

Banking sector is one of the vital parts of the financial system and it accumulates the idle savings of the people and makes them available for investments. If the banking sector is effective, efficient and well disciplined, it brings rapid growth in various sectors. However, there are many factors that cause the volatility of returns that could lead to unexpected losses. Business universe has not been free of risk; it has been affected by different factors in various ways. After the fall of Taliban's regime, liberalization of the banking sector in 2002 encouraged and promoted the banking sector in the country. The Introduction of the new banking legislation in 2004 aiming to establish appropriate and effective accounting and administrative procedures, and risk management controls for the banks. Despite the new banking legislation, Kabul Bank, the private largest commercial bank, collapsed in 2010 which imposed significant fiscal costs on the country. The objective of this research is to identify the main risk drivers that increase risk in financial institutions, especially banks in Afghanistan and to find the possible ways of managing and mitigating risks in the institutions.



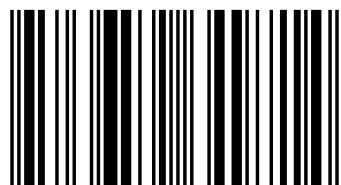
Rahmanullah Rasa

# Measuring and Managing Risk in Financial Institutions

The Case of Afghanistan



Rahmanullah Rasa has been teaching since 2008 and serves as a head of Banking & Finance department, faculty of Economics at Shiakh Zayed University, Khost. He obtained MSc from Ruhr University Bochum in 2013. Mr. Rasa received BBA from Shaikh Zayed University in 2007.



978-3-659-64971-4



**Rahmanullah Rasa**

**Measuring and Managing Risk in Financial Institutions**



**Rahmanullah Rasa**

**Measuring and Managing Risk in  
Financial Institutions**

**The Case of Afghanistan**

**LAP LAMBERT Academic Publishing**

## **Impressum / Imprint**

Bibliografische Information der Deutschen Nationalbibliothek: Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über <http://dnb.d-nb.de> abrufbar.

Alle in diesem Buch genannten Marken und Produktnamen unterliegen warenzeichen-, marken- oder patentrechtlichem Schutz bzw. sind Warenzeichen oder eingetragene Warenzeichen der jeweiligen Inhaber. Die Wiedergabe von Marken, Produktnamen, Gebrauchsnamen, Handelsnamen, Warenbezeichnungen u.s.w. in diesem Werk berechtigt auch ohne besondere Kennzeichnung nicht zu der Annahme, dass solche Namen im Sinne der Warenzeichen- und Markenschutzgesetzgebung als frei zu betrachten wären und daher von jedermann benutzt werden dürften.

Bibliographic information published by the Deutsche Nationalbibliothek: The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.d-nb.de>.

Any brand names and product names mentioned in this book are subject to trademark, brand or patent protection and are trademarks or registered trademarks of their respective holders. The use of brand names, product names, common names, trade names, product descriptions etc. even without a particular marking in this work is in no way to be construed to mean that such names may be regarded as unrestricted in respect of trademark and brand protection legislation and could thus be used by anyone.

Coverbild / Cover image: [www.ingimage.com](http://www.ingimage.com)

Verlag / Publisher:

LAP LAMBERT Academic Publishing

ist ein Imprint der / is a trademark of

OmniScriptum GmbH & Co. KG

Heinrich-Böcking-Str. 6-8, 66121 Saarbrücken, Deutschland / Germany

Email: [info@lap-publishing.com](mailto:info@lap-publishing.com)

Herstellung: siehe letzte Seite /

Printed at: see last page

**ISBN: 978-3-659-64971-4**

Copyright © 2014 OmniScriptum GmbH & Co. KG

Alle Rechte vorbehalten. / All rights reserved. Saarbrücken 2014

## Table of Contents

Acknowledgement .....	ii
List of Tables .....	iii
List of Figures .....	iv
List of Abbreviations .....	v
1. Introduction .....	1
2. Risk management and financial regulation in the Afghan banking sector .....	4
2.1. The Afghan banking sector: Economic and financial overview .....	4
2.2. Fundamentals of risk management .....	5
2.2.1. The risk management process .....	7
2.2.2. The different types of risk .....	8
2.2.2.1. Market risk .....	8
2.2.2.2. Credit risk .....	9
2.2.2.3. Liquidity risk .....	10
2.2.2.4. Operational risk .....	12
2.2.3. Risk measurement in the Afghan banking industry .....	12
2.3. Financial regulation in the Afghan banking sector .....	21
3. Hypotheses and methodological issues of the case study .....	26
3.1. Hypotheses .....	26
3.2. Methodological issues .....	26
3.2.1. Data and sources .....	27
3.2.1.1. Primary data .....	28
3.2.1.2. Secondary data .....	28
3.2.3. Descriptive statistics .....	29
4. Empirical findings .....	30
4.1. Risk management and risk tolerance in the Afghan banking sector .....	30
4.2. Benefits and challenges of credit risk management .....	32
4.3. Risk reporting and risk management culture .....	36
4.4. Risk measuring approaches in Afghan banking sector .....	39
4.5. Implementation of Basel II in Afghanistan .....	42
4.6. Subsample analysis .....	45
4.6.1. Banks' size .....	45

4.6.2.	Central risk management approaches and bank's size .....	46
4.6.3.	Risk tolerance in Afghan banking sector based on size .....	50
4.6.4.	Banks' size and implementation of Basel II .....	52
5.	Conclusion .....	57
	Bibliography .....	60
	Annexes .....	64

## **Acknowledgement**

I would like to express my first and foremost gratitude to Almighty Allah (SWT) who gave me the ability to complete my master. I extend my sincere thanks to my supervisor Prof. Dr. Stephan Paul and co-supervisor Dipl.-Ök. Christian Farruggio for valuable comments, advice, suggestion and engagement throughout the master thesis. Furthermore, I would like to thank Ministry of Higher Education of Afghanistan, Faculty of Management and Economics and the Institute of Development Research and Development Policy at Ruhr University Bochum, for providing me a scholarship and an opportunity to pursue my study.

I sincerely thank the whole IEE staffs, especially Prof. Dr. Wilhelm Löwenstein, Vice Rector of Ruhr University and Managing director of IEE, Dr. Martina Shakya Coordinator in Management & Economics for Afghan Universities and Dr. A.Sami Noor, Coordinator Cooperation with Afghan Universities, who have given me an opportunity to study at the university.

Moreover, I would also like to thank Mr. Shahzar Khan Adil, Application & Software Engineer at Huawei Technologies Co.,Ltd, Mr. Hadi ur Rahman Hadi, Associate Professor at Shaikh Zayed University and Mr. Hayat Gul Rahmanzai, Admin & Finance Officer at Alokozay Tea international Ltd, for his consistent support and encouragement throughout my entire study phase in life, especially during master completion in Germany.

Finally, my deepest gratitude and thanks to my family, parents, wife and especially my mother, for her constant encouragement and faith in my progress.

Rahmanullah Rasa

Bochum, Germany

August 2013

## List of Tables

Table 1: Claims on sovereigns.....	14
Table 2: ECA risk scores.....	14
Table 3: Claims on banks option 1 .....	14
Table 4: Claims on banks option 2 .....	15
Table 5: Claims on corporate .....	15
Table 6: Banks' size.....	46
Table 7: Credit risk approaches and banks' size .....	47
Table 8: Market risk approaches and banks' size .....	48
Table 9: Operational risk approaches and banks' size.....	49
Table 10: Credit risk in domestic and foreign banks .....	49
Table 11: People in risk management .....	50
Table 12: Risk tolerance.....	51
Table 13: Impact of implementing Basel II in Afghanistan .....	53
Table 14: Risk management processes .....	54
Table 15: Adequate knowledge of Basel II .....	54
Table 16: Credit risk approaches and Basel II.....	55
Table 17: Market risk approaches and Basel II .....	55

## List of Figures

Figure 1: Risk topology.....	6
Figure 2: Risk management process.....	7
Figure 3: Risk tolerance.....	30
Figure 4: Importance of risk management and risk awareness.....	32
Figure 5: Difficulties in risk quantification.....	34
Figure 6: Quality of information.....	34
Figure 7: Credit portfolio view.....	35
Figure 8: Ratings based approach.....	36
Figure 9: Risk reporting on regular basis.....	37
Figure 10: Risk management culture.....	38
Figure 11: Using VaR for risk exposure measures.....	39
Figure 12: Credit risk approaches.....	40
Figure 13: Market risk approaches.....	41
Figure 14: Operational risk approaches.....	41
Figure 15: Difficulties in credit risk.....	42
Figure 16: Difficulties in operational risk.....	43
Figure 17: Important impact of Basel II in Afghanistan.....	43
Figure 18: Improvement of risk management processes.....	44
Figure 19: Adequate knowledge of the Standards of the Basel II Accord.....	44
Figure 20: Trade-off between risk and return.....	51

## **List of Abbreviations**

ACAs	Export Credit Agencies
AMA	Advanced Measurement Approach
BC	Basel Committee
BCBS	Basel Committee on Banking Supervision
BIA	Basic Indicator Approach
CAMEL	Capital adequacy, Asset quality, Management quality, Earnings and Liquidity sensitivity to market risk
CNs	Capital Notes
DAB	Da Afghanistan Bank (The Central Bank of Afghanistan)
EAD	Exposure at Default
ECA	External Credit Agency
ECAIs	External Credit Assessment Institutions
FIs	Financial Institutions
GDP	Gross Domestic Product
HSE	Health and Safety Executive
IMF	International Monetary Fund
IRB	Internal Ratings-Based
LGD	Loss Given Default
LILAC	Leadership, Involvement, Learning, Accountability and Communication
M	Maturity
PD	Probability of Default
ROA	Return on Assets
ROE	Return on Equity
S&P	Standard & Poor's
UL	Unexpected Losses
USD	United States Dollar
VaR	Value at Risk

## 1. Introduction

Financial system is an important part of the country's national economy. The banking sector is one of the vital parts of the financial system and it accumulates the idle savings of the people and makes them available for investments. If the banking sector is effective, efficient and well disciplined, it brings rapid growth in various sectors. However, there are many factors that cause the volatility of returns that could lead to unexpected losses. Business universe has not been free of risk; it has been affected by different factors in various ways.

A number of studies have been published in recent years on managing risks in banks to identify measure, monitor and control, and mitigate various risks occurring in business. The important task of risk management to accurately control risks is to take action where and when risk arises and prevent rather than treat it.<sup>1</sup>

The banking system in Afghanistan virtually stopped functioning during the Taliban years. As a result, the country operated on the cash basis and people's confidence in the national currency, the Afghani, was very low. After the fall of Taliban's regime, liberalization of the banking sector in 2002 encouraged and promoted the banking sector in the country. The Introduction of the new banking legislation in 2004 aiming to establish appropriate and effective accounting and administrative procedures, and risk management controls for the banks. Despite the new banking legislation, Kabul Bank, the private largest commercial bank, collapsed in 2010 which imposed significant fiscal costs on the country.

"Globally, more than 50% of total risk elements in banks and financial institutions (FIs) are Credit Risk alone".<sup>2</sup> Thus managing credit risk for efficient management of a FI has gradually become the most crucial task.<sup>3</sup> Measuring and managing risk in the Afghan banking sector is a key and interesting issue that could be investigated. The major risk factors and risk tolerance in the entire banking sector need to be identified respectively. Then, the central risk management approaches that are used for different types of risk measurement and the implication of risk management procedures deficits for the entire banking sector and economy could be analyzed.

There are measuring problems in some sectors in Afghanistan due to illiteracy, and weaknesses in documentation of identity. Protective measures are certainly difficult to implement, even in the medium term, in the vestigial financial sector. For instance,

---

<sup>1</sup> Carrel, Philippe, 2010, p. 14.

<sup>2</sup> Bangladesh Bank, 2005, p. 1.

<sup>3</sup> Ibid.

it might become visible that the lack of implementation and supervision of protective measures, such as identification of customers and proper testing did play a role in the creation of a major financial fraud in the most important commercial bank.<sup>4</sup>

Implementation of Basel II is one of the main objectives of Da Afghanistan bank (the central bank of Afghanistan, DAB). The greater integration of risk, across risk types, economy and regulatory capital calculation is necessary. Furthermore, traditional and isolated risk management disciplines will no longer be sufficient in the Afghan banking sector.<sup>5</sup> Doing so requires a risk management system in modern banking which has to be implemented. Moreover, Afghan banking sector has difficulties in quantifying risks and lack of necessary knowledge and skills within the organization. Lack of qualified people in risk management causes much damage to the organization, so elimination of the qualification imperfectness would lead to sound management in practice.

Theories and evidence from studies claim that large banks use more sophisticated and advanced risk management procedures in order to measure risk. They have a high loans portfolio quality and large risks exposures. Therefore, it is necessary to use more sophisticated and advanced risk management procedures to measure and control risk. Logically, it is true that more people work in the risk management departments in large banks. And risk tolerance is higher in large banks than in small banks. The comparison between large and small banks, domestic and foreign banks gives us an overview of the sector concerning different tasks of risk management.

The objective of this research is to identify the main risk drivers that increase risk in financial institutions, especially banks, in Afghanistan and to find the possible ways of managing and mitigating risks in these financial institutions. Conducting a survey for the whole target population was possible, which is sixteen commercial banks in Afghanistan. Therefore, this research intends to answer the following research questions in order to explore and discover the impacts and procedures of measuring and managing risk in financial institutions.

- 1. What are the main risk drivers (risk factors) in the Afghan banking sector?**
- 2. What are the central risk management approaches used?**
- 3. What kinds of deficits exist in the risk management procedures and what are their implications for the entire banking system and the Afghan economy?**

The first question attempts to find out the major risk drivers which increase the possibility of losses in the Afghan banking sector. The second question focuses only

---

<sup>4</sup> IMF, 2011, p. 7.

<sup>5</sup> DAB, 2009, p. 30.

on the appropriate approaches that are used in the Afghan banking sector to measure, manage and mitigate risks in this sector respectively. The third question identifies and illustrates the deficits that exist in the risk management procedures and their implications for the entire banking system and the Afghan economy.

For better understanding of the research, the scope and the structure of the research is organized as follows. Chapter two "Risk management and financial regulation in the Afghan banking sector" describes and defines different types of risks and indicates and explains different approaches used for the calculation of various types of risk for better management and assessment of risk. Notwithstanding views and general findings of the researches that have already been done on the related topics to find solutions to the unsolved problems. Chapter three "Hypotheses development and methodological issues" expresses the way of data collection and operationalization of the data that how data was collected and operationalized. Chapter four "Empirical findings" describes and analyzes the results of the empirical field research. Chapter five "Conclusion" summarizes the main findings of the empirical research and gives suggestions for the future researches.

## **2. Risk management and financial regulation in the Afghan banking sector**

### **2.1. The Afghan banking sector: Economic and financial overview**

The three decades of war in Afghanistan destroyed almost the whole of the financial sector, and financial services were counted as nonexistent. The banking system nearly stopped functioning during the Taliban years. As a result, the country operated on a cash basis. Confidence in the national currency, the Afghani, was very low as it had lost much of its value following the years of hyperinflation.<sup>6</sup>

At the end of 2001 the financial system in Afghanistan had largely come to an end to exist. Banks play an important and vital role in the economic and financial development of a country. Banks accumulate the idle savings of the people and make them available for investment. If the banking system is effective, efficient and well disciplined, it brings rapid growth in various sectors. The capital market in Afghanistan is developing rapidly despite inadequacies in the legal framework, especially weak formal mechanisms for contract enforcement. As of April 2013 there were 16 licensed commercial banks that were supervised by the central bank. These banks operate in the same environment, they have broadly different approaches to lending, and some banks have insignificant lending activity, while others have a large loans portfolio for domestic businesses.<sup>7</sup>

Considerable progress in the banking sector has been made in recent years. The improvements in size, structure and expanded outreach in the financial system have improved the financial health of the economy. The Kabul Bank run which happened in mid 2010 impacted the overall banking sector performance, as well as people's confidence in the banking sector. As a result, the overall banking sector exhibited weak performance until the second quarter of 1390(September 2011). Since then, DAB has taken the necessary initiatives and managed to rescue the overall banking sector from further deterioration.<sup>8</sup> Demand and short term saving deposits in the banking sector are kept in both, Afghani and US dollars. Therefore, any drastic appreciation and depreciation of the domestic currency against US dollars could have an adverse impact on the stability of the entire banking sector. A significant depreciation in the domestic currency could reduce the confidence of people and

---

<sup>6</sup> DAB, 2009, p. 4.

