.*, 2018). Thus, an updated regulatory framework was introduced in June 2006 which was known as BASEL accord II (Teply and Cernohorska, 2016). According to the framework of BASEL accord II, the minimum capital requirement for risk weighted assets was 8%. It was not only for the credit risk but also for operational and market risk. Soon, it was realized that BASEL II accord also failed to enhance all internationally active bank's stability and soundness. In other words, BASEL II failed to meet the main objectives of the banking regulatory authority (Alsharif *et al.*, 2016). Therefore, after the financial crises of 2007, BCBS decided to introduce a new banking regulation agreement which is known as BASEL accord III and introduced in 2010 and implemented in 2013 (Silva and Fernandes, 2014).

The objectives of BASEL III include;

- To make improvements in governance and risk management practices.
- Enable the banks to face financial and economic problems/issues.
- To improve the banking sector's disclosure and transparency.

This accord is a comprehensive set of guidelines and the modification of BASEL I & II Teply and Cernohorska (2016).
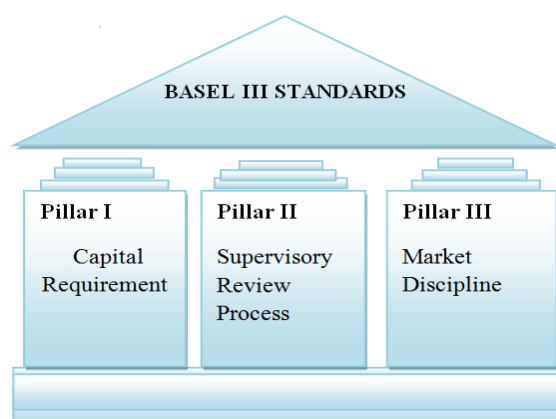

Figure-1. BASEL III Standards.

Hussain et al conducted a study in 2012 in which the author showed a picture of the pillars of BASEL III standards. The three pillars of BASEL III are given above in Figure 1.

BASEL accord III covers the following areas of risk;

- Credit risk
- Operational risk
- Market risk
- Liquidity risk
- Counter cycle risk

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financial stability was the key objective of BCBS by making improvement in supervisory know-how and the quality of banking supervision worldwide. Rizvi, Kashiramka and Singh (2018).

It has introduced counter cycle buffer which help to make savings during the time of boom and these saving can be used at the time of depression or stressed situations. It has introduced capital conservation buffer also (Roy *et al.*, 2013).

- **Requirements of BASEL accord III:**
  - Tier 1 capital must increase from 2% to 4.5%.
  - Capital conservation buffer must be at 2.5%.
  - Common equity must be at 7%.
  - Total leverage ratio should be at 3%. It means the total assets of the banks should be equal to 33 time of the bank's total capital, not more than 33 times.
  - It is necessary to rate the assets of the banks on the basis of their liquidity from 100% for govern
  - Government bonds to 50% for corporate bonds and cash of 0% weighting.

Moreover BASEL III requires increased bank's short term liquidity coverage. This helps the banks to retire their urgent liabilities and enable them to save their highly liquid assets for uncertain situations (Hayat and Ali, 2014).

Previous researches with respect to the impact of new supervisory reforms named BASEL accord III on the performance of banking sector showed different results. Some studies including (Al-Hares *et al.*, 2013; Mashamba, 2018) found positive relationship between BASEL accord III and bank's performance while some other including (Bitar *et al.*, 2017) found a negative relationship between BASEL III and performance of banks. At the same time some other studies found it both beneficial and challengeable for the banking sector (Bhatia and Mehta, 2015; Alsharif *et al.*, 2016). Therefore, this study has been conducted to re-examine the impact of these reforms on both Islamic and conventional banking sector and to find whether it is more beneficial for Islamic or conventional banks of Pakistan as no such study has been conducted in context of Pakistan. For this purpose, National bank of Pakistan has been taken as a unit of analysis because it is one of the largest government banks of Pakistan.

2. LITERATURE REVIEW

Basically, the reason behind the evolution of BASEL accord I, II and III was the establishment of more accurate techniques to reduce the risk faced by banking sector. After the introduction of BASEL I, BASEL II and III introduced with little changes in each accord. BASEL II covered the large areas of risk but due to some factors, including diminishing of risk share related to retail exposure caused the financial crises of 2007-2008 and thus resulted the failure of BASEL II. BASEL accord III occurred as a result of financial crises of 2007-2008 and imposed on banks with tightened policies. So, from BASEI I to III, comparative analysis showed an increase in capital which banks must have in order to meet imposed requirements (Sbârceaa, 2014).

2.1. Origin of Supervisory Regulations:
2.1.1. BASEL Accord I;

The concept of BASEL accord came into being in 1988 when banking regulators of G10 countries and Basel committee of banking supervision (BCBS) decided to introduce a regulatory framework for all internationally active banks. This framework named as BASEL accord I and according to this, it was necessary for all internationally active banks to maintain an adequate capital to meet uncertain losses. This accord achieved higher degree of acceptance across all internationally active banks (Teply and Cernohorska, 2016). BASEL accord I can be summarized as it introduced the idea of risk weighted assets, capital requirements were minimum 8% and core capital ratio to total RWA was minimum 4% (Rizvi *et al.*, 2018).

