Effects of Bank-Specific and Macroeconomic Risks on Growth, Profitability, and Stability of Islamic and Conventional Banks in Pakistan

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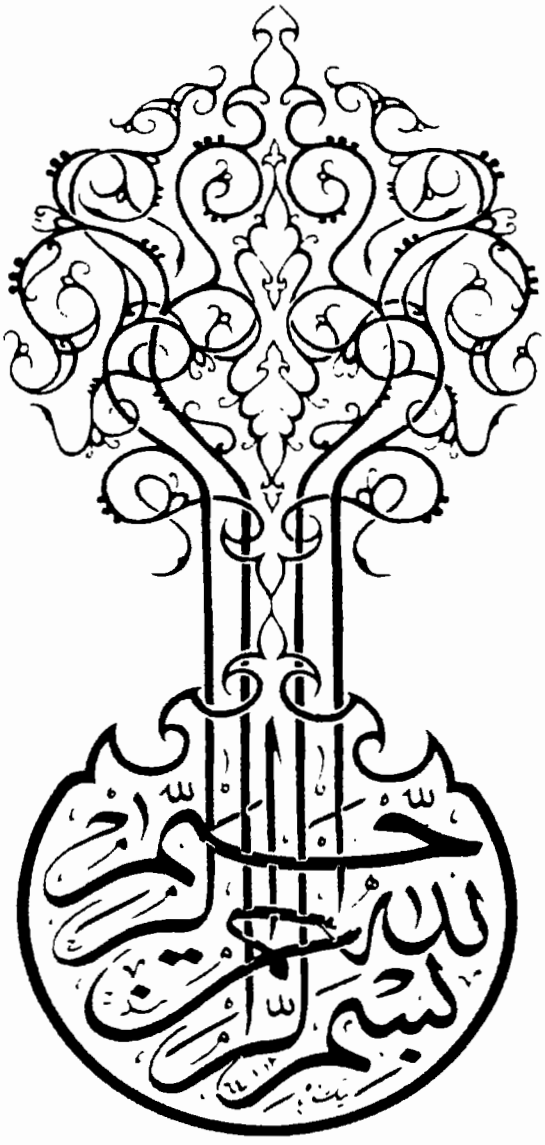

"O you who believe! When you are told to make room in the assemblies, (spread out and) make room. Allah will give you (ample) room (from His Mercy). And when you are told to rise up [for prayers. Jihad (holy fighting in Allah's Cause), or for any other good deed], rise up. Allah will exalt in degree those of you who believe, and those who have been granted knowledge. And Allah is Well-Acquainted with what you do."

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Submitted in Partial fulfillment of the Requirements for the Ph.D. Degree in Islamic Banking and Finance under the Joint Program of International Institute of Islamic Economics (IIIE), Faculty of Shariah and Law (FSL), Faculty of Management Sciences (FMS) at International Islamic University (IIU), Islamabad, Pakistan.

DEDICATION

To my parents and elder brothers and sisters, who have always loved me, trusted in my capabilities, felt proud in introducing me and prayed for my success. Also, to my family to whom I am truly grateful for understanding my professional life and facilitating me to work with full concentration.

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ABSTRACT

Banks are playing a vital function of financial intermediation in the financial development and economic growth of a country. A stable banking is considered an essential for the economic and financial stability. However, banking industry is considered one of the most liquid industry and therefore exposed to financial crises and various types of risks. The failure of banking system leads to systematic economic crises. Hence, this study has the main objective to empirically scrutinize the effects of bank-specific risks and macroeconomic risks on the growth, profitability and stability of banks operating in Pakistan covering the period 2007-2019. The bank-specific risks include credit risk, liquidity risk, operational risk, and capital risk, while the macroeconomic risks consist of inflation rate risks, exchange rates risks, and interest rate risks. The study also compares the impacts of both types of risks across Islamic and conventional banks. In addition, the study examines whether corporate governance moderates the effects of both types of risks across Islamic and conventional banks. Finally, the study evaluates whether there is any difference in the effects of both types of risks on growth, profitability and stability of domestic versus foreign Islamic and conventional banks.

To achieve research objectives, we estimate several empirical models. Bank-specific risks and control variables data are collected from the annual reports of each bank. Further, the data of macroeconomic and country level control variables are obtained from the annual reports published by State banks of Pakistan (SBP). Dynamic panel data estimator two-steps system Generalized Method of Moment (GMM) is employed to carry out the empirical analysis.

The estimate of baselines models provides significant evidence that both bank-specific and macroeconomic risks have negative effects on the growth, profitability, and

stability of Pakistani banks. Moreover, the results of augmented models confirm the differential effects of both categories of risks across both types of banking. The growth, profitability, and stability of Islamic banks are more exposed to liquidity risk, operational risk, capital risk, inflation risk, and exchange rate risk than their conventional counterparts. In contrast, conventional banks are more affected by credit risk and interest rate risk.

The results also show that corporate governance significantly reduce the adverse effects of both types of risks on growth, profitability, and stability of both banks. This finding holds for both types of banks. Further, the results clearly demonstrate that domestic Islamic and conventional banks are more exposed to both types of risks as compared to foreign Islamic and conventional banks.

This study has several important implications and policy recommendations for academicians, bank management, policy makers, regulators, and investors. The study provides sufficient knowledge and facilitates stakeholders to build a better understanding of various types of bank-specific and macroeconomic risks that adversely affect the bank activities. Efficient management of risks and execution of good corporate governance practices are essential for bank management to identify the problems timely and bring rapid improvements and to be safe and sound from financial crises. The risk management department of bank are required to perform their functions attentively to not only minimize risks but also improve the overall performance of banks.

Keywords: bank-specific risks, macroeconomic risks, growth, profitability, stability, corporate governance, bank ownership

JEL classification: C23, G21, G32, G34.

ACRONYMS

AAOIFI	Accounting and Auditing Organization of Islamic Financial Institutions
AENMII	Admin Expense to Non-markup/interest income
AEPBIT	Admin Expense to Profit Before Interest and Tax
A.S	Alayhi s-salām
BCBS	Basal Committee of Banking Supervision
CAMEL	Capital adequacy, Asset quality, Management efficiency, Earning, and Liquidity
CBs	Conventional Banks
CEO	Chief Executive Officer
CG	Corporate Governance
CPI	Consumer Price Index
EPS	Earnings Per Share
Eq.	Equation
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GLS	Generalized Least Square
GMM	Generalized Methods of Movements
IBs	Islamic Banks
IFSB	Islamic Financial Service Board
LIBOR	London Interbank Offered Rate
MCB	Muslim Commercial Banks
MENA	Middle East and North Africa
NMIETI	Non-markup/Interest Expense to Total Income
NPL	Non-performing Loan
NSFR	Net Stable Funding Ratio
OLS	Ordinary Least Square
P.B.U.H	Peace Be Upon Him
PBIT	Profit Before Income and Tax
R.A	Radhe Allaho-ann, meaning may Allah be Pleased with him/her.
ROA	Return On Asset
ROE	Return on Equity

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CHAPTER 1

INTRODUCTION

1.1 Background

Banks play a significant role in the smooth operation of a country' economy. Financially stable banking is considered a prerequisite for sustainable economic development. The banking sector performs important function of economic acceleration and financial intermediation by transforming deposits into productive investment (Menicucci & Paolucci, 2016). Both types of banking system (Islamic and conventional) are playing equally significant role in development of a country economy like other financial institutions (Abu Hussain & Al-Ajmi, 2012).

Typically, banks are dealing in most liquid assets and operate in high uncertain macro environment (Al-Tamimi & Obeidat, 2013). In the current competitive, unpredictable, and volatile atmosphere all banks are exposed to various types of substantial risks (credit risk, liquidity risk, operational risk, foreign exchange risk, market risk, and interest rate risk). These risks along with other intimidate the performance, survival, and success of the banks (Ali, Akhtar & Sadaqat, 2011; Alshatti, 2015). In banking history, several banking crises are documented when one or more risks emerged in banking sector. The prominent examples include the Japanese banking crises during the 1990, the United States saving and loan crises in the 1980s and the early 1990s, Asian financial crises 1997, and sub-prime mortgage crises in the 2007/2008. Thus, risky nature of the banking business stipulates that banking institutions are required to assess prudently the risk and return involved in serving the needs of the public. It will sustain the competitiveness and stability of banks (Aslam, et al., 2014). Hence, the management of risks becomes significant for existing and survival of banking sectors. During the recent financial crisis bankruptcies of financial institutions like Lehman-Brother raise

the awareness about appropriate risk management procedures in banking sectors (Ali et al., 2018).

Globally commercial banks involved in the business of financial risks: foreign exchange risk, liquidity risk, solvency risk, interest rate risk, credit risk, and many more, which directly affect the banks performance (Haque & Wani, 2015). The extensive globalization has put Islamic banks in fierce competition with traditional banks in a well-developed financial market (Rahaman & Akhter, 2015). The extents of risks are different across Islamic and conventional banks because of differences in their structure and functions. Islamic banks are operating under the principles of Islamic Jurisprudence which eliminate any kind of transaction based on interest, gambling, short selling, gharar (uncertainty) in contracts, and selling of debt. Islamic law prohibits the involvement of Islamic banks with industries who deal with products related to alcohol, pork, and pornography. Islamic banks offer distinguishes products and dealing under two major kinds of contract: Asset based (non-participatory) contract like Ijarah, Salam, Istisna and Murabaha, and equity based (risk sharing) sharing contracts like Musharaka, and Mudaraba.

Islamic banks intermediation function is based on asset and risk sharing, while the intermediation function of conventional banks is primarily based on debt and risk transfer. Hence, there are difference in risks exposure of both type of banks. Due to distinction attributes, IBs are uncovered to certain inimitable risks (displaced commercial risk, Shari'ah non-compliant risk, rate of return risk, equity investment risk) besides the risks (credit, liquidity, operational, transparency, and legal risks) alike to those of CBs, but their implication vary because of specific nature of Islamic banks. Overall, it looks that IBs may possibly be subjected to more risk as compared to CBs (Mejia et al., 2014).

The financial performance of banking sector is the major concern as it support and maintains the robustness and safety of the banks, preserves the stability of financial system, and eventually stimulates the economic growth in the country (Jamal, Hamidi & Karim 2012). The stability and profitability of banks are contingent on risk management (Ahmed, 2011). Therefore, in past few decades banking sector has experienced many changes due to crisis and exposed to a multiple risk including credit risk, liquidity risk, market risk, operational risk, interest rate risk, political risk, and foreign exchange risk (Yimka et al., 2015; Effendi & Disman, 2017; Ahmad et al., 2019). Because of this the evaluation of relationship between risk and bank performance always remains in the good interest of researchers and policymakers in both developed and underdeveloped countries. Specifically, after the financial crises 2007/2008, the examination of banks profitability and stability has gained dynamic attention among researcher and becomes growing concern for bank supervisors and regulators (Ali & Puah, 2018). For instance, Rashid and Jabeen (2016) identified bank-specific, macroeconomic, and financial factors affecting bank performance in Pakistan. They documented that reserves, overheads, and operating efficiency are significant indicators of conventional banks (CBs) performance, whereas, deposits, market concentrations, and operating efficiency are the important factors in explaining the Islamic banks (IBs) performance. Additionally, interest rate and GDP negatively affect the performance of both types of banks. Another study conducted by Rashid and Khalid (2017) provided evidence of differential influence of interest and inflation rate volatility on the performance of IBs and CBs in Pakistan. In the case of IBs, Chowdhury and Rasid (2016) showed that bank size, operating efficiency, equity financing, money supply, oil price, and inflation are the important determinants of affecting the bank' profitability in Golf Cooperation Council (GCC) region.

By examining the determinants of Indian commercial bank profitability, Al-Homaidi et al. (2018) showed that bank-specific determinants such as liquidity, capital adequacy, bank size, deposit, leverage, asset quality, operating efficiency, asset management, leverage, and number of branches are highly significant to bank profitability. Further, the macroeconomic factors like interest rates, GDP, inflation, and exchange rates have significant and negative effect on bank profitability. Macroeconomic variables reflect legal and economic environment, which is not in the control of bank management and hence significantly impact the performance of financial institutions (Menicucci & Paolucci, 2016; Dodi et al., 2018). It is widely argued that unanticipated variations in macroeconomic variables can cause global effects on firm fundamentals like investment opportunities, cash flow, and risk adjusted discount factors. Moreover, macroeconomic variables like unemployment, economic growth, exchange rates, inflation, and interest rates significantly affect the price of risky assets (bonds, stock, derivatives, and currencies) through several channels (Bali, Brown, & Caglayan, 2014). Talbi and Bougatef (2018) argued that capitalization, liquidity, operating efficiency, and GDP growth play a significant role in explaining bank performance in the MENA countries. Likewise, Salike and Ao (2018) examined the bank profitability in Asian countries for the period 2001-2015 and showed that poor asset quality negatively while income diversification, operating efficiency, capital adequacy, GDP growth have positive impact on profitability. Abbas et al. (2019) found that credit risk, bank capital and liquidity level are the important determinants of commercial banks in Asian developed countries and the USA.

Another strand of empirical studies like Adusei (2015), Ashraf et al. (2016), Tan et al. (2017), and Ali and Puah (2018) critically evaluated the determinants of banks stability. For example, Adusei (2015) found positive impacts of funding risk and bank size on

bank stability in Ghana, while controlling the effect of liquidity risk, credit risk, business model diversification, inflation, GDP, and financial structure. Buston (2016) argued that the bank possess efficient and effective risk management system were likely remained sound during the crises 2007-2009. Ali and Puah (2018) examined the internal determinants of Pakistani banks stability and profitability. They demonstrated that funding risk, credit risk, bank size are significant determinants of profitability while funding risk, liquidity risk and bank size are the important factors explaining the stability. Similarly, Khemais (2019) and Hassan et al. (2019) found the joint influence of credit risk and liquidity risks on banks' stability in different countries.

Regarding the determinants of banks growth, Aslam et al. (2014) studied the role of credit risk in the growth of Pakistani Banks spinning the period 2004-2011. They pointed out that credit risk has influence the growth of banks. The study of Lone and Rehman (2017) identified customers' satisfaction as determinant of Islamic banks growth. Cham (2018) argued that stable GDP, high oil price, higher educated population, and better existence of capital resources are the key factors contributing to the growth of Islamic banks, while the factors such as tax rate, skilled labor force, and regulation are the major constraints obstructing the Islamic banking growth.

The other group of researchers like Zagorchev and Gao (2015), Jaimes-Valdez and Jacobo-Hernandez (2016), Al-Gamrh et al. (2018), Aktan et al. (2018), Hussien et al. (2019), Permatasari (2020), and Musallam (2020) considered corporate governance (CG) as an important determinant for improvement in bank performance. Corporate governance plays a significant role in developing the culture of openness and transparency and controlling the agency issues (Aslam & Haron, 2020). Effective and sound corporate governance implementation reduces idiosyncratic and systematic risk (Ferrero-Ferrero et al., 2012), increases profit, market value, sales growth, and

decreases costs of doing business (Zagorchev and Gao, 2015), enhances the market capitalization of corporations (Jaimes-Valdez & Jacobo-Hernandez, 2016), reduces the overall level of risk (Maurya et al., 2015: Ahmed, 2017), and helps better allocation of resources to produce more profit (Hussien et al., 2019).

The bank having higher proportion of independent directors, small size of the board, separate board leadership structure, lower director ownership, higher block ownership, and higher institutional ownership are exposed to low level of risk (Adnan et al. (2011). Strong CG practices encourage banks to oversee thoroughly the borrowing and financial process. The board of director takes accurate decisions to apportion the acquired debt to the proper investments by consenting the conceivable amount of risk (Al-Gamrh et al., 2018). However, weak CG is considered one of the main reasons of financial crises in Asian countries (Yeoh, 2010; Wahyudin & Solikhah, 2017) and the companies having good CG mechanism were less affected during the financial crisis (Suvankulov & Ogucu, 2012). The main reason is that corporate governance implements certain set of rules and regulations that brings accountability and transparency in an organization which ultimately increase its performance (Sheikh et al., 2018).

1.2 Research Gap

The current empirical study has identified several potential gaps in the existing literature that required to be explored comprehensively for better understanding of the impacts of various risks on growth, profitability and stability of banks. It is commonly held view that banking growth, profitability, and stability are usually related to economy growth of a country. Therefore, academicians and researchers take a keen interest in the evaluation of these phenomena. For instance, past studies mainly investigated determinants of profitability and stability. The group of researchers like

Ramadan et al. (2011), Sanwari and Zakaria (2013), Kanwal and Nadeem (2013), Irfan, Majeed and Zaman (2014), Rashid and Jabeen (2016), Rashid and Khalid (2017), Talbi and Bougatef (2018), Salike and Ao (2018), Al-Homaidi et al. (2018), and Abbas et al. (2019) empirically investigated the financial performance of banks. They mainly explored the impact of various bank specific (internal) factors, and macroeconomic (external) factors on the financial performance of banks operating in various countries. The other strand of literature Adusei (2015), Ashraf et al. (2016), Tan et al. (2017), and Ali and Puah (2018) critically evaluated the determinants of banks stability.

These studies mainly examined the internal determinants of bank profitability and stability. However, the analysis of banking growth is quite limited. Only few studies are found that discussed the determinants of banks growth like Aslam et al. (2014), Lone and Rehman (2017) and Cham (2018). Yet, no specific study was found to investigate and compare the impact of risks on the growth of IBs and CBs.

Overall, the survey of the literature explored that limited attention was given to explore the impact of different kinds of risks on bank' growth, profitability, and stability of both types of banking system (Islamic & conventional), comprehensively. Evidently, few studies have attempted to determine the influence of bank-specific risks on profitability and stability in different countries and at regional level (Al-Tamimi & Obeidat, 2013; Ariffin & Tafri, 2014; Haque & Ahmed, 2015; Al-Tamimi et al., 2015; Sutrisno, 2016, Suseno & Bamahriz, 2017; Ghenimi et al., 2017; Olalekan et al., 2018; Alsyahrin et al., 2018; Ali et al., 2019). Moreover, Imbierowicz and Rauch (2014), Khemais (2019) and Hassan et al. (2019) inspected the joint influence of credit risk and liquidity risks on banks' stability in different countries.

The above studies explored the effects of bank-specific risks in various countries but did not investigate the effects of macroeconomic risks which have significant impact

on the bank' performance. Macroeconomic risks arise from legal and economic environments, which is not in the control of bank management and hence significantly impact the performance of financial institutions (Menicucci & Paolucci, 2016; Dodi et al., 2018). It is widely argued that unanticipated variations in macroeconomic variables can cause global effects on firm fundamentals like investment opportunities, cash flow, and risk adjusted discount factors. Moreover, macroeconomic variables like unemployment, economic growth, exchange rates, inflation, and interest rates significantly affect the price of risky assets (bonds, stock, derivatives, and currencies) through several channels (Bali, Brown, & Caglayan, 2014). Thus, it is essential to properly scrutinize the impacts of macroeconomic risks on bank' activities and performance.

Reviewing the literature, we came to the conclusion that Islamic banks intermediation function is based on asset and risk sharing, while the intermediation function of conventional banks is primarily based on debt and risk transfer. Additionally, Islamic banks are uncovered to certain inimitable risks (displaced commercial risk, Shari'ah non-compliant risk, rate of return risk, equity investment risk) besides the risks (credit, liquidity, operational, transparency, and legal risks) alike to those of conventional banks, but their implication vary because of specific nature of Islamic banks. Overall, it looks that IBs may possibly be subjected to more risk compared to conventional banks (Mejia et al., 2014). Hence, it would be essential to investigate the effects of risks across IBs and CBs.

Overall, we do not find any study that empirically has examined the moderating role of corporate governance in establishing the impact of bank-specific and macroeconomic risks on the growth, profitability, and stability of banks. Although we reached at the conclusion from literature survey that the effects of corporate governance are twofold.

First, corporate governance enhances the performance and promote the stability of banks. On other side, it reduces the level of various types of risks. Thus, it is necessary to empirically scrutinize the moderating role of corporate governance. In addition, the banks having high portion of foreign shareholders have bigger capital, high profit, lower financial instability, and high operational efficiency. Further, foreign banks have better regulation and supervision, advance technology, superior management practices, and better techniques and tools to diversify risks effectively (Rehman & Reja, 2015; Noor & Mohamed, 2019). It is concluded from literature survey that foreign banks have high performance than domestic banks, but we do not find any empirical work that discusses risks differences across domestic versus foreign banks. Therefore, it is required to examine and compare the impacts of risks across domestic and foreign banks.

It is noticeable that our study is different than previous empirical works in several ways. First, we determine the effect of most important bank-specific risks (credit risk, liquidity risk, operational risk, capital risk) and macroeconomic risks (inflation risk, exchange rate risk, interest rate risk) on the growth, profitability, and stability of all banks operating in Pakistan. Secondly, we analyze and compare the impact of both types of risks on the growth, profitability, and stability of IBs and CBs Third, we examine weather corporate governance are playing significant moderating role in the influence of both types of risk across IBs and CBs. Finally, we examine whether the impacts of both types of risks on the growth, profitability, and stability differentiate across domestic and foreign Islamic and conventional banks.

1.3 Objectives of the Study

The study aims to achieve the following objectives.

1) To critically evaluate the concept of risk from Shari'ah prospective.
2) To empirically examine the effects of bank-specific risks (credit risk, liquidity risk, operational risk, capital risk) on the growth of IBs and CBs in Pakistan.
3) To empirically examine the effects of bank-specific risks (credit risk, liquidity risk, operational risk, capital risk) on the profitability of IBs and CBs in Pakistan.
4) To empirically examine the effects of bank-specific risks (credit risk, liquidity risk, market risk, operational risk, capital risk) on the stability of IBs and CBs in Pakistan.
5) To empirically examine the effects of macroeconomic risks (inflation rate risk, interest rate risk, exchange rate risk) on the growth of IBs and CBs in Pakistan.
6) To empirically examine the effects of macroeconomic risks (inflation rate risk, interest rate risk, exchange rate risk) on the profitability of IBs and CBs in Pakistan.
7) To empirically examine the effects of macroeconomic risks (inflation risk, interest rate risk, exchange rate risk) on the stability of IBs and CBs in Pakistan.
8) To compare the impact of bank-specific and macroeconomic risks on the growth, profitability and stability of IBs versus CBs.
9) To examine the moderating role of corporate governance in establishing the impact of various types of bank-specific and macroeconomic risks on the growth, profitability and stability of IBs and CBs in Pakistan.

10) To examine whether the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability are different for domestic versus foreign IBs and CBs.

1.4 Research Questions

The managing of various types of risk is important for both types of banking system: Islamic and conventional. These risks have vital effect on the financial performance and stability of banks. As the main objectives of our study is to find out the impacts of various risks on the growth, profitability and stability of both types of banking system. In order to achieve these objectives, we constructed the following research questions.

1) What is the concept of risk in Shari'ah?
2) What are the effects of bank-specific risks on the growth of IBs and CBs in Pakistan?
3) What are the effects of bank-specific risks on the profitability of IBs and CBs in Pakistan?
4) What are the effects of bank-specific risks on the stability of IBs and CBs in Pakistan?
5) What are the effects of macroeconomic risks on the growth of IBs and CBs of Pakistan?
6) What are the effects of macroeconomic risks on the profitability of IBs and CBs of Pakistan?
7) What are the effects of macroeconomic risks on the stability of IBs and CBs of Pakistan?
8) Do bank-specific and macroeconomic risks that influence the growth, profitability, and stability of IBs have different impact on the growth, profitability and stability of CBs in Pakistan?

9) How corporate governance moderates the effects of bank-specific and macroeconomic risks on the growth, profitability and stability across IBs and CBs of Pakistan?

10) Whether the effects of bank-specific and macroeconomic risks on the growth, profitability and stability are different for domestic versus foreign IBs and CBs?

1.5 Significance of the Study

This study has several contributions to the existing banking and finance literature, specifically for researchers, teachers, and students in the field of bank performance and risks. Also, the study provides sound suggestions and policy recommendations to bank practitioners. First, the study provides deep understandings of the Shari'ah prospective of risk, various types of bank-specific risks (credit risk, liquidity risk, capital risk, operational risk), different types of macroeconomic risks (inflation rate risk, exchange rate risks, interest rate risk) and its impact on growth, profitability, and stability of IBs and CBs. Secondly, the study documented important and novel results which provide evidence about the significant and negative effect of bank-specific and macroeconomic risks on the growth, profitability, and stability of all banks. Third, the comparative risks analysis of IBs and CBs suggests that both types of banks are exposed to both types of risks differently. The result clearly indicate that the growth, profitability, and stability of IBs are less exposed to credit risk while more exposed to liquidity risk, operational risk, capital risk, inflation rate risk, exchange rate risk. Further, the operations of IBs are not affected by the interest rate risks.

Fourth, the study enlightens the moderating role of corporate governance. Corporate governance significantly mitigates the negative impact of bank-specific and macroeconomic risks on the growth, profitability, and stability across Islamic and conventional banks. Fifth, this study clearly indicated that domestic Islamic and

conventional banks are more exposed to bank-specific and macroeconomic risks. This evidence provides clear investment guidelines to individuals and institutional investors. Sixth, the study provides guidelines and roadmap for individuals and institutional investors, bank managers, and regulators. They should know that growth, profitability, and financial stability is the most important features of banks whether it is conventional banks or Islamic banks. These features explore and describes competitiveness, aptitude of business, reliability of future and present financial contracts, and financial interests of bank' management and shareholders. Therefore, peer banks, financial and non-financial institutions, and individuals are predominantly interested in assessing these features of the banks. Hence, our study provides significant information and signal to customers, shareholder, and investors whether to invest or withdraw funds from the bank. It also provides directions and guidelines for internal management of the banks about the improvement of deposits, assets, return, and cost. The public and corporate community is concerned with the banks' performance because their access to financial service and credit facility is associated with the success or failure of the bank. The regulators are concerned about financial performance, good corporate governance, and risk management of the banking sector to ensure the safety and reliability of the banking system and public confidence in the system.

Seventh, our study also clearly indicate that implementation of good corporate governance will reduce the impact of various types of risks. This clearly recommending to the bank management to implement sound corporate governance. On one side corporate governance increase the performance of banks, and other side reduce the impact of bank-specific and macroeconomic risk.

Lastly, it would serve as reference material for practitioners and academicians and encourage other interested researcher to conduct more extensive studies in this research area.

1.6 Organization of the Study

This dissertation consists of six chapters. Chapter 1 explains in depth the background of the study. Next, we presented the research gap, which is followed by the main objectives of the study. After that this chapter demonstrates the research questions. Finally, the chapter documents various significant contributions.

Chapter 2 titled "Critical Review of Risk" explains in depth the philosophy and concept of risk. Further, we demonstrate the various types of risks exposed by commercial banks. At the end, we explore the difference in risks across Islamic and conventional banks. Chapter 3 titled "Islamic philosophy of Risk" deliberates the Shari'ah (Islamic law) recognition about the concept of risk. The chapter discuss in depth the recognition of risk concept from various source of Islamic law like Qur'an, hadiths, Shari'ah maxims, and Islamic events occurred in the life of Prophet Muhammad (P.B.U.H).

Chapter 4 titled "Review of Literature" discusses in depth empirical literature about the main variables of the study. Where, we discuss the internal and external determinants of the banks' growth, profitability, and stability. Further, we explore the causal relationship exist between various types of bank-specific risks (credit risk, liquidity risk, operational risk, capital risk) and macroeconomic risks (inflation rate risk, exchange rate risk, interest rate risk) and bank performance. In addition, we discuss the difference exist in exposing various types of risks across IBs and CBs. Finally, the chapter demonstrate empirical literature about the moderating role of corporate governance attributes and bank ownership.

In Chapter 5, we explain the methodology adopted to carry out this study. First, we discuss the data description and collection, followed by the conceptual and empirical models. Next, we explain population and sample which are examined in the study. After that, we demonstrate the detail description of variables included in the study and their measurement proxies with reference. Finally, the chapter enlighten the estimation techniques two-steps System Generalized Methods of Momentum (GMM) applied to estimate all empirical models.

Chapter 6 titled "Empirical Analysis and Discussion" represents the analysis and detail discussion of estimate results. Where, we first explore the descriptive statistics of all variables included in the study for all banks, and then the descriptive statistics of Islamic versus conventional banks. After that, we interpreted and discussed the estimation results of baseline models which is estimated to know the impact of bank-specific and macroeconomic risks on the growth, profitability, and stability of all banks. Further, we explain the estimation results of augmented models which were estimated to observe the effects of risks across Islamic and conventional banks. Moreover, the chapter demonstrate the estimation results of moderation of corporate governance. Finally, we interpret the results of moderation of bank ownership in the relationship between risks and growth, profitability, and stability.

The last chapter of the dissertation provides conclusions, key findings, and several policy recommendations and implications. The chapter also provides some suggestions about future research. Finally, the chapter highlight limitations of the study that may be encounter in future research.

CHAPTER 2

CRITICAL REVIEW OF RISK

2.1 Introduction

The main goals and objectives of the study is to investigate the impact of various types of risks on the growth, profitability, and stability of IBs and CBs in Pakistan. The growth in the global financial market stances different types of risks to the financial institutions. Risks are the essential part of the banking activities and thus it can't be avoided. Both types of banking system (Islamic and conventional) are expose to certain types of risks. Therefore, the proceeding chapter intends to theoretically overview the various definitions and concept of risk. Further, the chapter provides the detail review of different types of risks pose to commercial banks.

A group of researchers have an opinion that IBs are exposed to more risks than CBs due to their unique structure compliance to Islamic law. Thus, Islamic banks may expose to additional risk than conventional banks. Hence, the chapter explores the differences exist in the types of risks across CBs versus IBs and provide the detail overview of additional risk faced by IBs.

2.2 Etymology and Definition of the Word Risk

The etymological roots of the word risk go back to Latin term "rischio" which means probable loss or negative consequences arising from unexpected situation (Magne, 2010). The implication of this meaning is clearly negative. Moreover, Bouslama and Lahrichi (2017) reported that the source of the word "rischio" are to be found in another Latin words risco and risico. These words were commonly used among traders in the beginning of thirteen century in reference to the company that could make a loss or profit. However, before this, the words used in the reference of consequences of uncertain situation or hazardous. Further, they reported that the Latin root is not clear,

and they might be associated to the term "resecare" where "re" means back and "secare" mean cut. Collectively, the word means to remove or cut away. This word is usually associated with transport via Sea that refers to the edge of a ship which helps in its attachment with a rock. In general sense, it refer to the risk faced by both the parties in a contract i.e. risking loss of goods at sea. In specific sense the word risk is the threat of loss (El-Gamal, 2000; Magne, 2010).

In the Oxford English dictionary, risk means "a possibility of harm or damage against something which is insured". As noun, it means the probability of loss or damage of property or money, and as a verb, the word means something or someone in failure, damage, or loss. However, the term risk does not have universal definition. Different academician and researcher have various approach to describe the term in different words. For instance, Howells and Bain (1999) defined risk in financial terms as "probability that the actual return may differ from the expected return". Similarly, Khan and Ahmed (2001) assert that those situations where either result is unknown or it yields more than one result are more prone to risk.

The State Bank of Pakistan (2003) described risk as the possibility of action's outcome resulting unfavorable impact on earning or capital of a bank or affect the ability of bank to meet its current or future goals. Moreover, SBP (2003) stated that unfavorable impacts are divided into expected and unexpected losses; Expected losses (losses of loan) can be reasonably predicted by bank, while unexpected losses (losses from rapid fall in activity of economics) cannot be reasonably predicted by bank. Gallati (2003) defined risk as a condition where likelihood of deviancy appeared from probable result or a condition where exposure to danger exist. It implies to exposure to uncertainty or threat.

As risk has no standard and consistent definition but most of financial literature focused on two definitions which are acceptable to investors: probability of unfavorable outcome; and uncertainty of future outcome (Brown et al., 2006). Risk refers to a situation which contain the probability of deviating from the paths leads to expected result (Vaughan & Vaughan, 2007). Chernobai et al. (2007) defined risk as "an expression of the danger that the effective future outcome will deviate from the expected or planned outcome in a negative way".

Risk is anything which generates difficulties in the achieving of specific goals (Shafiq & Nasr, 2009). "The banking risk can be defined as a phenomenon that occurs during the course of banking operations and causing negative effects on these activities by deteriorated business, reducing profits or losses with impaired functionality of the bank" (Dimitriu & Opera, 2009). Yang (2011) stated that risk is the probability that an event or action may adversely affect the organization. Hassan and Dridi (2011) defined risk as a chance of adverse condition and chance of losses incurred and the probability or threats of damage usually caused certain losses level of any asset. Bakr et al., (2012) reported that simply risk means uncertainty that can be expressed through probability. Ghosh (2012) defined bank' risk as "a potential loss that may occur due to some antagonistic events such as economic downturns, adverse changes in fiscal and trade policy, unfavorable movements in interest rates or foreign exchange rates, or declining equity prices".

The risk can be defined as "an uncertain event, but possible, that could cause some losses" (Apatachioae, 2015). Further, the author quoted that, specifically in banking sector, risk is associated with the negative deviations from the desired results and probability of loss. Risk has different definitions based on the point of view of certain disciplines. In the field of finance, risk is the "possibility that actual return on an

investment is lower than the expected return" In a workplace, risk is "the product of the consequence and probability of a hazardous event or phenomenon" (Noor et al., 2018). In the field of economic, risk refers to "the existence of uncertainty about the future outcomes whereas the possibility of more than one outcome and the ultimate outcome is unknown or unclear" (Bhatti & Misman, 2010; Bouslama & Lahrichi, 2017).