<sup>7</sup> Pavlocic, Jelena; Charap, Joshua, 2009, p. 3.

<sup>8</sup> SAARC, 2012, p. 1.

ultimately lead to a replacement of foreign currency as a store of value and result in financial dollarization that is already the case in Afghanistan.<sup>9</sup>

After the successful creation of the primary market for Capital Notes (CNs) in Sep 2004, DAB, with the assistance of IMF technical team, set the legal framework for developing the secondary markets for CNs, where more investment opportunities would be available for the commercial banks to invest their excess Afghani-denominated funds and the banks would have access to more liquid Afghani-denominated assets, which help them to manage their liquidity well. In order to further strengthen the financial sector, building a robust and stable financial system is one of the critical goals of DAB. Total assets of the banking system at the end of the third quarter of 1390(dec.20.2011) increased by 2.5 percent, standing at USD 4.01 billion compared to the same period of last year. The components of total assets depicted mixed performance; the most obvious increase was registered in the “investment” category, up to 184.5 percent. The second major increase was posted by cash in vault and claims on DAB, which increased by 44.3 percent followed by interbank claims and net due from, while the “other” category of the total assets and net loans posted decline of 58.50 percent and 1.1 percent, respectively. The banking sector accounts for 24.2 percent of the GDP.<sup>10</sup>

## **2.2. Fundamentals of risk management**

Individuals are faced with a huge number of risks on a daily basis, even if it is just crossing the road, driving cars, concerning about school or university grades or the job they want or the salary increase or promotion they expect in the future. Taking out insurance policies on lives, home or cars, indicates the awareness of risks. The existence of risks that are resulting from natural disasters which cannot be controlled such as earthquakes, fire and floods, affects individuals and society. These are all, natural and man-made risks, an affecting us all in various ways, some are large and some are small risks.<sup>11</sup> Business universe has not been free of risk; it has been affected by natural and man-made risks events in various ways. Since, it is difficult to forecast future and the estimation of future events is tentative, risk can be defined as “the volatility of returns leading to unexpected losses”: with higher volatility of returns, risk would be higher and with lower volatility it will be lower and there are several variables that affect the volatility of returns negatively, which is

---

<sup>9</sup> SAARC, 2012, pp. 3-5.

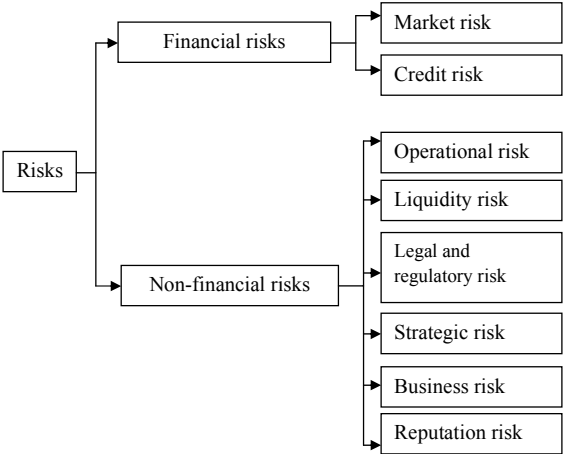
<sup>10</sup> Ibid, pp. 8-14.

<sup>11</sup> Collier, Paul M., 2009, pp. 3-4.

called risk factors.<sup>12</sup> Financial institutions face three types of risks: risks that can be eliminated, those that can be transferred to others, and the risks that can be managed by the institutions. Financial intermediaries can avoid certain risks by simple business practices and will not take up activities that impose risks upon them.<sup>13</sup> Taking up those activities in which risks can be efficiently managed and shift risks, that can be transferred.<sup>14</sup>

Risks faced by financial institutions, especially banks can be grouped into financial and non-financial categories. Financial risks are those risks which take place during performing financial services to different types of clients and also those that arouse from possible losses in financial markets due to movements in financial variables. Non-financial risks are those risks which take place in the organization and in the whole business cycle of either bank or a firm due to changes and possible losses resulting from inadequate and failed internal processes. For further understanding, financial risks are decomposed into market and credit risk. Non-financial risks are decomposed into operational risk, liquidity risk, legal and regulatory risk, strategic risk, reputation risk and business risk.<sup>15</sup> The following figure 1 simply identifies the different risk factors that financial intermediaries are faced with.

**Figure 1:** Risk topology



Source: based on, Crouhy (2006): The Essentials of Risk Management

<sup>12</sup> Crouhy, Michel; Galai, Dan; Mark, Robert, 2006, p. 25.

<sup>13</sup> Khan, Tariqullah; Ahmed, Habib, 2001, p. 27.

<sup>14</sup> Ibid.

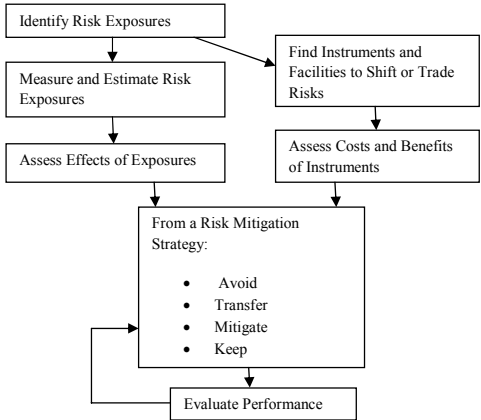
<sup>15</sup> Ibid, p. 28.

Financial risks and some types of non-financial risks e.g. operational and liquidity risk are very important to be considered in commercial banks accordingly. As financial risks are divided into two categories; market and credit risk in figure 1, besides of this division, every category has sub-division. According to (Crouhy, 2006) market risk is subdivided to equity price risk, interest-rate risk, foreign exchange risk and commodity price risk, and as well as credit risk is subdivided to transaction risk and portfolio concentration.

**2.2.1. The risk management process**

Before identifying and describing the whole risk management process, it is necessary to define risk management in order to define what risk management is and which tasks it performs. According to different types of risk management definitions, it is a procedure to identify, monitor and control various risks which occur while doing business and it can be defined as “the overall process that a financial institution follows to define a business strategy, to identify the risks to which it is exposed, to quantify those risks, and to understand and control the nature of risks it faces”<sup>16</sup>. Corresponding to this definition, first risks have to be identified and quantified, when it is quantified then different strategies should be applied to control and mitigate them. For the better understanding, risk management process is simply identified in the following figure:

**Figure 2:** Risk management process



Source: Crouhy, The Essentials of Risk Management,

<sup>16</sup> Khan, Tariquillah; Ahmed, Habib, 2001, p. 27.

Identification of risk exposures is the first step in the risk management process for measuring risk in the organization. All risks factors have to be identified at first, to know which factors cause the volatility of returns which may lead to unexpected losses. For instance, in the case of loans, the risk factor will be the volatility of interest rate.<sup>17</sup> When the risk factor is identified, it should be measured and estimated to quantify the exact risk exposures. Additionally, when risk exposure is identified and measured then, in the next step, it is recommended to evaluate and assess the effects of this exposure on the entire management performance. Nevertheless, parallel to risk exposures measurement, seeking instruments and facilities such as derivatives; swaps, options and futures<sup>18</sup> to transfer or trade risks is another step of risk management process which has to be considered. However, the costs and benefits of using such derivatives should be evaluated and assessed, namely what the costs of using derivatives will be and what the benefits of it will be for the organization. Moreover, different risk mitigation strategies such as avoiding, transferring, mitigating and keeping risk are applied to control risk in the organization. After choosing one of these strategies, performance has to be evaluated. If the performance is good enough, it can be recommended to keep on the same strategy, if not another strategy should be chosen.

## **2.2.2. The different types of risk**

### **2.2.2.1. Market risk**

In general, market risk is connected with instruments traded on well-defined markets. General or systematic market risk occurs due to a movement and change in prices of all market instruments and it arises in circumstances where the price of one instrument take out of line with other similar instruments, because of an event or events related to the issuer of the instrument.<sup>19</sup> For instance, a government's large fiscal deficit or a large change in banking or company law will reduce and drop financial instruments prices in the markets. Market risk can be defined as "the risk that changes in financial market prices and rates will reduce the dollar value of a security or a portfolio".<sup>20</sup> The adverse effects of changes in equity prices, interest rates, foreign exchange rate and commodity prices bring negative changes in the assets values consequently. Instability in equity prices, interest rates, foreign exchange rate and commodity prices affect financial markets regularly. If financial

---

<sup>17</sup> Crouhy, Michel; Galai, Dan; Mark, Robert, 2006, p. 6.

<sup>18</sup> Hull, John C., p. 508.

<sup>19</sup> Heffernan, Shelagh A., 2005, p. 108.

<sup>20</sup> Crouhy, Michel; Galai, Dan; Mark, Robert, 2006, p. 27.

market is affected unfavorably by instabilities of these factors one can claim that market risk occurred.<sup>21</sup>

Due to volatility of prices in different markets, different kinds of market risks take place. Market risk includes a large subset of risks and all types of it are very important to be considered. Recent studies have shown that interest rate risk is one of the key and most important risks that banks have to consider and worry about. Since the interest rate is the “price” of money or the opportunity cost of holding money in the narrow form, so it is another type of price risk. Interest rate risk arises due to interest rate mismatches.<sup>22</sup> Interest rates are unstable, so are earnings. Anyone who lends or borrows is subject to the interest rate risk. The lender earning a variable rate has the risk of seeing revenues reduced by a decline in interest rates and the borrower paying variable rate tolerates higher costs when interest rates increase. According to the theory, different approaches and methods are used to identify measure and manage market risk which will be discussed under the title of risk measurement in the Afghan banking industry.

#### **2.2.2.2. Credit risk**

According to financial risk classification, *credit risk* is one of the most important risk categories in the banking sector and it can be defined as follows “Credit risk is the risk that a change in the credit quality of counterparty will affect the value of a security or a portfolio”<sup>23</sup>. The inability of borrowers to pay back the loans and the interest rates have a negative impact on assets values and in the extreme case of default financial institutions, especially commercial banks that provide and issue loans, will be forced to close down. It is calculated based on the borrowers’ overall ability to repay the principal and its interest. Loans to corporate which turn out to be bad can be very serious for the bank because of the large sums involved.<sup>24</sup>

Credit risk is an important element of fixed-income investing, that is why ratings agencies such as S&P, Moody’s and Fitch assess the credit risks of corporates and banks on a continuing basis. A number of studies have been published in recent years which show that if a bank is looking to minimize an aggregate credit risks, a good credit risk management is needed to be applied in the bank practically. Implementing

---

<sup>21</sup> Jorion, Philippe, 2003, p. 243.

<sup>22</sup> Heffernan, Shelagh A., 2005, p. 109.

<sup>23</sup> Crouhy, Michel; Galai, Dan; Mark, Robert, 2006, p. 29.

<sup>24</sup> Heffernan, Shelagh A., 2005, p. 156.

a good credit risk management in banks helps to control and reduce credit risk appropriately.

Credit risk is classified into different categories. According to Crouhy (2006) credit risk is subcategorized into transaction risk and portfolio concentration. Transaction risk arises from a change in the price of one currency transferred to another currency and portfolio concentration is referred to diversified investments made by a bank or a firm. But, sometimes investors concentrate in a few stocks in the stocks portfolios, paying attention not to the whole portfolio risk which arises in the portfolio.<sup>25</sup> According to (Crouhy, 2006), these two categories are again divided into issue risk, issuer risk and counterparty risk, respectively. Counterparty risk arises when counterparties are unable to meet contractual obligations and they will default in an agreement. Banks' customers may fail to pay back the amount of original loans and its interest rates, or a company may fail to repay amounts protected by predetermined charge over the assets of a company, which causes a counterparty risk that may arise and occur in the organization consequently.<sup>26</sup>

#### **2.2.2.3. Liquidity risk**

In some cases banks are faced with problems to meet deposit demands. For solving deposit cash flow problems they need to raise funds, therefore to meet counterparties' obligations. When banks are unable to fulfill these requirements, *liquidity risk* will take place. In the intervening time, it has several aspects and can be defined as "The inability to raise funds at normal cost; market liquidity risk; asset liquidity risk". Since banks in some cases need to raise their funds to meet and fulfill the counterparty's requirements, when they are unable to lend money at reasonable cost from the market, market liquidity risk will take place. Having liquid assets which can be converted easily to cash to meet short-term obligations of counterparties, however, in case of lack of liquid assets, financial institutions will face assets liquidity risk.<sup>27</sup>

Commercial banks take deposits from their various clients and at the same time use short-term debt for the objective of investing in long-term assets to get reasonable profits. Involving in such a business cycle creates liquidity risk for the banks, despite being solvent because of increased uncertainty over the banks' solvency. However,

---

<sup>25</sup> Parkinson, Dilys; Noble, Joseph, 2005, Oxford business English dictionary, Software.

<sup>26</sup> Crouhy, Michel; Galai, Dan; Mark, Robert, 2006, pp. 27-36.

<sup>27</sup> Bessis, Joël, 2002, p. 16.

banks can hedge this risk by introducing and practicing “liquidity buffer”<sup>28</sup> and “transparency”<sup>29</sup>. A combination of these two strategies in risk management, will fully hedge small refinancing needs, and partially hedge large ones.<sup>30</sup>

Researches’ evidence has shown that systematic differences exist across bank types, so the smaller banks are more vulnerable to failure on liquidity problems, while the larger cross-border banks characteristically fail on inadequate capital buffers.<sup>31</sup> As far as this difference is crucial from the financial stability perspective, it implies that regulatory and supervisory stress should be placed ensuring that the capital buffers of the systemically vital banks are corresponding with their risk-taking.<sup>32</sup> Elimination of systemic liquidity risk is an important issue that has to be considered and strategies have to be applied to eliminate it. To do so a greater transparency of liquidity management practices is needed. Moreover, supervision and regulation are the fundamental things which are used against systemic liquidity crises to control them. Applying these policies in practice, could reduce liquidity risk by minimizing asymmetric information and moral hazard through effective monitoring mechanisms of the financial system. Using such a policy makes it easier to distinguish between solvent and illiquid agents and therefore, enforce liquidity cushions to the ones most in need and which would help markets become more complete.<sup>33</sup>

As far as risk types are concerned, business risk was one type of the non-financial risks which is concerned with the whole business processes in a firm or a bank, and it can be defined as “business risk refers to the classic risks of the world of business, such as uncertainty about the demand for products, the price that can be charged for those products or the cost of producing and delivering products”<sup>34</sup>. The rest of non-financial risks are reputation and strategic risks. *Reputation risk* is “the risk arising from negative perception on the part of customers, counterparties, shareholders, investors, debt-holders, market analysts, other relevant parties or regulators that can adversely affect a bank’s ability to maintain existing, or establish new, business relationships and continued access to sources of funding (e.g. through the interbank or securitization markets)”<sup>35</sup> and *Strategic risk* is “a risk that could cause severe

---

<sup>28</sup> Accumulating a precautionary buffer of easily trade able assets

<sup>29</sup> The amount of information available to outsiders

<sup>30</sup> Ratnovski, Lev, 2013, pp. 3-4.

<sup>31</sup> Vanzquez, Francisco; Federico, Pablo, 2012, pp. 16-17.

<sup>32</sup> Ibid, p. 17.

<sup>33</sup> Nikolaou, Kleopatra, 2009, p. 44.

<sup>34</sup> Crouhy, Michel; Galai, Dan; Mark, Rober, 2006, p. 32.

<sup>35</sup> BCBS, 2009, p. 19.

financial loss or which could undermine the competitive position of a particular company”<sup>36</sup>.

#### **2.2.2.4. Operational risk**

Operational risk is an important risk factor which has to be considered in banks very seriously. According to Basel committee “*operational risk* is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk”<sup>37</sup>. Operational risk is one type of non-financial risk which occurs due to internal process failures and external events either in a bank or a firm. So there is a significant relationship between operational risk and internal process failures and external events. Lack of knowledge and qualified staff in the risk management departments may hold up and detain internal processes which are called the root of operational risk in the organization. Fraud, employment practices, client relations, physical assets, business interference and systems failures and execution, and business processes<sup>38</sup> are the elements due to which operational risk takes place in banks.