2.1.2. Failure of BASEL accord I;

There are several reasons for the failure of the BASEL accord I. One of the major reasons was that it focused only credit risk and did not considered operational risk. Other reasons include technology changes and changes in finance. Banks moved their more risky assets to off − balance sheet. This worked to weak the BASEL accord I. (Hussain *et al.*, 2012).

2.1.3. BASEL accord II;

According to the framework of BASEL accord II, minimum capital requirement for risk weighted assets was 8%. It was not only for the credit risk but also for operational and market risk. The accord was based on three pillars. The first pillar named Minimum capital requirements for assets/funds, which were 8% for credit operational and market risks. Second pillar contained review and evaluation process about bank's internal risk assessment and risk management strategies and giving directions to the supervisory authorities regarding the implementation of regulatory framework. Information disclosure related to the allocation of bank's capital and risk exposure for the sake of strengthening market discipline was included in the third pillar of BASEL II accord (Alsharif *et al.*, 2016). For the greater use of the securitization's process, FBASEL accord II provided incentives (Rizvi *et al.*, 2018).

2.1.4. Failure of BASEL accord II;

There are several causes for the failure of BASEL accord II. One of them is capital adequacy requirements. At the time of boom, banks require less CAR while when they are facing recession they need more capital adequacy requirements (CAR). Such fluctuations in Capital adequacy requirements are one of the basic reasons of the failure of banks. Liquidity requirement is also one more reason of the failure of BASEL II because this accord failed to fulfill the bank's liquidity requirements. Islamic banks require more capital adequacy requirements than conventional banks because they have more risk as compare to conventional banks. So capital adequacy requirements given by BASEL II were not sufficient for Islamic banks, this resulted in the failure of BASEL accord II (Hussain *et al.*, 2012).

The deficiencies of BASEL II can be summarized in the following manners;

Pro-cyclicality of capital requirements: The requirements were not pro-cyclical.

Creative methods of credit risk estimation: There were complex financial products including derivatives and the new ways of estimation of credit risk created the worst situation (Rizvi *et al.*, 2018).

2.1.5. BASEL Accord III;

BASEL III is a modification of BASEL accord II. This accord was developed after the financial crises of 2007. BASEL accord III was introduced by Basel committee of banking supervision (BCBS) in reaction to the financial crises of 2007. It contains liquidity requirements and gives more consideration to work to handle system wide problems like economic situations. In order to make BASEL III more powerful, BCBS provided new enhanced capital, leverage and liquidity requirements to supervise and support risk management of banking sector. It is designed and aimed to implement in all the banks operating globally (Al-Darwish *et al.*, 2014). The picture of the evolution of supervisory regulations has been explained in Table 1 which described the journey of supervisory regulations from BASEL I to BASEL III.

Table-1. Evolution of Supervisory Reforms: A Journey From BASEL I to BASEL III.

Sr. no	BASEL I	BASEL II	BASEL III
1.	Introduced in July 1988	Introduced in June 2004	Introduced in September 2010
2.	Center of attention was credit risk	Prime focus was on credit risk, operational risk and market risk	Prime focus on Credit risk, market risk, liquidity risk, operational risk and counter cycle risk
3.	Risk based capital ratio = Capital / risk adjusted assets	Risk based capital ratio = Capital / credit risk + market risk + operational risk	It covers not only credit, market and operational risk butt also includes the areas of liquidity and counter cycle risk.
4.	8% capital requirements for only credit risk	8% capital requirements not only for credit risk but also for operational risk	10.50% minimum capital requirements

Source: Soni and Heda (2015).

2.2. BASEL Accord & Banking Sector

With the help of BASEL accord I and II, Islamic banks of Pakistan are motivated towards investment in government securities, which in turn resulted in the stability of financial portfolio and increased capital ratio of Islamic banks. Capital requirements have become essential and it is expected that it will effect negatively on the capital adequacy ratio of Islamic banks (Azeem *et al.*, 2015). One research study concluded that Islamic banks have successfully and effectively implement and manage BASEL II as compare to conventional banks and they are also positively affected by second and third pillar of BASEL, known as higher supervisory power. At the same time, first pillar of BASEL, named capital requirements positively influenced on both Islamic and conventional banking sectors (Alam, 2012). The regulatory framework of BASEL II accord helps the bank to improve their financial stability. A study conducted on central bank of Nigeria showed that it is considered the best decision to implement BASEL accord II. BASEL accord II has no significant negative impact on profitability of the banks however; it makes the bank's net income (NI) more responsive to the requirements of capital (Agbi and Ekundayo, 2016).