2.3 Different Types of Risk

Risks in economic and finance are categorized in different ways. For example, Jorion and Khoury (1996) classified risk into two categories: financial risk and business risk. Financial risk arises from the probable losses in financial markets caused by the movements of financial market variables, such as uncertainty of stock price, commodity price, interest, and exchange rates. Business risk arises from the business nature of a firm and mostly concerned with the factors affecting the products market. For example, uncertainty about the future sale or cost of inputs. Santomero (1996) classified risk based on its treatment and stated that there are three basic types of risks faced by most of the organizations: the risk, which is avoided or eliminated by the simple practices of business, the risk which is transferred to other participant, and the risk, that is managed actively at the level of firm. Financial institution does not take up activities which enforce certain risks on them. They take up such activities where they effectively manage or shift the risk. The most common approaches to avoid risk include; standardization of business related methods, developing diversified portfolio and implementation of different reward schemes under strict monitoring. Moreover, selling or shifting of bank' risk in well-organized financial market may be a good options to minimize risks exposure. Further, the practices of risk transferring includes selling or buying of financial claim, use of derivative tools for hedging, and changing the terms and conditions of borrowing. However, there are various risks that should be taken or

assumed by the financial intermediaries. These risks cannot be mitigated or transferred by the mitigation practices. Because these risks are complex in nature and central to their business, and thus difficult to separate it from asset (Khan & Ahmed, 2001).

Gleason (2000) divided the bank' risk into financial and non-financial risk. Financial risk can be further classified into credit risk and market risk, while non-financial risk includes legal risk, operation risk, and regulatory risk. Al-Saati (2002) and Dusuki and Smolo (2009) categorized risk into primary and secondary risk. Primary risk is the risk that naturally interconnected with every business and cannot be evaded, while secondary risk is the one which can be reduced or eliminated by using the derivative techniques.

Risk can also be broadly divided into unsystematic and systematic risk. Systematic risk is inherent and associated to the entire economic system or market. It generally arises from the adverse movements in macroeconomic factors like movement in interest rate, inflation rate etc. Systematic risk is undiversifiable because it cannot be avoided through the practice of diversification. On the other side, unsystematic risk is associated with a specific individual firm or asset. This type of risk can be diversifiable through diversification because it exists only in a specific industry or company. The factors contribute to unsystematic risk are financial position, earning and poor management (Khan & Ahmed, 2001; Kupper, 1999; Al-Tamimi & Al-Mazrooei, 2007; Razif & Mohamad, 2011).

2.4 Risk Involved in Conventional Banks

Considering banking sector, Dardac and Vascu (2001) asserted that a bank can be exposed to two kinds of risks: bank-specific risk and general risk: Bank-specific risks include: financial risks i.e. liquidity risk, variable income securities risk, interest rate risk, and counterparty risks (interbank risk, customers risk, country risk). On the other

side, general risks refers to commercial risks i.e. the risk of commercial image, the risk of accidents, market risk, customer / product risk, operational and technical risks, and internal risk management (technologic dependency risk, ethics risk, regulations risk, strategic risk and communication risk). Bessis (2002) reported that mainly bank exposed to interest rate risk, foreign exchange risk, operational risk, market risk, solvency risk, liquidity risk, credit risk, performance risk, country risk, and settlement risk is the main types of risks

The State Bank of Pakistan (2003) documented that commercial bank in Pakistan exposed to liquidity risk, market risk, credit risk, operational risk, regulatory risk, reputation risk, and legal risk. Crouhy, Galai and Mark (2006) categorized bank' risks into business risk, operational risk, credit risk, liquidity risk, market risk, strategic risk, legal risk, and reputation risk. Al-Tamimi and Al-Mazrooei (2007), Hassan (2011), and Abu Hussain and Al-Ajmi (2012) summarized that typically banks exposed to solvency risk, liquidity risk, operational risk, credit risk, interest rate risk, rate of return risk, foreign-exchange risk, strategic risk, reputation risk, settlement risk, regulatory risk, legal risk, concentration risk, country (political) risk, and price (equity) risk with varying degrees of exposures.

Similarly, Kannan and Thangavel (2008) argued that generally banks exposed to credit risk, market risk, liquidity risk, operational risk, compliance / legal /regulatory risk, and reputational risk. Moreover, Dimitriu and Oprea, (2009) classified banking risk into six types.

1) Credit risk refer to failure of a customer to repay the interest or principal amount of loans and advances in the agreed time period.
2) Liquidity risk is the bank incompetence to satisfy or fulfil the liquidity requirement of customers.

3) Market risk is emerge as financial loss generated due to the unexpected variations in exchange rate, interest rate and market prices of assets, liabilities and derivative instruments.
4) Operational risk is define as possibility of loss arise by poor internal process, inefficient people, system, or any external adverse event.
5) Legal risk, which refers to the loss arise as unexpected change in regulations.
6) Strategic risk, which refers to the risk that stem from the competition in the banking market.

Wood and Kellman (2011) reported that commercial banks exposed to operational risk, liquidity risk, foreign exchange risk, country/sovereign risk, technology risk and insolvency risk. However, Apatachioae (2015) categorized banking risk into two main categories: one is specific to financial and banking activities, while other is systematic risk which affect the activities of organization irrespective of their field of activity. Systematic risk emerged from macroeconomic indicators like GDP, inflation, interest rate, and currency exchange, etc., and arise from other characteristic like political situation, natural disasters, and the risk of country, etc.

2.4.1 Credit Risk

Credit risk is the most significant and prominent risk faced by banks. Credit risk occurred when a counterparty or customers would not have ability or unwilling to fulfill commitment with bank and the security pledged do not meet up the liabilities of customers. Credit risk arises at the time when borrowers failed to fulfill their obligation on the due date or after that (Hempel & Simonson, 1999; Fabozzi, Modigliani, & Jones, 2010). Credit risk also refers to the variation in the value of derivatives and debt instrument because of the volatility in the credit quality and standards of counterparties and borrowers (Chen & Pan, 2012). Credit risk arise from the nature and types of credit

activities undertaken by the banks (Njogo, 2012). The significant causes of credit risk are inefficient management and administration, inappropriate lending guidelines and policies, fluctuating interest rates, restricted organizational capacity, irrelevant laws, issuing licenses to many banks, ambiguous underwriting of loans, direct or poor lending, less liquidity and capital levels, inaccurate analysis of credit and improper monitoring by the government and central bank (Kithinji, 2010).

Credit risk can emerge in the banking and trading books of the banks in various kinds like loan credit risk, trading book credit risk, and settlement risk. However, loan credit risk arises when counterparty do not fulfill the loan terms and conditions on time. Probability of default and quality of assets are the main factors contributing to credit risk. This risk results the volatility of worth of equity and net income which is caused by non-payment or delay in payment of interests or the principal amount. Similarly, risk of trading book happen due to borrower failures to fulfill their contractual commitments in trading contracts. This can result in settlement risk when one party to a deal pays money or delivers assets before receiving its own assets or cash, thereby exposing it to potential loss (Khan & Ahmed, 2001).

Bessis (2011) classified credit risk into different categories:

i) Default risk: when borrowers failed in repayment of full or partial amount of advances or loans. The different situation of default includes delay in loan payment, bankruptcy of borrowers, and restructuring the debt structure because of the failure in the credit standing of the borrower, etc.

ii) Exposure risk: this type of risk arises due to the loss occur from the future value of money given to customers.

iii) Migration risk: this type of credit risk related to indirect losses emerge as credit migration events and direct losses because of internal or external rating of bond

or stock issuer. Hence, this risk do not mean a default of payment, but it leads to increase in the chance of non-payment of loans or its interest.

iv) Loss under the default: It is the pending partial amount yet to be paid by the borrower. This partial amount is paid because of the recovery from collateral assets kept with bank against loan.

v) Counterparty risk: this risk arises due to the non-performance of the trading partner.

As credit risk emerge because of the bank borrower default in loan repayment. Therefore, banks must cautiously evaluate the loans granted for them to get back according to the agreed agreements. The failure of credit risk management will lead banks to face many serious problems as lending is one of the major businesses in banking system. Credit should be prudent in the process of channeling it. This can avoid the problem of credit risk (Abbas et al., 2019).

2.4.2 Liquidity Risk

Liquidity risk arise from the inability of a bank to fulfill its liabilities or when the liquid assets held by bank are not sufficient to fulfill its obligations. Liquidity risk emerges in the situation when there is shortage of liquidity with bank to run their routine operations. Liquidity risk makes difficult for a bank to raise cash from borrowing or sale of assets at normal cost for fulfilling its liabilities. Liquidity risk may be funding or financing liquidity risk (arise from the inconveniences in gaining cash at rational cost) or asset liquidity risk (sale of asset) (Khan & Ahmed, 2001). Liquidity risk is the fundamental bank risk which occurs because of the gap between the maturity of assets and liabilities. Those banks which have more off-balance sheet elements are more prone to liquidity risk (Bhattacharya, 2010).

Liquidity risk has linked with capital or earning of the bank and refers to the inability of bank to fulfill its depositor's obligations or rapid turning of assets into cash with

minimum loss to fulfill the requirements of borrowers (Gup, & Kolari, 2005). The unexpected arising in withdrawals that may be required that financial institutions liquidate its asset (sale of an asset at less than fair market prices) in a short time period (Saunders & Cornett, 2006).

As liquidity risk happens when raising and channeling the banks funds experience the mismatch on the amount of funds and time period. There might be cases where the amount of funds raised is smaller than fund distribution. Thus, this will lead the bank to be unable to provide funds at any time to fulfil its obligations. Banks mostly do short term fund collection while the lending could be for a long term. The difference in collecting and lending will cause a mismatch and banks will have liquidity risk (Abbas et al., 2019). Some of the practices are helpful in alleviating the consistent demand of liquidity. Primarily, the bank needs to make more investment in liquid assets as compared to fixed assets. Furthermore, the bank needs to borrow money from the central bank of a state in order to satisfy the constant demand of liquidity. In addition to this, the bank essentially require to uphold more sources of funds from various depositors to diversify portfolio (Greenbaum & Thakor, 2007).

2.4.3 Operational Risk

Operational risk referred to those losses that can arises (directly or indirectly) from inappropriate internal process, system, and people (Bessis, 2002). Further, State banks of Pakistan (2007) risk management guidelines defined operational risk is the unforeseen losses created as result of weak bank' internal operating system and process. inefficient workforce, inappropriate technological operating system, and other external adverse events. It may be arising mostly when a bank has less qualified professionals to carry out the operation of Islamic financing (Khan & Ahmed, 2001). Furthermore,

Oluchukwn (2012) precisely stated that operation risk is the financial loss which can result from the collapse of routine bank' operational activities and process.

Operational risk further divided into sub-categories, normally people risk, process risk, and technological risk. Where, People risk arises from the incompetency and expertise, internal and external fraud, and other practices of employees which result in losses for a bank. Process risk emerge as various reasons containing inadequate procedure, inaccurate transaction executions, errors in the model specifications, violating operational control limit etc. Moreover, technological risk caused by the breakdown in technological system, computing program failure or modelling error, lack of proper techniques for risk measuring and execution of the other technical processes (Khan & Ahmed, 2001; Bessis, 2011).

2.4.4 Interest Rate Risk

Interest rate risk is the exposure of bank' financial conditions to interest rate' fluctuations. The variations in exchange rate is caused by certain factors including changes in monetary and fiscal policies, liquidity conditions in financial market, exchange rate volatility, assets price movements, development in international as well as in local financial market and preference of assets' holding. Thus, it is very difficult to estimate the volatility of interest rate that may decrease, increase or remain constant over a period of time. It is needed that bank' professionals critically examine the variation in interest rate and provide guidelines on regular basis to the bank' management (Ghosh, 2012). Interest rate risks are further classified into the following categories.

i) Bases Risk: this type of risk appears when different rates (bases) are used to measure the cost of liabilities and profit gained from assets, for instance, US prime rate and London interbank offered rate (LIBOR). Such different basis fluctuate at

various rates and in diverse directions that occurs due to unpredictable variations in expenses and income (Bhattacharya, 2010).

ii) Yield Curve Risk: Short term investment yields low interest rate while it is higher on long term investment. Using this formula, banks commonly obtain loans for short term at low rate of interest and then invest it in assets for long term to gain higher interest rate. Both the long term and short term rates are highly volatile, which lead to instability in both expenses and income of the bank concerned (Ghosh, 2012).

iii) Repricing Risk: this type of risk occurs because of the repricing of liabilities and assets at different rates and point of times. For instance, when variable interest rate applies on loans it yields more profit for the lender in case of increase in interest rate. Contrary to this, in case of decrease in interest rate the lender will face loss. (Vyas & Singh, 2010).

iv) Option Risk: this kind of risk evolve in the situation where choice in some liabilities and assets are available. For instance, the option risk occurs when the interest rate changes on mortgage loans and the payments need to be paid before scheduled time. In this case the lender faces loss of profit. This risk is not easy to be controlled and measured (Vyas & Singh, 2010).

2.4.5 Foreign Exchange Rate Risk

Foreign exchange risk also synonymous to currency risk and generally it happen in export and import business (Vyas & Singh, 2010). Raghavan (2003) reported that adverse variation in exchange rate lead to foreign exchange risk. Similarly, Saunders and Cornett (2006) stated that foreign exchange risk caused by variation in exchange rates which negatively affect liability or asset of financial institution. According to the risk management guidelines provided by state bank of Pakistan (2007) foreign

exchange risk (associated with capital or earning) is arising from the unfavorable fluctuation in currency exchange rates.

2.4.6 Legal Risk

Legal risk happens when financial contracts are not implemented in their true sense. This kind of risk is most often related to regulations, legislation and statutes that have substantial effect on the fulfillment of transactions and contracts. The nature of such risk may be internal or external. Internal risk may be caused by bank employees or management activity like interfering regulations and laws or fraud while External risk appears due to regulations which have significant impact on several types of business activities (BCBS, 2001).

2.4.7 Reputational Risk

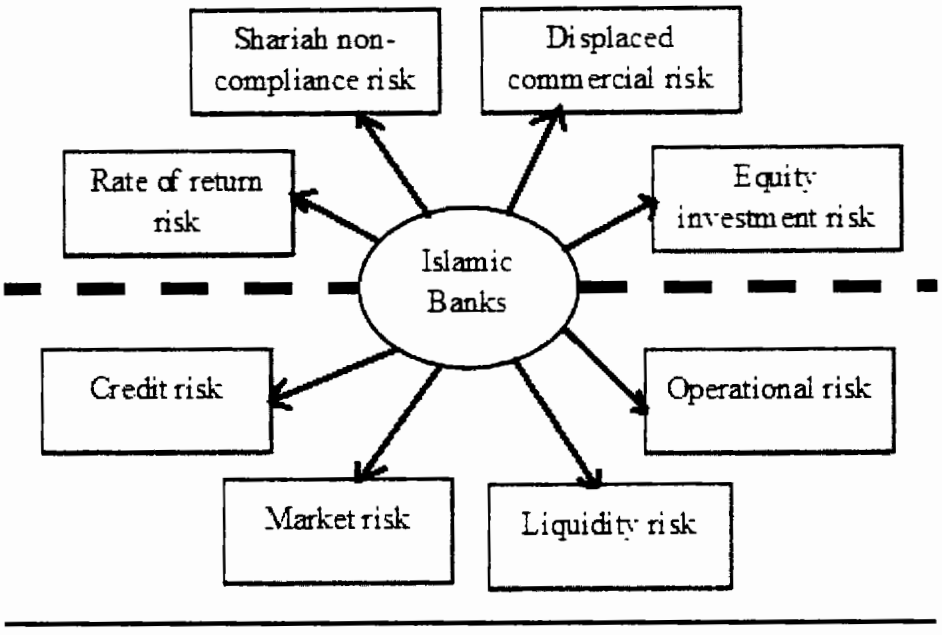
Reputational risk also known as "headline risk" which evolve because of the non-compliance of system or careless behavior of the bank' staff that damage the reputation and confidence of bank' clients (Van Greuning & Iqbal, 2008). Reputational risk is associated to the risk of damage to the goodwill of bank, and consequently will hurt the values of shareholders. The worse reputation of banks lead to less revenues, decline in share price, loss of trade partner and customers and increase lawsuits. Walter (2006) asserted that reputational risk is connected with the loss in going concern value of the bank. "Reputational 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" (BCBS, 2009a, p.19).

2.5 Risk Involved in Islamic Banking

The operational nature of IBs is vary from that of CBs due to the feature of profit-sharing and mode of financing. For example, on the liability side IBs accept usually two types of deposits: deposits in current account based on Amanah (trust) or Qard Hassana (interest free loan), and deposits in saving and investment accounts which is based on profit and loss sharing mode of financing. On the assets side, IBs transform their deposits into various investment projects through fixed-income mode of financing like murabahah (cost-plus sale), profit-sharing mode of financing (musharakah and mudarabah) and, Salam and Istisna (prepaid sale or object differed sale), and Ijarah (leasing). Profit and loss sharing mode of investment essentially require sharing of business risk with depositors. Hence, these characteristics of IBs differ the nature of risk face by them (Khan & Ahmed, 2001).

There is disagreement among scholars about the nature of risk faced by Islamic banks. One group of researchers argued that Islamic banks exposed to more risk as compared to conventional banks due to the unique nature of Islamic banks. For example, SBP (2008) risk management guidelines asserted that IBs exposed to certain type of unique risks (displaced commercial risks, rate of return risk, fiduciary risk, and Shari'ah non-compliance risk) as compared to CBs. Similarly, Khan & Ahmed (2001) and Helmy (2012) revealed that certain kinds of risks (liquidity risk, market risk, operational risk, credit risk) are common to both IBs and CBS. Yet, there is some risks like equity investment risk, displaced commercial risk, rate of return risk and Shari'ah non-compliance risk, which are unique to Islamic banking on the basis of their nature of activities.

Figure 2.1: Profile of risk in Islamic banks



Source: Helmy (2012)

In Islamic banking and finance, all financial institutions offering Islamic products exposed to some additional (unique) risks along with generic risks. The unique risk imitate the mix of risks that arises from the risk sharing arrangement and contractual design of instruments. Furthermore, the risks confronted by IBs may vary in term of both structure and severity rather than CBs. For instance, the home financing product offered by IBs under musharakah contract, generate two additional risks (Shari'ah non-compliance risk and equity risk arises from the ownership of equity) for IBs as compared to CBs (Sundararajan, 2007).

Ariffin, Archer and Rifaat (2009) stated that Islamic and conventional banking exposed to the same types of risk but on different levels. The other researchers have opinion that Islamic banks are less risky because of the restriction of interest-based transactions, and the financial instruments of Islamic banks are mostly based on trade financing instruments (Sundararjan & Erico, 2002; Fiennes, 2007; Khan & Bhatti, 2008). Moreover, IBs do not hold high percentage of their assets in interest bearing or fixed

income assets as compared to CBs. Henceforth, it is needed that IBs hold a large portion of capital adequacy and liquidity ratio (Siddique, 2008).

Iqbal and Mirakhor (2007) have divided risk of Islamic financial institutions into mainly four types of risks: financial risk, business risk, treasury risk, and governance risk. Financial risk includes credit, market, and equity risks. The rate of return and solvency risks are part of business risk. Governance risks comprise of operational risk, reputation risk, Shari'ah risk, transparency risk, and fiduciary risks. The Islamic banks of Brunei Darussalam and United Arab Emirate (UAE) faced foreign exchange risk, credit risk and operation risk (Al-Tamimi & Al- Mazrooei, 2007; Hassan, 2009). According to empirical study of Khan and Ahmed (2001), Islamic financial institutions mostly face benchmarking risk, credit risk, operational risk, liquidity risk, withdrawal risk, legal risk, displaced commercial risk and fiduciary risk. Rosly and Zaini (2008) classified major risk on the basis of systematic and unsystematic in Islamic mode of financing, as follows.

Figure 2.2: Classification of Risk in Islamic Mode of Financing

Product based on	Major risks	Risk classification
Murabahah	Credit risk	Unsystematic
Musharakah	Market and agency risk	Systematic
Mudarabah	Market and agency risk	Systematic
Ijarah thumma al-bay'	Credit risk	Unsystematic
Ijara wa iktina	Operational and payment risk	Unsystematic
Salam	Delivery risk	Systematic
Istisna'	Delivery risk	Systematic
Bay' al-inah	Credit risk	Unsystematic
Tawarruq	Credit risk	Unsystematic
Commodity murabahah	Credit risk	Unsystematic

Source: Zaini and Rosly, (2008)

Kahef (2006) asserted that effective and efficient risk management and analysis is required due to the nature of Islamic banking laws, processes and types of financing

opportunities. Mudarabah is a practical type of financing. Yet, it has many risks to shareholders and depositors of banks, because losses should be borne by all the parties involved in the business. Administration of mudarabah financing and its strategy are more complex in nature as compared to the conventional financing. In mudarabah contracts, Islamic banks also face risks due to the legal restrictions of no say in the venture. The entrepreneur is wholly responsible for the venture or business. Moreover, the musharakah mode of financing is more secure, because of the involvement of both parties in the management decisions and supervision. Hence, musharakah contracts are less risky and provide both the parties a right that is pre-agreed in nature.

In murabahah contracts, banks are exposed to credit risk (in case of defaulter of the client), price risk and market risk (when the client has a right to cancel the contract or refuse to take delivery of the product due to change in the market price of the corresponding product), mark-up risk (when the present mark-up rate prevailing in the market may increase beyond the rate set under the contract will result in mark-up risk for the bank), and liquidity risk (when the contract is cancelled by the client) (Van Greuning & Iqbal, 2008).

2.5.1 Credit Risk

Credit risk is evolved due to the failure of debtors to repay the amount of loans and advance in agreed time. In the case of IBs, credit risk is known as settlement/payment risk which arise when one of the contracting party deliver goods (in the case of murabahah contract) or paid money (in Salam and Istisna contract) before receiving its own cash or assets, and exposing to probable loss. Further, in the contract of musharakah and mudarabah (profit-sharing contract), credit risk emerge when the entrepreneur failed to pay the bank' share in agreed time (Khan & Ahmed, 2001).

Credit risk emerged in different contracts made by IBs. It arise in the contract of profit sharing contract mudarabah where bank do not take active part in the management of project because of the nature of contract. Moreover, bank cannot participate in daily operational activities of the project to effectively examine, monitor, and mange credit risk. This circumstances increase further the credit risk of IBs. Yet, in the contact of musharakah, if the entrepreneur failed to pay the bank' share of business income, this will also cause credit risk for IBs (Hassan & Lewis, 2007).

2.5.2 Liquidity Risk

Liquidity risk represent the failure of bank to provide sufficient funds to fulfill the financial obligation on time. Liquidity risk are mostly created by the poor management of funds and difficulties in obtaining the funds at reasonable cost. By the way, the fundamental function of banks are the transforming of short-term liabilities into long-term investment projects, assets and advances. Hence, there exists mismatch in the maturity level of assets and liabilities and because of this mismatch banks are exposed to liquidity risk. Further, liquidity risk also arise from the hurdle in acquiring funds at lower cost from borrowing or generate funds from the sale of assets. The both sources of generating funds at reasonable cost is critical for IBs. Islamic banks are not allowed under the rules of Islamic law to take interest based loans for the fulfillment of their liquidity needs. Moreover, Islamic banks are not allowed to sell their debts. Thus, selling of debts for the purpose of generating funds are not good option for IBs (Khan & Ahmed, 2001).

The main source of liquidity risk for Islamic banks is the shortage of Islamic liquidity instruments in the financial market (Ariffin et al., 2009). Further, they outlined the major causes of liquidity risk in Islamic banks. These are the following: Lacking of sufficient money market Islamic instruments, Absence of an effective inter-bank money

market for IBs because Shari'ah prohibited the interest rate on transactions. and shortage of assets backed tradable securities in capital market.

2.5.3 Market Risk

Market risk are related with the adverse trend in the commodity price, foreign exchange rate, mark-up rate, rate of return, and price of equity. Further, market risk emerge because of the variability in current and future market prices of assets. Also, market risk is present in derivative instruments such as currency derivative, option, equity derivative and interest derivative (Iqbal & Mirakhor, 2007); Van Greuning &Iqbal, 2008). Banks exposed to exchange rate risk due to variation in the exchange rate between foreign and home currencies. Islamic banks faced exchange rate risk in those contract where IBs take payment in foreign currency and whose exchange rate declines at that time or alternatively when IBs made payments in foreign currency and currency rate increases (Van Greuning & Bratanovic, 2009). The commodity price risk is the risk when a bank hold various assets with intention to sale them in future, and price of commodity decrease and bank sold them at lower price (Akkisidis & Khandelwal, 2008). Hassan and Lewis (2007) argued that commodity price risk is exist in different IBs mode of financing like Ijarah, Istisna, Mudarabah, Salam, and Musharakah.

Some scholars have opinion that IBs do not involved in activities based on interest rate, therefore IBs do not exposed to market risk creating from fluctuations in interest rate. However, variations in interest rate lead to some other risk in the earning of IBs. Usually, IBs use a benchmark rate to price their various financial instruments. For instance, in the murabahah mode of financing the markup rate is identified by calculating the risk premium to well-known benchmark rate. In the case fixed income assets, the mark-up rate is fixed for entire duration of the contract and cannot be

changed or adjusted with the variation of bench mark rate. Hence, IBs exposed to market interest rate emerging as variation in interest rate (Khan & Ahmed, 2001).

2.5.4 Operational Risk

Islamic banks exposed to operational risk in the following situations: problems in internal control system for managing problems in operational process and back office functions, cancellation of Istisna and murabahah contract, probable risk associated to the execution of Islamic contract in a large legal environments, the non-compliance of activities and functions with Shari'ah ruling, technology risk, legal risk related with different contracts and possible cost for checking equity based contracts (Sundararajan, 2005; Van Greuning & Iqbal, 2008).

2.5.5 Equity Investment Risk

Islamic banks invest their equity in various financial assets like private equity funds, share of stock market. These equities exposed to serval risks. In such situation, Islamic banks may be exposed to instability in the financial earning and leads to loss of capital invested in that equities (Van Greuning & Iqbal, 2008).

2.5.6 Rate of Return Risk

Khan and Ahmed (2001) reported that rate of return risk is the most significant and critical risk for IBs rather than other kinds of risks like liquidity and operational risk. How et al. (2005) also pointed that rate of return risk for IBs is high rather than CBs. Islamic banks exposed to rate of return risk due to volatile rate of return on investment. Rate of return is different from that of interest rate risk. (Iqbal & Mirakhor, 2007). As the nature of IBs activities are different as compared to CBs. CBs perform their activities based on a fixed interest rate on financial assets, hence they exposed to less rate of return risk. On the other hands, IBs deal in financial assets whose return are accurately cannot be pre-determined and disclosed at the end of maturity. Therefore,

IBs has to wait to disclose the rate of return for depositors. This ambiguity lead to fluctuation in the depositors' expected rate of return. The higher fluctuation cause higher rate of return risk (Van Greuning & Iqbal, 2008).

2.5.7 Displaced Commercial/Withdrawal Risk

Displace commercial or withdrawal risk arises at the time when Islamic banks offered lower rate of profit to their depositors. In the case of lower rate of return to depositors, the depositors will withdraw their funds from banks and deposit in some other banks where high rate of return are offered. Displaced commercial risk emerge from the comparative pressure put by conventional banks (Iqbal & Mirakhor, 2007). Similarly, the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) asserted that displaced commercial risk created from the pressure of paying higher return to depositors on their return. This situation occur when Islamic banks are fail to generate higher return on the investment of deposits and unable to distribute profit according to the expectations of depositors. In order to reduce the impact of this risk, Islamic banks might give up a percentage of their own profit to depositors to save themselves from withdrawal of funds by the depositors (IFSB, 2005).

2.5.8 Shari'ah Non-compliance Risk

Islamic banks are exposed to Shari'ah non-compliance risk which arises due to the failure to fulfill Shari'ah injunctions and principles as drafted by the bank' Shari'ah board of directors (IFSB, 2005). In Addition, IFSB (2005) documented that Shari'ah non-compliance risk may adversely affect the assets of IBs with probable loss of investment income. The direct adverse impact of this risk maybe the cancellation of contract and withdrawal of funds by the customers that consequently decrease the performance and profit of IBs. Also, this risk adversely affect the public confidence and trust on Islamic financial institutions. This scenario further increases the risks of IBs.

Oz et al. (2016) reported that Shari'ah non-compliance risk is caused due to the inconsistency of IBs with the vital requirements and conditions of the Islamic Law contracts. This risk leads to Shari'ah non-compliance income which reduce the profitability of IBs. Because, banks are required by Islamic law to deduct Shari'ah non-compliance income from net income.

Shari'ah non-compliance risk are divided into two categories; first is the risk emerged from the failure in compliance to Shari'ah injunctions and principles, and second one is caused by the substandard practices by various jurisdictions (Iqbal & Mirakhor, 2007; Van Greuning & Iqbal, 2008; El-Tiby, 2011). The differences of practices regarding accounting treatment, auditing and financial reporting is caused by the difference of opinions among various religious scholars regarding interpreting rules of Shari'ah. For instance, some of them believe that binding of Istisna and Murabahah contract is mandatory for buyer. On the other hand, to enter into Istisna and murabahah contracts. While others put their difference of opinion and state that the same is not mandatory for buyer when he has placed buying order to the concerned bank.

The operations of Islamic banks are vary from conventional banks in the sense that relationship between banker and customers is that of agent and principal. As customers deposit their funds in bank' account with entire confidence and trust that bank will run their operations fully with Shari'ah injunctions. If bank involved in non-Shari'ah compliance activities, this will hurt the confidence and trust of customers. The customers may withdraw their fund from banks and thus banks can be exposed to Shari'ah non-compliance risk. Therefore, Islamic banks should operate their functions only according to the golden rules of Shari'ah (Niu, 2012).

2.5.9 Fiduciary Risk

The risk created by the violation of contract by bank as its activities may not completely compliance with Shari'ah (Khan & Ahmed, 2001). Fiduciary risk also caused by the low rate of return than market rate: caused by the mismanagement of bank or by the violation of investment contract (AAOIFI, 1999).

2.6 Conclusions

The objective of this chapter is to critically evaluate the definition and concept of the term risk. Keeping in view all the definitions discussed in the chapter, we concluded that risk is the uncertainty exists about adverse events happen that have potential worse impacts on the outcome or objectives of an entity. Generally, risk has a threat to disturb the main earning capacity of a bank or increase the cost and volatility of cash flow. Risk can be emerged due to any internal factor (bank-specific factors) or external events (macroeconomic factors) that happen unexpectedly.

Both IBs and CBs are exposed to a variety of risks like, capital risk, liquidity risk, operational risk, credit risk, reputational risk, foreign exchange rate risk, interest rate risk, inflation rate risk, legal and fiduciary risk. However, the nature and level of risks are different across both types of banks because IBs have a unique contractual and operational structure compliance to Shari'ah. Moreover, because of such differentiation between IBs and CBs, IBs are expected to face additional risks like equity investment risk, rate of return risk, displace commercial risk, Shari'ah compliance risk, along with the risks faced by conventional banks.

CHAPTER 3

ISLAMIC PHILOSOPHY OF RISK

3.1 Introduction

This chapter describes the definition and description of risk considering Islamic literature. In this chapter, we discuss the various definition of risk interpreted by different Islamic scholars and then compared with the related term gharar (uncertainty). After that, the chapter explains whether Islam recognize the concept of risk under the heading of Islamic perspective of risk. The section begins with the viewpoints of different Islamic scholars about the recognition of risk concept. After that, we explain the concept of risk from Qur'anic verses, which provides general guidelines for risk management. Further, we describe certain hadiths and events occurred in the life of Prophet Muhammad (P.B.U.H) that define the concept of risk. At the end, we discuss several legal (Shari'ah) maxims where the first two maxims are particularly referred for the concept of risk in the commercial transaction, and other provide general concept and guidelines about the concept of risk.

3.2 Description of Risk in Islamic Literature

Quran and Hadith, the primary sources of Islamic Law, along with other relevant Islamic literatures justifies that the terms mukhatarah, gharar, maysir, Al-ghunm bil ghurm and Al-kharaj bil daman are the key concepts prevalent in Islam relating to the concept of risk (Waemustafa & Sukri, 2016). In Arabic language the word 'mukhatarah' is used for the term risk which means danger (Elgari, 2003; Gruining & Iqbal, 2008; Kozarevic et al., 2013; Waemustafa & Sukri, 2016). The literal meaning of risk in fiqh literature is any action that cause to impairment (Qal'aji, 1985). Similarly, Al-Zuhayly (1989) defined risk as venture into dangerous which is the situation taken place in oppose to the expected one. Further, Al-Suwailem (2006) stated that risk is the

factor that involves a chance of loss which of course is not desirable in Islamic perspective.

Several Muslim jurists employed the term mukhatarah and khatar for the business risk and define as "possibility of unexpected outcomes" (Al-Sharbasi, 1981). In reference to the Al-Mawsu'ah al-Fiqhiyyah Al-Kuwaytiyyah (1983-2006), mukhatarah is that uncertain and obscure status of a commercial transaction where gain or loss is totally not foreseen. Mukhatarah (risk), in the words of Elgari (2003) is "the situation that involves the probability of deviation from the path that leads to the expected or usual result". Further, he systematically analyzed the word mukhatarah and concluded that it is synonymous to English word Risk. Muhammad (2008) also reported that concept of Muslim jurists about mukhatarah and khatar is almost like that of conventional economist. In economic perspective, risk is the possible loss of wealth, hence it is not required by itself. But is necessary in business activities and essentially be taken to produce value and wealth.