According to Basel II Accord, banks must have sufficient capital reserves to meet actual and potential losses which may arise from the organization activities, i.e. losses from internal processes or external events. In addition, in the past 15 years experiences have shown that operational risks are the main source of financial losses in the banking sector and it is argued that a significant share of losses events recorded by banks, that are recognized to market or credit risk are in fact at least related to operational risk. However, it is not the consequences but the causes of a loss event that, by definition, determine whether it is an operational loss event, therefore, operational risks may become visible directly or indirectly in the course of market risk or credit risk.<sup>39</sup>

#### **2.2.3. Risk measurement in the Afghan banking industry**

Measuring and controlling different types of risk is a crucial issue in the process of managing the whole risks in banks. Different approaches are used to quantify risks exposures in financial institutions. Basel Committee provides various approaches and

---

<sup>36</sup> Collier, Paul M., 2009, p. 183.

<sup>37</sup> BCBS, 2006, p. 144.

<sup>38</sup> Murphy, David, 2008, p. 248.

<sup>39</sup> Oesterreichische Nationalbank, 2006, p. 10.

methodologies for calculating capital requirements for the most important risks such as credit risk, market risk and operational risk. The measurement and calculation of capital requirements for credit risk, the committee allows banks a choice between two broad methodologies. According to one alternative, the *Standardized Approach*, credit risk is measured in a standardized manner, supported by external credit assessments (ratings). The other alternative, the *Internal Ratings-Based Approach*, is subject to the explicit approval of the bank's supervisor, and thus allow banks to use their internal rating systems for credit risk. To calculate capital requirements for market risk, the committee allows banks to use two kinds of approaches, *Standardized Measurement* and *Internal Models*. Basel Committee provides and allows banks to use three types of approaches the *Basic Indicator Approach*, the *Standardized Approach* and *Advanced Measurement Approach* to calculate capital requirements for operational risk.<sup>40</sup>

The objective of measuring risk in financial institutions is to have some measure of the distribution of probable future outcomes. Measuring risk for a bank is the distribution of future returns on its own portfolio, although for a policy maker, it means the distribution of possible future outcomes for the entire system. In practice, risk measurement focus is on the negative aspect of outcomes, rather than positive aspect of outcomes. So measures of risk have a tendency to focus on the probability of losses, rather than differentiating the complete allocation of possible future outcomes.<sup>41</sup> In general, the major and essential objective of risk management is to identify, monitor, control and mitigate various risks which transpire in the course of doing business.

## **Credit risk measurement approaches**

### ***Standardized approach:***

In the standardized approach credit risk exposures for various types of counterparties, sovereigns, corporate and banks have risk weights based on assessments (ratings) by External Credit Assessment Institutions (ECAIs) Such as rating agencies or Moody's and Standard & Poor and Export Credit Agencies (ACAs) for sovereign risks.<sup>42</sup> In the standardized approach the risk-weighted assets

---

<sup>40</sup> BCBS, 2006, p. 19.

<sup>41</sup> Lowe, Philip, 2002, p. 3.

<sup>42</sup> Bessis, Joël, 2002, p. 43.

are the products of exposure amounts and supervisory ascertained risk weights and claims on sovereigns and their central banks will be risk weighted as follows:<sup>43</sup>

**Table 1:** Claims on sovereigns

Credit assessment	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk weight	0%	20%	50%	100%	150%	100%

Source: BCBS, 2006

According to BCBS, the country risk grades attributed by ECAs may be recognized by supervisors for the purpose of risk weighting claims on sovereigns. These ECA risk grades and scores will be compatible to risk weigh categories, as given below.

**Table 2:** ECA risk scores

ECA risk scores	0-1	2	3	4 to 6	7
Risk weight	0%	20%	50%	100%	150%

Source: BCBS, 2006

For the claims on banks two options existed and one option to all banks in their legal power by national supervisors will be applied. No claim on not rated bank may receive a risk weight lower than that applied to claims on its sovereign of incorporation. Under the first option, all banks comprised in a given country will be allotted a risk weight one class less favorable than that allotted to claims on the sovereign of that country. On the other hand, claims on banks in countries with sovereigns rate BB+ to B- and on banks in unrated countries the risk weight will be crested at 100%. The second option establishes the risk weighting on the external credit rating of the bank itself with claims on unrated banks being risk-weighted at 50%. Under this option, a preferential risk weight which is a more favorable category might be applied to claims with an original maturity of three months or less, which is subject to a floor of 20%. This treatment will be available to both rated and unrated banks, but not to banks risk weighted at 150%.<sup>44</sup>

**Table 3:** Claims on banks option 1

Credit assessment of sovereign	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk weight under option 1	20%	50%	100%	100%	150%	100%

Source: BCBS, 2006

<sup>43</sup> BCBS, 2001, p. 1.

<sup>44</sup> BCBS, 2006, pp. 21-22.

**Table 4:** Claims on banks option 2

Credit assessment of banks	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk weight under option2	20%	50%	50%	100%	150%	50%
Risk weight for short-term claims under option 2	20%	20%	20%	50%	150%	20%

Source: BCBS, 2006

The table below shows the risk weighting of rated corporate claims, including claims on insurance companies. The standard risk weight will be 100% for unrated claims on corporate and no claim on not rated corporate might be given a risk weight preferential to that allotted to its sovereign of incorporation. The standard risk weight for not rated claims should be increased by supervisory authorities where they judge that a higher risk weight is warranted by the overall default experience in their legal power.<sup>45</sup>

**Table 5:** Claims on corporate

Credit assessment	AAA to AA-	A+ to A-	BBB+ to BB-	Below BB-	Unrated
Risk weight	20%	50%	100%	150%	100%

Source: BCBS, 2006

### ***Internal ratings-based approach:***

Using internal systems for credit risk measurement needs is subject to the clear approval of the bank's supervisor. It relies on the bank's internal assessment of its counterparties and exposures and has two objectives: risk sensitivity, which can be proved to be more sensitive to the drivers of credit risk and incentive compatibility, which encourages banks to improve internal risk management practices.<sup>46</sup> IRB approach is divided in two types, foundation approach and advanced approach.

The internal measures of credit risk in banks are based on the assessment of the risk characteristics of both the borrower and the specific type of transaction. The central measurable concept, on which the IRB approach is built, is the Probability of

<sup>45</sup> BCBS, 2006, p. 23.<sup>46</sup> BCBS, 2001, p. 1.

Default (PD) of the borrower. However, it does not provide the complete picture of the potential credit loss. Banks also try to know and measure how much they will lose, if the borrower defaults on an obligation. This is depending on two elements. First, the magnitude of probable losses on the exposure which is called the Loss Given Default (LGD) and shows the exposures as percentage. Secondly, the loss is dependent on the amount to which the bank was exposed to the borrower at the time of default, which is called Exposure at Default (EAD). The combination of these three elements (PD, LGD and EAD) provides a measure of expected intrinsic, or economic, loss. Furthermore, Maturity (M) of exposures also takes into account in the IRB approach. Thus, risk weights derivation is dependent on PD, LGD and in some cases, M estimations that are attached to exposures.<sup>47</sup> The four components that build the structure of the banks' internal ratings systems are:

- PD of a borrower
- LGD of a transaction
- EAD of a transaction and
- M of the transaction.

The use of IRB approach whether it is foundation or advanced in all banks is supposed to provide supervisors with an internal estimate of the PD associated with borrowers in each borrower grade. A conservative view of a long-run average PD for the grade in question must be represented by each estimate of PD, and thus be grounded in historical experience and empirical evidence. LGD associated with a given borrower does not depend on the features of the specific transaction. LGD is facility-specific, for this reason such losses are generally understood to be influenced by the key transaction characteristics, such as the presence of collateral and the degree of subordination. EAD as with LGD, EAD is also facility specific. In most cases the nominal amount of the facility will be equaled, but for certain facilities (e.g. those with undrawn commitments) it will include an estimate of future lending prior to default. Maturity is treated as an explicit risk component. Banks will be expected to provide supervisors with the effective contractual maturity of their exposures.<sup>48</sup>

## **Market risk measurement approaches**

### ***Standardized measurement:***

In the standardized measurement of the market risk, the minimum capital requirement for equity positions, interest rate and their derivatives is expressed in terms of two separately calculated charges: *Specific risk of each security*; the capital

---

<sup>47</sup> BCBS, 2001, pp. 3-4.

<sup>48</sup> Ibid, pp. 6-7.

charge for specific risk is designed to protect against an adverse movement in the price of an individual security owing to factors related to the individual issuer. *General market risk*; The capital requirements for general market risk are designed to capture the risk of losses arising from changes in market interest rates. For foreign exchange risk, two processes are needed to calculate the capital requirement: *Measuring the exposure in a single currency* and *measuring the foreign exchange risk in a portfolio of foreign currency positions and gold*. For commodities risk, the methodology used encompasses: *Directional risk*, to capture the exposure from changes in spot prices arising from net open positions; *Forward gap and interest rate risk*, to capture the exposure to changes in forward prices arising from maturity mismatches; and *Basis risk*, to capture the exposure to changes in the price relationships between two similar, but not identical, commodities.<sup>49</sup>

### ***Internal models:***

Banks which start to use models for one or more risk factor categories are expected over time to extend the models to all their market risks. Those banks which have developed models will no longer be able to turn back to measuring by on the basis of standardized approach. During the transition period, a combination of internal models and standardized approach will be authorized before moving to full internal models. For market risks, the preferred model is value at risk (VaR). Banks will have flexibility in devising the precise nature of their models, but the following minimum standards will apply for the purpose of calculating their capital.<sup>50</sup>

- (a) "Value-at-risk" must be computed on a daily basis.
- (b) A 99<sup>th</sup> percentile, one-tailed confidence interval is to be used.
- (c) An instantaneous price shock equivalent to a 10 day movement in prices is to be used.
- (d) The historical data observation period is a minimum length of one year.
- (e) Banks should update their data sets no less frequently than once every three months.<sup>51</sup>

---

<sup>49</sup> BCBS, 2006, pp. 166-182.

<sup>50</sup> Ibid, pp. 191-199.

<sup>51</sup> BCBS, 2006, pp. 199-200.

## Operational risk measurement approaches

### *The basic indicator approach:*

Those banks that use the basic indicator approach must hold capital for operational risk equal to the average of the previous three years of the fixed 15% of positive annual gross income but negative or zero should be excluded. The charge is expressed as follows:

**Regulatory Capital = Average of last 3 years GI\*  $\alpha$ (15%)**

$$K_{BIA} = [\sum(GI_{1...n} \times \alpha)]/n$$

$K_{BIA}$  = the capital charge under the BIA

GI = annual gross income, where positive, over the previous three years

N = number of the previous three years for which gross income is positive

$\alpha$  = 15%, relating the industry wide level of the required capital to the industry wide level of the indicator set by BC.<sup>52</sup>

### **The standardized approach:**

The standardized approach to measure capital charges for operational risk can be used in the following way. “The whole banks’ activities are divided into eight business line: corporate finance, trading & sales, retail banking, commercial banking, payment & settlement, agency services, asset management, and retail brokerage”. For each business line the capital charge is calculated by multiplying gross income by a factor (beta) allotted to that business line however, gross income is measured for each business line, not the whole institution. “The total capital charge is calculated as the three-year average of the simple summation of the regulatory capital charges across each of the business lines in each year. In any given year, negative capital charges (resulting from negative gross income) in any business line may offset positive capital charges in other business lines without limit”. However, where the aggregate capital charge across the business lines within a given year is negative, then the input to the numerator for that year will be zero. The total capital charge is expressed as:

**Regulatory capital =  $\sum GI * \beta_{BL}$**

$$K_{TSA} = [ \sum_{years\ 1-3} \max[\sum(GI_{1-8} \times \beta_{1-8}), 0] ] / 3$$

---

<sup>52</sup> Ibid, pp. 144-145.

Where:

$K_{TSA}$  = the capital charge under SA

$GI_{1-8}$  = annual gross income in a given year, for each of the eight business lines

$\beta_{1-8}$  = a fixed percentage, set by BC ( $\beta$  between 12% and 18%) for each of the eight business lines.<sup>53</sup>

### **Advanced measurement approach (AMA):**

Measuring capital charge for operational risk by using AMA is equal to the Unexpected Losses (UL) with one year of time horizon and 99.9<sup>th</sup> of confidence level. Up to 20% effect of insurance can be taken into account. To identify, measure, monitor and control/mitigate operational risk banks have to develop risk management frameworks. Within the institution good documentation and regular reporting should take place. Moreover, banks must use external data and collect internal data concerning losses, as well as perform scenario analysis, evaluate business environment and internal control factors to validate the model results.<sup>54</sup>

There are different types of risk measures and their aim is to capture the deviation of a specified target variable, such as earnings, market value or losses due to default, produced by uncertainty. Quantitative indicators of risks are grouped into three categories.<sup>55</sup>

- ✓ **Sensitivity**, which illustrates the variation of a target variable when a unit change occurs in a single market parameter, for example, 1% change in the interest rate. Most of the sensitivities are market risk- related because of relating value changes to market parameters, which are value factors.
- ✓ **Volatility**, which demonstrates variations around the average of any target variable, both downside and upside and it measures the distribution around its mean of any target variables, such as losses for credit risk.
- ✓ **Downside measure of risk**, which focuses only on the adverse variations of the target variables with probabilities for all possible values and it, needs modeling to have probability distributions of target variables. Value at Risk (VaR) shows the negative variations of target variables and it is a downside risk measure.<sup>56</sup>

---

<sup>53</sup> BCBS, 2006, pp. 146-147.

<sup>54</sup> Ibid, pp. 149-155.

<sup>55</sup> Bessis, Joël, 2002, p. 77.

<sup>56</sup> Bessis, Joël, 2002, p. 77.

## Value at risk

Value at risk is one of the most well known instruments applied to forecast and predict exposures to market risk at the predetermined confidence interval. It can be defined as “the worst loss that might be expected from holding a security or portfolio over a given period of time (say a single day, or 10 days for the purpose of regulatory capital reporting), given a specified level of probability (known as the confidence level)”.<sup>57</sup>

Nowadays using VaR for active risk management has become a very important issue. Before the widespread application of VaR investors knew that financial management deals with balancing return against risk. Although, they do not have instruments to assess the risk return tradeoff for business line and banks which were dependent only on the measures such return on assets (ROA) or return on equity (ROE) which totally ignored differences in the risk of various activities.<sup>58</sup> Currently the application of VaR is rather widespread and used for active risk management in financial institutions. Notwithstanding VaR is a single risk indicator which estimates the probable losses to be suffered by the investor with the level of probability of losing. There are three classical techniques for measuring and estimating VaR.<sup>59</sup>

1. The estimated variance- covariance matrix method
2. The Monte Carlo simulation method
3. The historical simulation method

According to equity and portfolio, there are two kinds of measurements: the intrinsic method and the relative method. Intrinsic method is a variance (Standard deviation) in the return of equity. However, for portfolio measurement not only variances but also correlations or covariances should be considered two by two.<sup>60</sup>

The objective of VaR is to quantify risks in financial institutions by using different standard statistical methods. As the value of VaR is the worst expected loss, the simplest method is to use the distribution of the portfolio return. According to standard normal table,  $\alpha$  corresponds to the confidence level  $c$  and the value of  $\alpha$  is negative  $(-\alpha)$ .<sup>61</sup> If the portfolio return is normally distributed with the mean  $\mu$  and standard deviation  $\alpha$ , to obtain the VaR number, the standard transformation can be made as follows:

---

<sup>57</sup> Crouhy, Michel; Galai, Dan; Mark, Robert, 2006, p. 154.

<sup>58</sup> Jorion, Philippe, 2007, p. 403.

<sup>59</sup> Esch, Louis; Kieffer, Robert; López, Thierry, 2005, p. 180.

<sup>60</sup> Esch, Louis; Kieffer, Robert; López, Thierry, 2005, p. 181.

<sup>61</sup> Bo, Dai, 2000/2001, p. 5.

$\alpha = \frac{z-\mu}{\sigma}$  With  $z = -\text{VaR}$  and  $\alpha = -\alpha$ , thus

$$\text{VaR} = \alpha\sigma - \mu \quad (1)$$

$\mu$  = mean

$\sigma$  = Standard deviation

$\alpha$  = Negative number corresponding to confidence level in the standard table.

Quantitative factors selection is an important issue when VaR is computed, because either the selection of time period or confidence level will impact the value of VaR. In general, it will increase over a longer time period or greater confidence level. Under certain conditions, increasing one or the other factor may produce equivalent changes in the VaR value.<sup>62</sup> Basel committee lay down minimum quantitative standards for calculating capital charges which banks or other financial institutions will have carefulness to apply it. One of these standards is the computation of VaR on a daily basis; selecting confidence interval is another requirement of Basel committee and it says a 99<sup>th</sup> percentile, one-tailed confidence interval is to be used.