One more recent study conducted in emerging countries in 2018 found a positive impact of regulatory pressure on the bank's ability of generating profits. So, a general belief of adverse effect of regulatory pressure on the performance of the banks of emerging markets has been rejected by this study as, the study no detrimental effects of liquidity coverage charges on the performance of the banks of emerging markets (Mashamba, 2018). On the other hand, Hayat and Ali (2014) concluded that the basic purpose of BASEL III regulations was only to support conventional banks but state bank of pakistan imposed it on Islamic banks to empower the Islamic banking sector. They concluded that BASEL III regulatory standards cover not only the micro-economic level by increasing individual bank's struggle to deal with the period of stress but also cover the macro-economic level by reducing the recurrence of financial crises. This accord strengthens the banks to deal with economics shocks by improving risk management practices. It is assumed that in 2019, when BASEL III will be fully implemented the pretax return on equity of European banks will decrease.

A study of Indian banks found BASEL III regulations both challenging and beneficial for banking sector of India. The diminishing quality of assets of banks and reduction in profitability are main challenges for Indian banks. While, at the same time researcher stated that Indian banks will be more stable and strong, if they succeed to implement BASEL III reform effectively. It will also beneficial for Indian economy (Bhatia and Mehta, 2015). A study conducted in one of the GCC countries identified both positive and negative aspects of BASEL III by concluding that BASEL III may have positive impact on development of the banking industry as well as an increase in economic growth of GCC countries. On the other hand it may pose negative impact on the bank's activities by giving them complex restrictions about management activities (Alsharif *et al.*, 2016).

2.3. Banking Sector and Performance (Profitability)

In recent years few researchers have investigated the financial performance of Islamic banks of Gulf Council Cooperation region including (Trabelsi and Trad, 2017) and Al-Hares and Saleem (2017). Studies on the performance of banking sectors use variety of measuring tools and analysis techniques to measure and compare the performance of banking sectors of different regions of the world. According to Trabelsi and Trad (2017) Islamic banks of GCC countries are remarkably responsive to the BASELIII regulations. One another study conducted in GCC countries concluded that bothe Islamic and conventional banks are effectively capitalizes for BASEL accord III and Islamic banks are more profitable, more liquid and less risky and less efficient as compare to conventional banking sector of GCC countires. Banks of GCC countries are able to absorb higher provisions and deterioration charges (Al-Hares *et al.*, 2013). Bitar *et al.* (2017) examined the impact of risk and non risk based capital ratios on the profitability, efficiency and risk of of the banking sector of OECD countries.The study consluded that risk based capital ratios are not capable to reduce the risk faced by banks. Thus, imposition of BASEL III capital requirements on highly liquid banks is ineffective for the success of the banks. A study conducted in Nigeria discussed the determinants of bank's profitability by examining the impact of capital adequacy on profitability of Nigerian domestic and foreign deposit banks and found capital adequacy to be an influential indicator of profitability of the deposit banks of Nigeria. Adequate capital protects the banks from losses that bank cannot cover with the help of their current earning (Olalekan and Adeyinka, 2013).

2.4. Banking Sector and Liquidity

The existing literature regarding the liquidity management of banking sector is relatively scarce. A study conducted in CEE countries concluded that there are some important factors that affect the liquidity of banks. These factors include the total capital ratio, flawed loans to total loan ratio and the ratio of return on average equity. The study found positive impact of total capital ratio on bank's liquidity. On the other flawed loans are found to be negatively related with the liquidity of the banks of Central and East European countries (Roman and Sargu, 2015). Higher regulatory capital of the banks leads to the creation of lower liquidity in the BRIC's banks. There is a trade-off between creation of liquidity and higher capital and the bank's management and other regulators must keep in mind this (Umar *et al.*, 2018). On the other hand, comparative analysis of risk management practices of Islamic and conventional banking sector of Bangladesh by taking liquidity risk as a dependent variable found that positive relationship exist between ROA and liquidity risk of conventional banks. In case of Islamic banks, liquidity risk is insignificantly related with ROA. ROE and capital adequacy both have insignificant relationship with both kind of banking sector of Bangladesh (Rahman and Banna, 2015).

Cucinelli (2013) in a study on the liquidity risk's determinants showed that liquidity risk management of banks is effected by asset quality, size and capitalization of the bank. Large banks with more lending activites usually have low level of liquidity. Highly capitalized banks are more efficient in long term liquidity management while, good asset quality helps the banks to control short term liquidity risk. Another study conducted in India found that bank's size and liquidiy are negatively related with each other while, capital adequacy ratio is positively related with bank's liquidity that higher the bank's CAR , higher will be bank's liquidity. Inflation and bank's profitability have positive relationship with liquidity while, GDP of India found to be negatively related with Indian banks liquidity (Singh and Sharma, 2016). The liquidity management of the banks of Romania & Bulgaria countries has influenced by the joining of European Union by Romania & Bulgaria and the liquidity of the banks of these two countries is directly influenced by additional requirements of capital and foreign ownership structure. It is necessary for the banks of Romania and Bulgaria countries to avoid an increase in the impaired loans with the help of integrated lending policy. It will be helpful in screening the possible customers as well as better evaluation of macroeconomics and credit risk. The ability of keeping the shareholder's expectations reasonable must be the in the top management of these banks. These two things are necessary to diminish liquidity risk of the banks of these two