It is a generally held view that risk must be assumed in the business transaction and should not be omitted at all. Rather its effect should be shared by all the contracting parties. Any income generated from zero risk activities are strictly prohibited in Islamic law (Agha & Sabirzyanov, 2015). Waemustafa and Sukri (2016) also reported that mukhatarah (risk) is an essential element of a contract that makes it legal, lawful and binding according to Shari'ah principle. All types of risks do not make a contract invalid because the risk which exist and predictable in daily life transactions is permissible (Swartz, 2013; Kozarevic et al., 2013). Ibn Taymiah (728H-1328G) classified risk into two categories. One is the commercial risk where one party purchase an asset for selling purpose to earn profit and trust on Allah for that. This type of risk is essential for traders even though one might loss, but this is the nature of business. The second is the risk of

gambling where parties involved is eating wealth for nothing. This type of risk strictly prohibited in Islamic law.

Uwaidah, (2010) pointed that words mukhatarah and khatar are employed interchangeably with gharar. The literal meaning of gharar is uncertainty that is the fraud, mistake, and danger (Dusuki & Smolo, 2009; Razif & Mohamad, 2011; Hidrus & Rahman, 2013). According to Al-saati (2003), gharar means the state of being at the verge of destruction. Further, he stated that the verbal noun of Gharar "Taghreer" means misrepresentation or deception which contains exposing other or oneself or other properties or oneself to threat and danger. Other Islamic scholars reported that literally gharar means risk which is the outcome of something is unknown (Al-Darir, 2004; El-Gamal, 2006; Razali, 2007; Hussain & Pasha, 2011; Lambak, 2013). Gruining & Iqbal (2008) explain that gharar is uncertainty. Gharar refers to a situation where either some elements of contract is known to contractual party that is not known to the other party, or more explicitly none of the party involved in contract has control over the contract' subject. Al-Darir (1997) summarized the different definition of gharar under the following heading:

a) Gharar means uncertainty or doubtfulness in a transaction as when situation is not clear whether something will happen or not. This definition excludes the unknown (Hanafi and Shafi`i schools share this definition).

b) Gharar also refers to ignorance. This can be in the situation when the subject matter of sale transaction is not known (this definition is adopted by Zahiri school alone). Ibn Hazm (n.d) "Gharar in sale occurs when the purchaser does not know what he has bought, and the seller does not know what he has sold.

c) Gharar means both the uncertain and unknown. Al-Sarakhsi (n.d) reported gharar obtains where consequences are concealed" (Most of the Muslim Jurists have consensus on this definition).

Although the term risk and gharar have resemblance and interchangeability used in some situation, however, there is a fundamental distinction between the concept of gharar and risk. Gharar refers to contractual uncertainty presented in exchange transaction and nullified the contract from Shari'ah perspective. However, there is the natural presence of unavoidable risk in every situation. Gharar, on the other hand, is a special type of risk which arises through the structure of the contractual arrangement between the contracting parties. For instance, giving loan or selling goods based on murabahah to a non-credit worthy person is risky, but it is not gharar. On the other side, selling an item for two prices: one for differed price leaving the price to be decided by the purchaser after the execution of sale contract, and the other one for cash. Such type of transaction may not be very risky but consists of gharar and prohibited in Islamic law (Elgari, 2006).

In both definition of risk and gharar, there exists an element of uncertainty or hazard that consist of different events which may or may not take place, and uncertainties resulted by lacking information or ambiguity. (Lambak. 2013). Waemustafa and Sukri (2016) differentiated the terms risk and gharar according to definition in dictionary, Jurisprudence definition, and Arabic linguistic definition. The most common synonyms of gharar in various dictionaries are risk, danger, threat, difficulty, fraud, exposure to risk, deception, jeopardy and hazard. Mukhatara is defined as the undertaking of risk or a probable loss. Linguistically defined in Arabic, gharar is risk while Jurisprudence declares gharar as unpredictable result or probability of more than one result or uncertainty. They pointed out that gharar may be either minor or excessive in nature.

Most of the Islamic Scholars have consensus on the possibility of minor gharar as it is always there in almost all contracts by nature. But excessive gharar is prohibited under Islamic Law because of various reasons including resemblance with maysir (gambeling) and ambiguity in the quantity, delivery and features of goods. Mukhatarah (risk) comes under the tag of minor gharar so it is not possible to exclude it entirely from any contract.

From the discussion it is concluded that perception of Muslim scholars about the implication of gharar (uncertainty) and mukhatarah (risk) is not distant from those of economist. According to the economists risk is the measure of uncertainty related to the incidence and consequences of events that are hostile or unbearable. On the other side, Islamic jurisprudents identifies gharar as type of uncertainty, and literarily means risk, hazard, or uncertainty. The excessive gharar is strictly prohibited by the Prophet Muhammad (P.B.U.H) because of its speculative nature which may cause hatred, dispute, getting of unfair gains, exploitation and eating wealth of other individuals unlawfully, (Al-Suwailem, 2000). Also, Islam prohibits maysir or game of chances and gambling because the outcomes of these activities purely based on luck and gain profit on the expense of other. Further, no productive activities are generating from such type of activities. Thus, the prohibition of gharar contain in such types of activities is seen as way of reducing risk by nullifying the contact (Elgari, 2003). However, Islam encourages the assuming of risk in business transaction where profit or gain without assuming risk is not allowed. Only those risks are prohibited which involve in the activities where outcome purely depend on luck. Hence, the ultimate objective of prohibition of excessive gharar is consistent with that of risk management which is carried to save one from loss.

3.3 Islamic Perspective of Risk

The protection of goods, property, and capital is one of the core objectives of Shari'ah (Islamic law). Shari'ah strongly advises cooperation, mutual assistance, and solidarity to avoid the risks individuals may face in daily life. Holy Qur'an documented the cooperation and mutual assistance in the following versus.

"Cooperate with one another in goodness and righteousness, and do not cooperate in sin and transgression. And be mindful of Allah. Surely Allah is severe in punishment" (Qur'an, 5:2).

"[They will be asked], what is wrong with you? Why do you not help each other?" (Qur'an, 37:25).

Noor et al (2018) documented in their study that Prophet Muhammad (P.B.U.H) stated that property and safety of other cannot be contested, and any kind of intrusion of property rights is a property crime. Further, Prophet Muhammad (P.B.U.H) permits the mudarabah and musharakah where the contracting parties must share their profit and loss according to the agreed terms and condition. The making of profit in any business without bearing loss is not acceptable in Islamic law (Sunan Abi Dawud, 3508). Rosly (2005) reported that seller must bear the risk of depreciation or damage of goods prior they are delivered to purchaser. It is the prerequisite for business transaction based on the concept of "al ghunm bil ghurm" where the gain is the right of one who bear risk. The concept of risk is also related with the ultimate concept of Shari'ah maxim al-ghunm bil ghurm. The concept of al-ghunm bil ghurm discloses that profit is lawful only when a party involves in any real economic activity or venture, whereas, the concept of al Kharaj bil-al-Daman suggests that, in order to earn Halal (permissible) earning, the gain must be accompanied with liability for losses (Ibn Taymiah, 728H-1328). Risk management is vital in the business and financial transaction, and it falls

inside in the domain of the higher objectives of Islamic law (Maqasid Al-Shari'ah). The main objective of Islamic law is to protect the Din (religion), nafs (life), nasl (lineage), aqal (intellect), and mall (wealth) (Noor, et al. (2018). Islam instruct their believers to handle different kinds of risks like business risk, investment risk, criminal assault risk, illness risk, and other (Chapra, 2008).

Islam encourage us to manage risk in daily life if it does not carry out purely for making profit and nor involve any practices forbidden by riba, *gharar*, gambling, chance, or injustice. According to ISRA (International Shari'ah Research Academy) (2012), Islam law restrict and condemn the two extreme behaviours associated with risk. The first one refers to the complete evading of risk such as the risk contain in transaction of interest (riba), where the lender earn money without assuming or taking business risk. The second one is related with taking of excessive risk as in the situation of maysir (gambling). This prohibition based on the Islamic ruling which strictly nullifies the contract containing element of excessive uncertainty, cheating and riba. Further, Islamic law clearly distinguishes between two types of risks. The risk associated with economic transaction or simply risk linked with activities that generate wealth or value added. Secondly, the risk involved in zero-sum activities (where no extra wealth is generated) or in the activities of gambling (eating wealth for nothing) (Bouslama and Lahrichi, 2017).

Islamic Ideology dos not support the concept of associated risk with the probability of loss provided that there is no clear demarcation of accumulation and growth of wealth. (Al-Suwailem, 2002). Moreover, the researcher asserts that one must not indulge himself in an aim of risking loss of wealth. Such risk may be dealt as an upcoming difficulty. There are many situations in daily life where such difficulties are not welcomed by choice but they happen often. The same idea is propounded by Sabiq

(1999) where reward of any activity is not based on difficulty involved in an action but on the positive utility of the action. Every good action faces difficulties. A good action is considered good on the basis of its ultimate effect and positive utility but not due to the difficulties faced during these acts. Briefly, when an action is determined whether it is good or not, the difficulties play secondary role. The primary role is played by the positive utility of an action. Al-Suwailem (2006) further endorses them and argues that risk must not be the aim of an action although it happens as a hurdle during its performance. Hence, the success of economic policies is identified through financial gains not by the risk involved in them. Such financial gains reveal the risk faced during an action but the risk does not identify the financial gains by itself. Hence, it is affirmed that taking risk is allowed in Islamic Ideology to achieve financial gains without desiring risk. This difference separates forbidden and legal risks poles apart. Legal risk refers to the risk when it is taken for financial gains while forbidden risk is the one where no financial gains are expected such as the activity of gambling (Maysir).

According to Bouslama and Lahrichi (2017) a risk may be declared as acceptable on the basis of the following three major criteria.

i) The first criterion is Degree of Inevitability which revels that it is not possible to gain economic value without taking into consideration the risk of bankruptcy or financial loss. It is not possible to separate risk from the generation of economic value and real economic transactions. Islamic injunctions forbid to separate risk from real economic transactions because it will lead to more risk and economic stability would be on stake. For instance, sale of debt is prohibited on specific price and all financial derivatives in economic and finance are also prohibited where risk and ownership are separated from each other.

ii) The second criterion is importance of risk. Islamic injunctions accept risk where failure have less chances as compared to success. As per this criterion Islam prohibits gambling where loss is inevitable. Such activities involve illusion and fraud. The gambler thinks that he has more chances to win the prize but in fact the chances of winning is minute while the degree of loss is high.

iii) The third criterion is the Degree of Intentionality which is derived from the above two criteria. The primary aim of an economic activities is the creation of wealth and not the risk faced during such activities. Hence, the stated risk must be avoided to plan it an element of the economic transaction. The decision of an agent must be encouraged by his intentions to gain success and wealth and discouraged by the high probability of loss. This principle differentiates investment from gambling. Both of them are differentiated by the probability of success. For example, a person setting new business is sure about the success of his start up. On the other hand, a gambler is confirmed about probability of his loss but the high winning prize motivates him to participate in a game where chances of success is tiny. It can be safely assumed that any activity where the chances of success is less than failure can be considered as cause of failure, not as cause of success.

3.3.1 Islamic Perspective of Risk from Qur'an

Islam recognize the concept pf risk. There are several versus in the Holy Qur'an which instructed Muslim to handle different risks confront in financial and wealth affairs. Those versus suggest proactive steps to be taken to eliminate risks, and specifically represent the importance of strategic planning to alleviate and control expected risks. Holy Qur'an presents the complete code of life and provides general guidelines about the management of risk in daily life. Such as Holy Qur'an described the stories of earlier prophets so that Muslim can take guidelines and lessons in the worse situations. The

prominent story is the prophet Yusuf stated in the chapter of Yusuf in the Holy Qur'an which recommend the general concept of risk, where, Prophet Ya'qub, the father of prophet Yusuf, advise his sons to enter Egypt from various gate, not by one gate. The advice of Prophet Ya'qub stated in the Qur'an in the following verses.

"O my sons, do not enter by one gate, and enter by separate gates; and in no way can I avail you anything (whatever) against Allah. Decidedly judgment belongs to none except Allah. On Him I have put my trust, and in Him let (all) the trusting ones then put their trust."(Qur'an, 12: 67).

These verses described the general guidelines on how to manage and reduced risk. As, Prophet Ya'qub provided guidelines to his sons to prepared best plan and pursue options so that they will save from danger. Although, Muslim must have faith and trust that Allah decided everything but instead of that they must plane for worse situation. It is not contradictory with the trust of Allah. Hence, it is permissible to used various tactics to handle and decrease the expected risks.

The concept of risk also derived from the story of Egyptian' king dream interpreted by prophet Yusuf. The dream of king is stated in Qur'an in the following verse.

"And (once) the king (of Egypt) said: 'Verily I saw (in a dream) seven fat cows which seven lean cows were eating; and seven green ears of corn and other (seven) dry. O' chiefs (of my court)! Explain to me my dream, if you are able to interpret dreams" (Qur'an. 12: 43).

The interpretation of the dream made by prophet Yusuf is that Egypt would expose to seven years of famine after seven years of prosperity. There would be no crops and sufficient foods for the survival of people. As. Qur'an stated the interpretation of prophet Yusuf in the following verses:

"He said: 'You shall sow for seven consecutive years and that which you have harvested you leave it in its ear, except a little whereof you eat. Then will come after that seven difficult [years] which will consume what you saved for them, except a little from which you will store. Then will come after that a year in which the people will be given rain and in which they will press [olives and grapes]." (Qur'an, 47-49).

Not only prophet Yusuf interpreted the dream of king but also proposes and advise fourteen-year strategic plane to King to overcome the forthcoming calamity and expected worse situation. Specifically, he advises that the people of Egypt must produce a large quantity of grains during the coming seven years of rains and keep the extra grains to be utilized in the next seven years of drought (Agha & Sabirzyanov, 2015). As a best planner, Prophet Yusuf (A.S) devised a unique approach to curb the forthcoming situation of drought. He proposed the idea to grow more crops than the quantity needed and store the additional grains. Following the proposed approach of Prophet Yusuf (A.S), the government of Egypt and its people successfully survived for seven years during the famine. This strategy is the best example of risk management where production of more crops and storing the additional grains reduced the risk of hunger among the people of Egypt. It clearly indicates that Islam allows to take measures for risk in worst conditions. All kind of preparation made for mitigating the effect of drought, floods, earthquakes are not contradictory with trusting in Allah and submission to Allah's decree (Ibn Kathir, 1988). Although the risk described in this example is not the same as financial risk but we may get a general idea of risk management to curb any worst situation.

There is another verse in the Qur'an which impose attestation on contracting parties in a financial dealing. The verses particularly focused on the management of default (credit) risk.

"O you, who have believed, when you contract a debt for a specified term, write it down. And let a scribe write [it] between you in justice. Let no scribe refuse to write as Allah has taught him. So let him write and let the one who has the obligation dictate. And let him fear Allah, his Lord, and not leave anything out of it. That is more just in the sight of Allah and stronger as evidence and more likely to prevent doubt between you, except when it is an immediate transaction which you conduct among yourselves. For [then] there is no blame upon you if you do not write it. And take witnesses when you conclude a contract. Let no scribe be harmed or any witness. For if you do so, indeed, it is [grave] disobedience in you. And fear Allah. And Allah teaches you. And Allah knows of all things" (Qur'an, 2:282).

The above verses comprehensively discussed the clarity of contract between parties from any types of gharar, disputes, and uncertainty. There is always a chance of disputes and alterations of opinion over the mutually decided terms and conditions in the business and financial dealings. So, it is required that transaction involve money, rights, ownership, land, property, and other valuable things must be recorded in the form of contract. The contract must be signed by the parties and witnesses. The well-documented contract reduces the default' risk and guarantee the rights of all contracting parties. Allah strictly commands people that they must not waste and reject the witnesses when needed, and Allah guarantee all kinds of protection of witnesses and scribes. Because witness and evidence are significant to disclose the justice and truth and reduces uncertainty and disputes.

Attestation is the fundamental prerequisite in Islamic commercial law whether it is an official documentation at organization level or usually documentation at Individual level. The basic aim of the attestation is to reduce the risk of any contracting party refuting the mutually agreed conditions, which may lead to capital loss. Further, in debt

contract, Islamic law permits creditor to take collateral as debt security. This will mitigate credit risk in the case of debtor failure in gratifying his obligation. Thus, the verses mentioned above clearly represents that any type of risk and losses must be eliminate in possible way up to maximum level (Usmani, 1978).

In the chapter five of the Holy Qur'an, there is verses which prohibit certain activities which leads to harm and damage to society. Allah address His believers to save their selves from the prohibited activities like intoxicants, masir (gambling) and ansab (fortune telling) and azlam (arrow of seeking luck) to save themselves from the risk of hostile and hatred. If you (believers) don does not obey this command you will fail in the objectives of faith and submission to God.

"O you who believe! Intoxicants (all kinds of alcoholic drinks), gambling, Al-Ansab, and AlAzlam (arrows for seeking luck or decision) are an abomination of Shaitan's (Satan) handiwork. So, avoid (strictly all) that (abomination) in order that you may be successful. Shaitan (Satan) wants only to excite enmity and hatred between you with intoxicants (alcoholic drinks) and gambling and hinder you from the remembrance of Allah and from As-Salat (the prayer). So, will you not then abstain?" (Qur'an, 5:90-91).

The prohibited activities elucidate in the above versus have two possible outcomes either the parties involved will be lucky to win the bit or they will loss. Hence, the contract contains these activities would be null and void (Qurtubi. Hamad, Qalaji, n.a).

Another text in Qur'an which reveals the concept of risk is documented in the chapter of Al-Baqarah. The verse is following.

"Those of you who die and leave widows should bequeath for their widows a year's maintenance and residence; but if they leave (the residence) there is no blame on you

for what they do with themselves, provided it is reasonable, and Allah is Almighty, All-Wise" (Qur'an, 2:240).

This verse indirectly focused on the probable risk exposed by the family in the case of death of their bread winner. The qur'anic verse encourages the husband to make a strategy for the financial assistance to overcome the risk of living face by his family in the case of his death.

The husband must forecast and save enough amount based on their historical and current need and expenses. Hence, it is not prohibited that any individual or an organization identify the definite risk that may occur, though he has no capability to assure its incidence, and takes proactive actions based on the experience to encounter impact of risks.

Another verse where Allah permitted the forbidden food items whenever there is severe need of it. The verse is the following.

"Say (O Muhammad): I do not find in what has been revealed to me anything forbidden to eat except carrion, running blood, swine which is impure or a sinful offering in the name of any other than Allah. But if someone is compelled by necessity neither driven by desire nor exceeding immediate need then surely your Lord is All-Forgiving, Most Merciful" (al-Qur'ān, 6:145).

The verse specifically describes the risk to human life. Allah has given relaxation about consuming the unlawful items in the case of necessity to ensure the safety of human life. The Islamic scholars have consensus on the permissibility of forbidden food items in the time when there is threat to life. Its means that Allah do not put human being in high risk and permit to mitigate risk.

From the above Qur'anic verses, it is concluded that Islam recognized the general concept of risk. Also, Islam allowed the identification and mitigation of risk. Although

the concept of risk demonstrate by the verses are not specific to that of financial risk but enlighten the general concept of risk. The verse suggests that proactive steps would be taken for the elimination of the possible adverse impact of risk confronted in daily life. The main objective of the verses is to reduce the losses arises from the happening of adverse events, which ultimately consist with the concept of risk and objectives of risk management. Because the risk has the aim to early identify, monitor and mitigate the risk.

3.3.2 Islamic Perspective of Risk from Hadiths

The recognition of the risk management concept is not only basis and root in the Holy Qur'an but also in Sunnah as well. There is certain worse situation occurred in the life of Prophet Muhammad (P.B.U.H) which reveal the general concept of risk. The prominent is the history of the Prophet' migration to Madinah which provide us guidelines that how Prophet (P.B.U.H) handle the risk when there is serious risk to his life. The Prophet Muhammad (P.B.U.H) mitigated the risk of getting martyred during the night of migration by inviting Hazart Ali (R.A.) to sleep in his bed. It is documented that a night prior to the migration of Prophet Muhammad (P.B.U.H) from Makkah, the tribesmen of Quraish surrounded his house. They tried their best not to sleep for the whole night so that they may easily martyr him early the morning. They used to keep an eye on him through a tiny hole in the door and found someone sleeping on his bed (Waheed & Akhter, 2010). Here, the Prophet Muhammad (P.B.U.H) identified the risk to his life and then reduced it by inviting Hazarat Ali (R.A.) to sleep on his bed.

Another is the history of Battel of Khandaq (Battle of trench) fought between Muslim and Jews tribe in the 5 A.H. The battle is named after the digging of trench by Muslim around the Madinah city. At the advice of Salman Farsi (R.A.), a learned Persian companion of Prophet Muhammad (P.B.U.H) recommend the digging of trench. The

main aim of the trench is to protect himself from the high risk of casualty in the battle. The strategy was succeeded when enemy approached Madinah and saw the deep trench, they faced setback. Thus, the digging of trench (Khandaq) is the effective preventive and mitigative strategy adopted by Muslims. This suggests the identification and taking of precautionary steps to overcome the severity of expected worst scenarios and of risk. There are various authentic hadiths which demonstrate the recognition of risk concept. This recognition is based on the following famous hadith reported by the companion of Prophet Muhammad (P.B.U.H) Anas bin Malik.

"Prophet Muhammad (peace be upon him) once asked a Bedouin who had left his camel untied, "Why do not tie your camel?" the Bedouin answered," I put my trust in Allah" the prophet then said, "tie up your camel first then put your trust in Allah" (Sunan al-Tirmidhi, Vol.4, No. 2517).

The hadith highlights the identification of risk such as the camel may be stolen if not properly tie and mitigation of risk such as the stolen of camel can be prevented by taking the proactive step of tie up the camel. The hadith also focuses on that without proactive and preventive step or efforts taken for the elimination of worse situation, the total submission to Allah may not be appropriate (Laldin, 2013). Muslim should put their trust to Allah but must not be fatalistic or passive. Allah allows Muslims to take measures to handle natural disasters and manage risk of loss. This concept does not go against the idea of trust in Allah Almighty (Tawakul) which means the right choice to gain the aims and then praying to Allah Almighty for success (Usmani, 1999).

There is another hadith reported by Anas bin Malik that the Prophet (P.B.U.H) state:

"Trade the money of the orphans, so it will not be eaten (decreased) by zakat" (Sunan al-Tirmidhi, Vol.2, No.641)

In this hadith, Prophet Muhammad (P.B.U.H) clearly instructed the guardian of the orphans to invest the orphans' wealth in a trade. The trade will yield income which prevent the orphans' wealth from further loss due to the payment of zakat (Malik, 2004). The hadith focused on the proactive step to save the orphans from risk of decreasing their wealth.

Another hadith indicates the sound sign of risk management is reported by the Ibn Abbas (may Allah be pleased with him).

"Whenever Abbas ibn Abdul Muttalib (may Allah be pleased with him) handed over his assets [camels] for mudarabah to his partner, he stipulated that he should not take the assets across the sea, nor take them down to the bottom of a dry riverbed, nor trade them for live animals. If he were to do any of these, he would have to bear the compensation. Word of al-Abbas stipulation reached Rasulullah (P.B.U.H.) and he allowed it" (Al-Sunan al-Kubra, Vol. 6, p. 111).

The hadith describes the business of Abbas ibn Abdul Muttallib (may Allah be pleased with him), where he takes preventive step to save himself from excessive risk. The hadith allow stipulating terms and conditions in the business of mudarabah to avoid exposure to excessive risk. This hadith is the basis of rulings for restricted mudarabah. In restricted mudarabah, the capital provider put certain restriction on mudarab where to invest the fund. The capital provider aims to protect himself from the excessive risk of loss (Al-Daraqutni, 2004). Hence, the hadith allows the forecasting of expected risk and precautionary step to avoid risk may occur.

There are other hadiths reported by various companions of Prophet Muhammad (B.P.U.H) about the sale transaction. The hadith are the followings.

"Abu Huraira (Allah be pleased with him) reported that Allah's Messenger (May peace be upon him) forbade a transaction determined by throwing stones, and the type which involves some uncertainty" (Sahih Muslim, No. 1513).

"Ibn Abbas (Allah be pleased with them) reported Allah's Messenger (May peace be upon him) as saying: He who buys food grain should not sell it until he has taken possession of it" (Sahih Muslim, No. 1525a)

"Jabir b. Abdullah (Allah be pleased with them) is reported to have said that Allah's Messenger (may peace be upon him) forbade the sale of a heap of dates the weight of which is unknown in accordance with the known weight of dates"(Sahih Muslim, No. 1530a).

"Abdullah b. Dinar narrated that he heard Ibn 'Umar (Allah be pleased with them) saying: A man mentioned to the Messenger of Allah (May peace be upon him) that he was deceived in a business transaction, whereupon Allah's Messenger (May peace be upon him) said: When you enter into a transaction, say: There should be no attempt to deceive" (Sahih Muslim, No. 1533a).

"Ibn 'Umar (Allah be pleased with them) reported that Allah's Messenger (May peace be upon him) forbade the sale of fruits until they were clearly in good condition, he forbade it both to the seller and to the buyer" (Sahih Muslim, No. 1534a).

These hadith describe the prohibition of any type of gharar (uncertainty) or risk may be present in sale transaction or transaction base on purely on luck. The hadith evidently prohibit the sale and purchase of substance where the subject matter, quality and quantity of the substance is unknown. Also, restrict the contracting parties from deceiving each other in a transaction. The aim of the hadiths is to provide safeguard to society against any type of uncertainty and dispute associated to transaction. Hence, the

hadith provides guidelines to identify potential uncertainty and risk related to transaction. If there is uncertainty about the subject matter, quality, or quantity of substance, avoid such types of transaction. Because it leads to dispute and losses.

3.3.3 Islamic Perspective of Risk from Legal (Shari'ah) Maxims

Legal maxims (Al-qawa'id al-fiqhiyah) are universal principles of jurisprudence that may be used in different situations which are dealt under general injunctions. These maxims depict the objectives of Shari'ah and are playing significant function in concluding various fiqh' rules to come up with specific hukum (command) (Saiti & Abdullah, 2016). Islamic scholars have consensus that legal maxims are capable to be use as basis and evidence for juristic rulings. The reason is that it has based on strong evidence from Qur'an and Sunnah and have conformity with the maqaṣid of Shari'ah and public benefit (maṣāliḥ) of the people (Muhsin, Amanullah, & Zakariyah, 2019). There are certain Shari'ah maxims which reveal the concept of risk.

3.3.3.1 Al-Ghurm Bi Al-Ghunm

The first maxim is the "al-ghurm bi al-ghunm", *means that "no reward without risk" or* "gain begets liability". This maxim describes that earning a profit is not legitimate without assuming loss or risk. Anyone who assumes profit be required to agree to take responsibility in case of loss. The investor or depositors must share liability to earn profit. The elimination of liability and sharing of profit alone is strictly prohibited by Islamic law. Also, it is prohibited to guarantee profit by evading liability of loss (Waemustafa & Sukri, 2016). Lingually, the word ghurm means loss or damage, and precisely ghurm refers to the responsibility taken by an individual in his wealth in reward for destruction that is neither a crime nor treachery. Linguistically, the word ghunm means profit, gain, or advantage, and technically means obtaining something which was not owned before (Ikram, 2018).

This maxim clearly states that it is the mandatory responsibility of the owner of assets to afford the costs and all kinds of risks related to the ownership of that asset because he is the one who will get the end financial benefits from it. This benefit is not meant to be enjoyed by the non-owners. That is the reason, the real owner is the one who must afford the costs and risks (Laldin, 2013). For instant, when an individual invests his capital in a business through an entrepreneur, the entrepreneur turns into a capital holder who equitably shares profit and risk with the capital provider. Both the parties will enjoy the profit gained from this mutual business investment. The same way if the business faces any loss, both the parties will have to suffer equitably. Therefore, the income is justifies as fair on the basis of equitable responsibility of risk between both the parties (Agha & Sabirzyanov, 2015).

From this maxim we can conclude that taking of risk is permissible in Islamic law. Because the maxim can make a correlation among the usury (riba), sale (al-bay), and risk (ghurm). Allah stated in the Qur'an' Al-Baqarah versus no.275 "Allah has permitted trade and forbid riba". From this verse, it is clear that Allah encourage people to eliminate usury (riba) which bear no risk. On the other side, He also encourages people to trade (sale) with each other which is not risk free. Thus, trade is legitimate because of assuming risk taking and profit form loan (riba) denied the idea of risk taking and sharing. Therefore, Islam permits sale contract because sale contract is not free from risk. Profit generated from the sale is the outcome of risk taking, as seller assume the risks that market for the goods exist, goods are in good conditions, and price is right. Seller will lose their money if the market price is dropped below the cost or if the goods are damaged by the natural calamities (Rosly, 2005).

The second example is the musharakah contract where all partners are bound to share risks according to their capital contribution, implying that partner that earn profit or

expected to earn must bear the losses when arsis. Thus, it provides clear stance that Islam recognizes risk for justification of earning in any economic activities.

3.3.3.2 Al-Kharraj Bi Al-Daman

The maxim contains two Arabic words: kharraj and daman. Literally, the meaning of kharraj is return, yield, or revenue, and daman means liability, responsibility, or guarantee. In this maxim kharraj refers to yield, discreet benefits or corpus resulting from an owned asset, while daman specifically means to the liability or an asset in case it is damaged or destroyed (laldin, 2013). "The general meaning of this maxim is that the benefit of an asset is the right of the one (usually the owner) who indemnifies it if it is damaged. In other words, a person who is held liable in case an asset is damaged deserves to take its benefit or yield as compensation" (Ikram, 2018, p.33). A person who does not accept the liability of an asset are not allowed to receive any compensation or income from that asset as Holy Prophet (P.B.U.H) forbidden the income earned without assuming the risk or liability (Laldin, 2013).

This maxim is based on the following Hadiths:

Narrated from Aishah Radiyallahu 'Anha "A man bought a slave, and he remained with him as long as Allah wished him to remain. He then found defect in him. He brought his dispute with him to the Prophet, and he returned him (the slave) to him (the seller). The man said: Messenger of Allah, my slave earned some wage. The Prophet (P.B.U.H) then said: Profit follows responsibility".

Abdullah bin Amr narrated that Prophet (P.B.U.H) said "It is not lawful to lend and sell, nor two conditions in a sale, nor to profit from what is not possessed, nor to sell what one does not have".

The interpretation of this hadith describes that selling what one does not have means that it is not permissible to gain profit out of something that someone does not bear risk in it. Hence, the maxim concludes that assuming of risk is essential in the business.

3.3.3.3 Harm must be eliminated

This maxim means that all types of harm should be prevented, minimized, and eliminated. The maxim is universal on harm elimination and based on the hadith "no harm shall be inflicted or reciprocated". There are subcategories of the maxim like "Harm may not be eliminated by its equivalent", "Harm should be avoided as much as possible", "To repel a public harm a private harm is preferred", "A greater harm is eliminated by tolerating a lesser one", "When two wrongful acts meet, the remedy of the greater is sought by the doing of the less", and "The smaller of two harms is chosen" and "Harm is repelled as far as possible" (Sunan Ibn Majah, 2340).

These maxims provide general guidelines to prevent, minimized and eliminate all type of harm (difficulties) confront in daily life. It is construed as prohibition of all actions that involve the notion of insulting, violating on other's rights, irritating, overwhelming, or setting back some party's interests (Muhsin & Ali, 2020). Any type of 'Harm' leads to either loss of life or wealth should be avoided in possible way. Therefore, Islamic law strictly prohibits all activities or action which impose risk to other people' life or property.

3.4 Conclusions

The chapter highlighted the Shari'ah philosophy of risk. It is determined in the chapter that the word mukhatarah is used for the term risk which means danger, or any action which leads to loss. Islamic scholars define risk in the way which is very much consistent with the view of conventional economist. Because they both define risk in negative sense and have consensus that eventually risk leads to loss. Some of Islamic

scholars have opinion that the word gharar and risks are used interchangeably. Therefore, they define gharar most likely with that of risk. They pointed that both terms have the element of an uncertainty. In broad sense, the ultimate scope and outcome of risk and gharar is same with each other, but specifically the concept of risk is different from that of gharar. Gharar is the contractual uncertainty exists in exchange transaction, which invalidate the contract from Shari'ah perspective. On the other side, risk exists naturally in every transaction and situation which must be assume and cannot be avoided. Hence, risk cannot invalidate the contract.

It is noted that the protection of capital and good is one of the most important objectives of Shari'ah. Thus, Islam recognize the general concept of risk. There are various qur'anic versus, hadiths, and legal maxims which document the general concept of risk indirectly and provide general guidelines about the identification and mitigation of risk. Islam clearly elucidate that any type of gain or profit without assuming the liability or risk for that is not allowed. Thus, encourage their believers to trade with each other, and assume and bear risk in business transaction. However, Islamic law strictly forbid certain activities like gambling, maysir, throwing arrow, and etc. where profit is earned on the expense of other party or earning of profit purely based on luck. Such types of activities do not create economic value and leads to dispute, hatred, speculation, and disturbance in the society. Secondly, Islam prohibit the contract involve excessive gharar (uncertainty), where the subject of the matter, quality, quantity, and other characteristic of the subject are not known to the parties. The main aim of these prohibition is to save society from the risk of loss. Hence, it is concluded that Islam only prohibits certain activities which contain gharar and leads to harm and destruction, not the risk by itself. Shari'ah prohibits risk only in the situation where the ultimate objective of risk management is to make money exclusively and involve restricted

practices like gharar or riba. Thus, the forecasting and then management of risk by taking proactive steps is permitted in the permissible economic activities. Definably, the mitigation of risk is also consistent with the concept of protection of wealth, value addition and then, in turn, it promote economic activities and enhance socioeconomics stability in the society.