### **2.3. Financial regulation in the Afghan banking sector**

The key task of risk management is to accurately predict where, control/take action when risk arise and prevent rather than treat it. To achieve this goal, risks must be within predefined limits, either in the course of hedging or sensitivity restrictions. Managing risk differs a lot from measuring risk, because it is more of an art than mathematics. It is often difficult to determine hedges and stable limits; therefore the responsibility of design, implementation, monitoring and adjustment must be allocated to responsible and accountable units. To accomplish this objective, a financial institution or bank is required to create the largest number of people and to authorize people with the equivalent accountability for the risk they take, and gratifying them suitably for maintaining exposure within the defined restrictions.<sup>63</sup>

Responsibility and accountability are prerequisites for identifying and managing risks in banks. People who hold the responsibilities and accountabilities for identification and management of risks are need to be well qualified and trained to deal with risk related issues in the organization. Lack of qualified people in related

---

<sup>62</sup> Jorion, Philippe, 2007, p. 115.

<sup>63</sup> Carrel, Philippe, 2010, pp. 14-15.

fields either in a firm or bank become a great threat to the whole organization. Revising the staff qualification during recruitment and effective training would lead to sound management in practice. To have a successful risk management, risk-awareness culture has to be reflected in the organization. Risk culture is the outcome of individual/group values and their manners which lead to commitment of the organization. Implementation of the components of risk-aware culture, suggested by UK Health and Safety Executive (HSE) research and Leadership Involvement Learning Accountability and Communication (LILAC), is constructing a culture where successful risk management is vital part for people who wish to work in a long-term for most organizations.<sup>64</sup>

Since managing risk is an important task, banks should have internal controls to ensure the duties of people who measure, monitor and control risks. An incentive and accountability structure that is well-matched with reduced risk on employees is also an important part to reduce overall risk. Also efficient incentive compatible formation would limit individual positions to acceptable levels and encourage decision makers to manage risks.<sup>65</sup>

Regulation and supervision of banking sector are key tools for managing and controlling different type of risks in the financial sector. When banking sector was liberalized in 2002, it contributed to a sound and flexible banking sector and became more effective on strengthening of banking regulation and supervision in Afghanistan. Furthermore, banking sector in Afghanistan is generally highly liquid, sufficiently capitalized and profitable with no signs of short term susceptibilities that could cause systemic problems.<sup>66</sup> However, the dominance of few major players and the concentration of risks within the narrow banking sector restrain competition and innovation.<sup>67</sup> Nevertheless, bank operations in Afghanistan are managed notwithstanding lack of adequate legal framework and formal mechanisms for loan contract enforcement. The existence of different ways of lending in banks show that banks have different possible sources of income, different attitudes toward risk or perceived risk or face different credit risks. Moreover, bank perceptions of risk may differ in lending practices and it may also show some banks motivation to engage in riskier activities in pursuit of profitable lending opportunities.<sup>68</sup>

Managing operations in bank in a predefined manner/practice bring stability and simplicity, as well as it helps in the process of elimination and mitigation of different

---

<sup>64</sup> Hopkins, Paul, 2010, p. 105.

<sup>65</sup> Khan, Tariqullah; Ahmed, habib, 2001, p. 33.

<sup>66</sup> DAB, 2009, p. 15.

<sup>67</sup> Ibid.

<sup>68</sup> Pavlocic, Jelena; Charap, Joshua, 2009, p. 17.

types of risk. So, it strengthens the entire financial, especially banking sector with proper mechanism. The legal framework would help the sector to prevent it from difficulties arising in the course of their operation.

Since Afghanistan financial sector is controlled by commercial banks and microfinance institutions, eventually the insurance sector is small and weak. It needs to be strengthened properly, because the banks give and offer very basic savings and credits to selected customers, therefore the payment services of the banking sector is very slow. Despite slow payment, the banking system in Afghanistan is highly dollarized which reflect historically high inflation and exchange rate volatility. In the intervening time, DAB has invested in establishing financial supervision department to regulate and supervise commercial banks in Afghanistan. It has other roles like managing and controlling various risks in the financial sector. Creation of Risk Management is one of the achievements of DAB in this concern. Despite of having risk management in DAB, the nonexistence of enforcing security agreements is a serious problem in Afghanistan. There are no proper arrangements for valuing and enforcing collateral (and especially mortgages), as well as no information on credit history of the customers. These shortages raise the transaction cost of the banks offering credits and other services to its clients and increase the risk of undesirable selection.<sup>69</sup>

As far as risk management in Afghan banking sector is concerned, laws and regulations are required to establish legal framework for commercial banks operation and banking law was approved in 2003 in Afghanistan. According to banking law, article 32 describes general banking principles in Afghanistan and paragraph 32.2 states that “Bank shall maintain adequate capital and liquid resources; make adequate provision for depreciation of assets, for discharge of liabilities, and for covering risk of losses; maintain adequate accounting and other records of business; observe effective risk controls; and ensure that their assets are diversified to avoid loss”<sup>70</sup>. One of the objectives of DAB is to strengthen and make stronger banking supervision in the financial sector in Afghanistan to manage and control the sector in proper ways and set internationally accepted standards for financial sector, especially commercial banks be more standardized. Furthermore, recent empirical studies have shown that access to external financing for investment depends on county’s legal and financial environment. Moreover, in countries with weak legal and financial systems, the private sector obtains less external finance than countries with better developed systems.<sup>71</sup>

---

<sup>69</sup> DAB, 2009, pp. 22-24.

<sup>70</sup> Official Gazette, 2003, p. 26.

<sup>71</sup> DAB. 2009, p. 22.

For the internationalization and globalization of banking activities in Afghanistan, implementation of Basel II Accord is needed to be adopted. Basel II provides legal framework and set of standards to manage and control various types of activities in well defined manner say for instance assets, liabilities, liquidities and risk management in banking sector. Many factors like identifying, monitor, management, control and measures of different risk types e.g. credit, market, liquidity and operational risk are serious matters and its happening in the course of operation in banks, so legal framework and standards that are accepted internationally are required.

According to DAB strategic plan, implementation of Basel II Accord in Afghanistan is one of the objectives of DAB to make stronger banking supervision processes and will have far reaching implication for both commercial banking and the bank supervision. For instance, traditional and isolated risk management disciplines will no longer be sufficient in the banking sector, and as well as greater combination of risk measures across risk types, across economic and regulatory capital calculations are necessary. Failure to withstand these changes in the banking sector has deep impact on reporting process, data collection, risk and capital calculations processes in banks. However, achievement of this accomplishment in commercial banks will need to make significant investments in people, process and technology.<sup>72</sup> Based on DAB strategic plan, the three pillars of Basel II: minimum capital requirements; establishes minimum standards for management of capital on a more risk sensitive basis: credit risk, operational risk and credit risk mitigation, supervisory review process; increased the responsibilities and level of discipline for supervisory review and controls covering: processes for capital and risk profile management, capital adequacy, level of capital charges, proactive monitoring of capital levels and ensuring actions and market discipline; expands the content and improves the transparency of financial disclosures to the market: scope of application, capital, capital adequacy, risk exposure and assessment, are the main parts of Basel II Accord which are under the consideration and going to be implemented in the banking sector. The DAB works closely with commercial banks to implement Basel II advanced approached efficiently in Afghanistan. Nevertheless, such implementation needs several changes to be addressed. At strategic level, it should be considered and understood that how the requirements of Basel II could conflict with business goals, competitiveness, cost/efficiency and also defining a risk vision that resolves these conflicts. At an execution level, developing and implementing new methods, two-dimensional credit risk rating, credit management processes and technical solutions establishing new risk measurement modeling and developed portfolio risk. Other

---

<sup>72</sup> DAB, 2009, p. 30.

factors like asset and liability management systems, integrating risk, financial reporting processes and systems for internal and external purposes.<sup>73</sup>

Since the banking sector was almost totally destroyed before 2002, Afghan government with international community have supported and promoted the formalization of financial sector along with services in the following years which assured a rapid growth of the formal banking sector. Nevertheless, modern banking and the credit culture together is quite new to Afghanistan and domestic banks struggled to develop normal banking practices and skills.<sup>74</sup>

On overview, the improvement of banks supervision brings and conveys stability in the banking sector. Therefore improving supervision system in the country will make the sector stronger. The expansion of banking system in recent years shows the importance of improving supervision in Afghanistan and became relatively important. The DAB has plan to increase in extent and speed up banking supervision by extending the scope of bank examinations which include other risks and improve fraud detection capacity, monitoring all banks through the electronic Core Banking System, and fostering improvements in loan quality and prudential ratios of banks with weak CAMEL ratings.<sup>75</sup> Despite DAB has improved its capacity for banking supervision, the rapid growth of the banking sector still continue to be challenging as illustrated by the Kabul Bank crisis, the largest commercial bank in Afghanistan, as it collapsed in 2010. The collapse of Kabul Bank threatened the stability of the whole banking system in Afghanistan<sup>76</sup>, due to which, hundreds of millions of dollars were lost which created a havoc to the Afghan economy and consequently the trust of individuals on banking system is decreasing.

---

<sup>73</sup> Ibid, p. 35.

<sup>74</sup> IMF, 2011, p. 10.

<sup>75</sup> IMF, 2010, p. 10.

<sup>76</sup> IMF, 2011, p. 5.

### **3. Hypotheses and methodological issues of the case study**

#### **3.1. Hypotheses**

The theories and evidence from studies claim that large banks use more sophisticated and advanced risk management procedures in order to measure risk. Large banks have a high loans portfolio quality and large risks exposures. Therefore, it is necessary to use more sophisticated and advanced risk management procedures to measure and control risk. To know whether large banks use or do not use more sophisticated risk management procedures to measure and control risk, the study compares the large banks' risk management procedures with those of the small banks. Dealing with sophisticated risk management procedures requires qualified and trained personnel in risk management to quantify and manage risk.

Studies showed that implementation of Basel II will improve the risk management processes, but one of the biggest challenge facing low income countries is lack of human skills and resources and several low income countries feel that they have previous tasks to complete within Basel I, before dealing with Basel II issues (Cornford, Andrew, 2006). The employees in the banks do not have adequate and sufficient skills and resources to implement Basel II in a proper way. Therefore, the empirical study would be based on the following two hypotheses:

**Hypothesis 1:** Large banks use more sophisticated and advanced risk management procedures to measure risk.

**Hypothesis 2:** Implementation of Basel II improves the risk management processes.

#### **3.2. Methodological issues**

An empirical field research on measuring and managing risk in financial institutions in Afghanistan is necessary to be done in order to find relevant answers to the research questions and test the above hypotheses. The empirical field research of the study is profoundly based on the questionnaires and financial statements of sixteen commercial banks in Afghanistan. The research is done to find out the major risk factors and central risk management approaches that are applied to measure risks in the relevant banks. As well as the research is done to evaluate the potential deficits in risk management procedures and their implication for the entire banking sector and

Afghan economy. Methodological issues concerning the study will be outlined below.

### **3.2.1. Data and sources**

The selected area for the empirical research is all registered commercial banks with DAB whether it is domestic or foreign banks in Afghanistan. The selection of the topic was made, because after the fall of Taliban's regime, liberalization of the banking sector in 2002 encourages and promotes the banking sector in Afghanistan. Traditional and isolated risk management discipline will be no longer sufficient and greater integration of risks across risk types, across economic and regulatory capital calculation is necessary(DAB,2009).

Introduction of a new banking legislation in 2004 had the purpose to establish appropriate and effective accounting and administrative procedures and set risk management controls for the banks. So it was needed to find out the potential deficits in risk management procedures and their implication for the whole banking sector and Afghan economy. Secondly, the Kabul Bank collapsed in mid 2010 which had an impact on the overall banking sector performance, as well as people's confidence in the banking sector. As a result, the overall banking sector showed weak performance.

The Kabul Bank bankruptcy was bad for the Afghan economy. Due to Kabul Bank crisis, instability took place in the Afghanistan economy and the whole economy was affected negatively. The Afghan government bailout \$820 million was offered to Kabul Bank to solve liquidity problems.<sup>77</sup> The bailout from government's reserves fund, simply means the cost of Kabul Bank run to all Afghans. These two reasons contribute to a great extent to the relatively easier collection of more reliable data.

Due to the inadequate or failed internal processes, people and systems losses takes place either in banks or companies. Technical knowledge, qualified and trained personnel are needed in order to measure and manage risks in banks properly. One of the objectives of the study is to investigate the impacts of people who work in risk management departments on banks' risk managing strategies. Moreover, the investigation of the major risk factors and risk tolerance in the sector is another perspective which needs to be identified. The study has covered all commercial banks in the Afghan banking sector. To get qualitative and some quantitative data based on questionnaires, risk management departments for the entire population for both

---

<sup>77</sup> [http://www.uspolicyinabigworld.com/2012/06/12/how-they-robbed-kabul-bank/#\\_ftn57](http://www.uspolicyinabigworld.com/2012/06/12/how-they-robbed-kabul-bank/#_ftn57) [Accessed 13.06.2013].

eleven domestic and five branches' of foreign banks were selected. Three questionnaires were filled out by board members, three questionnaires were filled out by heads of the departments, three - by risk officers, two - by senior executives, two - by managers, one - by chief risk officer, one - by deputy chief officer and one questionnaire was filled out by credit risk manager.

Data collection for the entire target population was possible. The whole population was sixteen commercial banks, eleven domestic and five branches' of foreign banks, so there was no need for sampling. Different sources of data were searched and explored to complete the empirical impact study. Primary data and secondary data comprise the data sources. The survey was conducted at the beginning of January 2013. There was no need to employ research assistants to conduct the survey. The survey research was conducted and the answers of the questionnaires were entered into Microsoft Excel program by the researcher. Subsequently, the sources and their relevant composition to the empirical study would be presented.

#### **3.2.1.1. Primary data**

The main instrument for the data collection was well prepared and standardized questionnaire survey in Afghanistan with a population size of sixteen commercial banks. Primary data is the main and core data source for the empirical study on measuring and managing risk in financial institutions. Therefore, the same questionnaire was sent to the risk management departments' of each bank to fill it out. The questionnaire was developed before the field research started.

#### **3.2.1.2. Secondary data**

The secondary data was based on the financial statements of all sixteen commercial banks, past researches in the field, publications and annual reports. The sources of the secondary data were mostly the banks, DAB, internet, IMF and some institutions' reports constituted part of the sources for such data. The subsample analysis was based on financial statements of banks for years 2010- 2012. The financial statements of two banks were for 2010, eleven banks for 2011 and three banks for 2012. During the data collection, Shamsi (solar) year was used as a fiscal year in the banks to prepare financial statements and annuals reports. Not all banks prepared financial statements for 2012, because the Shamsi year was not ended. There is a difference between Shamsi and Georgian year. The time difference between these two years is about three months. The banks were supposed to publish

financial statements and annual reports in the middle of March 2013 for the year 2012, but the data collection took place at the beginning of 2013. Financial statements from 2009-2012 were needed for the study to analyze the relation between profitability and risk management in the sector, as well as to test the theory that foreign banks are more profitable than domestic banks in developing countries. To measure profitability in banks, financial statements for the same and chosen years for all banks were necessary. To get the relevant secondary data, an appointment was made with each bank separately. Half of the banks provided the missing data. The remaining banks promised that it will be published on their websites as soon as possible in the near future. Unfortunately, financial statements of all banks for the chosen years were not completely available. The final source to get financial statements of all commercial banks for the years 2009-2012 was financial supervision department at the DAB. The department rejected the request and said it is confidential information which is not allowed to provide. Therefore, the subsample analysis is based on the latest available financial statements of the banks. Due to the lack of consecutive financial statements for the chosen interval and missing some important figures in the existed financial statements, some important subsample analysis was not conducted. The secondary data was one of the most important complement data sources for the study completion.

### **3.2.3. Descriptive statistics**

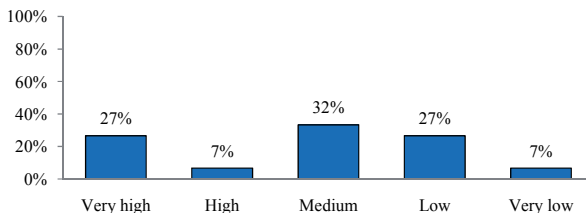
The primary data collected on the basis of the questionnaires were checked, coded and entered into Microsoft Excel program for analysis. Some sort of descriptive analyses about general risk measures and awareness in the sector, with the help of Microsoft excel, were prepared to identify the differences and/ or changes among the banks. Furthermore, for the subsample analysis the same Microsoft excel program was used to test the hypotheses that large banks use more sophisticated and advanced risk management procedures to measure risk, and implementation of Basel II will improve risk management processes.