countries (Roman and Şargu, 2014). A study conducted on Pakistan regarding the liquidity risk of banks of Pakistan found loan to deposit ratio (LTD), return on assets (ROA) and return on equity (ROE) to be directly related with each other and statistically important impact of LTD on the ROA's speed. According to the findings of the study, Pakistani bank's ROA and ROE are also influenced by current ratio (CR). Overall, the study found the performance of the banks to be statistically influenced by the liquidity of the banking sector of Pakistan (Farooq *et al.*, 2015). Iqbal (2012) worked on the comparison of liquidity risk management between Islamic and conventional banking sector of Pakistan and result of the study showed that return on assets (ROA) and the capital adequacy ratio (CAR) have positive with relationship with liquidity risk. The size of the banks is also found in a positive significant relationship with the liquidity risk of banking sector of Pakistan.

In the light of these arguments, this study tested the following six hypotheses:

H₁ BASEL III has positive impact on the profitability of Islamic area of NBP.

H₂ BASEL III has positive impact on the profitability of conventional area of NBP.

H₃ BASEL III has positive impact on the liquidity of Islamic area of NBP.

H₄ BASEL III has positive impact on the liquidity of conventional area of NBP.

H₅ Islamic area of NBP is more affected by BASEL III norms.

H₆ Conventional area of NBP is more affected by BASEL III norms.

3. METHODOLOGY

This study is descriptive in nature in which the role of BASEL III, in terms of its impact on the profitability and liquidity of banks, has been examined by using quantitative descriptive research design. For the purpose of examining the role of BASEL III in Islamic and conventional banks, both Islamic and conventional areas of NBP have been studied. 8 years financial data of NBP has been taken as a unit of analysis. Both Islamic and conventional branches of NBP came under the definition of unit of analysis. The variables selected for the study are given below in Figure 2 in which BASEL III has been taken as IV while, profitability and liquidity have been taken as a DV's for the study.
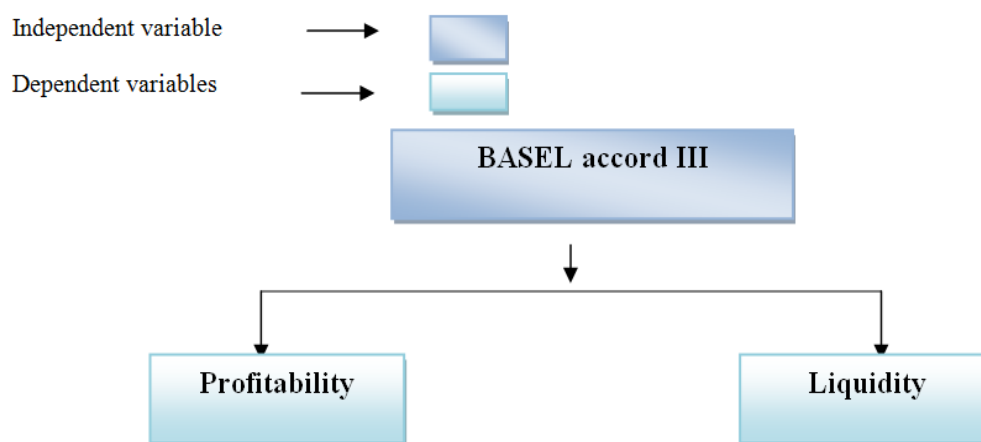

Figure-2. Theoretical framework.

All the data has been collected from secondary sources. Annual reports of the bank under discussion have been taken from bank's official website. The state bank's official website has also been used to collect research papers, working papers and journals. The study uses bank level data of National bank Pakistan and financial data related to financial ratios has been taken from the annual reports available on official website of NBP. Financial data of the annual reports used for the purpose of ratio analysis to measure the performance of Islamic and conventional banking system and compare their performance in terms of profitability and liquidity.

Table-2. Calculation f Ratios Used in the Study.