CHAPTER 4

REVIEW OF LITERATURE

4.1 Introduction

This chapter describes empirical literature about the main variables of the study. The chapter begins with the literature review of the dependent variables: growth, profitability, and stability of banks. Next, we present the detail review of previous empirical studies conducted in different countries and regions, which disclose the relationship between various types of risks and financial performance of IBs and CBs. Followed by the empirical studies depicting the impact of individual bank-specific risks (credit risk, liquidity risk, operational risk, capital risk), and macroeconomic risks (inflation rates risk, exchange rate risks, interest rate risk) on the performance of CBs. In the next section, the chapter represents the empirical literature review of moderating variables: corporate governance attributes and bank ownership. At the end, we present literature review about the control variables like bank size, tax, cost efficiency, asset structure, deposits, saving, and financial development.

4.2 Empirical Description of Dependent Variables

The dependent variable of the study includes growth, profitability, and stability of IBs and CBs.

4.2.1 Growth

Islamic banking has been growing globally in both the Muslim and non-Muslim countries. Several researchers examined the determinants/factors contributed to the growth of Islamic banks. Hasan and Dridi (2010) examined pre-and-post financial crises change aspect regarding credit growth, asset growth, external rating, and profitability of IBs and CBs for the period 2005-2009. They reported that IBs attained higher profitability than conventional banks in the pre-financial crises. However, IBs

suffered from huge decline in profitability than CBs in 2009. In addition, the assets, advances and loans of IBs during the financial crises are double rather than CBs.

Du and Girma (2011) stated that ownership type is important determinant in productivity growth of banks. Hence, private banks perform better with respect to productivity growth and efficiency as compared public banks. Mukherjee et al. (2001) stated that specialization of product mix and greater size of assets lead to enhance the growth of productivity while larger ratio of equity to assets cause in decline growth. Keenan (2010) reported that liquidity, diverse instruments, risk management, standards procedures for Islamic finance transactions, lack of efficient scholars and experts of Islamic finance, deficient customers awareness and competition of conventional banking is the main factors affecting the growth of Islamic banks.

Examined the globally expansion of Islamic Banking and using the country-level data for the period 1992-2006, Imam and Kpodar (2013) asserted that share of Muslims population, income per capita, and economic integration with Middle Eastern countries are highly associated to IBs development. Aslam et al. (2014) studied weather credit risk play significant role in the growth of banking system in Pakistan spinning the period 2004-2011. Their results confirm the significant role of credit risk under favorable conditions. Moreover, Lone and Rehman (2017) identified customers' satisfaction and Cham (2018) reported that GDP growth, gross fixed capital formation, schooling, percentage of Muslim population, inflation rate, oil prices, instability are the important determinant of Islamic banking growth. Similarly, Tabash (2017) argued that regulatory environment, lack of standardization, insufficient scholars and experts of Islamic banking and finance, deficiency of awareness, shortage of cooperation and coordination are significant factors which adversely affects the growth of IBs. Scrutinized the dual banking system in 10 different countries, Ibrahim & Rizvi (2018)

found that, during the crises period, lending growth of CBs are less than the financing growth of IBs. However, they did not find any significant evidence which indicated difference in the deposits growth of both types of banks. Further, they reported that cost efficiency and liquidity have significant and positive influence on both the financing and lending growth of IBs and CBs, respectively. Akotch (2018) documented that market penetration, product development, profitability, technological system, firm size, and innovation are the factors which substantially contributing to the growth of banks.

4.2.2 Profitability

Profitability is the significant common indicator of firm performance. It is used to determine how management of financial institutions are investing the total capital and raising funds effectively. Moreover, stakeholders are interested in the profitability because it is used as cushion against the adverse situation occurs like losses caused by uncertain changes in interest rates or losses on loan, etc (Gitogo et al., 2013). Hazzi and Kilani (2013) considered banking sectors as the key engine of economic growth and consequently its financial performance became the most critical and incessantly monitored aspect from the last couple of years. Further, they asserted that financial performance technically refers to the subjective measure undertakes to gauge the operational efficiency of banks and also measures the financial reliability and soundness of banking sector in monetary value which assist in making comparisons. Banks' financial performance is also recognized as profitability which is typically measured in the form of ratios: return on equity (ROE), return on assets (ROA), and net interest Margin (NIM) (Tafri et.al, 2009; Ruziqa, 2013). Profitability represents the ability of management of financial institutions to earn profit or make benefits from all the business activities and operations (Muya & Gathogo, 2016).

Various researchers evaluated the profitability of banks at different times by using different proxies. Such as Rose (2001), Anbar and Alper (2011), Zeitun (2012), Vejzagic and Zarafat (2014), Siddique, et al. (2016) measured profitability by the proxies of return on asset (ROA) and return on equity (ROE). The other researchers like Hassan and Bashir (2003), Sutrisno (2016), Tafri et al. (2009), and Al-Homaidi, et al. (2018) used return on asset (RoA), return on equity (RoE), and net interest margin (NIM) ratios for profitability measurement. Furthermore, Kamran et al. (2016) measured bank profitability by using spread ratio, while Rashid and Jabeen (2016) used the capital adequacy, asset quality, management efficiency, earning, and liquidity (CAMEL) model. Khan, Ijaz, and Aslam (2014) measured the profitability of Islam banks by using earnings per share (EPS), return on assets and return on equity.

Several researchers investigated the profitability of Islamic and conventional banks and determined various factors that have substantial effects on the profitability of both banks. such as, Athanasoglou, Delis and Staikouras (2008) reported that market share, concentration, foreign ownership, operating expenses, liquidity risk, bank capital, bank size, credit risk, economic activity, banking system reform, and inflation are the major determinants influence the bank profitability. Likewise, Ramadan et al. (2011) stated that important factors having impact on the profitability of banks includes cost efficiency, capital adequacy, expenses management, banking-Industry size, bank size, management efficiency, credit risk, non-interest earning, bank liquidity level, market concentration, inflation and economic growth.

Zeitun (2012) investigated that age, equity, size, efficiency, reserve to loan ratio, financial development, inflation, foreign ownership and economic conditions have vital effect on banks' performance. Further, Kanwal and Nadeem (2013) reported that inflation rate, real GDP, and real interest rate are the important macroeconomic factors

significantly affecting the profitability of banks. Similarly, Khan, Ijaz, Aslam (2014) revealed that asset management, operational efficiency, bank size, the capital adequacy ratio, the deposit ratio, asset composition, the non-performing loans ratio, the gearing ratio, inflation and GDP are the significant determinants of IBs profitability.

Abdullah et al. (2014) evaluated the sample of Bangladeshi banks for the period 2008-2011. Their results confirm that bank size, capitalization, cost efficiency, higher concentration, inflation rate have significant and positive impacts on the bank profitability. Similarly, Frederick (2015) quoted that capital adequacy, interest income, management efficiency, asset quality, and inflation are the most important factors which affect banks financial performance. Further, Noman et al. (2015) documented that bank-specific factors (capital adequacy ratio, bank size, cost efficiency, credit risk) and macroeconomic factors (GDP, real interest rate) are the significant determinants having vital influences on the banks' profitability.

Rashid and Jabeen (2016) documented that overheads, reserves, market capitalization, bank size, market concentration, deposits, operating efficiency, real interest rate, and GDP are the important internal and external factors having significant effect on the financial performance of both IBs and CBs. Moreover, Rahaman and Akhtar (2015) investigated the profitability of Islamic banks operating in Bangladesh over the period 2009-2013. They reported that bank size and total deposit negatively affect the performance of IBs. Further, they reported that equity of the bank has significant impact while operating and credit expenses have insignificant effect on the IBs profitability.

Fang et al. (2019) stated that bank size, competition, profit efficiency, cost efficiency, and inflation are the important determinants of Chinese commercial banks. Al-Homaidi et al. (2018) stated that bank-specific factors like asset quality, liquidity, operating efficiency, capital adequacy, deposits, asset management, bank size and leverage have

positive and significant influence on the profitability of Indian commercial banks. On the other side, macroeconomic factors like the interest rate, the inflation rate, and the exchange rate have negative and significant impacts on the banks' profitability.

4.2.3 Financial Stability

Financial stability refers to the positive net worth, solvability and liquidity level of financial intermediaries. A bank is said to be financial unstable when became default in payment obligation from its own source or due to the denial of interbank market or central banks to provide them credit facility. On the opposite, a bank will be financially stable when fulfil its payments commitment from borrow funds or own internal resources (Ghassan & Krichene, 2017). A bank is considered stable in a situation when it is improving economic performance and removing inequities instigated by endogenous elements of unwanted or unexpected events from various banking risks (Djebali & Zaghdoudi, 2020).

Several research studies examined the various determinants and factors having vital impact on the financial stability of commercial banks in different countries and regions. Among them certain researchers compare the financial stability of IBs verses CBs. For example, Rahim, Hassan and Zakaria (2012) analyzed differences in the level of financial stability of Malaysian conventional and Islamic banks over the period of 2005-2012. The result displayed that IBs are more stable than CBs. Compare the stability of Jordanian CBs and IBs over the period of 2005-2010, Al-Ali and Yousfi (2012) conformed that IBs were financially more stable than CBs. Likewise, Altaee et al. (2013) evaluated the financial stability of IBs and CBs operating in GCC countries for the pre and post financial crises. The result concluded that both types of banks exhibits similar financial stability for the periods 2003-2010, 2003-2007, and 2008-2010.

However, the financial soundness of CBs is better than IBs during the pre- financial crisis.

Compared the financial stability of Indonesian IBs and CBs, Gamaginta and Rokhim (2015) asserted that IBs and CBs exhibit significantly different level of stability. In general, IBs are financially less stable than CBs. However, the small size IBs have the same level of stability with small size CBs. Furthermore, during the crises period, both IBs and CBs show the same level of financial stability. Similarly, Pappas et al. (2015) compared the financial stability of IBs and CBs operating in Middle and Far Eastern countries over the period 1995 to 2010. Their results confirmed that CBs are financially weaker rather than IBs and showed higher probability of default. Further, Miah and Uddin (2017) evaluated IBs and CBs regarding their business orientation, stability, and efficiency differences. Researchers found that Islamic banks, in short run, are more stable than conventional banks. Yet, no such differences exist in long term. Moreover, well-capitalized banks are more stable than less-capitalized banks.

Several researchers and academicians documented that stability of a bank is affected by different internal and external factors. For instance, Vagizova et al. (2013) suggested that financial stability of banks are effected by poor quality of credit portfolio, poor quality of liabilities and assets, the aggressive credit policy, and dependence on interbank credits. Similarly, Mirzaei (2010) stated that firm concentration ratio, liquid assets to total assets, interest rate spread, market share, bank size, equity to total assets, off-balance-sheet activity to total assets, overheads to total assets, cost to income ratio, domestic credit advanced by the banking system, market growth, growth of GDP, and inflation are the main factors having significant influences on the stability of commercial banks.

Cihak and Hesse (2010) assessed financial stability of 77 Islamic and 397 conventional banks operating in different countries and found (a) large size CBs are financially more stable than large size IBs, (b) small size IBs are financially stronger rather than small size CBs, and (c) small size IBs are financially more sound than large size IBs. Nguyen et al. (2012) stated that bank market power, income diversification, bank size, cost efficiency, non-performing loans, interest margins, market concentration, capitalization, business cycle, financial development, ownership, restriction are the main factors have influence on the bank' stability. Altaee et al. (2013) revealed that market share, cost ratio, loans to total assets, total assets, income diversity, consumer price index (CIP), governance, and economic growth have significant impact on the stability of banks. Likewise, Rajhi and Hassairi (2013) reported that bank size, asset structure, credit Risk, income diversity, liquidity risk, concentration, market share, GDP growth, inflation, exchange rate, London interbank offered rate, governance, and cost efficiency are the significant determinants of banks' stability. Examined the main determinants of Romanian banks' stability, Diaconua and Oanea (2014) concluded that interbank offer rate and GDP growth are the significant factors with positive influence on financial stability.

Ghenimi et al. (2015) studied the effect of political uncertainty and financial crisis on the financial stability of IBs and CBs operating in three major regions: GCC, MENA, and Mediterranean over the period 2005-2013. The major findings of the study include: 1) financial crises lead to increase in the stability of CBs. On the other hand, financial stability of IBs are not affected by the financial crisis 2) political uncertainty increase the stability of IBs while the effect on CBs stability is lower in the MENA and Golf countries and more in the Mediterranean region. Further, Adusei (2015) scrutinized the effect of funding risk and bank size on the stability of rural banking industry in Ghana

over the period of 2009-2013, while controlling the other variables: profitability, liquidity and credit risk, diversification in the business model, inflation, gross domestic product, and financial structure. The results revealed a positive impact of both variables on the stability. Next, Ashraf, Rizwan and L'Huillier (2016) explored the effect of net stable funding ratio (NSFR) on financial stability of IBs and found that NSFR has positive impact on the stability of IBs.

Buston (2016) tested the effect of financial innovation on the financial stability of banks. The result concluded that the bank having active risk management are saved from the probable bankruptcy although their balance sheets exhibited higher risk-taking. Ashraf, Ramady, and Albinali, (2016) determined the role of income diversification and ownership structure in the financial stability of banks operated in GCC region. The results show that ownership concentration influence the financial stability of said banks. Banks with higher concentration of ownership faced higher insolvency risk. Ozili (2018) documented that determinants of bank stability include regulatory capital ratio, cost efficiency, non-interest income, size of the banking sector, net interest margin, rule of law index, competition, control of corruption index, bank concentration, regulatory quality index, inflation, government effectiveness index, unemployment, economic growth, foreign bank presence, political stability and absence of terrorism index.

In order to measure the stability of banks, various academicians like Cihak and Hesse (2010), Rahim et al. (2012), Altaee et al. (2013), Gamaginta and Rokhim, (2015), Adusei (2015), Ashraf et al. (2016), Miah and Uddin (2017) and Ozili (2018) used Z-score. Z-score is calculated by the following formula.

$$Z_{it} = \frac{(RoA)_{it} + (E/C)_{it}}{\delta(RoA)_{it}} \qquad (4.1)$$

Z_{it} represents financial stability for i bank at time t, $(RoA)_{it}$ denote return on asset (ROA) for i bank at time t, $(E/C)_{it}$ represent book value of equity to capital ratio for i bank at time t, and $\delta(RoA)_{it}$ represent standard deviation of return on asset for i bank at time t.

4.3 Banks-specific Risks and Performance

Tafri et al. (2009) examined the effect of financial risks includes liquidity risk, interest rate risk, and credit risk on profitability of both IBs and CBs in Malaysia for the period of 1996 -2005. Bank-specific and macroeconomic factors (bank size, bank capital, and GDP growth) was used as control variable to exclusively explore the impact of risks. Moreover, the results displayed that liquidity risk has insignificant impact on both banks profitability, while credit risk have significant impact on profitability of both types of banks. The interest rate risk has significant impact only for conventional banks. Similarly, the control variables: GDP did not have a significant impact on ROE, bank size has a positive relationship with profitability, and bank capital has a positive relationship with profitability but insignificant for conventional banks and highly significant for Islamic banks.

Al-Khouri (2011) scrutinised the influence of bank-specific risk characteristics and overall banking environments on the banks' performance in GCC countries for the period 1998-2008. The researcher analysis represents that capital risk, liquidity risk and credit risk have substantial effect on the performance of bank. Further, Tabari et al. (2013) examined liquidity and credit risk' impact on the performance of Iranian banks during the sample period 2003-2010. They concluded that liquidity and credit risk have negative relation while banks' capital, size, GDP, and inflation have positive relation with bank performance.

Al-Tamimi and Obeidat (2013) examined the significant relationship between most important determinants (revenue power, return on equity, return on asset, capital risk, liquidity risk, credit risk, and interest rate risk) and capital adequacy of Jordon commercial banks from 2000 to 2008. His Correlation Coefficient (Pearson Correlation) and Multiple Linear Regression Analysis conclude that the rate of return on assets and liquidity risk are statistically significant positively correlated with the degree of capital adequacy, while the rate of return on equity and interest rate risk are statistically significant inversely correlated with the degree of capital adequacy, and capital risk, credit risk and revenue power are not statistically significant inverse relationship with the degree of capital adequacy.

Masoud et al. (2013) focused the relationship between Iranian Islamic banks internal factors (size of bank, capital adequacy, cash to asset, and debt to equity) and credit, liquidity, and operational risks from 2006 to 2011. The regression analysis of the researchers represents that the debt-to-equity ratio has a positive relationship, and capital adequacy has an inverse relationship with credit risk, while size of bank and cash to asset ratio have no relationship with credit risk. Furthermore, the capital adequacy has a positive relationship with liquidity risk and sizes of banks, cash to asset ratio, and debt to equity ratio have inverse relationship with liquidity risk. Similarly, capital adequacy, size of banks, and cash to asset ratio have an inverse relationship with operational risk, while debt to equity ratio has no relationship with operational risk.

Said (2013) studied the association between risks (credit, liquidity and operational) and efficiency within the MENA region's Islamic banks for the period 2006 to 2009. The Pearson correlation test showed that credit and operational risk was negatively associated to efficiency, while liquidity risk was insignificantly associated to efficiency of Islamic banks.

Imbierowicz and Rauch (2014) explored that credit and liquidity risks did not have any significant reciprocal time-lagged association, yet both types of risk individually affect banks default probability. Further, Amin et.al. (2014) inspected the effect of financial risks (liquidity risk, credit risk, and interest rate risk) on the financial performance (ROA and ROE) of commercial banks operating in Tanzania over the period of 2003-2012. The results confirm that all these risks have significant influence on the banks' performance. Similarly, Ariffin and Tafri (2014) empirically studied the impacts of financial risks on the profitability of full fledge IBs worldwide over the period of 2004-2011. Precisely, study focused on the impact of financial risks (rate of return risk, credit risk, and interest rate risk, liquidity risk) by taken bank size, economic growth rate and inflation as control variables. Moreover, the Generalized Least Square (GLS) panel data analysis showed that interaction of rate of return risk and credit risk have significant negative impact on IBs profitability, while interest rate risk and liquidity risk have insignificant positive impact on profitability.

Soyemi, Ogunleye and Ashogbon (2014) examined the relationship between risks (operational, liquidity, credit, and capital risk) and financial performance (ROA and ROE) in Nigerian banks in the financial year 2012. The results reflect that risk management practices significantly accounted for variation in financial performance. Al-Tamimi et al. (2015) investigated the association between financial risks: capital risk, credit risk, operational risk, liquidity risk and performance of IBs operating in GCC covering the period of 2000-2012. They reported that operational and capital risk has significantly negative while the other risks have insignificant connection with performance. Furthermore, they documented that capital risk is most important risk followed by operational risk.

Haque and Wani (2015) inspected the sample of Indian banks for 2008-2013. They have taken financial performance as dependent variable and financial risks (interest rate risk, liquidity risk, credit risk, capital risk and solvency risk) as independent variables. Their results provided evidence that capital risk, credit risk and solvency risk are statistically significant, while interest rate and liquidity risk do not prove any substantial impact on performance. Sutrisno (2016) analytically evaluated the effects of risks (financing risk, capital risk, and liquidity risk), size and efficiency on Indonesian Islamic banks' profitability. Their empirically conclusion demonstrated that size and liquidity risk have significant positive impact, financing risk has no effect, while efficiency and capital risk show negative impact on IBs performance.

Tan et al. (2017) analyzing Chinese banks on the sample period of 2003-2013 reported the significant effect of competition and different risks including capital risk, credit risk, insolvency risk, security risk, and liquidity risk, while the insignificant effect of cost efficiency on profitability of Chinese' bank. Ghenimi et al. (2017) evaluated the influence of liquidity and credit risk on bank stability while observed the sample of MENA region banks covering the sample period 2006-2013. Their estimation results provided sound evidence that the interaction of both type of risk cause bank' instability, and individually both forms of risk have extensive influence on stability. Further, Suseno and Bamahriz (2017) scrutinized the influence of various bank-specific risks (operational risk, insolvency risk, liquidity risk, credit risk) on IBs performance in 24 countries. The results showed that all risks have significantly negative influence on the performance of IBs.

Olalekan et al. (2018) inspected the effect of financial risks on Nigerian' banks profitability for the period 201-2016. They concluded that liquidity risk has positive but insignificant, credit risk has significantly negative, while capital risk has positive

impacts on bank profitability. In the same way, Alsyahrin et al. (2018) scrutinized the influence of financing, operational and liquidity risk on financing of Indonesian Islamic banks covering the period of 2012-2016 and reported that all these risks significantly influence the financing. Similarly, Safiullah and Shamsuddin (2018) conducted comparative study to inspect the risk difference between IBs and CBs covering the time 2003-2014. The GMM estimation results revealed that IBs face lower insolvency risk and credit risk but exposed to higher liquidity risk as compared to CBs.

Khemais (2019) analyzed the impact of liquidity, operational and credit risk on the Tunisian conventional bank stability over the period 2005–2015. The author concluded that credit risk and the interaction of liquidity and credit risk adversely affects bank stability. Moreover, the author found statistically positive impacts of liquidity risk but insignificant impact of operational risk on stability. Ali et al. (2019) examined the effect of risks on stability of Pakistani banks for the period 2007-2015. They deducted that credit risk negatively related to stability, while corruption, liquidity risk and funding risk have positive impacts on stability. Hassan et al. (2019) comparatively studied the interaction of credit risk and liquidity risk between IBs and CBs operating in OIC over the time 2007-2015. They reported a negative interaction between the two risks, and further liquidity risk negatively affect bank stability only in the case of IBs. Finally, they found that IBs have better abilities to handle various risk effectively in contrast to CBs.

Ahmad et al. (2019) scrutinized the influence of bank risk and shock events on the profitability of Islamic banks for the periods 2009-2016. Their results showed that both types of risks have significant a negative influence on the profitability of Islamic banks. It means that higher credit and liquidity risk decrease the profitability of Islamic banks. Moreover, Shair et al. (2019) examined the impacts of risks and competition on the

profitability of banking industry in Pakistan spinning the period 2007-2017. The estimation results indicate that insolvency risk, credit risk, and competition negatively affect while liquidity risk positively affect the profitability. Moreover, the researcher also reported positive effects of taxation, capitalization, bank size, and GDP growth and negative effect of banking sector development and infrastructure on profitability.

H_1: Bank-specific risks (credit risk, liquidity risk, operational risk, capital risk) have negative effects on the growth, profitability and stability of both IBs and CBs.

4.3.1 Credit Risk and Banks' Performance

Credit risk is one of the oldest and most vital form of risk tackled by banks as financial intermediary (Broll et al., 2002). Credit risk arises in the situation when a borrower fails to defaults not honor its obligation and liability in agreed time (Ferhi, 2018). The main cause of credit risk includes poor management, volatile interest rate, low capital level, inappropriate credit policies, less liquidity level, limited institutional capacity, massive licensing of banks, inappropriate law, direct lending, government interference, inefficient lending practices, poor loan underwriting, and inadequate monitoring and supervision by central bank (Al-Khouri, 2011).

Miller and Noulas (1997) asserted that higher exposure of banks to risky advances and loans lead to increase the ratio of unpaid loans and consequently decrease the banks' profitability. Thus, the efficient and effective credit risk management is essentially needed for a bank financial success. The absence of effective and efficient credit risk management cause the banking crises which eventually lead to economic crises (Njanike, 2009). Since, credit risk management not only provide support to the sustainability and profitability of banks but also contribute to systematic stability through efficient distribution of capital in an economy (Psillaki, Tsolas & Margaritis, 2010).

Funso et al. (2012) reported that the higher exposure of bank to credit risk leads to more tendency of banks to face crises and vice versa. The reason is that credit risk has ability to adversely affect banks' financial performance, growth, and survival (Alshatti, 2015). Credit risk is considered one of the main reason of banks' instability. The prominent example is the recent financial crisis where worse credit management create catastrophic effect on the economy (Ferhi, 2018). Credit risk is the greatest risk affecting the bank performance such that the presence of high level of non-performing loan in the bank' balance sheet mitigates the profitability of bank (Ekinci & Poyraz, 2019).

The opinions of researchers are differing regarding the effect of credit risk on profitability of banks. Some argued that the effect is positive while other show the negative impact of credit risk. On the one hand, the taking of high credit risk lead to earning of higher profit. On the other hand, the taking of high risk may decline the bank profitability at the time when bank management fails to collect advances and loans (Pracoyo and Imani, 2018). However, Qin and Dickson (2012), Kaaya and Pastory (2013), Tabari et al. (2013), Ariffin and Tafri (2014), and Al-Tamimi et al. (2015) revealed the negative impact of credit risk on the financial performance of banks. Similarly, Alshatti (2015) and Ozili (2017) deducted the negative and significant impact of credit risk on the performance of Jordanian and African' banks, respectively. By examining the sample of Ghana' commercial banks, Annor and Obeng (2018) confirmed the negative and significant impact of credit risk on bank performance. Further, Sanni (2019) found significant and negative influence of credit risk on bank performance in Nigeria. The empirical studies conducted by Ghenimi et al. (2017), Hassan et al. (2019), Ali et al. (2019), Shair et al. (2019), Khemais (2019) documented the negative and significant impact of credit risk on the stability of commercial banks.

$H_{1(a)}$: Credit risk has a significant impact on the growth, profitability and stability of IBs and CBs.

4.3.2 Liquidity Risk and Banks' Performance

Liquidity risk is the result of the inability of bank to fulfil its commitments arisen from the inability to manage unexpected reduction and charges which may affect the ability of a bank to liquidate assets quickly with least possible losses in their value (Al-Tamimi & Obeidat, 2013). Liquidity risk arises in a situation where bank is unable to arrange sufficient funds to fulfil its obligation when dues (Ramlall, 2018). Generally, bank exposed to liquidity risk if withdrawal exceed new deposits over a short period of time (Khediri et al., 2015), and grant short term deposit into long term loan investment (Ramlall, 2018). Whenever the liquidity gap increases, the earning of the bank decrees for a period. In this situation bank essentially borrow from financial market to fulfil their liquidity requirements for daily operations. This will increase the cost of banks and hence, may cause the bankruptcy for some banks (Jenkinson, 2008; Al-Tamimi et al., 2015).

The literature provide theoretical evidences that banks liquidity risk inversely related to the profitability of banks. Because, when banks maintain a high level of liquid assets, they may be lose gains and earning in term of opportunity cost. Yet, the upholding of low level of liquid assets by bank usually earn more profit (Pracoyo & Imani, 2018). Several studies investigated the influence of liquidity risk on bank performance and stability where results are not clear. One strand of the literature found a positive while the other strand of literature found a negative impact of liquidity risk on the performance of banks. For example, empirical studies conducted by Sutrisno (2016), Olalekan et al. (2018), Khemais (2019), Shair et al. (2019) and Ali et al. (2019) revealed a positive impact of liquidity risk on the profitability and stability of banks. On other

side, studies conducted by Purbaningsih and Fatimah (2014) and Abusharbeh (2014) in Indonesia, Qudah and Jaradat (2013), and Obeidat et al. (2017) in Jordan, Tabari et al. (2013) in Iran, and Zulfiqar and Anees (2012) in Pakistan found negative relationship between liquidity risk and profitability of banks.

Using the sample of banks operating in G7 countries and Switzerland, Mamatazakis and Bermapi (2014) found a negative relationship between liquidity risk and bank performance. Similarly, Ly (2015) scrutinized the sample of European Union banks for the period 2001-2011. The results showed that liquidity risk negatively influence the performance of banks. Likewise, Marozva (2015) examined the sample of South African banks for the period 1998-2014. The result indicated negative relationship between liquid risk and performance of banks. Further, Chowdhury and Zaman (2018) examined the banks operating in Bangladesh over the period 2012-2016. Their results depict that liquidity risk has negative and significant impact on the performance of Islamic banks. In the case of Islamic banks, Ariffin (2012), Al-Tamimi et al. (2015) and Ahmad et al., (2019) reported that liquidity risk has negative impact on the profitability of banks.

$H_{1(b)}$: Liquidity risk has a significant impact on the growth, profitability and stability of Ibs and CBs.

4.3.3 Operational Risk and Banks' Performance

Operational risk is the risk of loss arising from the failure or inadequacy of internal process (technology, system, analytical model), or from the inadequate action of people (Greuning & Iqbal, 2008). According to Suseno & Bamahriz (2017) operational risk refers to monetary losses causing from insufficient or entirely failed internal processes and system, lack or ineffective human resource, or from the events outside the control of management (Suseno, & Bamahriz, 2017). Operational risk emerged from three main

sources: people, processes, and systems. Operational risk can also emanate from the payment and settlement systems. Risk of fraud is also encapsulated under operational risk. Compliance risk (legal sanction) also falls under the purview of operational risk. For instance, there is need to consolidate anti-money laundering and countering the financing of terrorism (Combating the Financing of Terrorism/Anti-money Laundering). Therefore, frauds related to the use of payment cards, online banking, and cheques, all fall under the purview of operational risk (Ramlall, 2018)

Bank for International Settlements (2011) operational risk's principles described that operational risk is vital in all banking processes, systems, and products. Thus, the effective management of operational risk is essentially needed to handle operational risk as one of the major element of a risk management process of banks. The management of operational risk assists banks in accurate measuring performance, restructuring products and services, avoiding disastrous financial loss, and guaranteeing persistence in case of takeovers. Thus, operational risk is viewed as significant factor for increasing the stability and sustainability of the entire banking sector (Nobanee & Ellili, 2017). Operational risk can be managed differently depend upon the bank size and complexity of the business of bank (more complicated banking businesses need a stronger operational risk management framework). Hence, it is essential for a bank to manage operational risk independently. This will enhance the ability of banks to accurately identify, monitor, assess, control, and mitigate operational risks (Ghosh, 2012). In the case where operational risk is not handle scientifically, it can result in unpredictable performance for stakeholders and create adverse impacts on the earnings and net value of a bank (Hess, 2011).

Concerning the Islamic banks, the handling of operational risk is more significant and complicated rather than conventional banks due to differences in the general legal

environment and contractual features (Marliana et al., 2011). Further, Islamic banks have higher cost structure, greater administration, and operating cost due to smaller size, younger age, and business model complexity, which generate higher operational risk for IBs than CBs (Johnes et al., 2014; Rashwan & Ehab, 2016). Said (2013) found negative relationships between operational risk and efficiency in banks of MENA area. The other studies like Soyemi et al. (2014), Suseno and Bamahriz (2017) and Alsyahrin et al. (2018) reported a significant impact of operational risk on the performance of commercial banks.

Al-Tamimi, Miniaoui and Elkelish (2015) examined the sample of Islamic banks operating in GCC countries. Their results confirms that operational risk (measured by the proxy of cost to income ratio) has significant and negative impact on the performance of Islamic banks. Likewise, Muriithi and Waweru (2017) explored the impact of determinants of operational risk on the financial performance of Kenyan commercial banks. The results showed an inverse relationship between operational risk and financial performance. Moreover, Nobanee & Ellili, (2017) examined the impact of operational risk disclosure on the operating cash flow of banks (Islamic and conventional) listed on the UAE Abu Dhabi Stock Exchange over the period of 2003-2016. The results did not confirm the significant relationship between operational risk disclosure and banks' operating cash flow in the case of both types of banks. Ebenezer et al., (2018) evaluated the commercial banks for the period 2009-2015. They revealed that operational risk has significant influence on bank performance.

$H_{1(c)}$: Operational risk has a significant impact on the growth, profitability and stability of IBs and CBs.

4.3.4 Capital Risk and Banks' Performance

Capital plays a significant role in explaining the financial performance of financial intermediaries. Capital is the funds that a bank keep in reserve in order to provide support to routine operational activities of bank. The major benefit of capital is that it provide cushion against any unanticipated financial losses occur due to any adverse situations (Ongore & Kusa, 2013). Curak et al. (2012) examined the sample of Macedonian banks during the period 2005-2010. They asserted that variations in banks' capital cause declining in their profitability. Hence, the banks having higher capital adequacy ratios displayed lower profitability. Even though greater capitalization ensure the safety of banks but extreme caution in banking business will cause lower profitability. Similarly, Dietrich and Wanzenried (2011) stated that, during the crises period, well-capitalized banks in Switzerland attract more saving and long-term deposits but they were not success in the transformation of these deposits into profitable investment projects. Concerning to Islamic banks, Wasiuzzaman and Tarmizi (2010) found negative association between capital and profitability. This implies that poor capitalized Islamic banks are resulting in lower agency cost which eventually enhanced the bank performance.

The previous empirical studies displayed the direct relationship between bank capital ratio and performance (Ramadan et al., 2011; Sufian & Habibullah, 2012; Rahman et al., 2012). For instance, Naceur (2003) argued that capitalization is positively related to bank profitability. This means that well-capitalized banks are less likely to be bankrupt. In the perspective of IBs, Al-Qudah and Jaradat (2013) pointed out a direct and significant impact on ROA and ROE of IBs. It implies that well-capitalized banks can acquire cheaper funds and subsequently increases the profitability. On the other hand, Al-Tamimi (2015) indicated a significant negative relationship between

performance and capital risk in GCC Islamic banks. Likewise, Alharthi (2016) examined profitability of IBs and showed that capital risk negatively affect the profitability, while bank size, loan intensity, deposit ratio has a positive effect on profitability. Similarly, Dodi et al., (2018) determined the negative influence of capital risk on the profitability of IBs in Indonesia. Based on the above discussed literature the following hypothesis is constructed.