## 4. Empirical findings

### 4.1. Risk management and risk tolerance in the Afghan banking sector

There are 16 commercial banks in Afghanistan which operate in the financial sector, which comprises 11 domestic banks and 5 foreign banks. Around 63 people work in the risk management departments of commercial banks. Exceptionally in some banks, the counts of staffs in the risk management departments are comparatively higher. In contrast, there are banks with fewer people in the risk management departments, as well as there are some banks which do not have any person working in risk management department or related issues. The above mentioned figures make a claim that, uneven distribution of the workforce and awareness of risk management exists in the Afghan banking sector. On an average 4 people are working in risk management departments of all banks. Extremity could be observed such that, highest of 13 people and lowest of 0(zero) people working in the risk management department. Eight banks record the numbers of people above average, whereas the rest show below average figures in risk management departments. As a result, there exists a lack of qualified professionals in the risk management, which might lead to increase in the probability of losses and operational risk. To mitigate such operational risk and to tackle shortcomings in the banks, adequate and professional people are needed to be employed in the organizations. Besides adequate and qualified professionals in the risk management departments, it is vital to have general awareness and sound knowledge of the banks concerning their risk tolerance in the Afghanistan banking sector. In order to evaluate the understanding and awareness in the banking sector, a short survey was conducted to rate their risk tolerance appropriately. The graph depicted below shows the risk tolerance of all 16 commercial banks in Afghanistan:

Figure 3: Risk tolerance



Source: The author's own data

The graph describes the rating of risk tolerance for all banks with a band range from very high to very low. According to the graph, the inconsistency in the returns which the banks are willing to endure is not high enough. Only 27% of the banks consider their risk tolerance very high, whereas from 7% of the banks which is only one bank is rated to be high. Furthermore, 32% of the banks responded maintain their risk tolerance to be medium, however 27% believe that their ability to withstand risk in their bank is seemingly low. Around 7% of the banks assure that the risk tolerance in their banks is very low. Meanwhile, one of the banks ignored the question to rate its risk tolerance. As a result, the risk tolerance in the whole banking sector is above average which is a positive sign.

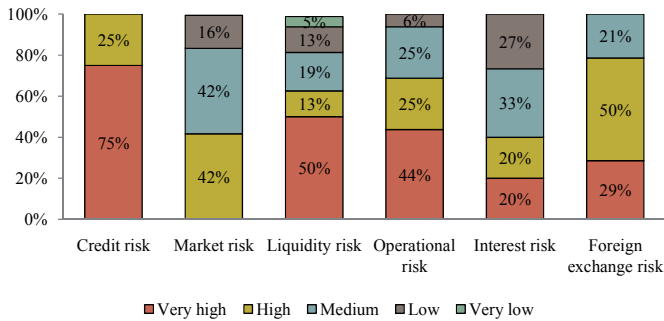
Since the transfer of money and funds usually takes place in different modes like interbank, individuals, domestic and overseas clients, it is vital to realize the different ways used for this propose. Based on the survey questionnaire, it was observed that different approaches are used in the Afghan banking sector for fund transfer, transactions within Afghanistan and worldwide. The money and fund transfer in both categories, say domestic or overseas is being done by Hawala<sup>78</sup>, Western Union, SWIFT, Money Gram and others different methods namely ACSS( Afghanistan Clearing Settlement System), net banking and CITI(An American multinational financial services corporation). According to the questionnaires replies, 13% of the banks use Hawala system to transfer money from one party to another party. It reads that, 88% of the banks confirm that the fund transfer takes place on the basis of SWIFT, 50% of the banks use Western Union, and 15% of the banks use Money Gram methods to transfer money and funds. However, 56% of the banks responded that they use ACSS, net banking and CITI to transfer the funds and money from one party to another party in Afghanistan and worldwide.

The importance of risk management and risk awareness in the Afghan banking sector with regard to different types of risk is an essential issue which reveals the general awareness of the sector towards risks and related risk factors. Furthermore, it identifies the major risk drivers in the sector which focus on this research theme. For the identification of importance and awareness of risk in the sector, a question was asked in the questionnaires to rate the importance of risk management in their banks with regard to different types of risk factors. The graph below shows the importance of risk management and risk awareness in the Afghan banking sector:

---

<sup>78</sup> Literally mean “ Transfer”

**Figure 4:** Importance of risk management and risk awareness



Source: The author's own data

According to the above graph, the main risk drivers in the Afghan banking sector are credit risk, liquidity risk and operational risk. Additionally with regard to credit risk, the graph describes that 75% of the banks ensure a very high credit risk and the study shows that the credit risk in the entire sector is rated as high as 25%. Based on this argument, it is put forth that credit risk is one of the main risk drivers in the Afghan banking sector. Liquidity risk arises during the inability of banks to meet and fulfill the counterparties, obligations and requirements. Speaking about the influence of liquidity risk, according to the survey results, 50% of the banks confirm that liquidity risk is very high and 13% of the banks verify that it is high. Furthermore, 19% of the entire banking sector approved that the importance of risk management and risk awareness with regard to liquidity risk in their banks is medium. However, 13% of the banks have agreed and consider their risk awareness as low and the rest as 5% which is hardly one bank confirm that importance and awareness of liquidity risk is very low in their bank. Operational risk is also an another risk driver, acknowledged by 44% of the entire sector rated it to be very high and other 25% rated it as high. Furthermore, 25% of the sector considered it as medium, and just 6% marked the importance and awareness of operational risk in their banks as low. In General, other market risks such as interest-rate, foreign exchange, commodity price and equity price risk awareness in the sector is not that much compare to the other risk factors due to lack of stock market in Afghanistan.

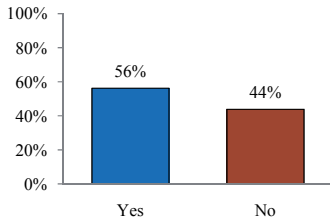
#### **4.2. Benefits and challenges of credit risk management**

Credit risk management is one of the most important management in banking sector which monitor, identify and control credit risk in the banks. Mostly credit risk

arises from situation in which issuance of loans to counterparties results in arrear of the principal and interest, interbank transactions, credits, swaps, bonds, equities and guarantees. Therefore, well framed mechanism/rules need to be imposed to observe and detect possible ways of reduction regarding mitigation of credit risk. The important benefits of having credit risk management are improved pricing of products, real time exposure updates, accuracy of exposure modeling, calculation of regulatory exposure, credit grading (scoring) models, reduction of losses, improved selection of clients according to risk profile and indication of the sensitivity on portfolio exposures to underlying risk factors. From the beneficial viewpoint of credit risk management, 31% of the whole sector has agreed that improved pricing of products and real time exposures are the most important benefits of credit risk management, whereas the rest 69% have a contrary opinion. However, only 6% of all banks which is just one bank out of 16 banks, verifies that accuracy of exposure modeling is the important benefit of having credit risk management in bank although the rest of the majority 94% do not accept it as important benefit. Moreover, 37.5% are agreed that calculation of regulatory exposure is the benefit of credit risk management and 62.5% do not agree. Furthermore, 44% of the banks accept credit grading (scoring) models as an important benefit but 56% do not accept it. Though the objective and expectation of all banks regard to reduction of losses are sensitive, only 81% banks are agreed. To avoid higher credit risk in the bank, 81% banks recognize improved selection of clients according to risk profile as the benefit of credit risk management but 19% do not recognize it. Meanwhile, 44% banks confirm and 56% ignore indication of the sensitivity of portfolio exposures to underlying risk factors as the benefit of credit risk management.

Having sound polices concerning credit risk reduce can mitigate the risk in commercial banks efficiently. However, there are many challenges and difficulties in the sector which prevent banks from having sound polices in the credit risk management. So the difficulties in quantifying the risks are one of the limitations which more than 50% commercial banks in the Afghan banking sector are facing to quantify and measure the real risk exposure in their banks. Thus, implication of this imperfectness for the entire banking system and as well as for the Afghanistan economy is negatively correlated. For better understanding the following graph based on the questionnaires' results, shows the exact figures of the entire banking sector that have difficulties in quantifying risks in their banks:

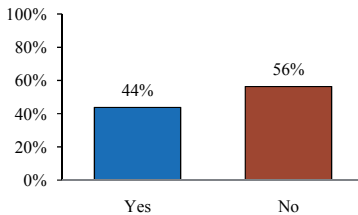
**Figure 5:** Difficulties in risk quantification



Source: The author's own data

The graph describes that 56% of banks have difficulties in quantifying risks in their respective banks, however the rest 44% of banks do not accept the fact. Having difficulties in risks quantification has negative impact on the entire performance of banks. In order to quantify risks, adequate and quality information is needed. Thus lack of timelines and quality of information are another challenge faced by credit risk management in the course of policy making processes. Information stays out of reach to credit risk management policy makers within stipulated and prescribed time frame, which reflects in lack of awareness during policy making. Based on the questionnaires results, Afghan banking system also faced such challenge and difficulty, and adequate and quality information stays less accessible at required time during policy making. Based on the survey results, the following graph describes the consequences of responses in the sector consequently:

**Figure 6:** Quality of information



Source: The author's own data

The graph indicates that 44% of banks face the challenge of timelines and quality of information problems. On the other hand, 56% banks refuse this idea meaning that, they do not have timelines and quality of information problems within their credit risk management during policy making processes. The minority of banks, claim 25% have been facing difficulties during the integration of risk management with other

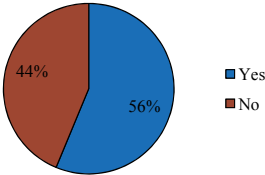
business processes. Furthermore, lack of necessary knowledge and skills within the organization is another difficulty involved with polices making in the credit risk management.

Having skilled, qualified, trained and professional personnel in the credit risk management help the organization to monitor, indentify, control and make better policy for the credit risk in an efficient manner. According to the survey, only 12.5% of commercial banks in Afghanistan claimed the fact, that the major challenge in their organization is lack of necessary knowledge and skills within the organization. However, the majority 87.5% responded that, they do not have such difficulty in their banks.

Business priorities are often conflicting and in some cases it is complicated to select an appropriate business. Based on the field research and questionnaires, 81% banks do not face this challenge, but the rest 19% banks confirmed that they have faced with challenge and clash during business selection. Estimation of parameters and constraints is another challenge regarding credit risk management policies in bank. Around 87.5% banks in the Afghan banking sector acknowledged that they have not been facing such challenge, but 12.5% banks have encountered such challenge during policy making in credit risk management. Furthermore difficulties were observed at some stage in separating banking and trade booking while framing credit risk management policies in banks. According to this research, only one bank faced this challenge.

The identification of creditworthiness among customers and clients in banks are very important, as it gives more insight about clients to bank. While issuing bank loans, guarantees and letter of credit, it is necessary to verify counterparties profile. Since the identification of creditworthiness of clients are very important, there are certain requirements of some models for the identification. Credit portfolio view is one of these models to identify creditworthiness of clients. More than 50% of the banks in Afghanistan use this model. The graph below describes the figures in a proper way:

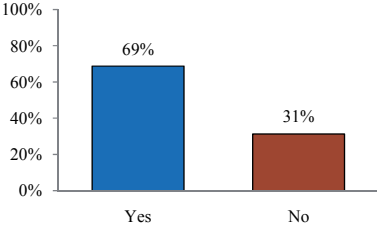
**Figure 7:** Credit portfolio view



Source: The author's own data

The graph shows that 56% banks use credit portfolio view model to know the creditworthiness of the clients, and 44% banks are not using this model. Notwithstanding equity based approach is another model used to identify creditworthiness of clients in banks. Around 19% banks in Afghanistan use this model to identify creditworthiness of customers, whereas 81% banks do not use this model. The third approach named stress testing is another model and is an important credit risk management tool which is used in banks as part of their internal risk management approaches for identification of creditworthiness, but unfortunately none of the banks use this model. Scenario analysis and sensitivity analysis are also used for detection and recognition of creditworthiness of clients, out of 16 banks, only one bank uses scenario analysis and one uses sensitivity analysis model to detect creditworthiness. Ratings based approach is another model which used to detect and identify creditworthiness of clients in banks. More than 50% banks use this model for detection of creditworthiness in their banks. The following graph identifies the exact percentage, how the banks use this model for creditworthiness in their banks.

**Figure 8:** Ratings based approach



Source: The author's own data

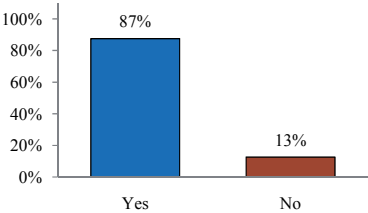
The graph describes that 69% of all banks use ratings based approach to identify creditworthiness of their customers; despite 31% banks do not use this model for the identification of creditworthiness of customers.

**4.3. Risk reporting and risk management culture**

Implementation of successful risk management culture in banks is very important. To implement it successfully, there are some aspects which have to be considered. Risk reporting on regular and formal basis should take place in the organization which contribute to greater financial stability in the organization and make it less

prone to failures. Getting incentives for distribution of information to internal and external stakeholders would help them to evaluate risk accurately. Figure 9 describes risk reporting on regular basis in the Afghan banking sector:

**Figure 9:** Risk reporting on regular basis



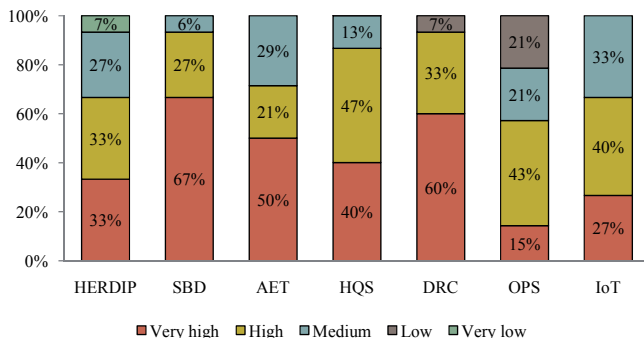
Source: The author's own data

The graph indicates that 87% banks report risk on regular and formal basis in their banks. However, 13% banks confirm that risk reporting takes place on irregular basis. Added to that, 50% banks say there is continuous management reporting which includes risk but the rest 50% reject it and risk reporting in their banks takes place in different ways. 19% banks have agreed that risk issues are reported on ad hoc basis. Exceptionally there is one bank, which confirms that risk issues are not reported at all.

Efficient dealing with risk related issues and implementation of risk management culture in the organization require responsibility and accountability among responsible staffs. For the successful implementation of risk management culture in the Afghan banking sector, implementation of various factors like technology, hiring qualified staff, documented records, overcoming personal skepticism, enterprise risk data infrastructure in place, support from the board of director/ executives and adequate employee training are inevitable.

According to the survey results, the following graph describes how the importance of the mentioned aspects were considered by banking sector in Afghanistan for better and successful implementation of risk management culture in banks.

**Figure 10:** Risk management culture



Source: The author's own data

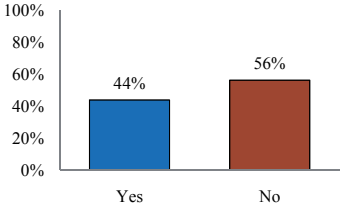
The graph describes that, 33% of banks confirm the importance of having an enterprise risk data infrastructure in place (HERDIP) is very high and 33% of banks have agreed that it is high for the implementation of successful risk management culture in their banks. In addition, 27% of banks admit that the importance of having an enterprise risk data infrastructure in place is medium, but only 7% have a contrary opinion. The support from board of director (SBD) or executive level is another aspect of having successful risk management culture, so 67% of banks rate it as very high, 27% as high and 6% as medium. Adequate employee training (AET) is needed to have effective risk-awareness culture in banks, 50% of banks consider the importance as very high, 21% as high and 29% medium in the Afghan banking sector. Based on the questionnaires results, hiring qualified and professional staff (HQS) was observed as another feature of implementing risk management culture in banks. Around 40% of banks in Afghanistan rated the importance of this aspect as very high, 47% are agreed that it is high, 13% confirmed it as medium and think that the importance of this aspect with regard to implementation of successful risk management culture in their banks is medium. However, documented records (DRC) in banks are another aspect of implementing successful risk management culture in banks. According to the questionnaires results, 60% of the banks have agreed that the importance as very high and 33% banks rated its importance as high. Overcoming personal skepticism(OPS) will also help in the process of implementing a successful risk management culture in banks, with 15% of banks have agreed and rated it as

very high, 43% as high, 21% as medium and 21% as low. Moreover, implementation of technology (IoT) is also an important aspect of having successful risk management culture in banks. Based on the survey results, 27% of banks rated this factor as very high, 40% consider it as high and 33% of banks agree that the importance of implementation of technology for successful risk management culture in their banks is medium.