Ratios	Abbreviations	Formula	Remarks	Source
Profitability Ratios:				
Gross profit margin	GPM	GP = Gross profit / sales * 100	Higher the gross profit margin, lower will be the cost of merchandise sold.	Gitman and Zutter (2012)
Net profit margin	NPM	NP = Net profit after taxes / sales * 100	Higher the NP margin, higher is the net income of a firm.	Gitman and Zutter (2012)
Return on assets	ROA	ROA = net profit after taxes / total assets	Higher the ROA, higher will be the firm's financial performance and better asset's utilization.	Al-Hares *et al.* (2013), Gitman and Zutter (2012)
Return on equity	ROE	ROE = Net profit after taxes / Owner's equity	Higher the ROE, greater will be the performance of a firm.	Al-Hares *et al.* (2013), Gitman and Zutter (2012)
Liquidity ratios:				
Current ratio	CR	CR= Current assets / Current liabilities	Higher the current ratio, the firm is more able to pay its bills.	Gitman and Zutter (2012)
Total debt to total asset ratio	TDTAR	TDTAR = Total liabilities / Total assets	Higher the TDTAR, greater is the money of other people, that is used to earn profits.	Gitman and Zutter (2012)
Net loan to deposit ratio	NLTDR	NLTDR = Net loans / deposits	Higher the ratio, the firm is unable to deal with any unforeseen requirements of funds as the firm has not enough liquidity.	Loan-To-Deposit Ratio - LDR (2018)
BASEL III Norms:				
Capital adequacy ratio (CAR)	CAR	CAR = Tire 1 capital + Tire 2 capital / RWA's	The higher the ratio, the safer the bank	Al-Hares *et al.* (2013)
Common equity/ RWA's (tangible common equity ratio)	CER	Common equity ratio = (Common shares + Retained earnings – intangible assets – goodwill – preferred stock equity) / RWA's	The higher the ratio, tahe safer the bank from loss. This ratio tells about the extent of loss a bank can take before dividend's distribution to shareholders	Al-Hares *et al.* (2013)
Liquidity coverage ratio (LCR)	LCR	High quality liquid assets (HQLA) / Net cash flow over 30 calendar days	Higher the LCR, higher is the liquidity of the bank.	Basel III (2013), Cucinelli (2013)

Above given Table 2 shows all the calculations of ratios used in this study. In this study, financial ratios (profitability and liquidity) of HBL Pakistan's Islamic and conventional areas have been compared, in terms of impact of BASEL III norms. That's why, calculations of BASEL III standards are used along with profitability and liquidity calculations.

4. RESULTS AND INTERPRETATION

Descriptive analysis:

Descriptive analysis of Islamic banking sector: Financial ratios for the year 2010-2017:

Table-3(A). Results of descriptive statistics.

Descriptive analysis of Islamic banks with BASEL II standards for the year 2010-2013							Descriptive analysis of Islamic banks with BASEL III standards for the 2014-2017.				
	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Minimum	Maximum	Mean	Std. Deviation	Variance
Net profit margin%	4	19.91	20.29	20.0575	.16317	.027	17.68	20.67	21.3050	1.28474	1.651
Return on assets%	4	2.69	2.89	2.7800	.09592	.009	2.66	2.83	2.7475	.07676	.006
Return on equity%	4	13.79	14.74	14.1525	.41105	.169	23.78	25.06	24.6225	.58631	.344
Current ratio%	4	1.09	2.72	1.9175	.71505	.511	1.00	1.43	1.2375	.17914	.032
Total debt to total asset ratio%	4	.86	1.00	.9200	.06055	.004	.78	.96	.9075	.08539	.007
Net loan total deposit%	4	.00	2.21	.7200	1.04234	1.086	.00	.02	.0075	.00957	.000

Descriptive analysis of Islamic banking sector: BASEL standards for the year 2010-2017.

Table-3(B). Results of descriptive statistics.

Descriptive analysis of Islamic banks with BASEL II standards for the year 2010-2013							Descriptive analysis of Islamic banks with BASEL III standards for the 2014-2017.				
	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Minimum	Maximum	Mean	Std. Deviation	Variance
Capital adequacy ratio%	4	15.76	17.58	16.8400	.89009	.792	15.59	19.22	17.9500	1.65801	2.749
Common equity ratio%	4	10.77	13.33	11.8400	1.09368	1.196	12.56	13.34	13.0025	.32541	.106
Liquidity coverage ratio%	4	1.56	1.69	1.6250	.06952	.005	1.54	1.68	1.6225	.06238	.004

Descriptive analysis of Conventional banking sector: Financial ratios for the year 2010-2017.

Table-4(A). Results of descriptive statistics.

Descriptive analysis of Conventional banking sector With BASEL II standards for the year 2010-2013.							Descriptive analysis of Conventional banking sector with BASEL III standards for the year 2014-2017.				
	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Minimum	Maximum	Mean	Std. Deviation	Variance
Net profit margin%	4	14.16	20.00	16.8950	2.80463	7.866	13.94	19.88	17.5200	2.56924	6.601
Return on assets%	4	1.14	1.70	1.4275	.24157	.058	.97	1.17	1.0800	.09592	.009
Return on equity%	4	10.20	13.50	11.8525	1.65866	2.751	9.80	13.13	11.825	1.51711	2.302
Current ratio%	4	1.08	1.10	1.0900	.00816	.000	1.07	1.10	1.0825	.01258	.000
Total debt to total asset ratio%	4	0.87	.89	.8800	.00816	.000	.88	.92	.9000	.01826	.000
Net loan total deposit%	4	0.02	.32	.1050	.14457	.021	.01	.21	.0700	.09381	.009

Descriptive analysis of conventional banking sector: BASEL standards for the year 2010-2017.