$H_{1(d)}$: Capital risk has significant impact on the growth, profitability and stability of IBs and CBs.

4.4 Macroeconomic Risks and Banks' Performance

The macrocosmic factors are significant as bank-specific factors to examine the performance of an institutions (Duraj & Moci, 2015). Macroeconomic risks arise from the volatility in macroeconomic variables. These variables reflect legal and economic environment, which is not in the control of bank management and hence significantly affect the performance of financial institutions (Menicucci & Paolucci, 2016; Dodi et al., 2018). It is widely argued that unanticipated variations in macroeconomic variables can cause global effects on firm fundamentals like investment opportunities, cash flow, and risk adjusted discount factors. Moreover, macroeconomic variables like unemployment, economic growth, exchange rates, inflation, and interest rates significantly affect the price of risky assets (bonds, stock, derivatives, and currencies) through several channels (Bali et al., 2014).

Several empirical studies studied the impact of macroeconomic risks like interest rate risk, inflation rate risk, exchange rate risk and other on the financial performance of commercial banks. Such as, Muriithi et al. (2016) investigated the impact of foreign exchange rate and interest rate risk on the performance of CBs in Kenya for the period 2005-2014. The results indicated that both risks show negative and significant impacts

on bank profitability. Similarly, Ekinci (2016) investigated the sample of Turkish banks over the period of 2002-2015. The results showed that the foreign exchange rate has a positive effect while interest rate risk has insignificant impacts on the profitability of Turkish banks. Further, Nahar and Sarker (2016) investigated the sample of IBs in 48 countries for the period 2004-2013. Their results revealed that exchange rate has negative while inflation rate has a positive influence on financing of IBs.

Rashid and Khalid (2017) scrutinized the effect of real interest and inflation rate uncertainty on solvency and profitability of IBs and CBs in Pakistan over the period 2008-2015. The authors explored that both variables and their volatility have differential impacts on the solvency and profitability of IBs and CBs. Additionally, the interest rate uncertainty has a positive, whereas inflation rate uncertainty has a negative effects on IBs solvency. Moreover, Al-Homaidi et al. (2018) reported that variations in the exchange and interest rate have a negative while inflation rate has a significant positive impact on the Indian commercial banks.

H_2: Macroeconomic risks has significant impact on the growth, profitability and stability of IBs and CBs.

4.4.1 Inflation Rate Risk

Inflation is the most critical indicator that has a vital impact on banks' performance (Zeitun, 2012). Inflation rate measures the overall percentage increase in Consumer Price Index (CPI) for all products (Anbar & Alper, 2011). While inflation rate risk is the unexpected fluctuations in the inflation rate over time (Rashid & Khalid, 2017). Variations in inflation rate have adverse impact on the financial stability of banks. Because in the situation of inflation rate variation, banks are unable to predict accurately real return on the loan and deposit. This may adversely affect the borrowing

and lending decision, and hence may increase bank insolvency risk (Huybens & Smith, 1999; Ivipcisc et al., 2008).

Staikouras and Wood (2004) pointed out that the effect of inflation may have direct or indirect on the banks' profit. Direct impact leads to increase in labor price, while indirect effect cause changes in the assets and interest rate. The effect of inflation be contingent on the condition whether the inflation is unanticipated or anticipated. In the case of anticipated, banks adjust their interest rate on loan and increase revenue faster than that of costs. Thus, inflation positively affects profitability. On the opposite side, if inflation is unanticipated, costs of banks may increase faster than revenue because bank is lethargic in adjusting their interest rates, consequently inflation adversely affects the profitability (Perry, 1992; Pasiouras & Kosmidou, 2007; Doyran, 2013; Talbi & Bougatef, 2018).

Inflation determines the withdrawal behavior of depositors. Inflation diminutions purchasing power, where depositors tend to withdraw more funds from their bank accounts and spend immediately to guard themselves against further monetary value decline. Therefore, banks are exposed to financial instability (Khaliq et al., 2017). The increase in an inflation rate cause decline in the performance of banks, which is projected to have a negative association with bank performance. Because, during high inflation, banks may charge customers more to cover its operational cost. Moreover, when inflation rate increases, the demand for money increases to cover the expenses that cause banks to increase interest rate to raise income. Secondly, customer increase borrowing to cover the additional cost. Thus, these leads to customers defaults in repaying loan and interest, and hence the bank loose interest revenue that eventually mitigate the profitability of banks (Amin et al., 2014).

The other adverse impact of high inflation is the uncertainty about the future rate of inflation. This uncertainty has worse effect on the banks' loan policy because it increases the withdrawal of money by customers from banks. Hence, it causes the shortage of bank resources and affect the lending behaviour of banks because commercial banks do not agree to provide finance without increasing interest rate. In the situation of scarcity of resources, banks may also not be able to cover their financial obligations on time and thus may become insolvent (Rashid & Khalid, 2017).

On the other side, Huizinga (1999) suggested that there is positive relationship between inflation and profitability. This implies that inflation increases banks profitability because banks income increases more than costs. Moreover, high inflation rates usually lead to higher loans interest rates which eventually results in high incomes. Banks also earn higher income from delays or floats in crediting customers' accounts during the inflationary environment.

The empirical studies conducted by Naceur (2003), Abreu and Mendes (2003), Tanna et al. (2005), Sufian and Habibbullah (2009), and Athanasoglou et al. (2009) revealed that inflation rate positively associated with banks' profitability. On the other hand, the study of Zeitun (2012), Kanwal and Nadeem (2013), and Rashid and Khalid (2017) found negative relationships between inflation rate and performance of commercial banks.

$H_{2(a)}$: Inflation has a significant impact on the growth, profitability and stability of IBs and CBs.

4.4.2 Exchange Rate Risk and Banks' Performance

The exchange rate refers to the price at which one unit of domestic currency of a country exchange for any other country's currency in the world. Simply, the value of one currency in relation of another currency (Chichi & Casmir, 2014). Exchange rates play

vital role in the global business transactions because it serves as basic connection between the local and international market for different financial assets, goods, and services (Reid & Joshua, 2004).

The volatility in exchange rate can cause variation in the other important macroeconomic factors: import, export, interest rate, and inflation rate. These facts underline the implication of exchange rate to the economic well-being of every country involved in international business. The advantage of exchange rate is the linkage of price systems of two different countries which facilitate international trade to make easy the direct comparison of traded goods. Therefore, exchange rate exhibits a strong influence on the balance of payment of any country (Osiegbu & Onuorah, 2012).

Ani, Ugwunta and Okanya (2013) asserted that foreign exchange is considered the major concept of international banking because it has a massive impact on the banks. The reason is that mostly banks are involved in the payments and settlement of international trade transactions. Thus, intermediation. International banking are not possible without foreign exchange (Kemisola et al., 2016).

The volatility of exchange rate have significant impacts on corporate anticipated stock return and cash flow (Aremu et al., 2010). Likewise, the appreciation of exchange rates cause an increase in bank deposits. For instance, the economy becomes more productive and competitive, importers and exporters gain more return from their business, and hence they will deposit more money in bank' accounts (Solarin et al, 2018). On the other hand, Kemisola et al. (2016) found an insignificant effect of exchange rate fluctuations on banks' profitability, while Muriithi et al. (2016), Nahar and Sarker (2016), and Setyowati, (2019) reported that superfluous volatility in exchange rates worsens the financial and economic stability and persuading banking crises.

$H_{2(b)}$: Exchange rate risk has a significant impact on the growth, profitability and stability of IBs and CBs.

4.4.3 Interest Rate Risk and Banks' Performance

Interest rate risk (caused by variations in interest rate) is the main cause of bank insolvency. Interest rates are a regular element of routine banking activities and important source of profitability. However, it should be maintained within the prudent level, otherwise it will lead to interest rate risk (BCBS, 2004). Interest rate risk is the exposure of a bank financial condition to adverse movements in interest rates (Entrop et al., 2008). Banks are exposed to interest rate risk in a situation when there is imbalance in size or maturity dates between interest rate sensitive liabilities and assets. This directly influences the net asset values and leads to potential losses for the bank (Cicea & Hincu, 2009). The other main cause of interest rate risk is the common banks' features like lend for long period and borrow short, which leads to maturity mismatch or re-pricing mismatch of liabilities and assets (Zainol & Kassim, 2012).

Interest rate has vital impact on all sectors of an economy, however, it has a foremost impact on banking sector as banks are directly involved in dealing of money (Mushtaq & Siddiqui, 2017). The performance of banks is highly exposed to interest rate variation as variations in interest rate increase the cost of funding and decrease the return on equity and assets. Variations in interest rate make it difficult for investors to make their investment decision accurately. Thus, the interest rate variation affects the lending and investment opportunity (Rashid & Khalid, 2017). Moreover, banks' assets, liability, and off-balance sheet items are highly sensitive to variations in the interest rate. The fact is that banks possess a huge chunk of their interest rate mortgages in their credit portfolio (Ramlall, 2018). Specifically, Interest rate volatility affects the profitability of a bank through the influence on net interest margin (English et al., 2018).

Interest rate risk is not only influencing conventional banks but also Islamic banks. Although, interest is prohibited in Islamic law, it does not mean that IBs would not be exposed to any risk caused by variations in interest rates. The balance sheet of IBs is fixed in assets side while the CBs balance sheet seems to be more flexible. Thus, IBs may not in a position to react quickly to handle the variation in interest rate which eventually leads to highly exposure to the rate of return risk. Thus, any fluctuation in the interest rate has similar effects on the financing and deposits of IBs and CBs (Erturk & Yuksel, 2013; Khaliq et al., 2017). Secondly, Islamic banks take market interest rate into consideration by mechanisms such as benchmark rate or profit balancing reserve when defining the products price (Koc, 2018). However, the interest rate positively affects the deposits of banks in non-Muslim countries both in the short and long term, but, in Islamic countries, people do not really give attention to variations in the interest rate while depositing money in banks because of the restriction on the interest in Islamic law. Thus, the interest rate does not affect the deposit of IBs (Mushtaq & Siddiqui, 2017).

Several studies are conducted to investigate the impact of interest rate on the performance of commercial banks. For instance, Hakan and Gulumser (2011) investigated the influence of interest rate on IBs and CBs. They documented that variations in the interest rate have significant impacts on the performance of both types of banks. Examined the sample of Turkish commercial banks for 2005-2009, Ergeç and Gulumser (2011) found that instability of interest rate have a significant impact on the assets and liability of both IBs and CBs. Similarly, Ergec and Arsalan (2013) and Saraç and Zeren (2015) examined the sample of Turkish banks. They reported the negative impact of interest rate volatility on banks' performance.

Ogunbiyi and Ihejirika (2014) observed the influence of interest rate on the profitability of Nigerian banks and concluded that interest rate negatively affects the bank profitability. Likewise, Khan and Sattar (2014) and Ahmed et al. (2018) scrutinized the effect of variations in the interest rate on the profitability of CBs in Pakistan. They found that volatility in interest rate is inversely related to the profitability of banks.

$H_{2(c)}$: Interest rate risk has a significant impact on the growth, profitability, and stability of IBs and CBs.

4.5 Risk Difference across Islamic and Conventional Banks

Islamic and conventional banks play similar functions of financial intermediation, but the nature and structure of products offered by Islamic banks are substantially distinct from that of conventional banks (Obaidullah, 2005). The possible reason is the compliance of IBs operations with the golden rules of Islamic law (restriction of interest, speculation, gambling (maysir), gharar (uncertainty), investment in illegal sectors, the purchase and sale of debt contract to receive an interest gain, derivative products, and profit taking without real economic activity and asset transfer). These precise rules suggest the existence of specific financial products for Islamic banks, requirement for tangible assets, considering value creation from a pluralist perspective, and new affiliation between debt holders, shareholders, and managers (Ariff, 2014; Jawadi et al., 2016; Mollah et al., 2017).

Islamic banks intermediation function is based on asset and risk sharing, while the intermediation function of conventional banks is primarily based on debt and risk transfer. Hence, there are difference in risks exposure of both type of banks. Due to distinction attributes, IBs are uncovered to certain inimitable risks (displaced commercial risk, Shari'ah non-compliant risk, rate of return risk, equity investment risk) besides the risks (credit, liquidity, operational, transparency, and legal risks) alike

to those of CBs, but their implication vary because of specific nature of IBs. Overall, it looks that IBs may possibly be subjected to more risk compared to CBs (Mejia et al., 2014).

Hasan and Dridi (2011) arrived at the conclusion that IBs, during the 2007/08 financial crises, performed well in term of credit and assets growth than CBs. Hence, IBs supported more economic and financial stability. Similarly, IBs attracted more deposit, disbursed more loans, and have lesser withdrawals during the financial crises compared to CBs (Farooq & Zaheer, 2015). Further, IBs had better quality assets than CBs because IBs, under profit and loss share contract, do not hold collateral against credit to alleviate credit risk (Bourkhis & Nabi, 2013), and secondly, under the debt-based contracts once the loan is granted then IBs are not allowed to sell the debt to any third party as the selling of debt is restricted under the rules of Shari'ah. Due to these constraints, IBs faces less risks related to transactions (Ahmed, 2009; Zainol & Kassim, 2012). Additionally, Chapra (2009) stated that debt-based contract made by IBs should be based upon real trade (with the intention of taking and giving delivery). Thus, IBs operations must be link with real economy, decreasing speculative trading, and avoiding derivative and high leverage which may leads to economic instability. However, some authors argued that Islamic banks may be more exposes to risk and crises.

Khan and Ahmed (2001), Hassan and Bashir (2003), and Srairi (2009) reported that IBs are exposed to several additional unique risks besides the basic risks faced by CBs. The additional risks may be due to their distinctive structure of liability and asset, compliance to Shari'ah requirement, and the prohibition of granted return or deposit insurance. Additionally, the reasons may be the unfamiliarity and lack of experience with all financial techniques, ban on practice of derivatives for the use of hedging,

restricted access to collateral, and recovery complications (Kabir et al., 2015; Sorwar et al., 2016). The other main reason is the failure of IBs to access interbank market liquidity instruments (having interest-bearing feature) in times of distress which is prohibited in Shari'ah (Alqahtani et al., 2017).

Boumediene and Caby (2009) reported that IBs and CBs were not subject to same risks during subprime crises. IBs were partially safe, whereas, CBs were highly volatile during subprime crisis. The levels of risks confronted by IBs are substantially greater than those encountered by CBs in Bahrain (Abu Hussain & Al-Ajmi, 2012), while Faye et al., (2013) reported that IBs exposed to lower risk as compared to CBs in African countries. The other researcher like Boumediene (2011), Kabir et al. (2015) and Ferhi and Chkoundali (2015) concluded that CBs have higher credit risk than IBs. Moreover, Safiullah and Shamsuddin (2018) reported that IBs exposed to higher liquidity risk, lower insolvency and credit risk as compared to CBs. Hassan et al. (2019) documented that IBs exposed to liquidity risk in different way than CBs. IBs receive deposits on the condition of profit sharing, but due to limited investment opportunities they find difficult to pay the profit, and this situation increase the liquidity risk. Further, IBs have limited access to money market, which further make difficult for IBS to raise funds at the time of liquidity shortage. On the basis of the above discussed literature the following hypothesis is constructed.

H_3: Bank-specific and macroeconomic risks affect differently the growth, profitability and stability of IBs and CBs.

4.6 Moderating Role of Corporate Governance and Bank ownership

The moderating variables include corporate governance attributes and bank ownership.

4.6.1 Corporate Governance Attributes

Corporate governance (CG) is an indirect mechanism which decreases the transaction and agency costs incurred by the managers when they work in their self- interests rather than working for the welfares of shareholders and company (Kidd & Richter, 2003). "Corporate governance is a philosophy and mechanism that entails processes and structure which facilitate the creation of shareholder value through management of the corporate affairs in such a way that ensures the protection of the individual and collective interest of all the stakeholders" (Butt & Hassan, 2009). Corporate governance is important concept which provide the main structure for setting goals and objectives, and the roadmap for achieving those goals and determined the monitoring performance procedures and practices. Moreover, good CG must provide appropriate incentives for management and board in order to pursue goals which are in the well-being of stakeholders and must assist effective and efficient monitoring (Ahmed, 2017).

Corporate governance has many advantages and benefits to financial institutions. The enterprise resource management can improve company's financial performance with the execution of good CG (Mokhtar et al., 2008). The firms with better CG implementation trade mostly at higher market value and earned more return for shareholders (Gompers et al., 2003). The implementation of better governance empowers firms to easily access capital markets on better terms and conditions, which are value-added for firms expecting to generate funds (Doidge, 2004). Gompers et al. (2003) documented that highly governed firms display higher value, larger equity returns and superior accounting results rather than the poorly governed firms. Further, Brown and Caylor (2005) asserted that firm with better implementation of CG displayed high profit, pay more cash dividends to their shareholders and enjoy high market value. Sound corporate governance in banks helps to reduce financing cost and

can lower the investor' investment risk. This will lead eventually to a continuous inflow of foreign investment into the country (Al-Farooque et al., 2007).

Effective corporate governance promotes stability, investor and market confidence, and tolerates accurate performance monitoring, and hence reduced perceived risk (James-Overheu & Cotter, 2009). In addition, the practice of corporate governance diminishes firm risk and defend stakeholders' interest in both periods (before and during the subprime crisis) (Ferrero-Ferrero et al., 2012). Good corporate governance endorses a fair return to investors, efficient and careful resources allocation within a firm, brings better management, and enhances corporate efficiency and performance (Tai, 2015).

The implementation of good CG practices leads to capital attraction and its retention, and ultimately enhances corporation market capitalization (Jaimes-Valdez & Jacobo-Hernandez, 2016). Moreover, it reduces the level of risk and enhance the level of performance (Maurya et al., 2015; Ahmed et al., 2017). Efficient CG encourages top management to oversee the organizational resources efficiently and effectively, and hence promotes transparency and accountability in an organization (Farag et al., 2018; Mulyadi, 2018). On contrary, weak structure of CG triggers to high levels of default risk and financial instability (Ballester et al. 2020), and can spoil the interest of shareholders which may instigate business failure (Li et al., 2020).

In the literature, several research studies rationalized the relationship between corporate governance attributes, performance, and risk. Li et al. (2008) observed the effect of CG attributes (independent directors, ownership structure, audit opinion, managerial agency cost) on Chinese firms' financial distressed status. The results confirmed that independent directors, state ownership, and ownership concentration have negative link with the financial distress' probability. Cornett et al. (2010) evaluated mechanism of CG and US banks' performance. They reported that good corporate governance such as

higher pay-for-performance sensitivity, more board independence, and higher insider ownership demonstrate positive affiliation with banks' performance during crises. Similarly, Peni and Vahamaa (2012) documented that strong CG practices significantly mitigated the adverse impact of financial crises on bank performance and stock return, while examined the impact of CG on bank performance of US banks.

Niu (2012) empirically inspected the impact of CG on the profitability of U.S banks over the period of 1990-2009. The results show no evidence of relationship between CG and bank profitability. Ghaffar (2014) examined the impact of corporate governance (board size and board independence) on the profitability of Islamic banks in Pakistan. The result showed that corporate governance has a significant relationship with the profitability of Islamic banks. Hsu and Wu (2014) evaluated the impact of board composition on default probability of UK non-financial companies covering period 1997-2010. They concluded that grey directors in the board perform well at supervising the board, and outside directors are unfavorable for survival of firm and increase the possibility of business failure.

Maurya et al., (2015) observed the relationship between CG variables (size of the Shari'ah supervisory board, board committees, bard composition, board size, concentration of ownership) and financial performance of IBs in GCC countries for 2005-2012. The paper finding confirmed that corporate governance variables: board composition, Shari'ah supervisory board, board size, and board committees have positive relationship while the concentration of ownership has negative relationship with the financial performance of IBs. Haider et al. (2015), Naushad and Malik (2015), and Srairi (2015) observed the sample of banks functioning in Pakistan and GCC region. They found positive associations between financial performance and characteristics of CG. In the same way, Saini and Singhania (2018) reported significant

and positive influences of CG characteristics on firms' performance in India. By examining the sample of Indian foreign funded firms, Saini and Singhania (2018) revealed that CG has a positive impact on the firm performance.

Iqbal et al. (2019) examined the CG index (board size and composition, CEO characteristics, and ownership type) on the performance of Asian' financial intermediaries. Their results confirm the significant impact of CG on the financial performance of financial institutions. Likewise, Permatasari (2020) stated that implementation of good CG practices has influences on bank risks, and banks with difference governance rating revealed differences in operational risk, liquidity risk and credit risk. Musallam (2020) examined the influence of CG attributes (board characteristics, risk management, audit committee) on performance of non-financial companies in Palestinian over the period 2010-2016. The author found that board ownership and independence audit committee size, meeting and financial expertise, and risk management have positive significant effects on corporate performance.

In opposite, the studies conducted by Tai (2015) and Fernandez-Mendez et al. (2017) found that CG attributes negatively related to firms' performance. Karkowska and Acedanski (2019) examined 239 banks for the period 1997–2016 and found negative associations between bank stability and board size. Further, they pointed out the importance of independent board which may possibly hindered rather than encouraged risky operations of banks.

Chang et al. (2015) evaluated the corporate governance as moderator in connection between performance and risk (observed listed companies in Taiwan). Their result confirmed that, during financial crises, the negative moderating effect of corporate governance. They stated that CG plays role as risk shield. Moreover, the companies where superior CG attributes exist report low levels of risk and high levels of

performance. Further, Bastomi et al. (2017) analysed the sample of Indonesian' banks for the period 2011-2015. They stated that the effective executions of corporate governance reduce the effect of credit and operational risk and thus enhance the performance of banks.

Al-Gamrh et al. (2018) examined whether CG reduces the influence of risk and leverage on firm performance during and after crises. Their results displayed that CG mitigates the negative impact of risk and leverage on firm performance after crises. Moreover, during the crises the interaction effect varies across performance indicators. Likewise, Chow et al. (2018) stated that CG plays a significant moderating role between the economic uncertainty and usage of leverage in non-financial firms, whereas CG controls leverage during the time of macroeconomic economic uncertainty. Further, Prasetyo (2011) reported the CG has sound effect on the systematic risks.

After reviewing the literature, we have the following hypotheses.

H_4: Corporate governance has positive influences on the growth, profitability and stability of IBs and CBs.

H_5: Corporate governance moderates the effect of risks on the growth, profitability and stability of IBs and CBs.

4.6.2 Bank Ownership

Ownership is one of the most important factors explaining the banks' financial performances. However, the direction and level of its significant influence remained unclear. One strand of literatures argued that that foreign firms financially perform better regarding low cost and high profit margins rather than local firms. The reason is that foreign firms are supposed to have efficient and experienced humane resource trained in other countries over years. Additionally, foreign firms often customize and apply their operational systems that are working effectively in their home countries

(Ongore, 2011). The bank would be called foreign if its 100 percent ownership held in the hand of foreign investors, and the bank would be called domestic if it is 100% ownership held in the hands of domestic investors (Anyanwaokoro, 2001). In the view of Claessens et al. (2001), a bank is said to be foreign when foreign investors hold more than 50% shares of the bank. In the words of Crystal et al. (2002), a bank is known to be foreign if foreign shareholders have majority of voting shares or exercise effective management control.

Several researchers documented that foreign banks are more efficient as compared to local banks. For example, Claessens et al. (2001) reported that foreign banks operating in developing countries are normally freed from the regulations of credit allocation and other such limitations. Thus, they can earn high interest margins due to lending without any restrictions to the most profitable sectors in the economy of host country. Moreover, they have additional opportunities to increase their income base and raise more capital internationally through abroad investment rather than domestic banks. Similarly, Dages et al. (2000) argued that foreign bank performs better than domestic banks because of the advantages of diversification, superior ability to diversify risks, high expertise, large capital, and the ability to offer services to multinational clients. Another reason is that depositors have more trust on foreign banks because they believes that these banks are financially stable due to the access to foreign credit, maintain high capital and having ability of enhancing investment and profits (Hull, 2002).

Bonin et al. (2004) reported that foreign banks have sufficient and efficient financial, human and technical resources and lower overhead cost, that is why foreign banks perform better than domestic banks. Jeon et al. (2004) stated that foreign banks are more probably earn higher returns on equity and assets as compared to domestic banks. Further, Lensink and Naaborg (2007) asserted that foreign banks are offer good services

and most cost efficient than local banks. Micco, Panizza and Yanez (2007) reported that foreign ownership is significantly associated with high return and lower financial stability. Because foreign banks are characterized by superior management practices, advance technology, efficient risk management, high operational efficiency, and higher profitability. Similarly, foreign banks have technical advantages as compared to local banks in their host country. They also have increase economies of scale due to functioning in more than one country at a time. Further, they are not often affected by interest rate volatility. For example, when interest rates go higher in their home countries than the interest rate in their host countries, they just decrease their loans and advances in host country and increase loans and advances in the home country and vice versa (Aburime, 2008).

Foreign shareholder and investors have played significant role in implementation of transparent corporate governance system, managing moral hazards, leading to good relationship among stakeholders, and reducing information asymmetries. These reduces the firm' risk (Oh et al., 2011). Rahman and Reja (2015) documented that foreign banks hold usually larger capital, better expertise, and better ability to diversify risk. It is argued that foreign banks have higher capital and better supervision and regulation from their parent organization. Further, foreign banks raise their liquid fund and capital from international market efficiently and take up support from their parent bank in term of management, financial, skill, and expertise. These characteristics increase the soundness and performance of the foreign banks, and decrease their risks (Rahman et al., 2012). Furthermore, foreign banks are efficient in risks mitigation, hold better technology, implement high governance standard and having specialty in taking advantage from specific tax breaks, that is why they are more profitable rather than domestic banks (Al-Harbi, 2019).

Several empirical studies investigated the effect of bank' ownership on the performance of commercial banks. For example, Goldberg et al. (2000) compared the performance of foreign banks with domestic banks in Latin American countries over the period of 1995 to 2000. They concluded that foreign banks performed better in overall financial conditions than domestic banks. Likewise, Abbas et al. (2009) examined ownership structure of Malaysian's Islamic financial institutions over the period of 2000-2006. Researchers concluded that ownership structure significantly and positively influences on the return on asset. Moreover. Kalluru (2009) scrutinized the influence of ownership on risk and performance of commercial banks in India over the period 1995-2007. The study tested whether there exists any significant difference in the risk and performance of domestic private banks, state-owned banks, and foreign banks. The results showed that foreign banks were more profitable and more risk-taking than the other two sets of banks.

Kamau (2009) scrutinized the sample of Kenya' banks for 1997-2006. The results suggested that foreign-owned banks have significant influences upon the performance of domestic banking sector. Further, the study showed that usually foreign banks have better technical capacity and more know-how. Moreover, foreign banks get liquidity resources from parents' banks due to their access to international financial market. and thus increase competition pressure for local banks. Sufian and Habibullah (2010) evaluated the entry of foreign bank on performance of domestic IBs. They argued that domestic IBs are relatively less profitable rather than their domestic counterpart. Rahman and Reja (2015) investigated the various form of ownership structure (family, government, insider, foreign and institutional ownership) on banking performance in Malaysia over the period of 2000-2011. The researchers concluded that bank's performance varies with different types of ownership structure.

In this study, we test the following hypothesis.

H_6: Bank ownership influence the impact of bank-specific and macroeconomic risk on the growth, profitability and stability of IBs and CBs.

4.7 Control Variables

Control variables of the study include bank size, the tax ratio, cost efficiency, deposits, saving, asset structure, and financial development.

4.7.1 Bank Size

Bank size is important bank-specific factor that may influence the profitability of banks. In most of banking literature, bank size is measured by taking natural logarithm of total assets (Javaid et al., 2011). Banks larger in size will perform better as they might have better management, better employees, more diversified investment opportunities, and better technology (DeYoung, 2009). The large size banks incline to have usually more loan and product diversification as compared to smaller banks and also they must obtain benefit from economies of scale (Dietrich & Wanzenried, 2011). Moreover, the banks having larger size showed higher profitability due to of economies of scope and scale. Additionally, large size banks are likely better diversified and hence have greater ability to invest in high-risk, high-return projects (Niu, 2012). Furthermore, economies of scale to cost advantage which in turn makes higher profitability (Ameur & Mhiri, 2013).

Several studies inspected the impact of bank size on the financial stability and performance of banks. For instance, Karim et al. (2010) scrutinized the factors affecting African IBs performance for 1999-2009. Their results demonstrates that bank size has significant and positive impact on the profitability which is consistent with the concept of economies of scale. By examining the influence of different internal and external factors on the banks in Pakistan, Gul et al. (2011) asserted that bank size has a positive association to bank performance. Likely, Ali et al. (2011) and Arif et al. (2013)

observed the sample of Pakistani Banks. They confirm the positive impact of bank size on the profitability of banks. Similarly, Rao and Lakew (2012) reported the positive relation of bank size to profitability level of banks operating in Ethiopia.

Other researchers' group like Goaid (2006) and Pasiouras and Kosmidou (2007) found diseconomies for large size banks, and stated when banks become extremely large, the impact of size due to bureaucratic and other reasons might be negative on profitability. Moreover, typically larger banks associated with higher profit and lower cost. Alike, Javaid et al. (2011) reported that bank size is negatively related to the profitability of Pakistani banks. The reason is that extreme large size banks often face scale inefficiencies as diseconomies of scale occurs and might exhibit negatively influence bank profitability (Syafri, 2012). This situation may be happen due to high cost incurred in monitoring large size banks such as the overhead of bureaucratic process and agency cost may decline the profitability of banks (Ameur & Mhiri, 2013). Several past studies (Naceur, 2003; Javaid et al., 2011; Ramadan et al., 2011; Curak et al., 2012; Rahman et al., 2012; Sufian & Habibullah, 2012; Ameur & Mhiri, 2013) documented a negative and significant impact of bank size on profitability of banks.

4.7.2 Cost Efficiency

Cost efficiency is one of the main determinants of performance. Cost efficiency emphasize on the continuous improvement and reduction of cost (Drury, 2004). Cost efficiency measures the expense of banks occur in the production of per unit output. The cost efficiency ratio is measured by the ratio of total cost to total income. The ratio has a significant and negative impact on banks' profitability. The negative impact means that greater the cost efficiency, lower will be the profitability (Dawood, 2014). Olson and Zoubi (2011) reported that European' banks are more cost efficient as compared to banks operating in MENA region. Further, they stated that all banks in

MENA region almost have an optimal cost efficiency level. However, the banks functional in MENA region results higher profitability as compared to the banks operating in Europe. This implies that a low level of cost efficiency does not show low profitability.

Sufian (2012) examined the impact of bank-specific determinants on the profitability of south Asian banks for the periods 1997-2008. The study reported a significant and negative effect of cost efficiency along with other bank-specific determinants on the profitability of banks. Similarly, Syafri (2012) found a negative impact of cost efficiency on the performance of banks. Further, Abuzar (2013) scrutinized the sample of Islamic banks in Sudan. This study reported the positive impact of cost efficiency along with other internal factors like liquidity and bank size on the bank profitability. Likewise, the empirical studies of Pasiouras and Kosimidou, (2007) and Osuagwu, (2014) revealed that cost efficiency is positively associated with the performance of banks.

Alqahtani et al. (2017) reported that, during the period subsequent to the GFC, the cost efficiency and profit of Islamic banks are lower than that of conventional banks. Likewise, Saeed et al. (2020) examined the cost efficiency of conventional banks by using the method of stochastic frontier approach. They suggest that cost efficiency exhibits significant impacts in the case of conventional banks. However, it show complementary impact in the case of Islamic banks. Moreover, cost efficiency is associated to higher risk for Islamic banks, while lower risk in the case of conventional banks.

4.7.3 Tax

Commercial banks are subject to corporate taxes. In banking literature, corporate tax is measured by the total tax paid to profit before taxes. Though the tax rate imposes on

profit is not a choice for banks, yet, the management of banks are trying to minimize the tax by restructuring their portfolio. Consequently, bank customers face an inelastic demand for the banking services (Bashir, 2003). Previous empirical works was conducted to determine the effect of taxes on performance of banks. For example, Kunt and Huizinga (1998) scrutinized the net interest margin of banks in 80 countries for 1988-1995. Their results suggest that tax rate along with other macroeconomic factors has a significant impact on the net interest margin of banks. Further, Bashir (2003) inspected the performance of IBs and suggests that the tax factors are very significant in the determination of banks' performance. The taxes have significant and negative impacts on the performance of Islamic banks. This implies that financial suppression is distorting Islamic banks' performance.

The banking taxes increase the interest rate of loan by increasing the costs of capital (Caminal, 2003; Albertazzi & Gambacorta, 2010). Similarly, De Nicolo (2010) reported that corporate taxes have inverse impact the growth of banks' assets. Further, Albertazzi & Gambacorta (2010) examined the impact of corporate income tax rate on the interest rate applied to loans and deposits, and the profits of banks in different countries. They revealed that increased corporate income tax has a positive effect on the interest rate charged on loans, and has a negative impact on the volume of lending. Moreover, high tax rate increase the costs of bank equity and hence increase the capital requirement of banks.