**4.4. Risk measuring approaches in Afghan banking sector**

Value at Risk (VaR) is an importance concept and tool for risk exposure measure in risk management. The potential loss can be calculated with VaR, which could not be exceeded within a confidence interval and time horizon. In the survey a question was asked to verify, whether VaR measures to analyze and quantify the risk exposure and at which confidence intervals are used. According to the results, only 7 banks use VaR measures to analyze risk exposures and the remaining 9 banks do not use it. Banks, which use VaR-tool, have been using a specified level of probability (known as confidence level or interval). Around five banks use 95% and from the remaining two banks, one use 99% and other use 90% confidence intervals. For better clarity, the graph below describes that only 44% of banks in the Afghan banking sector use VaR measures to quantify and analyze the risk exposures, but 56% banks do not use this tool.

**Figure 11:** Using VaR for risk exposure measures



Source: The author’s own data

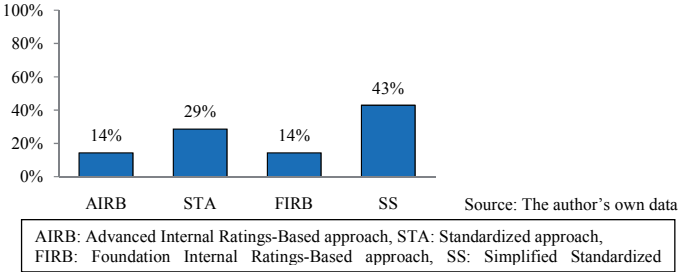
To calculate regulatory capital under Basel II Accord, banks are allowed to have their own risk parameters to calculate capital requirements for credit risk. In accordance with Basel II directives, 75% of commercial banks in Afghanistan have an internal rating system in place, whereas the rest 25% of commercial banks do not

have any internal rating system in place. In addition, 75% of all commercial banks verify that the minimum capital asset ratio requirement weighted is in line with the Basel II guidelines but the rest 25% reject it, because their minimum capital asset ratio requirement weighted is not in line with the Basel II guidelines. Besides, 75% of banks say that they have an adequate system in place to identify and monitor risk on an ongoing basis, whereas 25% of banks do not have any adequate system for monitoring and identification of risk. In questionnaires, a question was asked to know whether their credit risks policies constitute the part of bank-wide capital management strategy. Around 94% banks made a favorable reply, but 6% answered that their credit risk policy is not a part of the bank-wide capital management strategy.

As far as risk measuring is concerned, various and different types of approaches are used to quantify and measure different risk exposures in banks. There are various approaches to calculate the capital requirements in banks for many important risk factors such as credit risk, market risk and operational risk. The following approaches are used in the Afghan banking sector to quantify and analyze risk exposures in their banks accordingly.

*Credit risk measurement approaches:*

**Figure 12:** Credit risk approaches

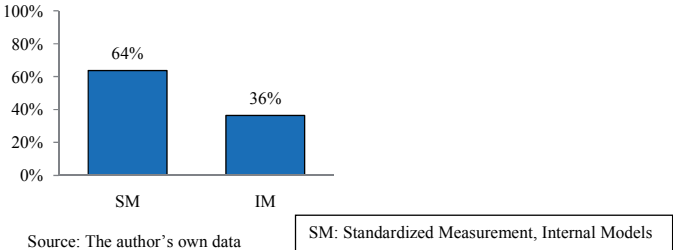


The Basel Committee permits bank to follow either standardized approach or internal ratings-based approach methodologies for calculating their capital requirements regarding credit risk. These two categories are then subcategorized into standardized and simplified standardized approaches, advanced and foundation internal ratings-based approaches in order. According to the research results, the mentioned approaches are used in the Afghan banking sector to calculate capital requirements for credit risk. The above figure 12 describes that, 14% of banks use advanced internal ratings-based approach to measure credit risk in their banks.

Around 29% of banks use standardized approach, 14% of banks use foundation internal ratings-based approach and the remaining 43% banks use simplified standardized approach to measure credit risk exposure in their banks.

*Market risk measurement approaches:*

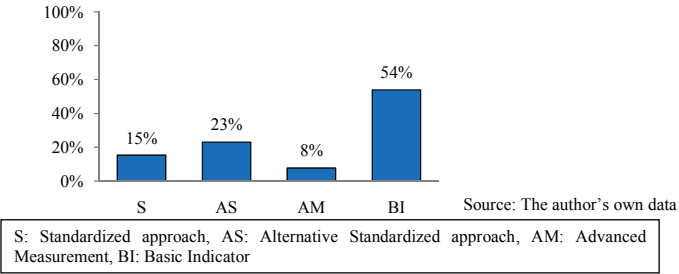
**Figure 13:** Market risk approaches



Since Basel Committee permit banks a choice between standardized measurement and internal models methodologies for calculating their capital requirements for market risk, both approaches are used in the Afghan banking sector. Based on the research results, the above graph identifies that 64% of banks use standardized measurement and 36% banks use internal models to measure market risk in their banks.

*Operational risk measurement approaches:*

**Figure 14:** Operational risk approaches



The graph shows that 15% of banks use standardized approach, 23% of banks use alternative standardized approach for operational risk measurement, 8% of the banks

use advanced measurement to measure operational risk in their banks and 54% of banks use basic indicator approach to measure operational risk in their banks.

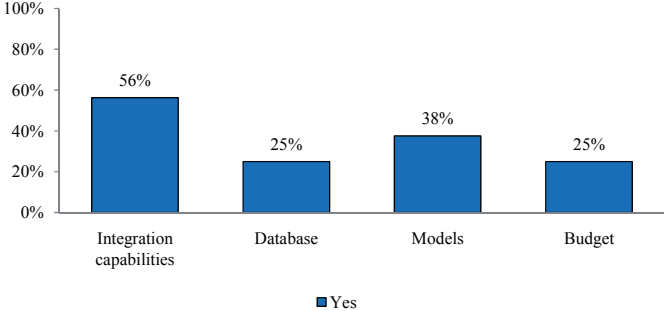
**4.5. Implementation of Basel II in Afghanistan**

Banking services and associated activities in Afghanistan financial sector are managed in traditional and isolated ways. To achieve internationalization of banking activities in Afghanistan, implementation of Basel II Accord in need to be followed. Basel II provides legal framework and set of standards to manage and control various types of activities in the sector. Implementation of Basel II in Afghanistan is one of the objectives of DAB. Even though DAB is working closely with commercial banks to implement Basel II efficiently. Afghan banking sector still predicts some difficulties. One of the banks claimed that it relies heavily on IT support and many aspects do not apply to microfinance institutions in Afghanistan.

The predicted difficulties are considered further into two broad sections, credit risk and operational risk. The difficulties in the credit risk part for Basel II implementation are well identified in the figure below:

*Difficulties in credit risk:*

**Figure 15:** Difficulties in credit risk



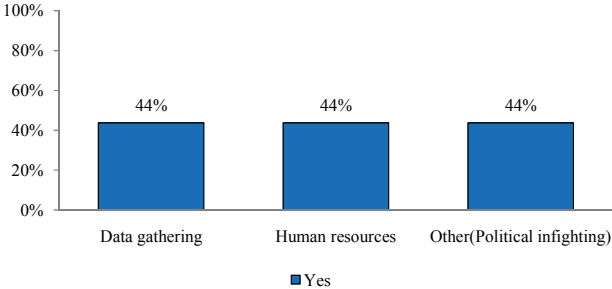
Source: The author's own data

Fifty six percent of banks certify that integration capabilities would be the major problem during implementation of Basel II in Afghanistan. In addition, 25% of banks

predict the problem and their argument is that, an appropriate database is needed for credit risk in banks to implement Basel II. Using models to measure credit risk in banks is another difficulty which prevents the sector to implement Basel II and 38% of banks acknowledged this difficulty. Insufficient funding/budget is also predicted as one of the difficulties and 25% of banks agreed on this problem during Basel II implementation in Afghanistan.

*Difficulties in operational risk:*

**Figure 16:** Difficulties in operational risk

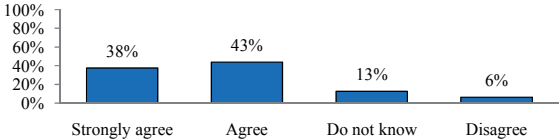


Source: The author’s own data

The difficulties concerning operational risk are predicted in the Afghan banking sector during Basel II implementation such as data gathering, human resources and political infighting. Based on the questionnaires results, 44% of banks equally acknowledged these three types of difficulties.

As far as the implementation of Basel II in Afghanistan is concerned, the important impact of Basel II can easily be judged from the following graph:

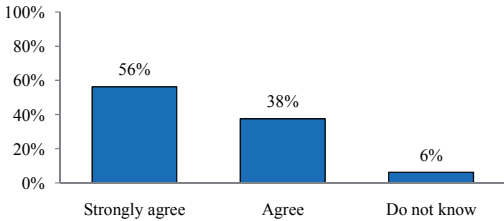
**Figure 17:** Important impact of Basel II in Afghanistan



Source: The author’s own data

The graph describes that the important impact of implementing Basel II in Afghanistan. 38% of banks have strongly agreed, 43% of banks have agreed, 13% of banks do not have an answer and the rest 6% have disagreed that the implementation of Basel II in Afghanistan is highly significant. Finally, the majority is agreed that the implementation of Basel II in Afghanistan has very important impact. When it is put into practice, it will improve the risk management processes in banks. In general, the majority verified the importance of Basel II in Afghanistan banking sector. The graph below shows the improvement of risk management processes when Basel II is put into practices:

**Figure 18:** Improvement of risk management processes

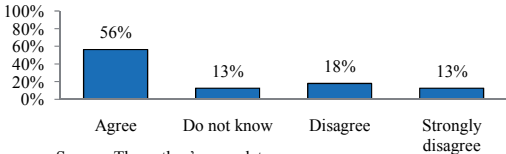


Source: The author’s own data

Around 56% of Banks have strongly agreed, 38% of banks have agreed, and 6% do not have knowledge, that implementation of Basel II will improve risk management processes in Afghanistan.

Having qualified and professional staff will help the risk management to answer many issues related to various types of risk in a proper time. Adequate knowledge over the Standards of the Basel II Accord is necessary to be acquired by the staffs of banks. Based on the questionnaires results, the following graph shows how employees in Afghanistan banking sector have adequate knowledge over the standards of the Basel II Accord:

**Figure 19:** Adequate knowledge of the Standards of the Basel II Accord



Source: The author’s own data

The graph identifies that none of the banks have strongly agreed that their staffs have sufficient knowledge about the standards of Basel II Accord. 56% of banks have agreed that their employees have adequate knowledge of standards of Basel II Accord. Around 13% of the banks do not know about their employees' knowledge on Basel II Accord, but 18% have disagreed and confirmed that their employees do not have adequate knowledge on Basel II Accord. The rest 13% of banks have strongly disagreed and confirm that their employees do not have adequate knowledge of standards of Basel II Accord.

#### **4.6. Subsample analysis**

##### **4.6.1. Banks' size**

The size of banks is analyzed to find the differences between large and small banks in the sector. The strong and weak points of the financial situation of the banks can be found. Furthermore, Cornett et al (2008) found that the size of a bank has an impact on the performance of banks IPOs (Initial Public Offerings), while Zimmerman (1996) investigated the performance of banks in California and found that the size continues to be the influential factor driving bank's performance.<sup>79</sup>

In general, bank size is used to measure economies or diseconomies of scale in the banking sector. The cost differences could cause a positive relationship between size and bank performance, if there are significant economies of scale. In addition, size is closely related to the capital sufficiency of a bank since relatively large banks tend to raise less expensive capital and, for this reason, seem more profitable.<sup>80</sup>

When analyzing a bank from an external point of view, the analysis is limited by the data and information the bank is obliged to or willing to publish. Therefore an analysis from an internal perspective can go deeper and in most cases is more reliable than an external one. In both cases it needs to be decided which data and what ratios are best for the purpose of analyzing the situation of the bank.<sup>81</sup> A number of studies have been made to subsample analysis of banks. In most studies, the total assets of the bank are used as proxy for bank size.<sup>82</sup>

---

<sup>79</sup> Fayman, Alex, 2009, p. 2.

<sup>80</sup> Chen, Yi-Kai, 2009, p. 11.

<sup>81</sup> Napp, ANN-Kartrin, 2011, p. 28.

<sup>82</sup> Ben Naceur, Samy, 2003, p. 6.

In order to distinguish between large and small banks, total assets are used as proxy for the bank size indicator in the Afghan banking sector. Based on balance sheets data, the median of total assets in the Afghan banking sector is 177,097.5 million dollars. Median is used as a division point here to group banks into large and small banks. Using median as a division point gives a view of the real data analysis and it gives a view of equal distribution of the numbers. Those banks are large banks when their total assets are above the median and those banks are small banks when their total assets are below the median. The below table gives us a broader view concerning the banks size in the Afghan banking sector.

**Table 6:** Banks' size

Banks' size	
<b>Median of total assets</b>	<b>177,097.5 million dollar</b>
<b>Small banks</b>	8
<b>Large banks</b>	8

Source: The author's own data

The above table describes that median of the total assets in the Afghan banking sector is \$177,097.5 million dollars. The assets of eight banks are below the median which are small banks and the assets of eight banks are above the median which are large banks. As a result, no differences exist between the two groups and the two groups are the same in size. In the large banks category, eight banks are included and the same eight banks are in the small banks category.

**4.6.2. Central risk management approaches and bank's size**

Theories and evidence from studies claim that large banks use more sophisticated and advanced risk management procedures in order to measure risk. They have a high loans portfolio quality and large risks exposures. Therefore, it is necessary to use more sophisticated and advanced risk management procedures to measure and control risk. The comparisons are made between large and small banks about sophistication degree of using different types of risks measuring approaches that cover exposures to credit risk, market risk and operational risk respectively. Controlling and monitoring risk levels depend on risk measurement tools. If a bank does not have risk measurement tools it has a limited ability to control or monitor the risk level. As the complexity of the risk increases, more sophisticated measurement tools are needed to be implemented and a bank should periodically test to make sure that the

measurement tools it uses are accurate.<sup>83</sup> Basel Committee itself expects that all banks, beginning with the larger ones, would enhance their information system in terms of sophistication to meet rigidly accurate supervisory requirements. It is logical to think that larger banks would aim for increased degree of sophistication in their information system.<sup>84</sup>

For rating and controlling risk exposures, large banks have developed and adopted more sophisticated approaches. Standardized approach in operational risk is different from basic indicator approach and it takes the distribution of a bank’s gross income over its different business lines into consideration. This makes it to some extent more sophisticated from a risk perspective, but it is still an apparently poor measurement approach for assessing the true operational risk taking of the bank. Using more sophisticated regulatory risk measurement approaches is giving the banks an option to set aside less capital for covering risk exposures.<sup>85</sup>

Many large banks have more formal systems for approving loans, portfolio monitoring and management reporting, analysis of sufficiency of loan loss reserves, profitability and loan pricing analysis. Internal ratings are vital inputs to all such systems, as well as to quantitative portfolio credit risk models. The uses of internal ratings have increased and promised to continue to grow, and thus a bank’s decisions about its internal rating system can have more and more important effect on its ability to manage credit risk.<sup>86</sup>

Using risk measurement approaches in the Afghan banking sector is different according to size. Based on the balance sheet data analysis in the sector, two types, standardized and advanced approaches are used to measure credit risk, market risk and operational risk exposures, respectively. The following table 7 shows the approaches which are used for credit risk measures.

**Table 7:** Credit risk approaches and banks’ size

	Credit risk approaches		
	Standardized	Internal ratings-based	Total
<b>Small banks</b>	83%	17%	100%
<b>Large banks</b>	50%	50%	100%

Source: The author’s own data

<sup>83</sup> Comptroller’s handbook, 2010, p. 5.  
<sup>84</sup> Bonson, Enrique; Escobar, Tomas; Flores, Francisco, 2008, pp. 297-298.  
<sup>85</sup> Willeson, Magnus, 2009, pp. 1-3.  
<sup>86</sup> Treachy, Willian F; Carey, Mark, 2000, pp. 168-200.