Table-4(B). Results of descriptive statistics.

		Descriptive analysis of Conventional banking sector With BASEL II standards for the year 2010-2013.					Descriptive analysis of Conventional banking sector with BASEL III standards for the year 2014-2017.				
	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Minimum	Maximum	Mean	Std. Deviation	Variance
Capital adequacy ratio%	4	15.24	17.23	16.1925	.97164	.944	16.48	18.38	15.5450	.89034	.793
Common equity ratio%	4	10.58	12.08	11.1350	.66385	.441	12.01	13.05	12.4000	.45063	.203
Liquidity coverage ratio%	4	1.44	1.67	1.5650	.11733	.014	1.59	1.70	1.6575	.04787	.002

Descriptive analysis of conventional banking sector: BASEL standards for the year 2010-2017.

The Table 3(A) shows descriptive statistics of the comparative performance of Islamic banking sector of NBP for the year of 2010-2017. The value of each ratio represents the average of 4 years. Descriptive analysis of Islamic banking of time periods, before BASEL III regulations (2010-2013) and after BASEL III regulations (2014-2017) shows major differences among the mean values of variables such as NPM, ROE, CR and NLTDR. Results show a drastic change in Return on equity of Islamic banks with the introduction of BASEL III regulations with mean (24.6225) in the time period of 2014-2017, which was lower with mean value of (14.1525) in the time period of 2010-2013. The results show an increase in the mean of NPM with the value of (21.3050) which was (20.0575) before the introduction of BASEL III also shows a positive impact of BASEL III regulations. Similarly, it has positive impact on the liquidity of the Islamic banking sector. This shows that BASEL III standards have positive impact on the profitability as well as liquidity of Islamic banks. Table 3(B) shows a descriptive statistics of comparative performance of BASEL II and BASEL III regulations for Islamic banking sector. Analysis shows that the introduction of new standards named BASEL III brought a positive change in regulatory ratios of Islamic banks which show the compliance of Islamic banks with BASEL III standards.

The Table 4(A) shows descriptive statistics of the comparative performance of Conventional banking sector of NBP for the year of 2010-2017. The results in Table 4(A) showed that BASEL III standards have not a great positive impact on the conventional banks. Analysis shows that with the induction of BASEL III, the Net profit margin increase with mean (17.520) while it was (16.895) before BASEL III standards. At time same time, other profitability ratios including ROE and ROA decreases which shows that BASEL III regulations not helped the conventional banks to increase their profitability and liquidity as the liquidity of conventional banks has also not been positively affected by BASEL accord III except Net loan to total deposit ratio which has positively compliant with BASEL III and has a positive impact on the liquidity of conventional banks. Table 4(B) showed a descriptive statistics of comparative performance of BASEL II and BASEL III regulations for conventional banking sector. Analysis showed that the introduction of new standards named BASEL III has no positive change in regulatory ratios of conventional banks.

Regression Analysis

In order to examine the relationship between the two areas of banking sector regression tool has been used. The description of each element used in the analysis is as under;

R-Square: This value shows the impact of independent variables on the dependent variable.

β: The value of β tells about the impact of each independent variable on the dependent variable. This is how much each independent variable affects the dependent variable.

Significant value (P-value): The desirable P-value is ≤ 0.05. This shows a significant impact of independent variable on the dependent variable.

Conventional Banking Sector: Profitability

Table-5. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.120	0.173	0.000		
liquidity coverage ratio	0.044	1.061	0.000		
common equity ratio	0.030	-0.182	0.004	0.139	0.081

Dependent variable: Net profit margin.

Table-6. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.107	1.288	0.267	0.295	0.217
liquidity coverage ratio	0.043	0.043	0.028		
common equity ratio	0.284	2.158	0.097		

Dependent variable: Return on assets.

Table-7. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.446	0.615	0.572	0.192	0.814
liquidity coverage ratio	0.382	0.729	0.506		
common equity ratio	0.994	-0.869	0.434		

Dependent variable: Return on equity.

Conventional Banking Sector: Liquidity

Table-8. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.071	1.917	0.128	0.584	0.027
liquidity coverage ratio	0.152	0.340	0.751		
common equity ratio	0.120	2.039	0.111		

Dependent variable: Current ratio.

Table-9. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.008	1.125	.324	0.139	0.472
liquidity coverage ratio	0.035	0.415	.699		
common equity ratio	0.013	1.178	.304		

Dependent variable: Total debt to total asset.

Table-10. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.067	1.511	.205	0.492	0.412
liquidity coverage ratio	0.269	0.504	.641		
common equity ratio	0.012	0.168	.875		

Dependent variable: Net loan to total deposit ratio.