Kogler (2016) observed the impact of various taxes imposed on banking sectors in different European countries for the period 2007-2013. He reported that banks may lower the interest rate paid to depositors or increase interest rate on loan charged to borrower in order to offset the higher tax liabilities in short run. Further, taxes increase the deposits demand and net interest income because the increase of loan interest rate

is the main effect. Likewise, Haskamp (2018) argued that banks subjected to higher taxation increased the interest rates on their loans.

Buch, Hilberg and Tonzer (2016) analyzed the effect of taxes introduced in the German banks. Their results suggest that the imposition of taxes reduces the growth of loan and increase the interest rate on new deposits. Likewise, Capelle-Blancard and Havrylchyk (2017) observed the impact of different taxes in Hungarian banking system by using differences in differences methodology. They stated that bank taxes' burdens are fully shifted to commission and interest rates on loans. Consequently, it increases the cost of loans for households as compared to firms. Further, they reported that return on assets of banks is not affected by the taxes, implying that increase of interest rates on loans entirely compensates for the taxes' cost to a bank.

Gambacorta et al. (2017) analyzed the effect of taxation on the liability structure of Italian banks. They reported that reductions in taxes decrease non-deposits liabilities more than deposits in addition to depressing leverage. Moreover, the response of banks to taxes on the asset side depend upon the financial strength of banks. The poor capitalized banks react by cleaning up their balance sheet, while strong capitalized banks react to decreasing in taxes by growing their assets and investment portfolio. Similarly, Chronopoulos, Sobiech and Wilson (2018) investigated the small sample of Australian banks that were affected by the introduction of bank taxes. They suggested that taxes decreased the returns and stock market valuation of the Australian' banks. Further, Banerji et al. (2018) scrutinized the impact of taxes on the gross profits of Japanese banks. Their results confirmed that taxes increase the net interest income and fee margin, and decrease the credit supply and deposits of banks of a bank. Abbas et al. (2019) argued that higher tax payment increase the cost of banks which consequently decreases the profitability of banks. Similarly, Bosca et al. (2019) investigated the

(2016) and Menicucci and Paolucci (2016) reported that bank deposits improve the profitability of banks.

4.7.5 Savings

Saving is the proportion of disposable income which is not spent on the consumption of consumer equipment, and invested or accumulated directly in capital goods (Chaudhry et al., 2010). Various economic concept concerning to the growth of economy recognized national saving as important vital component which accelerate economic development, improve the level of productivity, and finances investment (Khan et al., 2017). Savings are most significant to maintain a higher level of investment which is the main component of economic growth (Nasir et al., 2004). On the other hand, low rate of national saving is one of the most serious impairments to obtaining more sustainable economic growth (Ahmad & Mahmood, 2013).

Saving is considered fundamental source of capital investment. Higher level of national saving can lead to high level of investment and consequently enhance economic growth (Krieckhaus, 2002). Sajid and Sarfaraz (2008) examined the impact of saving on the economic growth of Pakistan. Their results confirm that saving are playing an important role in investment creation. Further, they reported that savings have significant impact on the growth of economy. Likely, Singh (2010) reported that savings are likely to be significantly contributed in investment growth and speed up capital accumulation which consequently increase economic growth.

Dietrich and Wanzenried (2010) argued that increased saving, during the financial crises, reduced the revenue of financial institutions in Balkans and Greece. Because the financial institutions in these countries could not transform their deposits into loans and other investments due to the financial crises. By examining the sample of Nigerian banks for the period 1980-2006 and by using OLS methodology, Uremadu (2012) found

a negative impact of national saving along with other variables like saving deposit rate, foreign private investment, bank credit to domestic economy and inflation rate on the profitability of Nigerian banks. Similarly, Chowdhury (2015) revealed a significant and negative effect of saving (measured by the ratio of saving to gross national income) on the performance of IBs operating in Malaysia.

4.7.6 Asset Structure

Assets refers to resources that are owned or controlled by an organization to create economic income or value in the future or in present time (Adhi & Alfarisi, 2019). Generally, any organization has two types of assets: fixed assets and current assets (Adhi, & Alfarisi, 2019). Further, Ekpo & Mbobo (2016) argued that banks hold two types of assets: earning and non-earning assets. Earning assets of the banks include those assets that generate return for a bank such as loan, advances and secondary reserve. Banks prefer to hold earning assets in their assets' portfolio as it is the credible way of maximizing profit. On the other hand, banks also hold non-earning assets including primary reserve kept with central banks, demand deposits, vault cash, and cash on transit with other banks. These assets may not generate revenue for a banks but must be set aside with earning assets as precautionary measures against liabilities.

Banks' assets are sensitive to interest rate fluctuations. The assets of banks can be classified on basis of sensitivity to interest rate fluctuations. Sensitive assets includes short-term liquid securities, loans with floating interest rate, interbank loans, and open credit lines. The non-sensitive assets consist material assets, cash and cash equivalents, loans with fixed interest rate, and credit card overdrafts (Saksonova, 2013). Hence, the management of asset structure is essentially required for a bank to ensure profitable and stable functioning of the bank (Rose, 2001). Asset structure management is an approach that protects banks up to the acceptable level of risk (Chareonsuk & Chansa-Ngavej,

2008). Asset structure refers to how much balance is allocated between current asset and fixed assets according to the use (Adhi, & Alfarisi, 2019). Further, Setiadharma & Machali (2017) stated that asset structure indicate the amount of funds allocated in each part of the assets. This allocation is important because it is associated to the funds required for the frim for long term purpose. Also, this determine the perception of investors towards the firm.

The basic purpose of the asset management is to effectively maximize the return by efficient allocation of assets. Asset management is very helpful to institutions to measure and monitor risk and deliver suitable strategies for their management. So, finance companies, banking institutions, insurance companies, leasing companies and other entities are expected to focus on assets management whenever they exposed to financial risks (DeYoung & Yom, 2008). Bor & Pyatenko (1997) argued that the main purpose of the management of asset structure is the profitability of bank. Thus, banks transform their assets in such manners that generate profit for a bank.

Several past empirical studies examined the impact of asset structure on banks' operational activities. For example, Haron & Azmi, (2004) documented a significant and positive impact of asset structure on profitability of Islamic banks. Delcoure (2006) and Nyamasege et al. (2014) reported a positive impact of asset structure on the firm value. Similarly, Setiadharma and Machali (2017) analyzed the impact of asset structure on the firm value in Indonesia for the period 2010-2014. They concluded that asset structure has significant impacts on firm value. Moreover, Handayani and Darma (2018) and Ariyani et al. (2019) examined the companies listed on the Indonesia Stock Exchange. They reported that asset structure has an insignificant and positive impact on capital structure of listed companies.

Ekpo and Mbobo (2016) scrutinized the association between asset structure and profitability of microfinance banks in Nigeria for the period 2007-2015. Their results indicate that asset structure is positively related with the profitability of microfinance banks. Further, they stated that preference, in making asset allocations, should be given to advances and loans to obtain the benefit of positive influence of asset structure on profitability. Likely, Sulaiman et al. (2018) examined the asset structure management in banking sectors in Malaysia over the period 1997-2012. Their results confirm that asset structure has significant impact on deposits, financing, and profit of the banks. Further, they reported that asset structure management acts to effectively and efficiently avoid any unanticipated crises that may affect the operations of banks.

4.7.2 Financial Development

Financial development is an important indicator which increases the efficiency of banking operations, boost up investment and decreases financial barriers (Williams & Nguyen, 2005). Financial development contributes positively to economic activities because it asses in efficient allocation of capital sources to enterprises, scrutinizing business performance, reducing cost of transferring resources, and facilitation risk management (Camba & Camba, 2019). On the other hand, the other empirical studies like Ruiz-Porras (2009) and Vithessonthi (2014a) argued that financial development increases the probability of bank failure. Because banks lends more in order to earn more profit which consequently increases the risk for a bank.

Pervious empirical works like Lee et al. (2015), Hamid et al. (2019), Shair et al. (2019), and Tran and Nguyen (2020) investigated the effect of financial development along with other variables on the performance and stability of banks. For example, Lee et al. (2015) also determined the negative impact of banking sector development on the net interest margin of banks. Hamid et al. (2019) determined the effect of financial

development on bank risk taking of Islamic and conventional banks operating in different countries. Their results confirm that the effect of financial development on capitalization of banks is varied across conventional and Islamic banks. Similarly, Shair et al. (2019) examined the various factors affecting the profitability of Pakistani banks for the period 2007-2017. Their results indicated that banking sectors development and infrastructure negatively affect the profitability of Banks. Further, Tran and Nguyen (2020) examined the sample of commercial banks in south East Asian countries (Singapore, Philippines, Thailand, Vietnam, Malaysia, Indonesia) for period 2004-2018. They found that financial development has a significant and positive effect on z-score, while its impact on non-performing loans is significant and negative. This suggests that financial development improves banks stability and decreases the level of non-performing loans and advances.

4.8 Conclusions

The literature review presents the impact of various internal and external determinants of growth, profitability, and stability of banks. Different factors affect profitability and stability of bank differently. One strand of the literature found a positive impact while other strand of literature determined the negative impact of various internal and external factors. The literature review established the negative association of various types of bank-specific risks such as credit risk, liquidity risk, operational risk and capital risk with performance and stability of IBs and CBs. Likewise, different empirical studies documented the negative impact of macroeconomic risks (inflation rate risk, exchange rate risk, interest rate risk) on the performance and stability of both types of banks. However, there is disagreement among scholars about the effect of interest rate risk on performance of IBs. Some scholars are suggested that Islamic banks are not affected by the variation in interest rate because the core operations of IBs are free from taking and

receiving of interest. While the other scholars argued that although interest are restricted in IBs but variation in interest rate have significant impact on the rate of return of IBs. Because IBs considered market interest rate as benchmark rate at the time of deciding or identifying the products price. However, IBs are less sensitive to interest rate volatility as compared to conventional banks.

It is concluded that the implementation of good corporate governance has added advantage for a bank. A sound CG implementation enhances the financial soundness and performance of banks. Moreover, CG played significant role in alleviation of various types of risks including both at micro and macro level. The literature documented that foreign bank are more efficient in term of financial, management, technology, expertise, and risk management. Therefore, they are more profitable and financially sound than domestic banks.

CHAPTAR 5

EMPIRICAL FRAMEWORK

5.1 Introduction

The proceeding chapter explains theoretical framework, population, sample, data description and collection, variables description, various empirical models, and estimation techniques used for analysis in the study. The population of the study includes both IBs and CBs operating in Pakistan. Among 33 banks we have selected 22 banks as sample. For analysis purpose, panel data are collected on annual basis for the period 2007-2019. The dependent variables of the study are growth, profitability, and stability, while independent variables include bank-specific and macroeconomic risks. In addition, corporate governance and bank ownership are taken as moderating variables. Moreover, to evaluate the exclusive impact of risks, we also considered several bank and country level control variables.

We specify three baseline empirical models to examine the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of full sample banks. Extending the baseline models, we developed another three models to observe the effects of risks across Islamic and conventional banks. Finally, the next six models are constructed by adding the interaction terms corporate governance and bank ownership. At the end, the chapter demonstrates the estimation technique used for data analysis. We used two-step system Generalized Method of Momentum (GMM) estimator developed by Arellano and Bover (1995)/Blundell and Bond (1998).

5.2 Conceptual Model

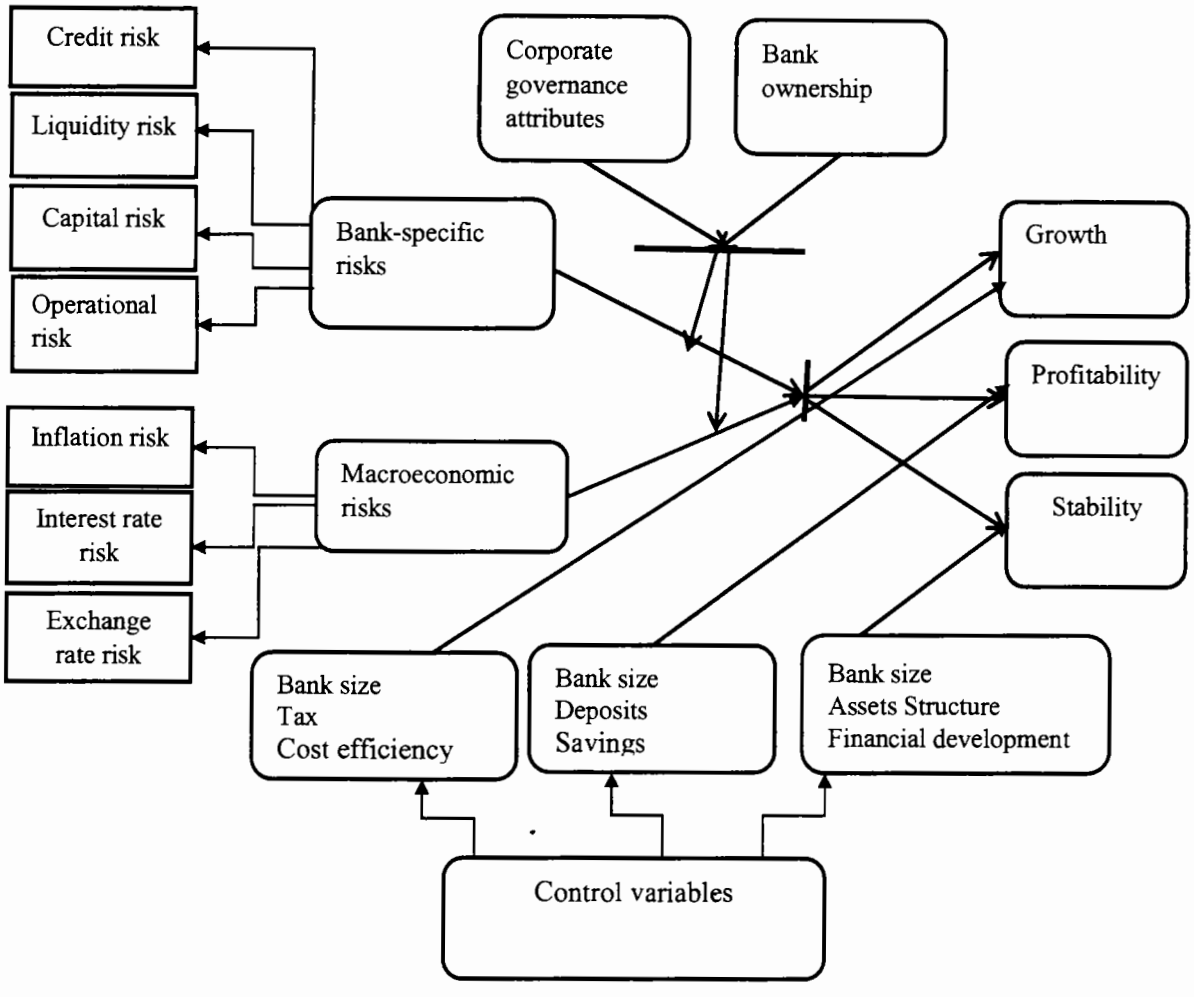
This research study attempts to explore the impact of bank-specific risks and macroeconomic risks on the growth, profitability and stability of IBs and CBs operating in Pakistan for the period 2007-2019. The bank-specific risks include credit risk,

liquidity risk, capital risk and operational risk and macroeconomics risks consist inflation rate risk, interest rate risk, and exchange rate risk. Further, the study determine whether corporate governance attributes are playing moderating role significantly in establishing the impact of both categories of risks. The CG attributes contain board size, board independence, frequency of board meeting per year, CEO duality, size of the audit and risk management committee. Moreover, this study also examined whether the impact of both categories of risks on the growth, profitability and stability are different for domestic versus foreign IBs and CBs. Yet, to find out the exclusive impact of bank-specific and macroeconomic risk, the study takes up various control variables includes bank size, the tax ratio, deposits, saving, asset structure and financial development.

The below Figure 5.1, developed by researcher based on literature review, represents the relationship between the variables taken in this study. Where credit risks, liquidity risk, capital risk and operational risk is the bank-specific risks, while interest rate risk, inflation risk and exchange rate risk is the macroeconomic risks. These risks are independent variables and we expect the negative impact of these risks on dependent variables include growth, profitability and stability.

Further in the figure 5.1, corporate governance attributes and bank ownership is the moderator variables and we expect the positive moderation effect of these variables in all empirical models. Moreover, we control the impact of different variables in each model as bank size, tax ratio and cost efficiency is the control variable in the growth model, bank size, deposits and savings are the control variable in the profitability model, and bank size, asset structure and financial development is taken as control variables in the stability model.

Figure 5.1: Conceptual Model



5.3 Empirical Models

This study mainly focusses to investigate the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of IBs and CBs. The study also observes the effects of these risks across IBs and CBs. In addition, we examine whether corporate governance and bank ownership moderate the effects of these risks. Although, we estimate different empirical models by including different variables. First, we estimate baseline models that determine the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of all banks in the sample in Eq. (5.1), Eq. (5.2), and Eq. (5.3). Further, the bassline models are extended to observe the differential effects of both types of risks across IBs and CBs. Therefore,

Eq. (5.4), Eq. (5.5), and Eq. (5. 6) are constructed. In the next step, interaction terms of corporate governance index with the variables of interest are added in Eq. (5.4), Eq. (5.5), and Eq. (5. 6) to determine the moderating role of corporate governance. Next, we estimate Eq. (5.7), Eq. (5.8) and Eq. (5.9). Finally, to observe the moderating role of bank ownership (domestic versus foreign), we estimate Eq. (5.10), Eq. (5.11) and Eq. (5.12).

5.3.1 Effects of Bank-Specific and Macroeconomic Risks on the Growth, Profitability, and Stability: Full Sample

The baseline models are estimated to determine the effects of bank-specific and macroeconomics risks on the growth, profitability, and stability of all banks in Eq. (5.1), (5.2), and (5.3). The models take the following form.

$$G_{it} = \alpha + \varphi G_{it-1} + \mathrm{X}_{it}\beta + \lambda BR_{it} + \gamma MR_t + \varepsilon_{it} \quad (5.1)$$

$$P_{it} = \emptyset + \varphi P_{it-1} + \mathrm{Y}_{it}\beta + \lambda BR_{it} + \gamma MR_t + \mu_{it} \quad (5.2)$$

$$S_{it} = \delta + \varphi S_{it-1} + \mathrm{Z}_{it}\beta + \lambda BR_{it} + \gamma MR_t + \nu_{it} \quad (5.3)$$

where G_{it} is the growth, P_{it} is the profitability, and S_{it} is the stability as dependent variables. The bank growth, profitability, and stability are defined in Table (5.3). In the above models "i" signify individual bank' dimension and "t" denotes time dimension. The intercept α, $\emptyset$, and δ represent individual-specific effects, and $\varepsilon_{it}, \mu_{it}$ and ν_{it} are the error term.

In all baseline models, BR_{it} is a vector of bank-specific risks of bank "i" at time "t" that are credit risk, liquidity risk, capital risk, and operational risk. MR_t denotes macroeconomic risks at time "t" that are inflation risk, exchange rate risk and interest rate risk. G_{it-1}, P_{it-1} and S_{it-1} is the lagged growth, lagged profitability and lagged stability, respectively. β represents coefficient of control variables, λ denotes the coefficient of bank-specific risks, γ represents coefficient of macroeconomic risks and φ signify the coefficient of lagged variables. These coefficients are measuring the

responsiveness of bank growth, profitability, and stability to changes in bank-specific risk, macroeconomic risks, and the vectors of control variables.

In Eq. (5.1), X_{it} is the vector of control variables that includes bank size, tax ratio, and cost efficiency. In Eq. (5.2), Y_{it} represents control variables in the profitability model: bank size, deposit, and saving. In Eq. (5.3), the control variables are denoted by Z_{it} including bank size, asset structure, and financial development. All these variables are defined in Table (5.3).

5.3.2 Effects of Bank-Specific and Macroeconomic Risks on the Growth, Profitability, and Stability: IBs versus CBs.

In Eq. (5.4), Eq. (5.5), and Eq. (5.6), we expanded the baseline models by adding two dummies: one for CBs and other one for IBs. Explicitly, we interact the dummies with the bank-specific risks and macroeconomic risks to assess the differential effect of both categories of risks across IBs and CBs. The expanded models allow us to evaluate the differential effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of Islamic versus conventional banks. The augmented models are expressed as follows.

$$G_{it} = \alpha + \varphi G_{it-1} \times D_i^{IB} + \varphi G_{it-1} \times D_i^{CB} + X_{it}\beta + \lambda^{IB} BR_{it} \times D_i^{IB} + \lambda^{CB} BR_{it} \times D_i^{CB} + \gamma^{IB} MR_t \times D_i^{IB} + \gamma^{CB} MR_t \times D_i^{CB} + \varepsilon_{it} \quad (5.4)$$

$$P_{it} = \emptyset + \varphi P_{it-1} \times D_i^{IB} + \varphi P_{it-1} \times D_i^{CB} + Y_{it}\beta + \lambda^{IB} BR_{it} \times D_i^{IB} + \lambda^{CB} BR_{it} \times D_i^{CB} + \gamma^{IB} MR_t \times D_i^{IB} + \gamma^{CB} MR_t \times D_i^{CB} + \mu_{it} \quad (5.5)$$

$$S_{it} = \delta + \varphi S_{it-1} \times D_i^{IB} + \varphi S_{it-1} \times D_i^{CB} + Z_{it}\beta + \lambda^{IB} BR_{it} \times D_i^{IB} + \lambda^{CB} BR_{it} \times D_i^{CB} + \gamma^{IB} MR_t \times D_i^{IB} + \gamma^{CB} MR_t \times D_i^{CB} + \nu_{it} \quad (5.6)$$

where, $(BR_{it} \times D_i^{IB})$ is the interaction term between bank-specific risks and dummy of Islamic banks. Similarly, $(BR_{it} \times D_i^{CB})$ is the interaction term between bank-specific risks and dummy of conventional banks. BR_{it} are vectors of bank-specific risks.

$(MR_t \times D_i^{IB})$ denotes the interaction term between macroeconomic risks and dummy of Islamic banks. Alike, $(MR_t \times D_i^{CB})$ express the interaction term between macroeconomic risks and dummy of conventional banks. MR_t are vectors of macroeconomic risks. D_i^{IB} and D_i^{CB} are dummy variables for IBs and CBs, respectively. D_i^{IB} (D_i^{CB}) takes value 1 if the underlying bank is Islamic (conventional), if not, equal to 0. BR_{it} and MR_t are the vectors of bank-specific and macroeconomic risks, respectively. $G_{it-1} \times D_i^{CB}$, $G_{it-1} \times D_i^{IB}$, $P_{it-1} \times D_i^{CB}$, $P_{it-1} \times D_i^{IB}$, $S_{it-1} \times D_i^{CB}$ and $S_{it-1} \times D_i^{IB}$ are the lagged growth, lagged profitability and lagged stability of conventional banks and Islamic banks, respectively.

λ^{IB} is the slope coefficient of Islamic banks bank-specific risks, while λ^{CB} represent slope coefficient of conventional banks bank-specific risks. Similarly, γ^{IB} indicates slope coefficient of macroeconomic risks for Islamic banks, and γ^{CB} represents slope coefficient of macroeconomic risk for conventional banks. If the values of λ^{IB} and γ^{IB} is found higher than the values of λ^{CB} and γ^{CB}, it suggests that Islamic banks is affected more by bank-specific and macroeconomic risks. All other variables are as described in Equations (5.1), (5.2), and (5.3).

5.3.3 Impact of Bank-Specific and Macroeconomic Risks on the Growth, Profitability, and Stability of IBs and CBs: Moderating Role of Corporate Governance.

Another purpose of our study is to evaluate whether corporate governance moderates the effect of both categories of risks on the growth, profitability, and stability of IBs and CB. For this purpose, Eq. (5.4), Eq. (5.5), and Eq. (5.6) are augmented by including interaction term between corporate governance index (CG_{it}) and the variables of interest into the specification. Particularly, we interact the interaction term with the bank-specific risks and macroeconomic risks of IBs and CBs. This enables us to

observe the moderating role of CG in establishing the effects of both types of risks across both types of banks. The augmented models are as follows.

$$G_{it=}\ \alpha + \varphi G_{it-1} \times {D_i}^{IB} + \varphi G_{it-1} \times {D_i}^{CB} + \mathrm{X}_{it}\beta + \lambda_1^{IB} BR_{it} \times {D_i}^{IB} + \lambda_2^{IB} BR_{it} \times {D_i}^{IB} \times CG_{it} + \lambda_3^{CB} BR_{it} \times {D_i}^{CB} + \lambda_4^{CB} BR_{it} \times {D_i}^{CB} \times CG_{it} + \gamma_1^{IB} MR_t \times {D_i}^{IB} + \gamma_2^{IB} MR_t \times {D_i}^{IB} \times CG_{it} + \gamma_3^{CB} MR_t \times {D_i}^{CB} + \gamma_4^{CB} MR_t \times {D_i}^{CB} \times CG_{it} + \varepsilon_{it} \quad (5.7)$$

$$P_{it=}\ \emptyset + \varphi P_{it-1} \times {D_i}^{IB} + \varphi P_{it-1} \times {D_i}^{CB} + \mathrm{Y}_{it}\beta + \lambda_1^{IB} BR_{it} \times {D_i}^{IB} + \lambda_2^{IB} BR_{it} \times {D_i}^{IB} \times CG_{it} + \lambda_3^{CB} BR_{it} \times {D_i}^{CB} + \lambda_4^{CB} BR_{it} \times {D_i}^{CB} \times CG_{it} + \gamma_1^{IB} MR_t \times {D_i}^{IB} + \gamma_2^{IB} MR_t \times {D_i}^{IB} \times CG_{it} + \gamma_3^{CB} MR_t \times {D_i}^{CB} + \gamma_4^{CB} MR_t \times {D_i}^{CB} \times CG_{it} + \mu_{it} \quad (5.8)$$

$$S_{it=}\ \delta + \varphi S_{it-1} \times {D_i}^{IB} + \varphi S_{it-1} \times {D_i}^{CB} + \mathrm{Z}_{it}\beta + \lambda_1^{IB} BR_{it} \times {D_i}^{IB} + \lambda_2^{IB} BR_{it} \times {D_i}^{IB} \times CG_{it} + \lambda_3^{CB} BR_{it} \times {D_i}^{CB} + \lambda_4^{CB} BR_{it} \times {D_i}^{CB} \times CG_{it} + \gamma_1^{IB} MR_t \times {D_i}^{IB} + \gamma_2^{IB} MR_t \times {D_i}^{IB} \times CG_{it} + \gamma_3^{CB} MR_t \times {D_i}^{CB} + \gamma_4^{CB} MR_t \times {D_i}^{CB} \times CG_{it} + \nu_{it} \quad (5.9)$$

In Eq. (5.7), Eq. (5.8), and Eq. (5.9), the terms $(BR_{it} \times {D_i}^{IB})$ and $(BR_{it} \times {D_i}^{CB})$ denote bank-specific risks for IBs and CBs, respectively. $(BR_{it} \times {D_i}^{IB} \times CG_{it})$ is the interaction term between bank-specific risks of IBs and CG index. Similarly, $(BR_{it} \times {D_i}^{CB} \times CG_{it})$ is the interaction term between bank-specific risks of conventional banks and CG index. Further, the terms $(MR_t \times {D_i}^{IB})$ and $(MR_t \times {D_i}^{CB})$ represent macroeconomic risks for IBs and CBs, respectively. $(MR_t \times {D_i}^{IB} \times CG_{it})$ is the interaction term of macroeconomic risks of Islamic banks and CG index. Likewise, $(MR_t \times {D_i}^{CB} \times CG_{it})$ is the interaction term between macroeconomic risks of conventional banks and corporate governance index. BR_{it} and MR_t represents bank-specific and macroeconomic risk, respectively. CG_{it} denotes index of corporate

governance attributes including board size, board independence, CEO duality, frequency of board meeting per year, audit committee size, and risk management committee size.

In Eq. (5.7), Eq. (5.8), and Eq. (5.9), the coefficients λ_1^{IB} and λ_3^{CB} are showing the responsiveness of growth, profitability, and stability to each unit changes of bank-specific risks across IBs and CBs, respectively. Likewise, the coefficients λ_2^{IB} and λ_4^{CB} are denoting the responsiveness of the dependent variables to interaction terms (bank-specific risks and corporate governance index) for IBs and CBs, respectively. Further, the $\gamma_1^{IB}$and γ_3^{CB} are the coefficients to represent the responsiveness of growth, profitability and stability of IBs and CBs to changes in macroeconomic risks. Similarly, the coefficients γ_2^{IB} and γ_4^{CB} are representing the different responses of dependent variables of Islamic and conventional banks to each unit change of macroeconomic risks and corporate governance index. The other variables in the models are sufficiently explained in baselines models.

5.3.4 Impact of Bank-Specific and Macroeconomic Risks on the Growth, Profitability, and Stability of IBs and CBs: Moderating Role of Bank Ownership

The next objective of our study is to examine whether the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability are different across foreign and domestic IBs and CBs. In following equations, we interact four dummies for domestic IBs, foreign IBs, domestic CBs, and foreign CBs. Specifically, these dummies are interacted with bank-specific risks and macroeconomic risks for both types of banks.

$$G_{it=}\alpha + \varphi G_{it-1} \times {D_i}^{IB} + \varphi G_{it-1} \times {D_i}^{CB} + \mathrm{X}_{it}\beta + \lambda_1^{IB} BR_{it} \times D_0^{DIB} + \lambda_2^{IB} BR_{it} \times D_0^{FIB} + \lambda_3^{CB} BR_{it} \times D_0^{DCB} + \lambda_4^{CB} BR_{it} \times D_0^{FCB} + \gamma_1^{IB} MR_t \times D_0^{DIB} + \gamma_2^{IB} MR_t \times D_0^{FIB} + \gamma_3^{CB} MR_t \times D_0^{DCB} + \gamma_4^{CB} MR_t \times D_0^{DCB} + \varepsilon_{it} \quad (5.10)$$

$$P_{it=} \emptyset + \varphi P_{it-1} \times D_i^{IB} + \varphi P_{it-1} \times D_i^{CB} + Y_{it}\beta + \lambda_1^{IB} BR_{it} \times D_0^{DIB} + \lambda_2^{IB} BR_{it} \times D_0^{FIB} + \lambda_3^{CB} BR_{it} \times D_0^{DCB} + \lambda_4^{CB} BR_{it} \times D_0^{FCB} + \gamma_1^{IB} MR_t \times D_0^{DIB} + \gamma_2^{IB} MR_t \times D_0^{FIB} + \gamma_3^{CB} MR_t \times D_0^{DCB} + \gamma_4^{CB} MR_t \times D_0^{DCB} + \mu_{it} \quad (5.11)$$

$$S_{it=} \delta + \varphi S_{it-1} \times D_i^{IB} + \varphi S_{it-1} \times D_i^{CB} + Z_{it}\beta + \lambda_1^{IB} BR_{it} \times D_0^{DIB} + \lambda_2^{IB} BR_{it} \times D_0^{FIB} + \lambda_3^{CB} BR_{it} \times D_0^{DCB} + \lambda_4^{CB} BR_{it} \times D_0^{FCB} + \gamma_1^{IB} MR_t \times D_0^{DIB} + \gamma_2^{IB} MR_t \times D_0^{FIB} + \gamma_3^{CB} MR_t \times D_0^{DCB} + \gamma_4^{CB} MR_t \times D_0^{DCB} + \nu_{it} \quad (5.12)$$

where G_{it}, P_{it}, S_{it} are representing the dependent variables: growth, profitability, and stability, respectively. The $(BR_{it} \times D_0^{DIB})$ is the interaction term between bank-specific risks and the dummy of domestic IBs, while $(BR_{it} \times D_0^{FIB})$ is the interaction term between the bank-specific risks and the dummy of foreign IBs. Further, $(BR_{it} \times D_0^{DCB})$ is the interaction term expressing bank-specific risks for domestic CBs, and $(BR_{it} \times D_0^{DCB})$ is showing bank-specific risks for foreign CBs.

The interaction term $(MR_t \times D_0^{DIB})$ is showing macroeconomic risks for domestic IBs. Likewise, the term $(MR_t \times D_0^{FIB})$ is representing macroeconomic risks for foreign IBs. Further, the $(MR_t \times D_0^{DCB})$ is the interaction term between macroeconomic risks and the dummy of domestic CBs. Similarly, the $(MR_t \times D_0^{FCB})$ is the interaction term between macroeconomic risks and the dummy of foreign CBs.

BR_{it} is the vector of bank-specific risks; credit risk, liquidity risk, operational risk, and capital risk. MR_t is the vector of macroeconomic risks including inflation rates risk, interest rate risks and exchange rate risk. In all equations, λ_1^{IB}, λ_2^{IB}, λ_3^{CB} and λ_4^{CB} are the coefficients denoting the responsiveness of growth, profitability, and stability of IBs and CBs to each unit change in bank-specific risks due to dummies. Likewise, the coefficients γ_1^{IB}, γ_2^{IB}, γ_3^{CB} and γ_4^{CB} denote the response of dependent variables of both types of banks to one unit change in macroeconomic risks due to dummies of domestic

and foreign banks. X_{it}, Y_{it} and Z_{it} are the vectors of control variables in specific models. ε_{it}, μ_{it}, and ν_{it} are the error term in specific model.

5.4 Population and Sampling

The experimental assessment is based on Islamic and conventional banks functional in Pakistan.

The banking industry of Pakistan consists of 32 commercial banks, of which, five banks are public sector, three are specializes banks, twenty are the local private banks, and four are the foreign banks. Among the private sector banks, only five banks are full fledge Islamic banks. Details are given in Table 5.1.