The table identifies that small banks use 83% of standardized and only 17% of advanced approaches to measure credit risk. Large banks use 50% of standardized and 50% of advanced approaches to measure credit risk. Based on the comparison between small and large banks, it can be concluded that large banks in the Afghan banking sector use more sophisticated approaches to measure credit risk exposures. Taking into account credit risk measurement approaches, the assumption that large banks use more sophisticated and advanced approaches for credit risk measurement is confirmed.

The questionnaires results show that market risk does not seem to be the most relevant risk factor at all. One reason might be that the capital market is not well developed in Afghanistan. But, to some extent the importance of market risk is high in the sector. The measuring approaches are varying among the banks which can be found in the table below:

**Table 8:** Market risk approaches and banks' size

	Market risk approaches		
	Standardized	Internal models	Total
<b>Small banks</b>	80%	20%	100%
<b>large banks</b>	33%	67%	100%

Source: The author's own data

The above table shows that 80% of small banks in the Afghan banking sector use standardized approaches to measure market risk and 67% of large banks use internal models which are more sophisticated methodologies. It is decided by reasoning that large banks in the Afghan banking sector use more sophisticated approaches to measure market risk.

As the operational risk is the relevant risk factor in the sector, its measurement in small and large banks is a crucial issue that has to be considered. Three types of approaches, basic indicator, standardized and advanced, are used in the entire sector for operational risk measurement. From the risk perspective, standardized approach in operational risk is to some extent more advanced than basic indicator approach. The following table 9 identifies the approaches that are used for operational risk measurement.

**Table 9:** Operational risk approaches and banks' size

Operational risk approaches				
	Basic indicator	Standardized	Advanced measurement	Total
Small banks	71%	29%	-	100%
large banks	33%	50%	17%	100%

Source: The author's own data

The table describes three different approaches which are used in the Afghan banking sector for operational risk measures. It shows that 71% of small banks use basic indicator approach to measure operational risk and 50% of large banks use standardized, 17% advanced measurement. The comparison between these categories according to operational risk measurement shows that large banks use more sophisticated and advanced approaches. Once again, the assumption is confirmed here that large banks use more sophisticated approaches for operational risk measurement.

The hypothesis that large banks use more sophisticated approaches to measure risk is tested in the Afghan banking sector. As a result, it is confirmed that large banks in the Afghan banking sector use more sophisticated and advanced measurement to measure risk.

### **Credit risk measure in domestic and foreign banks**

Using risk measures tools to measure credit risk according to domestic and foreign banks is varied to some extent in the Afghan banking sector. Most of the domestic banks use standardized approach to measure credit risk. Compared to domestic banks, foreign banks use more advanced approach to measure credit risk. A reason could be that loans portfolios are higher in foreign banks and they use more sophisticated risk management procedures to manage and control credit risk. The table below shows the approaches that are used to measure credit risk in domestic and foreign banks in Afghan banking sector.

**Table 10:** Credit risk in domestic and foreign banks

Credit risk measure in domestic and foreign banks		
	Domestic banks	Foreign banks
Standardized approach	80%	60%
Advanced approach	20%	40%
Total	100%	100%

Source: The author's own data

The table describes that 80% of domestic banks use standardized and 20% advanced Approach to measure credit risk. It shows that 60% of foreign banks use standardized and 40% advanced approach for credit risk measurement.

The people who work in risk management departments depend on the banks size. If the bank size is large, so more people are working in the risk management, but if the bank size is small fewer people are working in the risk management department. In large banks more sophisticated risk management procedures and advanced information system are required that have to be applied in order to manage and control risk. The below table 11 gives us the exact number of people working in the risk management departments in large and small banks in the Afghan banking sector.

**Table 11:** People in risk management

People in risk management		
	Small banks	Large banks
<b>Total</b>	17	46
<b>Median</b>	2	5

Source: The author’s own data

The above table describes that more people are working in risk management departments of large banks. But, fewer people are working in risk management departments of small banks. In large banks, totally 46 people are working in risk management or work on issues related to risk and the median number of people in risk management of large banks is 5 people in each bank. The total number of people who work in risk management units of small banks is relatively smaller. Totally 17 people are working in risk management of small banks, 2 people in each. The larger the bank size, the more people are working in risk management.

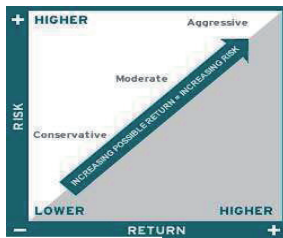
**4.6.3. Risk tolerance in Afghan banking sector based on size**

Inconsistency in the returns that banks are willing to accept and endure is a vital issue in the banking sector. With higher risk tolerance, banks goals are growth in their portfolios and they are seeking higher returns. They are willing to accept greater volatility over the short-term because their time horizon is long-term. Risk tolerance is a factor which may establish the appropriate composition of assets in a portfolio,

and the assessment of an investor’s risk profile is another highly influential factor in the construction of an appropriate investment portfolio.<sup>87</sup>

In the process of investing banks are required to consider the financial risk that they are willing to take. A trade-off exists between the risk linked with an investment and its expected return over time. Naturally, one must tolerate a greater risk of go down in the portfolio value in order to pursue higher potential returns. Each bank has an unlike attitude toward risk. The figure below shows the trade-off between risk and return in the capital markets.<sup>88</sup>

**Figure 20:** Trade-off between risk and return



Source: Citibank

The figure illustrates that there is a positive relation between risk and return, and it shows that the higher the risk the higher the return. If a bank tends to increase possible returns the risk will be increased, as well.

To know risk tolerance in the Afghan banking sector, the entire sector is divided into small and large banks. To have a normal distribution of the numbers, a median is taken as the division point here. The banks are equally distributed and eight small and eight large banks existed in the sector. Table 12 below illustrates risk tolerance in the Afghan banking sector.

**Table 12:** Risk tolerance

Risk tolerance						
	Very high	High	Medium	Low	Very low	Total
Small banks	14.3%	14.3%	57.1%	14.3%		100%
Large banks		50%		37.5%	12.5%	100%

Source: The author’s own data

<sup>87</sup> Hallahan, Terrence A.; Faff, Robert W.; McKenzie, Michael D., 2003, p. 75.

<sup>88</sup> [http://www.citibank.com/ipb-global/homepage/newsite/content/english/inv\\_wma\\_lv/risk.htm](http://www.citibank.com/ipb-global/homepage/newsite/content/english/inv_wma_lv/risk.htm) [Accessed 29.06.2013].

The table illustrates that 50 % of large banks confirmed that risk tolerance in their banks is very high. But, the risk tolerance in the remaining 37.5% banks in the large category is low and in 12.5% banks it is very low. In the small bank category, 57.1% banks confirmed that risk tolerance in their banks is medium. The comparison between large and small banks shows that the risk tolerance in large banks is higher than in small banks. Furthermore, in general, risk tolerance in the Afghan banking sector is more than average.

#### **4.6.4. Banks' size and implementation of Basel II**

Implementation of Basel II may have many important consequences for the global financial system. Changes in the regulation and supervision of banks and in their risk management will result from the Basel II implementation. Therefore, implementation of Basel II may in the long run be considered as one of the most vital ingredient elements of the global financial system.<sup>89</sup>

Several low income countries feel that they have previous tasks to complete within Basel I, before dealing with Basel II. Basel Committee and IMF do not push low income countries to adopt Basel II. However, the pressure would be from international consulting firms, rating agencies and others to adopt Basel II. The challenges that low income countries face are not exactly the same and it can differ across countries according to the country's size (population, absolute GDP). It is possible to confirm that one of the biggest challenges facing low income countries is lack of human and skills and resources to implement Basel II in a proper way.<sup>90</sup>

The views of the Executive Board of the IMF clearly indicate that implementing Basel II before the expected time in countries with a limited capacity could improperly disport resources from the more urgent priorities, and as a result the supervision will be weakened rather than strengthened. They agreed that countries should give priority first to strengthening their financial systems and focus on achieving a greater level of compliance with the Basel Core Principles.<sup>91</sup>

Banking crises are able to jeopardize macroeconomic stability through their potential effects on confidence, financial flows, monetary control and the budgetary impact of a bank. The inability to identify and quantify the different sorts of risk requires a very high cost not only for the entire banking sector, but for the whole economy as well. Therefore, achieving an efficient, sound and stable financial system

---

<sup>89</sup> Cornford, Andrew, 2006, p. 1.

<sup>90</sup> Gottschalk, Ricardo, 2007, pp. 3-6.

<sup>91</sup> Sharma, Manoranjan, 2008, p. 2.

is an important, complex and a multidimensional task, and Basel II intends to give impulsion to the development of a sound risk management system.<sup>92</sup>

The importance of an effective and improved risk management under the Basel II Accord is its proper implementation, and it has become apparent as an effort to secure stability in financial systems and structures by using a set of rules which are acceptable in all global financial centers and is a scientific treatment of risk.<sup>93</sup>

Implementation of Basel II in Afghanistan is one of the major objectives of DAB. DAB is working closely with commercial banks to address a number of challenges in order to efficiently implement the Basel II. To see the important impact of implementing Basel II in the Afghan banking industry, the whole sector was divided to small and large banks and a median was used as a division point here. Therefore, to know if Basel II is implemented what could be positive consequences on risk management, from large and small banks perspectives. The table below illustrates the important impact of implementing Basel II in the Afghan banking industry.

**Table 13:** Impact of implementing Basel II in Afghanistan

Important impact of implementing Basel II in Afghanistan					
	Strongly agree	Agree	Do not know	Disagree	Total
Small banks	37.5%	50%		12.5%	100%
Large banks	37.5%	37.5%	25%		100%

Source: The author’s own data

The above table illustrates that 37.5 % of equal small and large banks strongly agreed that the implementation of Basel II in Afghanistan will have an important positive impact on the risk management procedures in the banking industry. Furthermore, 50% of small and 37.5% of large banks confirm the important impact of implementing Basel II in the banking sector. As a result, the implementation of Basel II in the whole banking sector will have a positive impact on the risk management processes.

As Basel II aims to give strength to the development of a sound risk management system in the banking sector the implementation of Basel II will improve the risk management processes in the relevant sector respectively.

In theory, the assumption was that implementation of Basel II improves risk management processes. This assumption is tested in the Afghan banking sector,

<sup>92</sup> Hai, Seema Siddiqua; Minhaj, Safia Qamar; Ahmed, Roohi, 2007, pp. 2-3.

<sup>93</sup> Masood, Omar; Fry, J.M., 2011, pp. 2-3.

whether they confirm or reject it. The table below shows risk management processes in both small and large banks.

**Table 14:** Risk management processes

Basel II improve risk management processes				
	Strongly agree	Agree	Do not Know	Total
<b>Small banks</b>	50%	37.5%	12.5%	100%
<b>large banks</b>	62.5%	37.5%		100%

Source: The author’s own data

The table identifies and illustrates that 50% of small and 62.5% of large banks strongly agreed that the implementation of Basel will improve risk management processes. Furthermore, 37.5% of equally small and large banks agreed that implementing Basel II in the banking industry will improve risk management processes. But, only 12.5% of small banks which is only one bank responded that they do not know about Basel II implementation. In general, based on the result of the table, the whole sector is agreed that implementation of Basel II will improve risk management processes. As a result, the hypothesis is true and confirmed in the Afghan banking sector.

Implementation of Basel II requires that the people who work in risk management or work on issues related to risk should have an adequate knowledge about Basel II Accord. The table below shows the adequate knowledge of employees of the Standards of the Basel II Accord in small and large banks in the Afghan banking sector.

**Table 15:** Adequate knowledge of Basel II

Adequate knowledge of Basel II					
	Agree	Do not Know	Disagree	Strongly disagree	Total
<b>Small banks</b>	62.5%		37.5%		100%
<b>Large banks</b>	50%	25%		25%	100%

Source: The author’s own data

The table describes and shows that in 62.5% of small banks the employees have adequate knowledge of the Standards of the Basel II Accord but 37.5% of small banks disagreed and the employees in their banks do not have adequate know about Basel II Accord. Furthermore, 50% of large banks agreed that employees in their banks have adequate knowledge of Basel II Accord. In the large banks category, the remaining 25% do not know and 25% strongly disagreed that the employees in their banks do not have adequate knowledge of Basel II Accord. As a result, more than

average employees have adequate knowledge of the Standards of Basel II Accord in the sector.

**Basel II and risk management approaches**

It is interesting to know which approaches are used to measure credit risk and market risk in those banks that agreed that implementation of Basel II has a very important impact on risk management processes and will improve it. The table below shows the relation between credit risk measurement approaches and Basel II.

**Table 16:** Credit risk approaches and Basel II

Basel II and credit risk approaches			
	Credit risk		
	Standardized	Advanced	Total
<b>Strongly agree 38%</b>	83%	17%	100%
<b>Agree 44%</b>	57%	43%	100%

Source: The author’s own data

The above table shows that 38% of banks strongly agreed that implementation of Basel II has a very important impact on risk management processes, among which 83% used standardized approach and the remaining 17% used advanced approach. Moreover, 44% of banks agreed that implementation of Basel II has a very important impact on risk management processes, among which 57% used standardized approach and the remaining 43% used advanced approach. In both categories, the majority use standardized approach for credit risk measurement. So the assumption holds valid, that the implementation of Basel II will improve risk management processes in the Afghan banking sector. It is equally important to know the relation between Basel II implementation and market risk measurement approaches. The table below depicts it.

**Table 17:** Market risk approaches and Basel II

Basel II and Market risk approaches			
	Market risk		
	Standardized	Internal models	Total
<b>Strongly agree 56%</b>	75%	25%	100%
<b>Agree 38%</b>	43%	57%	100%

Source: The author’s own data

From the table, it is clear that 56% of banks strongly agreed and 38% of banks agreed that implementation of Basel II will improve risk management processes in the sector. From the strongly agreed banks category, 75% follow standardized approach to measure market risk but the remaining 25% follow internal models. From the agreed banks category, 43% follow standardized approach to measure market risk and the remaining 57% follow internal models for market risk measurement. It can be concluded that strongly agreed banks primarily focus on standardized approach to measure market risk. However, from the agreed banks category, the majority use internal models.

## 5. Conclusion

The objective of this study was to find the major risk factors in the Afghan banking industry and the central risk management approaches that are used for measuring the relevant risks in the sector. It was also of importance to evaluate the potential deficits in risk management procedures that exist in risk management and their implications for the Afghan banking sector and for the whole Afghanistan economy. The key research findings and their relevance for the research questions as summarized as follows.

According to the empirical research findings, the main risk drivers in the Afghan banking sector are credit risk, liquidity risk and operational risk. The findings claim that credit risk is the most relevant risk factor. However, market risk does not seem to be a relevant risk factor at all. Based on the research findings one can argue that capital market in Afghanistan is in the primary stage and it is being in the developing process.

In the entire sector the majority of the banks use a standardized approach to measure credit risk in their banks. According to subsample analysis, 83% of small banks use standardized approach and 50% of large banks use more sophisticated and advanced approaches for credit risk measurement in their banks. In the whole sector, 64% of all banks use standardized measurements to measure market risk in their banks. However, based on the banks' size analysis, 80% of small banks use standardized and 67% of large banks use more sophisticated approaches for market risk measurement. Furthermore, more than 50% of the whole sector uses basic indicator approach to measure operational risk in their banks. According to size, 71% of small banks use basic indicator and 50% of large banks use standardized approaches for operational risk measurement.

There is inconsistency in the banks' returns which they are willing to endure. Risk tolerance in large banks is higher than in small banks. In general, risk tolerance in the whole sector is higher than average. But, the main deficits in the risk management procedures that negatively impact the whole Afghan banking industry are lack of technical knowledge, qualified and trained personnel in the risk management, difficulties in quantifying risks, quality of information and high cost of information technology. Missing expertise in risk management may have adverse consequences on the stability and development of the financial sector in Afghanistan. Furthermore, implementation of new regulatory requirements seem to be the first step in the right direction, but missing IT-infrastructure and know how remain the key challenges.