Relationship Between BASEL III And Conventional Bank's Profitability & Liquidity

Table 5 with the value of P= 0.081 and R-Square which is R=0.139 shows that there is no significant impact of independent variable BASEL III standards on the dependent variable. The value of R-Square which is 0.139 shows that independent variable has 13.9% impact on the dependent variable. Capital adequacy ratio has higher influence on the Net profit margin as its β is 0.12 which is greater than the values of β of other two factors. The results of regression show that Capital Adequacy ratio has more impact on NPM as compare to other two factors. This can be described with the help of value of the β. The value of R-Square in Table 6 shows that independent variable with significant value 0.217 and R-Square 29.5% has no significant impact on the dependent variable. The value of R-Square in the Table 7 which is R=0.192 with P=0.814 shows that independent variable has insignificant impact on the dependent variable. The value of R-Square which is 0.192 tells that independent variable has 19.2% impact on the dependent variable. Table 8 with the value of P=0.027 and the value of R-Square 0.584 tells that independent variable has 58.4% impact on the dependent variable current ratio. According to the results, liquidity coverage has higher impact on the current ratio as its value of β is higher than the beta's of other two factors. While Capital adequacy ratio has lower impact on the dependent variable with the value of β=0.071 which is lower as compare to two other factors of independent variable. Regression results in Table 9 shows that independent variable with the value of P=0.472 and the value of R-Square with R=0.139 has not a significant impact on the dependent variable.

While in Table 10 the results show that the independent variable with P=0.412 and R= 0.492 has not a significant impact on the dependent variable.

Islamic Banking Sector: Profitability:

Table-11. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.296	1.571	0.001		
liquidity coverage ratio	0.240	.011	0.009	0.790	0.003
common equity ratio	0.126	1.010	0.000		

Dependent variable: Net profit margin.

Table-12. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.014	.182	0.004		
liquidity coverage ratio	0.870	1.336	0.002	0.570	0.000
common equity ratio	0.571	.145	0.000		

Dependent variable: Return on asset.

Table-13. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.854	1.722	0.001		
liquidity coverage ratio	0.535	2.643	0.000	0.726	0.000
common equity ratio	0.863	1.465	0.002		

Dependent variable: Return on equity.

Islamic Banking Sector: Liquidity

Table-14. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.128	1.933	0.000		
liquidity coverage ratio	0.031	0.844	0.001	0.716	0.000
common equity ratio	0.607	1.349	0.005		

Dependent variable: Current ratio.

Table-15. Results of regression.

Model	Standardized beta	T	Sig	R-square	Sig
capital adequacy ratio	0.180	0.794	0.007		
liquidity coverage ratio	0.400	0.390	0.000	0.692	0.005
common equity ratio	0.141	1.103	0.000		

Dependent variable: Total debt to total asset ratio.

Table-16. Results of regression.

Model	B	T	Sig	R-square	Sig
capital adequacy ratio	0.014	0.575	0.000		
common equity ratio	0.310	1.076	0.000	0.680	0.000
liquidity coverage ratio	0.471	1.615	0.001		

Dependent variable: Net loan to total deposit ratio.

Relationship between BASEL III and Islamic Bank's Profitability & Liquidity:

Table 11 with P value 0.003 and R-Square 0.790 shows that Independent variable has a significant impact on the dependent variable. The value of R-Square which is 0.790 shows that independent variable BASEL III regulation has 79% affect on the net profit margin of the Islamic banking sector. Results of analysis show that

Capital adequacy ratio has more influence on NPM with β=0.296 as compare to Common equity ratio with β=0.240 and Liquidity coverage ratio with β= 0.126. In this case Liquidity coverage ratio has lower impact on NPM as compare to other factors. Table 12 the P- value which is P=0.000 and the value of R-square which is R-0.570 shows that independent variable has 57% impact on the dependent variable which is Return on assets. According to the values of β, Liquidity coverage ratio has most influence on the Return on assets with the value of β=0.87 which is greater than the values of Capital adequacy ratio and Common equity ratio with the value of β=0.014 and β=0.57 respectively. The result of regression analysis in Table 13 has the value of R-Square 0.726 meaning, that the independent variable BASEL III has 72.6% impact on the dependent variable to increase the return on equity ratio of Islamic banking sector of NBP. Common equity ratio has higher impact on the ROE with the value of P=0.000 and β=0.863 While the liquidity coverage ratio has lower affect on dependent variable with the value of β=0.535 which is lower than the values of β of other two factors. Table 14 with the value of P=0.000 and R-Square 0.716 shows a significant impact of BASEL III on the Current ratio. The value of R-square which is R=0.716 shows that the independent variable has 71.6% impact on the dependent variable which is Current ratio. The results of regression for the current ratio show the most influence of common equity ratio on the dependent variable with the value of β=0.607 which is higher than beta's of other two factors.