Table 5.1: Scheduled Banks and their Branches in Pakistan

S.No	Banks	S.No	Banks
A)	**Public Sector Commercial Banks**	8	Faysal Bank Ltd.
1	First Women Bank Ltd.	9	Habib Bank Ltd.
2	National Bank of Pakistan	10	Habib Metropolitan Bank Ltd.
3	Sindh Bank Ltd.	11	JS Bank Ltd.
4	The Bank of Khyber	12	MCB Bank Ltd.
5	The Bank of Punjab	13	MCB Islamic Bank Ltd.
B)	**Specialized Banks**	14	Meezan Bank Ltd
2	SME Bank Ltd.	15	Samba Bank Ltd.
3	The Punjab Provincial Cooperative Bank Ltd.	16	Silk bank Ltd.
4	Zarai Taraqiati Bank Ltd.	17	Soneri Bank Ltd.
C)	**Domestic Private Banks**	18	Standard Chartered Bank (Pakistan) Ltd.
1	Al Baraka Bank (Pakistan) Ltd.	19	Summit Bank Ltd.
2	Allied Bank Ltd.	20	United Bank Ltd.
3	Askari Bank Ltd.	**D)**	**Foreign Banks**
4	Bank Al Falah Ltd.	1	Citibank N.A.
5	Bank Al Habib Ltd.	2	Deutsche Bank AG
6	BankIslami Pakistan Ltd.	3	Industrial and Commercial Bank of China Ltd.
7	Dubai Islami Bank Pakistan Ltd.	4	Bank of China

Among the population comprised 32 banks, 22 banks were selected as sample through purposive sampling technique. The list of the sample banks is given in Table 5.2.

Table 5.2: List of Sample Banks

S.No	Banks	S.No	Banks
1	First Women Bank Ltd.	12	JS Bank Ltd.
2	National Bank of Pakistan	13	MCB Bank Ltd.
3	The Bank of Khyber	14	Habib Metropolitan Bank Ltd.
4	The Bank of Punjab	15	Samba Bank Ltd.
5	Faysal Bank Ltd.	16	Habib Bank Ltd.
6	Allied Bank Ltd.	17	Bank Al Falah Ltd.
7	United Bank Ltd.	18	Soneri Bank Ltd.
8	Silkbank Ltd.	19	Meezan Bank Ltd
9	Askari Bank Ltd.	20	Al Baraka Bank (Pakistan) Ltd.
10	Standard Chartered Bank (Pakistan) Ltd.	21	Dubai Islami Bank Pakistan Ltd.
11	Bank Al Habib Ltd.	22	BankIslami Pakistan Ltd.

Three public sector specialized banks were excluded because these banks provide specialized services for specific purposes and do not provide full fledge services of commercial banks. Another four foreign banks were excluded because of their branches are less and only provides services to foreign residents. These banks include Citi bank, Deutsche Bank, Industrial and Commercial Bank of China Ltd, and Bank of China. Furthermore, another three banks were excluded because of their age (MCB Islamic bank established in 2015, Summit Bank Limited established in 2010, Sindh bank limited established in 2010). The reason is that we analyzed the sample for 2007-2019 and these banks do not fulfil the objectives of the study. Finally, we selected 22 banks for analysis including four full fledge Islamic banks and eighteen (18) conventional banks. We do not include Islamic window and divisions of conventional banks that offers Islamic banking services. The logic behind the exclusion is that these windows

and divisions do not have separate corporate governance attributes and ownership indicators. Hence, they do not fulfil the objective to examine the influence of corporate governance and bank ownership as moderator.

5.5 Description and Measurement of Variables

Table (5.3) presents the summary of variables and their measurement proxies. Growth, profitability, and stability are taken as dependent variables while credit risk, liquidity risk, operation risk, capital risk, inflation rate risk, exchange rate risk, and interest rate risk are considered as independent variables. Corporate governance and bank ownership are undertaken as moderating variables. Moreover, to examine the exclusive impact of independent variables, we take into consideration several bank-specific variables (bank size, tax ratio, deposits, asset structure, cost efficiency) and country level variables (saving, financial development) as control variables.

5.5.1 Dependent variables- Growth, Profitability, and Stability

The dependent variables of the study are growth, profitability, and financial stability. In line with the empirical prior studies (Abedifar et al., 2013; Akram & Rehman, 2018; Ibrahim & Rizvi, 2018; Hassan, et al., 2019; Abbas, et al., 2019, Bilgin et al., 2020), this study considers asset growth, deposit growth, and loan/financing growth for the measurement of overall growth of a bank. The term "loan" is used in the case of CBs and the term "financing" is used in the case of IBs. Asset growth is the annual percentage increase in total assets which is measured by the total assets in current year minus assets in previous year divided by assets in previous year. Similarly, deposit growth is the annual percentage increase in the total deposit of a bank, such as total deposits in current year minus deposits in previous year divided by deposit in previous year. Further, the loan/financing growth is defined as annual percentage increase in the total amount of loan/financing granted by bank, whereas loan granted, or financing

made in current year minus loan granted or financing made in previous year divided by loan or financing in previous year.

The profitability measurement proxies adopted for this study are return on asset (ROA), return on equity (ROE), and net interest/mark-up margin (NIMM). Several empirical studies adopted these proxies for profitability measurement (Amin et al., 2014; Aydemir & Ovenc, 2016; Alharthi, 2017; Al-Homaidi, 2018; Shair et al., 2019; Fang et al., 2019). We developed the index of return on asset (ROA), return on equity (ROE), and net interest/mark-up margin (NIMM). ROA is computed as the percentage of net income to the total assets in a year of a bank. It represents the ability of bank management to earn profit from its total asset utilization in business.

The second profitability proxy employed is the return on equity (ROE). ROE define as percentage of net income to the total shareholder equity. ROE shows the competency of bank management to generate profit from the efficient investment of shareholder equity. It is direct measure of return to shareholders. The next profitability measurement ratio is the net interest or mark-up margin. Net interest margin is used in the case of conventional banks and net mark-up is used in the case of Islamic banks. Net interest/mark-up margin is defined as the difference between interest/mark-up received on granting loans/financing and interest/mark-up paid on deposits to total assets. Simply, it is the represent the gap between what the bank receives from borrowers and pays to saver. Its shows the traditional function of bank to accept deposits and lend it to investors (Rani & Zergaw, 2017). It shows the earning ability of a bank through the investment of assets and capability to take right decision related the spreads relative to its interest expense.

The third dependent variable is the financial stability. Financial stability is measured by the Z-score. Z-score is probably a sound scale for the measurement of bank` financial

stability among practitioners and scholars (Ashraf, et al., 2016: Alharthi, 2017; Ghenimi, 2017: Alqahtani & Mayes, 2018; Islam et al., 2019; Phan et al., 2019; Berger et al., 2019). It is the return on asset plus book value of equity to asset ratio divide by the standard deviation of return on asset. A higher value of Z-score show that banks are more stable, as it is inversely associated to the possibility of bank insolvency.

5.5.2 Independent Variables: Bank-specific and Macroeconomic Risks

The independent variables of the study categorize into bank-specific risks and macroeconomic risks.

5.3.2.1 Bank-specific Risks

Bank-specific risks are the risks arises from the core commercial activities and functions of the bank. Bank-specific risks classified into credit risk, liquidity risk, operational risk, and capital risk. Credit risk define as possibility of the borrowers' defaults to fulfil their loan contract either to not repay principal amount of loan or its interest instalment according to stipulated contract. In literature credit risk is measured by different proxies such as non-performing loan (NPL) to gross advances, provision against advances to gross advances and non-performing loan write off to provision against advances (Zins & Weill, 2017; Cai & Zhang, 2017; Ali et al, 2018; Akram & Rehman, 2018; Ferhi, 2018; Natsir et al., 2019; Buthiena, 2019; Shair et al, 2019; Djebali & Zaghdoudi, 2020). However, these studies used individual proxy for the measurement of credit risk, we develop the index of non-performing loan (NPL) to gross advances, provision against advances to gross advances and non-performing loan write off to provision against advances.

NPLs to gross advances ratio denotes the percentage of nonperforming loans to gross loans granted by a bank. NPLs refers to impaired loans which are unpaid by three months or 90 days. This ratio also evaluates the assets' quality of the bank. Higher ratio

shows lower quality of loan or assets and thus higher credit risk. The ratio of provision against advances to total advances indicate the percentage of loan that bank keep aside to minimize the adverse effects of bad loan. This ratio imitates the quality of bank' advances. An increase amount of provision against advances represents a deteriorating trend in loan quality of a bank and higher sign of credit risk. Non-performing loan write off to provision against advances ratio indicate the percentage of loan writ-off to the total provision against advances. This shows the actual amount of bed loan that cannot be recover. The coefficients of all these ratios are expected to be negative as non-performing loans, provision against advances, and bad loan negatively reduce the total loan and overall assets of a bank. Thus, it ultimately adversely affects growth, profitability, and stability of a banks.

Liquidity risk arises in the situation where bank is unable to fulfil the obligations of depositors or to arrange necessary funds for granted loans without incurring losses or intolerable costs. Liquidity risk quantified by two proxies: current asset to deposit and current asset to total asset, following Amin et al. (2014), Salim and Bilal (2016), Ghenimi et al. (2017), Amara and Mabrouki (2019), Fang et al (2019), Djebali and Zaghdoudi (2020). The current asset to deposit ratio shows the percentage of highly liquid asset to total deposit. Current asset to total assets expresses the percentage of highly liquid assets to the total assets. Current asset includes high liquid asset cash with bank and cash held with central or treasury bank and other banks. The lower values of these ratios indicate higher liquidity risk.

Operational risk is the risk of loss arises from inadequate internal processes, people and systems or external events. In literature various proxies used for the measurement of operational risk which cover the different operational activities of a bank. Followed by Soyemi et al. (2014), Alsyahrin et al. (2018), and Ali et al. (2018), we have taken three

proxies for the measurement of operational risks and developed the index: admin expense to non-markup/interest income, non-markup/interest expense to total income, and admin expense to profit before interest and tax. Admin expense to non-markup/interest income ratio measures total administrative expenses in relation to the non-interest/markup income. The ratio of non-markup/interest expense to total income express the percentage of non-interest/mark-up expenses in relation to total income. This ratio imitates the management efficiency in applying the bank overall resources. The ratio admin expense to profit before interest and tax measures the total administrative expenses relative to income before interest and taxes. Higher the ratios higher will be the operational risk.

Capital risk is defined as variation in shareholder equity in relation to total assets. The bank faces capital risk when it fails to increase a rational amount of capital mandatory for the bank operation or fail to make batter structure of capital and assets. Followed by the previous literature (Yousfi, 2014; Al-Tamimi et al., 2015; Olalekan et al.. 2018; Wood & McConney, 2018; Fang et al., 2019), capital risk is computed by the proxy of equity to total asset. This proxy is a good measure of capital risk because declines in equity amount respective to assets show bigger exposures of capital risk. Capital ratio express the capital strength of a bank and thus low ratio indicates higher capital risk

5.3.2.2 Macroeconomic Risks

Macroeconomic risks include inflation rates risk, exchange rates risk, and interest rates risk. Inflation rates risks is defined as unexpected volatility in inflation rates over time. It is measured by yearly standard deviation of monthly rate of consumer price index (CPI) over the sample periods, followed by Rashid and Khalid (2017) and Al-hamodity (2018). CPI is the basic measure which calculate the of price changes at retail level. It measures changes in the cost of buying representative predefined basket of goods and

services and to gauge the increase in the cost of living in reporting period. Monthly rate of consumer price index is the percentage change of an index in a given month relative to the index in previous month. Higher rate shows higher inflation risk. An increase in inflation rates tends to deteriorations the financial performance of a bank.

Exchange rates risk is calculated by the yearly standard deviation of monthly rate of real effective exchanges rate of Pakistani Rupee against the basket of foreign currencies. Several studies have used the real effective exchange rate as a proxy of exchange rate measurement, for instance see Slimani and Allem (2018). Decrease in real effective exchange rate represents real depreciation of Pakistani Rupee against the basket of foreign currencies and vice versa.

Interest rates risk defined as unexpected variation in lending interest rate over time and proxied by yearly standard deviation of monthly rate of lending interest rate. Lending rate is the rate charged by banks on loan to the private sectors. The past studies like Kanwal and Nadeem (2013), Amin et al. (2014), Rashid and Jabeen (2016), Rashid and Khalid (2017), Berger et al. (2019), and Bilgin et al. (2020) have used the lending interest rate for the measurement for interest rate risk.

5.5.3 Moderating Variables-Corporate Governance and Bank Ownership

Moderating variables includes corporate governance attributes and bank ownership. In literature, different corporate governance attributes are used. In line with past studies like Ghaffar (2014), Andries and Brown (2017), Hussain and Shah (2017), and Musallam, (2020), we have taken most important attributes including board size, board independence, CEO duality, frequency of board meeting, risk management committee size, and audit committee size. Board size refers to the total number of directors in the board. Board independence calculated by the percentage of number of independent directors to total number of directors in the board. CEO duality takes value 1 if the CEO

and the chairman of the board is the same person, and 0 otherwise. Frequency of the board meeting refers to the number of boards' meeting per year. Audit committee size is computed as number of members in the bank audit committee, while risk management committee size refers to the total number of members in the risk management committee. Followed by the studies of Lu and Wang (2015), and Chow et al. (2018), we developed the index of these attributes by apply principal components analysis (PCA) technique. PCA encounters the multidimensional characteristics of corporate governance into single index. The following CGI equation is created:

$$CGI_{it} = \sum_{j=1}^{n} W_{ji} CG_{jit} \qquad (5.13)$$

where CGI_{it} is the corporate governance index for bank i in time t. CG_{jit} denotes individual corporate governance attribute j of bank i in time t. W_{ji} is the loading for individual CG attributes.

The second moderating variables is the bank ownership. Bank ownership measured in the form of domestic and foreign bank. The bank will be called foreign if its 50% or more share owned by foreigner (individuals or corporation), otherwise it will be considered domestic. Followed by previous studies Alqahtani et al. (2017), we assign 0 to domestic bank and 1 to foreign bank.

5.5.4 Control Variables

To capture well-documented impact of risks on the growth, profitability, and stability, we consider several control variables in each model. In the growth model, we consider bank size, the tax ratio, and cost efficiency as control variable. Similarly, in the profitability model, we have taken bank size, deposit, and saving as control variable. Moreover, bank size, asset structure, and financial development are taken as control variables in the stability model.

Bank size is defined as natural logarithm of total assets of a bank. This proxy for bank size frequently used by researchers (Rashid & Khalid, 2017; Bougatef, 2017; Alqahtani et al., 2017; Ghenimi et al., 2017; Fang et al., 2019; Djebali & Zaghdoudi, 2020). The tax ratio is defined as annual total tax paid to profit before tax, followed by Shah et al. (2015), Abbas et al. (2019), and Shair et al. (2019). Higher tax ratio indicates grater cost of banks and eventually affect adversely bank assets, deposits, and loans. Cost efficiency is proxied by the percentage of expense in relation to total asset ratio, followed by Alam (2012), Nguyen et al. (2012) and Ozili (2019). Lower the ratio, the bank will be more efficient in cost management.

Table 5.3: Summary of Variables

Dependent Variables	Growth	1) $Deposit\ growth = \frac{Dt-D(t-1)}{D(t-1)} \times 100$ Deposits in current year minus deposits in previous year divided by deposits in previous year. 2) $Asset\ growth = \frac{At-A(t-1)}{A(t-1)} \times 100$ Assets in current year minus assets in previous year divided by assets in previous year. 3) $Loan/financing\ growth = \frac{Lt-L(t-1)}{L(t-1)} \times 100$ Loan/financing for current year minus loan/financing for previous year divided by loan/financing for previous year. The term "loan" for conventional banks while "financing" for Islamic banks.	Financial Statement of Banks
	Profitability	1) Return on Asset (RoA) $= \frac{net\ income}{total\ asset} \times 100$ 2) Return on Equity (RoE) $= \frac{net\ income}{total\ equity} \times 100$ 3) Net interest/mark-up margin= $\frac{net\ interest/markup\ earned - interest/markup\ expense}{total\ asset} \times 100$	Financial Statement of Banks
	Stability	$Z_{it} = \frac{(RoA)_{it}+(E/A)_{it}}{\delta(RoA)_{it}}$ Z_{it} Represent financial stability of i bank at time t, $(RoA)_{it}$ is return on asset, $(E/A)_{it}$ is book value of equity to asset ratio, $\delta(RoA)_{it}$ is standard deviation of return on asset.	Financial Statement of Banks
Independent Variables	Credit risk	(1) $\frac{nonperforming\ loan}{gross\ advancees} \times 100$ (2) $\frac{provision\ aginst\ advances}{gross\ advances} \times 100$ (3) $\frac{non-performing\ loan\ write\ off}{provision\ against\ adnvances} \times 100$	Financial Statement of Banks
	Liquidity risk	1) $\frac{current\ assets}{total\ deposit} \times 100$ 2) $\frac{current\ assets}{total\ asset} \times 100$	Financial Statement of Banks

	Operational risk	1) $\frac{Admin\ expense}{non-interest/mark-up\ income}$ 2) $\frac{non-interest/mark-up\ expens}{total\ income} \times 100$ 3) $\frac{Admin\ expense}{profit\ before\ interest\ \&\ tax}$	Financial Statement of Banks
	Capital risk	1) $\frac{total\ equity}{total\ asset} \times 100$	Financial Statement of Banks
	Inflation risk	yearly standard deviation of monthly rate of inflation	SBP
	Interest rate risk	yearly standard deviation of monthly rate of lending rate	SBP
	Exchange rate risk	yearly standard deviation of monthly rate of real effective exchanges rate	SBP
Control variable	Bank size	natural log of total assets	Financial Statement of Banks
	Tax ratio	$\frac{total\ tax\ paid}{profit\ before\ tax}$	Financial Statement of Banks
	Cost efficiency	$\frac{total\ expense}{total\ asset}$	Financial Statement of Banks
	Deposit	$\frac{total\ depsits}{total\ assets}$	Financial Statement of Banks
	Saving	$\frac{total\ saving}{GDP}$	SBP
	Asset structure	$\frac{total\ loan}{total\ asset}$	Financial Statement of Banks
	Financial development	$\frac{\text{Credit provided to the private sector}}{GDP}$	SBP
Moderator Variables	Corporate governance	Index of board size, independent director, CEO duality, frequency of the board meeting, audit committee, risk management committee.	Financial Statement of Banks
	Bank ownership	Take value 1 if the bank is foreign and 0 otherwise. The bank will be called foreign if its 50% or more share owned by foreigner, otherwise it will be considered domestic.	Financial Statement of Banks

The next control variable is deposits. Deposit is proxied by the total deposits to total assets ratio. This ratio is mostly used in previous studies to capture the impact of deposits (Menicucci & Paolucci, 2016; Zampara et al., 2017; Al-hamodity, 2018). Higher the ratio, expectedly greater will be the performance of banks. The savings variable is defined as the percentage of gross private saving to GDP, followed by (Imbierowicz & Rauch, 2014; Chowdhury, 2015). Asset structure shows the

composition of bank' assets. It is proxied by the ratio of total loan provided as a percent of total asset (Rajhi & Hassairi, 2013; Zins & Weill, 2017). Financial development refers to the credit provided to the private sector to Gross domestic product (GDP), followed by Nguyen et al. (2012), Ibrahim and Rizvi (2018), Ozili (2018), and Smolo (2018). The high ratio of financial development indicate that the private sector has provides sufficient financial resources and can save banks collectively from financial instability.

5.6 Data Collection and Description

This study uses dataset of Islamic and conventional banks and selected macroeconomic variables from Pakistan over the period 2007-2019. We constructed 284 observation of a balance annual panel dataset from various sources. The bank level data on bank-specific risks, control variables, and corporate governance are thoroughly gathered from the annual reports of each individual bank. The country level data on macroeconomic risks and control variables are taken from publications and economic survey issued by State Bank of Pakistan. The State Bank of Pakistan is the regulatory and controlling bank of all banks operating in Pakistan. Additionally, state bank of Pakistan control and monitor macroeconomic indicators.

There are some differences in terminology and accounting treatment of various elements of financial statements across Islamic and conventional banks. The reason is that structure and functions of Islamic banks different from conventional banks. In Islamic banks, credit is supplied with the title "Islamic financing" whereas the title in conventional banks is "loans or advances". Secondly, conventional banks use the term "net interest margin" while Islamic banks uses "net mark-up margin". Similarly, Islamic banks uses the term "non-markup income or expense" in contrary to conventional banks term "non-interest income or expense". Finally, Islamic banks use

the term "non-performing financing" while conventional banks use the term "non-performing loans".

5.7 Estimation Techniques- The Generalized Method of Moments (GMM) Estimator

This study examines dynamic panel data over sample period 2007-2019. Hence, the empirical models used in the study are dynamic in nature. The regressions of dynamic panel data are characterized by two sources of persistence over time: autocorrelation due to the presence of a lagged dependent variable among the regressors and individual effects characterizing the heterogeneity among the individuals (Daher et al., 2015). Thus, the use of conventional econometric techniques ordinary least square (OLS) and generalized least square (GLS) would be unfair and biased. The reason is that conventional techniques do not provide solution for problem of autocorrelation, heterogeneity, and endogeneity. Endogeneity arises from a causal association between independent and dependent variables due to lagged dependent variables.

To overcome the problems of traditional econometrics techniques Ordinary Least Square (OLS) and Generalized Least Squares (GLS), we employ dynamic panel data estimator two-step system Generalized Method of Moment (GMM) to examine the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability. The GMM estimator is a generic estimation technique for estimating parameters in dynamic econometric models. It was initially developed by Arellano-Bond (1991), and later modify and fully designed by Arellano and Bover (1995)/ Blundell and Bond (1998). Recently, this estimator emerged in the empirical literature as a most popular dynamic panel data estimator among the academician and researchers (Daher et al., 2015; Aydemir & Ovenc, 2016; Ghenimi et al., 2017; Ali et al., 2019; Shair et al., 2019; Bilgin et al., 2020).

GMM estimators have several advantages over other panel data estimators. The main advantage of this estimator is that it manipulates lagged levels of variables as instruments for differenced equations and lags of the first difference of variables for equation in levels. Further, this estimation technique eliminates the time invariant unobservable bank-specific fixed impact by taking first difference of each underlying variables. The second advantage of using two-step system GMM is that it overcomes endogeneity problems in the regressors and controls the heterogeneity across individuals' banks (Blundell & Bond, 1998; Bond, 2002).

There are strong reasons to use the two-step system GMM estimator for econometric analysis. Precisely, it eliminate effectively cross-sectional correlation and endogeneity problem by allowing the researchers to use both level and first difference instruments. The Arellano and Bond (1991) AR (2) is applied to test the existence of the second order serial correlation in the residuals. Further, the null hypothesis of the instruments is also tested through the J-test of Hansen (1982) whether these are orthogonal to the residuals or not.

The system-GMM estimator is preferred to many other estimators in modern econometric estimating techniques. Although, some questions are raised about to utilize the system-GMM approach. Generally, it is assumed that the two-step system-GMM estimation is more reliable in producing the efficient empirical results than the estimates of the one-step estimation on econometric models. In fact, none can say surely about the preference the former estimator on later one. Similarly, there is not well-developed mechanism to select the set of optimal instruments. Further, the excessive use of these type of instruments in regression analysis, may push a researcher to face the problem of "many instruments". Likewise, the same problem may more disturbing if a very limited size of sample is selected for analysis. To meet with this type of problem, we

have used the J-test of Hansen (1982). It observes over identified restrictions to ensure the validity of the instruments that are borrowed to estimate our estimation models. However, these instruments are considered valid only when their residuals do not reflect the second-order serial correlation. Although, the first-order serial correlation is possible to occur because the models of study have the dynamic contexts. Similarly, the residuals should also be ensured through the test for autocorrelation that the second-order serial correlation is not found in the residuals. Therefore, the Arellano-Bond test for AR (2) is applied to test the serial correlation for all the models. In short, the reliability of the system GMM estimation critically depends on whether the instruments are valid or not. Therefore, we have employed the J-test of Hansen (1982) for testing the validity of the instruments of the system GMM estimation and the Arellano-Bond AR (2) test to observe the second-order serial correlation in the residuals.

5.8 Conclusions

In this chapter, we have described the date collection, population and sample, variables, empirical models, and estimation techniques. We inspected panel data of the banking sectors of Pakistan on annual basis spinning the period 2007-2019. Similarly, we have considered variables; the bank growth, profitability, and stability as dependent variables, bank-specific and macroeconomic risks as independent variables. Further, we have taken corporate governance, and bank ownership as moderating variables, and other variables like bank size, tax ratio, cost efficiency, deposit ratio, saving, financial development, and asset structure as control variables.

To observe the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of full sample banks, first we have construct baselines models. Further, we augmented the baselines models to scrutinize the impacts of both types of risks across Islamic and conventional banks. Further, to observe the moderating

role of corporate governance, we added interaction terms corporate governance in the empirical models. Finally, we have constructed empirical models to examine the effects of risks across domestic versus foreign banks.

At the end, this chapter also presented the estimation technique two-steps system Generalized Method of Moment (GMM) used to examine the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability. GMM estimator initially proposed by Arellano and Bover (1995) and later fully established by Blundell and Bond (1998). The significance of the GMM estimator is vindicated for all empirical models. In sum, this empirical design enables to measure the effects of bank-specific and macroeconomics risks on the growth, profitability, and stability of Pakistani' banks based on annual panel dataset.

CHAPTER 6

EMPIRICAL RESULTS AND DISCUSSION

6.1 Introduction

In this chapter, the results of descriptive statistics of all variables and the results of all regression models are interpreted. First, the chapter displays the summary statistics of variables for full sample banks as well as for Islamic versus conventional banks. Next, the chapter give the empirical results of all regression models. First, the results of baselines models are given to explore the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of all banks. Next, the results of extended models are given. These models are augmented to observe the differential impacts of both types of risks across IBs and CBs.

Then, the chapter shows the results of the role of CG as a moderator in establishing the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of IBs versus CBs. At the end, the chapter provides the comparative effects of both types of risks on the growth, profitability, and stability of domestic versus foreign IBs and CBs.

6.2. Descriptive Statistics

In this section, first we represent the descriptive statistics; standard deviation, mean, maximum and minimum of all variables for full sample banks. Aftermath, the descriptive statistics of all variables for IBs versus CBs are explored.

6.2.1 Descriptive Statistics: All Banks

Table 6.1 summarizes the results of descriptive statistics (minimum value, maximum value, observation, mean standard deviation) of all variables considered in the study for full sample of banks. The mean value of asset growth, deposit growth, and loan/financing growth are 14.31, 16.48, and 16.16 with standard deviation 8.51, 11.10,

and 14.20, respectively. On average, the banks total assets are growing at 14.31 % annually, total deposits are growing at 16.49% annually, and total loan/ financing is growing at 16.16 % annually. The minimum value for growth proxies is -26.80, -26.66, and -16.23, and maximum value are 33.7, 48.72, and 48.83, respectively. However, the minimum value indicates that some of the banks have negative growth in some years. We measure profitability by the index of three proxies; return on asset (ROA), return on equity (ROE), and net interest/markup margin (NIMM). The mean value of ROA shows that banks included in the sample averagely earn 1.17 % from the investment of assets. Likewise, banks averagely yield returns 10.89% on the investment of shareholders equity. Further, the banks generate averagely net mark-up/ interest return at the rate of 3.23 %. Our next dependent variables is the bank stability. The mean value of stability (Z-score) is 17.96 with minimum value 0.30 and maximum value is 38.13. The first independent variable is credit risk which is measured by the proxies: Non-performing loan/gross loan (advances), Provision to non-performing loan/gross loan (advances), and Non-performing loan write-off/ provision against. The mean values of these proxies are 10.26, 7.69, and 17.87 with minimum values 0, 42.57, -54.56, and maximum values are 42.57, 33.95, and 100, respectively. The maximum values of these proxies are high, indicating that, on average, Pakistani banks are exposed to credit risks. Similarly, the mean values of liquidity risk proxies (current assets to total deposit and current assets to total assets) are 12.02 and 9, respectively. The mean values of these proxies are ranging between minimum value 5.93 and 3.43 and maximum values 65.95 and 27.76, respectively. It means that some of the banks have good liquidity position and other have worse liquidity condition.

Looking at the descriptive statistics of operational risk proxies, Admin expense/ non-markup or interest income has mean value 2.31 ranging between minimum value 0.02 and maximum value 15.87.

Table: 6.1 Descriptive statistics: All Banks

Variables	Obs	Mean	SD	Min	Max
Dependent variables					
Asset growth	286	14.31	8.51	-26.80	33.7
Deposit growth	286	16.49	11.10	-26.66	48.72
Loan/financing growth	286	16.16	14.20	-16.23	48.83
Return on Asset	286	1.17	0.83	0.02	6.4
Return on equity	286	10.89	10.54	-31.92	36.55
Net interest or markup Margin	286	3.23	1.13	0.08	7.17
Stability (Z-score)	286	17.96	9.301	0.30	38.13
Independent variables					
Non-performing loan/gross loan (advances)	286	10.26	6.89	0	42.57
Provision to non-performing loan/gross loan(advances)	286	7.69	4.86	0.08	33.95
Non-performing loan write-off/ provision against advances	286	17.87	22.45	-54.56	100
Current assets/total deposits	286	12.02	5.56	5.93	65.95
Current assets/total assets	286	9.00	3.52	3.43	27.76
Admin expense/ non-markup or interest income	286	2.83	2.31	0.02	15.81
Non-markup or interest expense/ total income	286	33.69	13.57	8.88	90.85
Admin expense/profit before interest and tax	286	2.35	7.34	-63.05	35.7
Total equity/total Asset	286	9.32	5.69	-3.10	33.22
Consumer price index	286	1.70	1.42	0.37	5.28
Real effective exchange rate	286	2.23	0.82	0.88	3.88
Lending rate	286	0.37	0.35	0.05	1.23
Control variables					
Bank size	286	8.42	0.60	6.86	9.98
Tax ratio	286	0.36	0.21	0	1.80
Cost efficiency	286	9.76	2.68	4.49	24.52
Deposit	286	8.28	0.60	6.66	9.52
Saving	286	14.11	2.19	9.56	19.32
Asset structure	286	42.64	10.16	15.33	70.86
Financial development	286	18.49	4.07	14.77	27.10
Moderating variables					
Board size	286	8.67	1.66	4	13
Board independence	286	26.48	18.53	0	100
CEO Duality	286	0.27	0.45	0	1
Board of directors meeting frequency	286	7.10	1.97	3	16
Audit committee members	286	3.93	0.74	3	6
Risk management committee	286	3.73	0.87	0	5
Bank ownership	286	0.36	0.48	0	1

The mean value of non-markup or interest expense/ total income is 33.69 ranging from minimum value 8.88 to maximum value 90.85. The maximum value indicates that non-markup/interest expense of some of the banks was too high which represents alarming situation for those banks. Further, the mean values for admin expense/profit before interest and tax is 2.35, ranging between minimum value -63.05 and maximum value 35.7. The minimum value denotes that some of the banks at the initial time of starting of business have 0 profit and admin expense was paid form equity. Similarly, the mean value of capital risk proxy (total equity/total asset) is 9.34 with minimum value -3.10 and maximum value 33.22.

By observing the descriptive statistics of macroeconomic risks, we find that the mean value for inflation rate risk proxy (CPI), exchange rate risk proxy (real effective exchange rate), and interest rate risk proxy (lending interest rate) are same for both IBs and CBs. The mean value of volatility in CPI is 1.7, the real effective exchange rate is 2.72, and the average of volatility of the lending interest rate is 0.372. One should note that both IBs and CBs are face the same macroeconomic factors or uncertain conditions. But this does not mean that both types of banking have same sensitivity to macroeconomic risks. Rather, as we have already mentioned in this study, both types of banks are very likely to be affected very differently.

Looking at the control variables, we see that the mean value of bank size is 8.42 with minimum value 6.86 and maximum value 9.98. The mean value of tax ration is 0.36, ranging between the minimum value 0 and maximum value 1.80. It represents that banks paid 36 percent tax on the total profit before tax. Likewise, the mean value of cost efficiency and deposits ration is 9.76 and 8.28, respectively. Further, the mean value of saving is 14.11 ranging between 9.56 and 19.32. It denotes that banks' national

saving is 14.11 percent of total GDP. Similarly, the mean value of asset structure is 42.64 with minimum value 15.33 and maximum value 70.86. The mean value indicate that the banks hold 42.64 percent loans out of total assets. Further, the mean value of financial development is 18.49, indicate that banks provide loans to private sectors 18.49% of total GDP.

Examine the descriptive statistics of moderating variable corporate governance attribute, averagely Pakistani banks have 8 directors in the board, minimum 4 and maximum number of directors are 13. Likewise, the banks have 26 percent independent directors in the board. The mean value of CEO duality is less than 0.5, it means that maximum banks have separate board chairman. Further, the board holds on average 7 meetings per year, where minimum meetings are 3 and maximum meetings are 16 per year. Also, the Table 5.1 shows that audit committee of banks has 4 members, where minimum 3 and maximum members are 6. The risk management committee includes averagely 4 members on average. However, some banks have no separate risk management committee, and thus the minimum value is 0. The mean value of the bank ownership is 0.36 and less than 0.5. This shows that most of the banks are domestic and only 36% banks are foreign.