Using total assets as a proxy, the entire Afghan banking sector is comprised of eight small and eight large banks. There is no difference between these two groups; they are the same in size. The first hypothesis and assumption was that large banks use more sophisticated and advanced approaches in order to measure risk in their banks. The hypothesis was checked in the Afghan banking sector. It is true and confirmed that large banks use more sophisticated approaches to measure risk. It is also logically true that large banks increase the degree of sophistication in order to meet rigidly accurate supervisory requirements.

In the theory, the second hypothesis was that implementation of Basel II improves risk management processes. This assumption was checked and tested in the Afghan banking sector, 50% of small and 62.5% of large banks strongly agreed that the implementation of Basel II will improve risk management processes. Furthermore, 37.5% of equally small and large banks agreed that implementing Basel II in the banking industry will improve risk management processes. In general, based on the empirical research findings, the whole sector is agreed that implementation of Basel II will improve risk management processes. As a result, the hypothesis is true and confirmed in the Afghan banking industry.

As far as the bank's size is concerned, more people are working in risk management departments of large banks or work on issues related to risk than small banks in order to manage and control risk in the sector. In large banks totally 46 people and in small banks totally 17 people work in risk management departments or work on issues related to risk in their banks.

Having effective and efficient risk management requires responsibility and accountability allocated equally between responsible staffs. Moreover, it requires implementation of successful risk management culture in the organization. Based on the empirical research analysis hiring qualified and professional staffs, adequate employees training, implementation of technology, documented records, support from the board of director/executive level and having an enterprise risk data infrastructure in place are very important aspects which will contribute to creating a successful risk management culture within banks in the Afghan banking sector.

The empirical research results show that 38% of all sixteen commercial banks strongly agreed that the implementation of Basel II in Afghanistan will have an important positive impact on the risk management procedures in the banking industry. Furthermore, 56% of all banks strongly agreed that the implementation of Basel in the sector will improve risk management processes.

Many researches show that implementing Basel II requires that employees in the banks should have adequate knowledge of the Standards of Basel II Accord. The examination and analysis of this research shows that 56% of the whole banks' employees have adequate knowledge of the Standards of Basel II Accord in the Afghan banking industry. 56% of banks have one to five years of experiences in credit risk management.

As it is mentioned, implementing Basel II has an important impact on risk management procedures and will improve risk management processes in the Afghan banking industry, so it is recommended that the DAB should provide regular training workshops to the banks' staff and employees to acquire the adequate knowledge of Basel II Accord, to eliminate the problems of lack of technical knowledge, qualified and trained personnel in the risk management and difficulties in quantifying risks.

It was intended to analyze comparative profitability between small and large banks, between domestic and foreign banks from risk perspective in the Afghan banking industry, but unfortunately financial statements for the last three years of the whole banks were not available and some of the data was missing. Therefore, further future researches on profitability analysis from risk measuring and managing perspective and the impact of credit risk on profitability in domestic and foreign banks in the Afghan banking sector are required to be done.

## Bibliography

Bangladesh Bank (2005): Managing Core Risks of Financial Institutions: Credit Risk Management-Industry best practices.

Basel Committee on Banking Supervision (2001a): The Internal Ratings-Based Approach.

——— (2001b): The Standardized Approach to Credit Risk.

——— (2006): International Convergence of Capital Measurement and Capital Standards.

——— (2009): Enhancements to the Basel II framework.

Ben Naceur, Samy (2003): The determinants of the Tunisian banking industry profitability: panel evidence. *Universite Libre de Tunis Working Papers*.

Bessis, Joël (2002): Risk management in banking. 2<sup>nd</sup> ed. New York: Wiley.

Bo, Dai (2000/2001): Value at Risk, Undergraduate Research Opportunity Programme in Science. Thesis, National University of Singapore.

Bonson, Enrique; Escobar, Tomas; Flores, Francisco (2008): Operational risk measurement in banking institutions and investment firms: New European evidences. *Financial Markets, Institutions & Instruments*, Vol.17.No.4, 287-307.

Carrel, Philippe (2010): The handbook of risk management. Implementing a post-crisis corporate culture. Chichester: Wiley (Wiley finance).

Chen, Yi-Kai (2009): Bank liquidity risk and performance. *International Monetary Fund, Working Paper*.

Citibank: Risk tolerance: [http://www.citibank.com/ipb-global/homepage/newsite/content/english/inv\\_wma\\_lvlrisk.htm](http://www.citibank.com/ipb-global/homepage/newsite/content/english/inv_wma_lvlrisk.htm) [Accessed on June 29 2013].

Collier, Paul M. (2009): Fundamentals of risk management for accountants and managers. Tools & techniques. Amsterdam, Boston, London: Elsevier/Butterworth-Heinemann.

Comptroller's handbook (2010): Large bank supervision: <http://www.occ.gov/publications/publications-by-type/comptrollers-handbook/cbs.pdf>. [Accessed on June 21 2013].

Cornford, Andrew (2006): The global implementation of Basel II: prospects and outstanding problems. UN, Policy issues in international trade and commodities study series No.34.

Crouhy, Michel; Galai, Dan; Mark, Robert (2006): The essentials of risk management. [Washington, D.C.]: McGraw-Hill.

Da Afghanistan Bank (2009): Da Afghanistan Bank strategic plan (2009-2014): Fostering Price Stability and Building a Robust Financial System.

Esch, Louis; Kieffer, Robert; López, Thierry (2005): Asset and Risk management. Risk oriented finance. Chichester: Wiley (Wiley Finance).

Fayman, Alex (2009): Large Banks versus Small Banks: How Different Are They?. *Journal of Economic and Social Policy*: Vol. 13: Issue No. 1, Article 6. Available at: <http://epubs.scu.edu.au/jesp/vol13/iss1/6>.

Gottschalk, Ricardo (2007): Basel II implementation in developing countries and effects on SME development. In: ICRIER- InWent Conference on 'Financial globalization and domestic financial sector development in South and Central Asia'. 22-23 November, New Delhi, India.

Hai, Seema Siddiqua; Minhaj, Safia Qamar; Ahmed, Roohi (2007): Implementation of Basel II: Issues, Challenges and Implications for Developing Countries. *Preprint*. <http://www.hull.ac.uk/php/ecskrb/GDP2007/SESARO-58110.pdf> [Accessed on May 27th 2013].

Hallahan, Terrence A.; Faff, Robert W.; McKenzie, Michael D. (2003): An empirical investigation of personal financial risk tolerance. *FINANCIAL SERVICES REVIEW-GREENWICH*-, Vol.13.No.1, 57-78.

Heffernan, Shelagh A. (2005): Modern banking. Chichester, West Sussex, England, Hoboken, NJ: John Wiley & Sons.

Hopkin, Paul (2010): Fundamentals of risk management. Understanding, evaluating, and implementing effective risk management. London, Philadelphia, PA: Kogan Page.

Hull, John C. (2005): Options, Futures, and other Derivatives, 5<sup>th</sup> ed, Upper Saddle River, New Jersey. Prentice Hall.

IMF (2010): Islamic Republic of Afghanistan: Sixth Review Under the Arrangement under the Poverty Reduction and Growth Facility, Request for Waiver of Nonobservance of a Performance Criterion, modification and Performance Criteria, and Rephrasing and Extension of the Arrangement, Country Report No.10/22.

—— (2011a): Islamic republic of Afghanistan: Detailed Assessment Report on Anti-Money Laundering and Combating the Financing of Terrorism, Country report No.11/317.

—— (2011b): Islamic Republic of Afghanistan: Letter of Intent, Memorandum of Economic and Financial policies, and Technical Memorandum of Understanding.

—— (2011c): Islamic Republic of Afghanistan: 2011 Article IV Consultation and Request for a Three-year Arrangement Under the Extended Credit Facility-Staff Report; Supplement-A Joint Work Bank/IMF Debt Sustainability Analysis; Staff Statement; Public Information Notice and Press Release on the Executive Board Discussion; and Statement by the Executive Director for Islamic Republic of Afghanistan, country Report No.11/330.

Jorion, Philippe (2003): Financial risk manager handbook. 2<sup>nd</sup> ed. Hoboken, N.J, [Chichester]: Wiley.

—— (2007): Value at risk. The new benchmark for managing financial risk. 3<sup>rd</sup> ed. New York: McGraw-Hill.

Khan, Tariqullah; Ahmed, Habib (2001): Risk management: An analysis of issues in Islamic financial industry, Islamic development Bank, Islamic Research and Training Institute, Jeddah-Saudi Arabia, Occasional Paper No.5.

Lowe, Philip (2002): Credit risk measurement and procyclicality, BIS, working paper No.116.

Masood, Omar; Fry, J. M. (2011): Risk management and the implementation of the Basel Accord in emerging countries: An application to Pakistan. MPRA Paper No.34163.

Murphy, David (2008): Understanding risk. The theory and practice of financial risk management. Boca Raton: Chapman & Hall/CRC (Chapman & Hall/CRC financial mathematics series).

Napp, ANN-Kartrin (2011): Financial risk management in SME: The use of financial analysis for identifying, analyzing and monitoring internal financial risks. Thesis, Arhus University, Denmark.

Nikolaou, Kleopatra (2009): Liquidity (Risk) concepts definitions and interactions. ECB. WP I008.

Oesterreichische Nationalbank (2006): Guidelines on Operational risk management.

Official Gazette (2003): Afghanistan Law of Banking: Chapter IV Operational requirements, page 34-36.

Parkinson, Dilys; Noble, Joseph (2005): Oxford business English dictionary. For learners of English. Oxford: Oxford Univ. Press.

Pavlocic, Jelena; Charap, Joshua (2009): Development of the Commercial Banking System in Afghanistan: Risk and Rewards, IMF, Working Paper, WP/09/150.

Ratnovski, Lev (2013): Liquidity and Transparency in Bank Risk Management, IMF, WP.13.16.

SAARCfinance, Governor's Symposium (May 15-17, 2012): Afghanistan Macroeconomic and financial stability.

Sharma, Manoranjan (2008): Dynamics of Indian banking. Views and vistas. New Delhi: Atlantic Publishers & Distributors.

Treachy, Willian F.; Carey, Mark (2000): Credit risk rating systems at large US banks. *Journal of Banking & Finance*, Vol. 24.No.1, 167-201.

US Policy in a big World: How they robbed Kabul Bank:  
[http://www.uspolicyinabigworld.com/2012/06/12/how-they-robbed-kabul-bank/#\\_ftn57](http://www.uspolicyinabigworld.com/2012/06/12/how-they-robbed-kabul-bank/#_ftn57) [Accessed on June 13 2013].

Vanzquez, Francisco; Federico, Pablo (2012): Bank Funding Structures and Risk: Evidence from the Global Financial Crisis, IMF.WP.12/29.

Willeesson, Magnus (2009): Banks' Operational Risk Measurement in Practice: Swedish banks' adaptation to the Basel II accord. In *Wolpertinger Conference, European Association of University Teachers of Banking and Finance, Sept 2-5, Rome, Italy*.

## Annexes

### Questionnaire:

#### GENERAL INFORMATION

Bank Name:..... Date:.....

1:  Afghan Bank       a Branch of foreign Bank

2: How many people work in the risk management department (or work on issues related to risk management) of your bank?

Answer: .....

3: How would you rate the risk tolerance of your bank (Please put (✓) for rating?)

very high	High	medium	low	very low

4: When you transfer money from one party to another party in Afghanistan and overseas, which method do you mostly use (in percentage)?

Hawala:   %;   Western Union:   %;   SWIFT:   %;

Money Gram:   %;   Other:   %

**RISK MANAGEMENT (MEASURES AND AWARENESS)**

5: Please put (✓) for rating.

The importance of risk management in our bank with regard to...	...is...				
	very high	high	medium	low	very low
...Credit Risk...					
...Market Risk					
...Liquidity Risk					
...Operational Risk					
...Interest Risk					
...Foreign Exchange Risk					
...Others (please specify)					

6: Which of the following do you believe are the most important benefits of *Credit Risk Management*?

- Improved pricing of products
- Real time exposure updates
- Accuracy of exposure modeling
- Calculation of regulatory exposure
- Credit grading (scoring) models
- Reduction of losses
- Improved selection of clients according to risk profile
- Indication of the "Sensitivity" of portfolio exposures to underlying risk factors
- Others:.....

7: What are the major challenges of credit risk management policies in your bank?

- Difficulty in quantifying risks
- Timeliness and quality of information
- Difficulty integrating risk management with other business processes
- Lack of necessary knowledge and skills within the organization
- Business priorities are often conflicting
- Calculation of parameters
- Difficulties for banks to separate banking and trading books
- Lack of technical knowledge and trained personnel
- High cost of information technology

8: Which of the models below are employed to identify credit worthiness of your customers?

- Credit portfolio view
- Scenario analysis
- Equity based approach
- Ratings based approach
- Stress testing
- sensitivity analysis
- Others:.....

9: Which of the following describes best the way risk management is reported within your organization? Please select the answer that most closely corresponds with the situation in your Bank.

- Risk reporting takes place on a regular, formal basis
- There is continuous management reporting which includes risk

Risk issues are reported on ad hoc basis

Risk issues are not reported at all

10: How important are the following aspects for implementing a successful risk management culture within your Bank?	very high	high	Medium	Low	very low
Having an enterprise risk data infrastructure in place					
Supported from the board of director/ executive level					
Adequate employee training					
Hiring qualified staff					
Documented records					
Overcame personal skepticism					
Implementation of technology					

11: Do you use Value at Risk (VaR) measures to analyze or quantify the risk exposure of your bank?

No  Yes

... if yes, for which type of risk do you calculate the VaR?

Credit Risk  Market Risk  Liquidity Risk

Other:.....

... if yes, what is the confidence interval the bank uses to determine the Value at Risk (VaR)

90%  95%  99%  99,9%

**RISK MANAGEMENT AND BASEL II**

12: Kindly tick (✓) for appropriate answer	Yes	No
Do you have an internal rating system in place in accordance with Basel II directives?		
Is the minimum capital asset ratio requirement weighted in line with the Basel II guidelines?		
Does the bank have an adequate system in place to identify and monitor risk on an ongoing basis?		
Is credit risk policy part of the bank-wide capital management strategy?		

13: Which approach (es) do you use to measure risk in your bank?

Credit Risk:

Simplified Standardized

Approach:.....

Standardized Approach:

.....

Foundation Internal Ratings-Based Approach:.....

Advanced Internal Ratings-Based Approach:.....

Others:.....

None

Market Risk:

Standardized Measurement Method:.....

Internal Models Approach:.....

Others:.....

None

Operational Risk:

Basic Indicator

Approach:.....

Standardized

Approach:.....

Alternative Standardized Approach:.....

Advanced Measurement Approach:.....

Others:.....

None

14: what difficulties do you foresee (predict) in the context of the implementation of Basel II?

Credit Risk:

Integration capabilities  Database  Models

Budget

Operational Risk:

Data gathering  Human Resources  Other (Political

infighting)

15: Do you think that the implementation of Basel II in Afghanistan is highly significant (Kindly tick (✓) for appropriate answer)?

strongly agree	agree	don't know	Disagree	strongly disagree

16: Do you think that Basel II will improve the risk management processes in your bank?

strongly agree	agree	don't know	Disagree	strongly disagree

17: Do you think that the employees in your bank have adequate knowledge of the standards of the Basel Accord?

strongly agree	agree	don't know	disagree	strongly disagree

**PERSONAL INFORMATION**

18: Number of years of experience in credit risk management (Please put (✓) for correct answer)

Below 1 year     1 to 5 years     5 to 10 years

10 to 15 years     above 15 years

19: Which best describes your position in the bank?

(Please put (✓) for correct answer)

Board Member     Senior Executive     Manager

Head of department     Risk Officer     others:.....





**More  
Books!** 



**yes**  
**i want morebooks!**

Buy your books fast and straightforward online - at one of the world's fastest growing online book stores! Environmentally sound due to Print-on-Demand technologies.

Buy your books online at

**[www.get-morebooks.com](http://www.get-morebooks.com)**

Kaufen Sie Ihre Bücher schnell und unkompliziert online – auf einer der am schnellsten wachsenden Buchhandelsplattformen weltweit!  
Dank Print-On-Demand umwelt- und ressourcenschonend produziert.

Bücher schneller online kaufen

**[www.morebooks.de](http://www.morebooks.de)**

OmniScriptum Marketing DEU GmbH  
Heinrich-Böcking-Str. 6-8  
D - 66121 Saarbrücken  
Telefax: +49 681 93 81 567-9

[info@omniscrptum.de](mailto:info@omniscrptum.de)  
[www.omniscrptum.de](http://www.omniscrptum.de)

OMNI Scriptum 