Table 15 with P=0.005 and R-Square 0.692 shows that Independent variable BASEL III has 69.2% impact on the dependent variable which is Total debt to total asset ratio. The value of R-Square which is R=69.2% shows that independent variable has significant impact on the dependent variable. The results of regression show that Liquidity coverage ratio has most influence on the dependent variable with β=0.40 which is higher as compare to the values of β of two other factors. Table 16 with P=0.000 and R-Square with R=0.68 shows that independent variable has significant impact on the dependent variable. The value of R-Square which is R=0.68 tells that independent variable has 68% effect on the dependent variable. Liquidity coverage ratio has β=0.471 which shows that liquidity coverage ratio has more impact on the dependent variable than other two factors.

One Sample T-Test:

Table-17. T-test of Islamic banking sector for the year 2010-2017.

Variables	Before BASEL III (2010-2013)	After BASEL III (2014-2017)	T-test	P-value
net profit margin%	14.0234	21.3050	0.010	0.003
return on assets%	1.3839	2.9538	0.045	0.015
return on equity%	14.1525	23.6225	0.011	0.000
current ratio%	1.5775	1.0862	0.034	0.002
Total debt to total asset ratio%	0.9380	0.8100	0.327	0.014
net loan total deposit ratio%	0.3638	0.0875	0.434	0.032
capital adequacy ratio%	17.5890	19.6122	0.675a	0.050
common equity ratio%	11.8400	13.0025	0.547	0.006
liquidity coverage ratio%	1.6250	1.6579	0.423	0.020

Table-18. T-test of conventional banking sector for the year 2010-2017.

Variables	Before BASEL III (2010-2013)	After BASEL III (2014-2017)	T-test	P-value
net profit margin%	13.0991	11.3412	0.192	0.000
return on assets%	2.5642	1.3401	0.592	0.001
return on equity%	16.6780	13.2495	0.060	0.000
current ratio%	1.5775	0.8994	0.401	0.001
Total debt to total asset ratio%	1.0600	1.0825	0.270	0.020
net loan total deposit ratio%	0.8800	0.9000	0.457	0.000
capital adequacy ratio%	11.5640	12.2021	0.085	0.050
common equity ratio%	9.9870	11.4608	0.189	0.001
liquidity coverage ratio%	1.1435	1.1907	0.034	0.000

Table-19. Mean differences of Isamic & conventional banks with BASEL III: T Test for the year 2014 – 2017.

Variables	Islamic banks Mean	Conventional banks Mean	T-test	P-value
net profit margin%	21.3050	11.3412	0.029	0.000
return on assets%	2.9538	1.3401	0.000	0.001
return on equity%	23.6225	13.2495	0.006	0.000
current ratio%	1.0862	0.8994	0.055	0.000
Total debt to total asset ratio%	0.8100	1.0825	0.372	0.002
net loan total deposit ratio%	0.0875	0.9000	0.354	0.001
capital adequacy ratio%	19.6122	12.2021	0.415	0.000
common equity ratio%	13.0025	11.4608	0.175	0.002
liquidity coverage ratio%	1.6575	1.1907	0.762	0.000

The results of T-test in Table 17 show that with the induction of BASEL III, there is an average increase in profitability and liquidity of Islamic banks. While, Table 18 explain that on average the profitability and liquidity of conventional banking sector has decreased with the induction of BASEL III standards. The results of T-test in Table 19 show the mean differences in the profitability and liquidity of Islamic and conventional banks after the introduction of BASEL III. The results show that on average Islamic banks are more profitable, more liquid and more compliant with BASEL III standards. The significant 2-tailed values is less than 0.05 which shows that statistically, there exist a significant difference between the Islamic and conventional banking sector in terms of profitability and liquidity. Islamic banks have higher profitability, liquidity as well as highly capitalized with BASEL III standards.

5. CONCLUSION AND IMPLICATIONS

The main objective of this study was to examine the impact of BASEL III standards on performance of the banking sector of Pakistan. For this purpose, BASEL III ratios including CAR, CER and LCR has been used as independent variable and NPM, ROA and ROE have been used to measure the profitability and CR, NLTDR and TDTAR have been used to measure the liquidity of both Islamic and conventional banking sector. The results found that BASEL III has a significant positive relationship with the profitability and liquidity of Islamic sector. Islamic banks are higher in terms of impact of BASEL III on the profitability and liquidity. They are more profitable, more liquid and highly capitalized with BASEL III standards. While Conventional banking sector needs to redesign their policies and make them more compliant with BASEL III to generate more profit and be more liquid as Islamic banks are. The bank under discussion has needed to improve the performance of its conventional area either by increasing sales or by lowering markup / interest rates on their services. It is also needed to renew their policies and set them according the standards of BCBS. The compliance with BASEL III will help them to improve their performance. This study will contribute to the literature as no study with regard to the comparison between Islamic and conventional banking sector's performance in terms of the impact of BASEL III on the profitability and liquidity, has been conducted previously. This study will be helpful for national bank's financial planning as the bank has need to improve the compliance of their conventional sector with BASEL III reforms so they become more profitable and more liquid as Islamic banks are.

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