6.2.2 Descriptive Statistics: Islamic versus Conventional Banks

Table 6.2 displays descriptive statistics including mean, standard deviation (SD), minimum value, and maximum value of bank-specific risks, moderating variables, and bank-specific control variables for IBs versus CBs. Country-level control variables (financial development, saving) and macroeconomic risks are not included. These variables are discussed in the full sample descriptive statistics in Table 6.1.

We observe that the mean value of growth proxies: asset growth (AG), deposit growth (DG), and loan/financing growth (L/FG) for IBs is higher than that of CBs. This means

that IBs are more attractive for customers. The possible reason may be that most of population of Pakistan are Muslims and they may prefer Islamic banking due to their religious belief. On the other hand, the mean value of profitability ratios (return on asset (ROA), return on equity (ROE), net interest/mark-up margin (NIMM)) is higher for CBs as compared to IBs. This shows that conventional banks are more efficient than Islamic banks with respect to the investment of assets and shareholders' equity. The statistics on the Z-score, proxy for financial stability, do not show any considerable difference between the two groups of banks. For example, the mean value of IBs is 17.97 and CBs is 17.95.

Looking at the descriptive statistic of independent variables, the average mean value of credit risk proxies: non-performing loan to gross advances (NPL), provision against advances to gross advances (PNPL), and non-performing loan write off to provision against advances (NPLW) for CBs is higher than that of IBs. These indicate that on average IBs face lower credit risk as compared to CBs. Unlikely, the mean value of liquidity risk proxies: current assets to total deposits (CD) and current assets to total assets (CA) are greater for IBs. It means that IBs have better liquidity position as compared to CBs. Moreover, the mean values of capital risk proxy (equity to total assets) for IBs are higher than their conventional counterparts. The higher ratio indicates that Islamic banks have better capital position and may be exposed to less capital risk.

Regarding the descriptive statistics of control variables, mean value of bank size, tax, and total deposit is greater for CBs compared to IBs. This show that, on average, CBs have greater bank size, pay more tax, and having more deposits. On the other side, the mean value of cost efficiency ratio is higher for IBs which indicates that IBs are more efficient in cost management than its conventional counterparts. Likewise, the asset

structure ratio for IBs is grater as compared to CBs. This shows that IBS have more portion of financing in the total assets.

Table 6.2: Descriptive Statistics: Islamic versus Conventional Banks

	Islamic Banks				Conventional Banks			
Variable	**Mean**	**S.Dev.**	**Min**	**Max**	**Mean**	**S. Dev.**	**Min**	**Max**
Dependent variables								
Asset growth	15.56	13.07	-26.79	33.7	14.03	7.12	-18.72	27.41
Deposit growth	22.37	12.97	-10.69	48.72	15.17	10.21	-26.66	48.19
Loan growth	28.18	15.42	-10.26	48.77	13.48	12.45	-16.23	48.83
Return on asset	0.77	0.55	.02	2.85	1.28	.859	.021	6.4
Return on equity	6.29	10.02	-16.17	23.35	11.91	10.40	-31.92	36.55
Net interest/markup margin	3.20	0.87	.89	5.21	3.28	1.19	0.08	7.17
Stability (Z-score)	17.97	8.89	7.07	38.13	17.95	9.42	.298	37.92
Independent variables								
Non-performing loan/gross loan	6.69	5.25	0.27	22.04	11.06	6.97	0	42.57
Provision to non-performing loan/gross loan(advances)	4.03	3.012	0.08	13.35	8.50	4.83	.28	33.95
Non-performing loan write-off/ provision against advances	14.76	28.16	-24.48	100	18.88	20.88	-54.56	95.35
Current assets/total deposits	14.59	7.33	6.66	40.37	11.45	4.92	5.93	65.95
Current assets/total asset	11.59	5.05	5.63	27.76	8.42	2.79	3.43	17.71
Admin expense/ non-markup or interest income	4.61	2.26	0.5	10.25	2.44	2.13	.019	15.81
Non-markup or interest expense/ total income	46.47	16.96	8.88	90.85	30.84	10.85	9.65	80.72
Admin expense/PBIT	1.96	14.04	-63.05	32.06	1.80	4.76	-11.18	35.7
Capital/Asset ratio	10.09	5.94	4.655	31.45	9.14	5.64	-3.10	33.22
Bank-specific control variables								
Bank size	8.00	0.45	6.95	9.01	8.50	0.595	6.86	9.98
Tax ratio	0.35	0.12	0	0.769	0.37	0.228	0	1.80
Cost efficiency	10.47	2.66	6.40	20.65	9.60	2.66	4.49	24.52
Deposit	7.93	0.48	6.66	8.83	8.36	0.592	6.77	9.52
Asset structure	46.10	10.79	27.43	66.79	41.87	9.88	15.33	70.86
Moderating variables								
Board size	8.21	1.65	6	12	8.55	1.64	6	13
Board independence	22.3	14.60	0	40	27.55	19.11	0	100
CEO duality	0.25	0.44	0	1	0.28	0.45	0	1
Board of directors meeting	6.25	1.50	4	9	7.30	2.02	3	16
Audit committee members	3.75	0.81	3	5	3.97	0.72	3	6
Risk management committee	3.50	1.08	0	5	3.79	0.81	0	5
Bank ownership	0.75	0.44	0	1	0.28	0.45	0	1

These statistics indicate that there are substantial differences between the both types of banks. Therefore, it is very likely both types of banks have significant different responses to the underlying interest variables, specifically the risks considered in this study.

Looking at the moderating variables' corporate governance attributes, on average conventional banks have more directors and independent directors in the board. Likewise, the mean value of CEO duality for both types of banks is less than 0.5. This shows that both types of banks have separate chairman of the board and CEO. Comparatively, the mean value of CEO duality in the case of Islamic banks are greater. Further, the number of director meeting per year, members of the audit committee, and members of the risk management committee are averagely higher for CBs compared to IBs. This shows that CBs have efficient and well-organized corporate governance system than IBs. As for bank ownership, the mean value is greater than 0.5 in the case of Islamic banks while less than 0.5 in the case of conventional banks. It means that majority of the Islamic banks are foreign, and most of the conventional banks are domestic.

6.3 Estimation Results

This section presents the estimation results of all empirical models used in the study. First, we provide estimation results for all basslines models. After that, the estimation results of augmented models are presented to determine the effects of bank-specific and macroeconomic risks across Islamic and conventional banks. Next, the empirical results of the models where we use interaction terms of corporate governance are provided. Finally, this section displays the results of both types of risks across domestic versus foreign Islamic and conventional banks.

6.3.1 Estimation Results: All Banks

Table 6.3 represents the estimation results for baseline Equations (5.1), (5.2), and (5.3) to determine the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of all banks. Panel A in Table 6.3 denotes the empirical

results of variables, where Panel B indicates the diagnostic tests results for model validity.

Table 6.3: Estimation results: All banks

Regressors	Model (1) Growth		Model (2) Profitability		Model (3) Stability	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Panel A: Estimation results						
Lagged growth	0.334***	(0.058)				
Lagged profitability			0.501***	(0.062)		
Lagged stability					0.874***	(0.069)
Credit risk	-0.240***	(0.055)	-0.203**	(0.091)	-0.057***	(0.007)
Liquidity risk	-0.287***	(0.073)	-0.232**	(0.114)	-0.013**	(0.005)
Operational risk	-0.116**	(0.060)	-0.293**	(0.149)	-0.038***	(0.012)
Capital risk	-0.437***	(0.220)	-3.319***	(1.263)	-0.272***	(0.032)
Inflation risk	-0.390***	(0.070)	-0.178***	(0.051)	-0.024***	(0.004)
Exchange rate risk	-0.149**	(0.058)	-0.230***	(0.070)	-0.025***	(0.006)
Interest rate risk	-0.843*	(0.278)	-0.590**	(0.243)	-0.060*	(0.014)
Bank size	0.171***	(0.229)	0.251**	(0.948)	0.051***	(0.018)
Tax	-0.536***	(0.570)				
Cost efficiency	0.603***	(0.228)				
Deposit			0.578***	(0.361)		
Saving			-0.190***	(0.291)		
Asset structure					0.233***	(0.061)
Financial development					0.169**	(0.068)
constant	4.788***	(2.509)	-5.774*	(5.238)	-1.152***	(0.225)
Panel-B: Diagnostic tests						
Observations	286		286		286	
Banks	22		22		22	
No. of instruments	21		20		18	
AR(1)	0.001		0.000		0.025	
AR(2)	0.295		0.442		0.427	
P-value	0.228		0.266		0.992	
J-state	9.85		12.29		8.45	
P-value	0.276		0.139		0.391	

The *J*-statistics test observes over identified restrictions to ensure the validity of the instruments and distributed as chi-squared under the null of instrument validity and the Arellano-Bond AR (2) test is to observe the second-order serial correlation in the residuals.

Standard errors are in parenthesis.

****p<0.01, ** p<0.05, * p<0.1*

Consistent with the earlier literature, we incorporate lagged value of the dependent variable to capture the persistency of growth, profitability, and stability measures, respectively in Model (1), Model (2), and Model (3). The coefficient of lagged growth, lagged profitability, and lagged stability are positive and significant at any acceptable level of significant. This finding shows that all dependent variables are persistent.

Panel A indicates that coefficient value of credit risk in all three models: growth model, profitability model, and stability model are significant and negative at the 1% significant level. This finding confirms that credit risk negatively affects the growth, profitability, and stability of banks. Further, this finding implies that banks with higher credit risk have less growth, are less profitable, and face financial instability. These results are in line with the studies of Tabari et al. (2013), Ghenimi et al. (2017), and Ali et al. (2019. Likewise, the growth, profitability, and stability are negatively affected by the liquidity risk. In the case of profitability and stability, the results are consistent with the empirical finding of Ghenimi et al. (2017), Olalekan et al. (2018) and Hassan et al. (2019).

Inspecting the results for operational risk, we find significant and negative coefficients in all models. Hence, operational risk negatively affects the growth, profitability, and stability of banks. Our results are in line with the results of previous studies Al-Tamimi et al. (2015) and Muriithi and Waweru (2017) and Alsyahrin et al. (2018. Similarly, the coefficient of capital risk in all models are significant and negative. In the case of profitability model, our finding is consistent with the results of Al-Tamimi (2015), Sutrisno (2016) and Mousal et al. (2018).

Overall, the estimation results provide sound evidence to confirm our first hypothesis: bank-specific risks (credit risk, liquidity risk, operational risk, capital risk) have

significant and negative impact on the growth, profitability, and stability of Islamic and conventional banks.

Examining macroeconomic risks, we find that the coefficient value of inflation risk is statistically negative and significant in all models. It means that variations in inflation rate deteriorate the growth, profitability, and stability of banks. The findings are aligned with the finding of Kanwal and Nadeem (2013), Aruwa and Musa (2014), Rashid and Khalid (2017) and Al-Homaidi et al. (2018). Inflation deteriorates the purchasing power of the depositors. Depositors withdraw their deposit from banks for immediate spending to protect themselves from further deterioration of monetary value. This will decrease total deposits of banks which result in financial instability.

Likewise, the coefficient of exchange rate risk is negative and significant in all three models. The results are consistent with the finding of Muriithi et al. (2016) and Al-Homaidi et al. (2018). Similarly, securitizing the effects of interest rate risk, the estimation results provide evidence of negative and significant impacts of interest rate risk on growth, profitability, and stability of banks. The possible reason may be that due to fluctuation in the interest rate debt cost may be superseding from asset' income of banks. Further, volatility in the interest rate affects the market value of elements in bank balance sheet, and thus affects the net worth of bank directly. The estimation of macroeconomic risks confirms the second hypothesis that macroeconomic risks (inflation risk, exchange rate risk, interest rate risk) have a significant and negative impact on the growth, profitability, and stability of banks.

Concerning the results of control variables, we find that bank size has positive impacts on growth, profitability, and stability. The finding suggests that larger banks have higher growth, profitability, and be more stable. This is consistent with the results of Adusei (2015), Ali and Puah (2018) and Shair et al. (2019). Likewise, we find positive

impacts of cost efficiency. It means that cost efficient banks have higher growth. Unlikely, the coefficient of the tax ratio is negative and significant. This means that higher tax declines the growth of banks. The other control variable in profitability model, deposit is positively and statistically significant at the 1% level. It means that higher deposit bank tends to invest more and earn high profit. Unlikely, the coefficient of saving is negative and significant. Similarly, in the stability model, the coefficient values demonstrate positively and significant effects of asset structure and financial development.

Panel B of Table 6.3 shows the diagnostic tests. Overall, diagnostic tests values support the instruments validity, where the instrument is robust and less than that of no of group in the sample. The Hansen *J*-test estimates do not provide any significance evidence in favor of rejecting the null hypothesis (There is no over-identifying restrictions in a statistical model). Also, Arleno and Bond tests indicates the models is free from 2nd order serial correlation in the residuals.

6.3.2 Estimation Results: Islamic vs Conventional banks

Table 6.4 represents the estimation results for the effects of bank-specific and macroeconomic risks on growth, profitability, and stability of IBs versus CBs. Panel B in Table 6.4 provides the results about the validity of the model. The results signify all standard of validity of the model. The values of AR (1), AR (2), and *J*-test show that there is no over-identifying restriction in the instruments and autocorrelation among the residuals. The number of instruments are less than the group.

Panel A represent that coefficient value of the lagged growth, lagged profitability, and lagged stability of both types of banks is positively and significantly associated to the one period lagged growth, lagged profitability, and lagged stability, implying that they are persistent.

The estimated value of credit risk shows significant and negative impacts of credit risk on growth, profitability, and stability of both type of banks. However, the results show that IBs have lower credit risk rather than its conventional counterparts. The reason is that IBs do not offer mortgage loans and loans backed by tangible assets. Mortgage loans is considering the main cause of financial crises. Secondly, Islamic law prohibits securitization which provide safeguard to IBs against defaulting loans. Finally, there is business partnership contract between banks and borrowers which may reduce credit risk exposure because it improves the adverse selection problems, reduces information asymmetry, and facilitate better understandings of borrowers' creditworthiness.

By observing the coefficient value of liquidity risk in all three models, we find a significant negative sign for liquidity risk for both IBs and CBs, but coefficients values are higher in the case of IBs. These results are in line with the findings of Safiullah and Shamsuddin (2018), and Mohammad et al. (2020). IBs cannot have access to many liquidity instruments and other common conventional financial tools like options and derivatives to obtain liquidity at time to manage their liquidity risk. Options and derivative are prohibited by Islamic law because of involvement of Gharar (uncertainty) and interest.

Based on the estimation results, we observe the negative and significant impact of operational risk on the growth, profitability, and stability for both types of banks. However, coefficients are higher for IBs compared to its conventional counterparts. The possible reason is that IBs exposed to extra operational risk result from Shari'ah non-compliance. In such situation the bank does not recognize the earnings and eventually mitigate the bank profit. Secondly, in case of non- profit and loss financing mode like leasing contracts, IBs undertake the assets' ownership and all associated risks until the end of contract. Furthermore, due to IBs complexity model, younger, and smaller size

of IBs might have higher cost structure, greater administration, and operating cost, which result in higher operational risk for IBs. Likely, we find a negative coefficient value of capital risk in all models for both IBs and CBs. However, the results suggest that IBs are more exposed to capital risk than CBs.

Looking at the estimation value of macroeconomic risks, we find negative significant sign of inflation risk in all three models. However, inflation risk has higher impacts on the growth, profitability, and stability in the case of IBs. The possible reason is that IBs are more involve in the transaction of real assets which is highly affected from inflation. Likewise, we find negative and significant impacts of exchange rate risk on growth, profitability, and stability. The estimated value of coefficient indicates that exchange rate risk has a greater impact in the case of IBs. By observing the impact of interest rate risk, we find insignificant effect of interest rate in the case of IBs. However, we find significant and negative coefficient in the case of CBs. It is consistent with general view that Islamic law restricts IBs to grant predetermined fixed interest rate on deposit and charge any type of interest on loans.

Overall findings provide evidence that bank-specific and macroeconomic risk affect differently the growth, profitability, and stability of Islamic and conventional banks. The reason is that there is a considerable difference in the structure of CBs and IBs. IBs operations running under the principles of Islamic Jurisprudence which eliminate any kind of transaction based on interest, gambling, short selling, Gharar (uncertainty) in contracts, and selling of debt. Islamic banks offer distinguishes products and dealing under two major kinds of contract: Asset based (non-participatory) contract like Ijarah, Salam, Istisna and Murabaha, and equity based (risk sharing) sharing contracts like Musharaka, and Mudaraba.

Table 6.4: Estimation results: Islamic versus Conventional banks

Regressors	Model-1 Growth		Model-2 Profitability		Model-3 Stability	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Panel A: Estimation results						
Lagged growth^{CBs}	3.648**	(1.427)				
Lagged growth^{IBs}	7.014***	(2.309)				
Lagged profitability^{CBs}			2.696***	(0.629)		
Lagged profitability^{IBs}			8.551**	(3.853)		
Lagged stability^{CBs}					0.937***	(0.292)
Lag stability^{IBs}					0.372**	(0.354)
Credit risk^{CBs}	-11.070 **	(0.441)	-4.280***	(0.167)	-0.191**	(0.091)
Credit risk^{IBs}	-7.426**	(10.745)	-2.273***	(0.019)	-0.018**	(0.085)
Liquidity risk^{CBs}	-5.090**	(2.097)	-0.325**	(0.191)	-0.088***	(0.052)
Liquidity risk^{IBs}	-8.483***	(3.091)	-19.654***	(14.02)	-0.183**	(0.080)
Operational risk^{CBs}	-0.109*	(0.276)	-0.197**	(0.049)	-0.278**	(0.031)
Operational risk^{IBs}	-6.312**	(2.575)	-5.842***	(1.896)	-0.549**	(0.269)
Capital risk^{CBs}	-1.17**	(0.472)	-0.170***	(0.047)	-0.022***	(0.007)
Capital risk^{IBs}	-1.728***	(0.578)	-6.681***	(2.341)	-0.172***	(0.058)
Inflation risk^{CBs}	-1.833**	(1.226)	-2.843***	(0.962)	-0.140**	(0.241)
Inflation risk^{IBs}	-2.477**	(1.991)	-33.918***	(11.88)	-0.622***	(0.067)
Exchange rate risk^{CBs}	-1.991**	(0.974)	-4.088***	(1.383)	-0.359**	(0.145)
Exchange rate risk^{IBs}	-9.662**	(3.929)	-21.699***	(7.536)	-0.464***	(0.063)
Interest rate risk^{CBs}	-4.567*	(2.366)	-11.667***	(3.985)	-1.760***	(0.657)
Interest rate risk^{IBs}	-4.209	(8.604)	- 3.673	(6.49)	-0.013	(0.061)
Bank size	42.098**	(17.336)	17.407***	(6.016)	0.655***	(0.224)
Tax	-2.752*	(1.425)				
Cost efficiency	4.237**	(1.701)				
Deposit			11.017***	(3.860)		
Saving			- 3.804***	(1.283)		
Asset structure					0.015*	(0.009)
Financial development					0.072**	(0.033)
Constant	42.891**	(18.98)	16.27***	(5.97)	3.271***	(1.217)
Panel B: Diagnostic Tests						
Observations	286		286		286	
Group	22		22		22	
No. of Instrument	19		21		20	
AR(1)	0.018		0.041		0.011	
AR(2)	0.502		0.731		0.522	
P-Value	0.214		0.829		0.112	
J-State	13.05		9.07		11.68	
P-Value	0.453		0.653		0.999	

Standard errors are in parenthesis

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

6.3.3 The Moderating Role of Corporate Governance in Establishing the Effects of Bank-specific and Macroeconomic Risks on the Growth

To inspect whether corporate governance play any significant moderating role in establishing bank-specific and macroeconomic risks' effects on the growth of both types of banks. We estimate the model given in Eq. (5.7) in Table (6.5). In Table (6.5), Panel B indicates the value of diagnostic tests which confirm the overall validity of model that there is no autocorrelation in residuals and no over-identifying restriction in the instruments. Table 6.5 Panel A shows that coefficient value of banks' growth is positively and significantly related to one period lagged growth in all three models. This shows that the banks' growth is persistent, and the banks which hold more growth previously would hold more growth in recent periods.

The estimated value in Table 6.5 panel A enables us to comparatively analyze the effects of both types of risks across the IBs and CBs before and after the inclusion of corporate governance in model. We observed the differential effects of risks in terms of coefficient. Looking at the estimated coefficient of both types of risks, we find that these both type of risks has significant and negative effect upon growth of both type of banks before the inclusion of interaction term. In Model (2), again both categories of risks have significant and negative effects on growth. While corporate governance displays positive effects on both types of banks' growth. It means that good CG increases the banks' growth. The reason is that corporate governance system efficiently monitors the utilization and investment of bank' overall assets and deposits. Also, the system develops and implement effective strategies for increasing bank deposits and granting of loans.

Inspecting at the estimation results with interaction term, we find that the effects of interaction terms (BSR × CGI and MER × CGI) on the growth are positive and significant across both type of bank. However, the coefficient of both categories of risks

changed due to the inclusion of interaction term (corporate governance) in the model. Therefore, before the interaction term, the effect of bank-specific risks for CBs is 20.2%, it reduced to 14.7% after the inclusion of interaction term. Correspondingly, in the case of IBs, CG decreases the impact of bank-specific risks from 19% to 16.2%.

Table 6.5: Moderating Role of Corporate Governance in the Growth Model

	(Model 1)		(Model 2)		(Model 3)	
Regressors	**Coefficient**	**SE**	**Coefficient**	**SE**	**Coefficient**	**SE**
			Panel A: Estimation Results			
Lagged growth^{CBs}	0.237***	(0.071)	0.253***	(0.094)	0.495***	(0.185)
Lagged growth^{IBs}	0.392***	(0.072)	0.588**	(0.257)	0.222***	(0.080)
BSR^{CBs}	-0.202***	(0.061)	-0.245***	(0.321)	-0.147**	(1.314)
BSR^{IBs}	-0.190***	(0.048)	-0.113**	(0.056)	-0.162***	(0.184)
MER^{CBs}	-0.165**	(0.037)	-0.214***	(0.078)	-0.121**	(0.189)
MER^{IBs}	-0.332***	(0.069)	-0.368***	(0.204)	-0.294***	(0.425)
CGI^{CBs}			0.266***	(0.089)	0.575**	(0.556)
CGI^{IBs}			0.223***	(0.060)	0.535**	(1.564)
BSR × CGI^{CBs}					0.866**	(0.806)
BSR × CGI^{IBs}					0.841***	(0.197)
MER × CGI^{CBs}					0.225*	(0.116)
MER × CGI^{IBs}					0.135**	(0.388)
Bank size	0.566**	(0.239)	11.052***	(0.173)	2.947***	(0.894)
Tax	-0.197**	(0.428)	-4.057***	(1.573)	-0.230***	(1.878)
Cost efficiency	1.527**	(0.699)	3.735***	(1.087)	11.558**	(8.017)
Constant	6.254**	(2.637)	14.141***	(1.770)	16.689**	(15.164)
			Panel B: Diagnostic tests			
Observations	286		286		286	
Banks	22		22		22	
No. of instruments	19		18		21	
AR(1)	0.004		0.025		0.046	
AR(2)	0.890		0.187		0.438	
P-value	0.140		0.172		0.118	
J-state	12.77		16.62		7.78	
P-value	0.620		0.255		0.650	

BSR is the index of bank-specific risks (credit risk, liquidity risk, operational risk, capital risk), MER is the index of macroeconomic risks (inflation risk, exchange rate risk, and interest rate risk) while CGI is the index of corporate governance attributes.
*Standard errors are in parenthesis *** $p<0.01$, ** $p<0.05$, * $p<0.1$*

Examining the influence of corporate governance on the effects of macroeconomic risks on growth, we find sound evidence that corporate governance mitigates the impacts of macroeconomic risks on the growth in both types of banks. For instance, with inclusion of interaction term in the model, the coefficient of macroeconomic risks is reduced to 12.1% from 16.5% in the case of CBs, and 29.4% from 33.2% in the case of IBs. This may be that macroeconomic risks are not in the control of bank management. However, the board of directors minimize and diversify the risks through effective timely decisions.

Overall, we find sound evidence that corporate governance positively moderates the negative impact of both types of risks on the growth of both categories of banks.

By observing the coefficient values of control variables, before the interaction term, we find a positive sign for bank size and cost efficiency. On opposite, the coefficient of tax ratio is negative. After the interaction term, again we find positive and significant coefficients for bank size and cost efficiency. However, the coefficient value of both variables increases positively after the interaction term. This means that corporate governance is playing efficient role in increasing bank size and in the management of cost.

6.3.4 The Moderating Role of Corporate Governance in Establishing the Effects of Bank-specific and Macroeconomic Risks on the Profitability

The estimation results for Eq. (5.8) are represented in Table 6.6. Panel A denotes the estimation values of variables, while Panel B indicate diagnostic tests signify the model validity. In Panel B, the values of AR (2) shows that there is no autocorrelation among the residuals. The value of *P*- value of *J*- state indicate that there is no over-identifying restriction in instruments. Overall, the results in Panel B confirms the model validity.

Table 6.6: Moderating Role of Corporate Governance in Profitability Model

Regressors	Model (1)		Model (2)		Model (3)	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Panel A: Estimation results						
Lagged profitability^{CBs}	0.289**	(0.120)	0.420***	(0.148)	0.229*	(0.196)
Lagged profitability^{IBs}	0.527***	(0.150)	0.239**	(0.115)	0.506*	(0.231)
BSR^{CBs}	-0.547**	(0.213)	-0.347***	(0.108)	-0.392**	(0.277)
BSR^{IBs}	-0.381**	(0.102)	-0.245***	(0.037)	-0.334*	(0.124)
MER^{CBs}	-0.147**	(0.068)	-0.079*	(0.045)	-0.116	(0.129)
MER^{IBs}	-0.206***	(0.078)	-0.115***	(0.029)	-0.094*	(0.199)
C.G^{CBs}			0.790**	(0.333)	0.192**	(0.184)
C. G^{IBs}			0.438***	(0.167)	0.694**	(0.883)
BSR × CG^{CBs}					0.972*	(0.504)
BSR × CG^{IBs}					0.640***	(0.222)
MER × CG^{CBs}					0.698**	(0.373)
MER × CG^{IBs}					0.292**	(0.330)
Bank size	0.741**	(0.354)	0.950***	(0.289)	1.310*	(0.685)
Deposit	1.417***	(0.361)	1.570***	(0.258)	1.869**	(0.801)
Saving	-9.668**	(4.103)	-1.194*	(0.933)	-0.528***	(1.107)
Constant	-8.639***	(5.597)	-6.480***	(1.515)	-4.300*	(2.263)
Panel B: Diagnostic Test						
Observations	286		286		286	
Banks	22		22		22	
Instruments	17		20		18	
AR(1)	0.002		0.007		0.008	
AR(2)	0.636		0.477		0.486	
P-value	0.444		0.422		0.693	
J-state	4.37		6.81		7.55	
P-value	0.498		0.558		0.273	

BSR is the index of bank-specific risks, MER is the index of macroeconomic risks, CGI is the index of corporate governance Standard errors are in parenthesis

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

In all models of Panel A in Table 6.6, the estimated coefficient of profitability recommend that banks' profitability is significantly and positively associated to one period lagged profitability. This suggest that those banks which are more profitable previously would profitable more in recent years. Further, Panel A provides evidence that both types of risks have negative and significant effects on the banks' profitability. However, the values of coefficients are different across the models. The coefficient

values of both categories of risks decrease after the inclusion of CG variables. For example, the coefficients of bank-specific risks for CBs and IBs are reduced to 39.2% and 33.4%, respectively. Similarly, the coefficients values of macroeconomic risks condensed to 11.6% and 9.4% in the case of CBs and IBs, respectively.

Looking at the estimates of CG, we find positive and significant impacts of CG on both types of banks' profitability. Likewise, the coefficients of interaction terms (BSR × CGI and MER × CGI) are statistically significant and positive for both IBs and CBs. Overall, the results conclude that both types of risks negatively affect the profitability, while interaction terms positively affect the profitability. It recommends that corporate governance plays significant role in mitigating the effects of risks on profitability.

6.3.5 The Moderating Role of Corporate Governance in Establishing the Effects of Bank-specific and Macroeconomic Risks on the Stability

To check the moderating role of corporate governance in establishing the impact of bank-specific risk and macroeconomic risks on the stability of IBs and CBs, the estimation results are presented in Table 6.7. Panel B in Table 6.7 represents the estimated values of diagnostic tests. The values of AR (2) provide evidence that residuals are free from 2nd order serial correlation. Likely, the probability of *J*-state confirms that there are no over-identifying restrictions in the model. Thus, the instruments applied to the models are valid. Overall, the value of these test shows the validity of models.

Observing the estimated values in Panel A, the coefficient of lagged stability of both IBs and CBs are positively and significantly related to the one-period lagged stability. This finding indicate that the dependent variable (stability) is persistent. Further, in all models, both types of risks have negative and significant effects on the stability. Unlikely, the corporate governance has positive and significant impacts on the stability of both types of banks.

When we estimate the influence of corporate governance as moderator, we observed that all interaction terms (BSR × CGI and MER × CGI) has a positive and statistically significant coefficient. However, the coefficient of both types of risks in Model (3) is smaller than the coefficients in Model (1). This is due to the positive influence of interaction terms on stability. Hence, these finding suggests that corporate governance reduced the severity of both types of risks on banks' stability.

Examining the coefficients of control variables before and after the inclusion of interaction terms, the coefficients of all control variables (bank size, asset structure, financial development) are positive and significant. However, the coefficients of these variables are increased after the inclusion of interaction terms. It shows that corporate governance is playing significant role in increasing the size of bank, effectively maintain the asset structure, and boost up lending to private sector. Overall, the estimation results from Table 6.5, 6.6, and 6.7 confirms that corporate governance has a positive impact on the growth, profitability, and stability of both IBs and CBs. In addition, the results provide evidence that corporate governance reduces the negative impact of both types of risks. Thus, corporate governance is playing significant moderator role in the relationship between both types of risks and growth, profitability, and stability of both types of banks. The possible reason may be that corporate governance builds up enough relationship with shareholders and share market and uphold the trust and confidence of investors and depositors, as result of which bank allocate careful resources and attract more deposits, capital, and investment. Moreover, CG ensure accountability and transparency, and monitor management, investment, lending and borrowing of the banks efficiently. It also manages and diversify risks through risk management framework. Ultimately, reduce mismanagement, corruption, fraud, and financials costs.

Table 6.7: Moderating Role of Corporate Governance in Stability Model

Regressors	(Model 1) Coefficient	SE	(Model 2) Coefficient	SE	(Model 3) Coefficient	SE
Panel A: Estimation result						
Lagged stability^{CBs}	0.843***	(0.029)	0.827***	(0.024)	0.963***	(0.172)
Lagged stability^{IBs}	0.832***	(0.024)	0.817***	(0.020)	0.122***	(0.195)
BSR^{CBs}	-0.031*	(0.006)	-0.024*	(0.010)	-0.012***	(0.051)
BSR^{IBs}	-0.047***	(0.002)	-0.116***	(0.003)	-0.019**	(0.017)
MER^{CBs}	-0.108**	(0.004)	-0.021***	(0.006)	-0.007**	(0.012)
MER^{IBs}	-0.72***	(0.007)	-0.036***	(0.009)	-0.045***	(0.020)
C.G^{CBs}			0.026**	(0.007)	0.099***	(0.029)
C. G^{IBs}			0.041***	(0.009)	0.408***	(0.096)
BSR × CG^{CBs}					0.072**	(0.040)
BSR × CG^{IBs}					0.106***	(0.023)
MER × CG^{CBs}					0.029*	(0.006)
MER × CG^{IBs}					0.048**	(0.018)
Bank size	0.031***	(0.004)	0.028***	(0.002)	0.102***	(0.022)
Asset structure	0.139***	(0.025)	0.065*	(0.036)	1.120***	(0.356)
Financial development	0.011*	(0.056)	0.150***	(0.045)	0.565**	(0.286)
Constant	-0.288***	(0.070)	-0.330***	(0.066)	-1.939***	(0.634)
Panel B: Diagnostic test						
Observation	286		286		286	
Banks	22		22		22	
Instruments	18		21		19	
AR(1)	0.006		0.007		0.011	
AR(2)	0.186		0.132		0.136	
P-value	0.178		0.976		0.486	
J-state	18.18		15.71		11.85	
P-value	0.110		0.108		0.605	

BSR is the index of bank-specific risks (credit risk, liquidity risk, operational risk, capital risk), MER is the index of macroeconomic risks (inflation risk, exchange rate risk, and interest rate risk) while CGI is the index of corporate governance attributes.

Standard errors are in parenthesis

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Hence, the estimated value in Tables 6.5, 6.6, and 6.7 provide sound evidence to confirm our proposed hypothesis: corporate governance has positive and significant effects on the growth, profitability, and stability of Islamic and conventional banks.

Secondly, corporate governance moderates the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of Islamic and conventional banks.

6.3.6 Moderating Role of Bank ownership (Domestic versus Foreign) in Establishing the Effects of Bank-specific and Macroeconomic Risks on the Growth, Profitability, and Stability.

The baseline models are augmented by classifying banks based on ownership (domestic versus foreign). The results of extended models are presented in Table 6.8 to explain the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability across domestic and foreign Islamic and conventional banks. In Table 6.8, BSR_DCBs denotes bank-specific risks for domestic conventional banks, BSR_FCBs represent bank-specific risks for foreign conventional banks, BSR_DIBs display bank-specific risks for domestic IBs, and BSR_FIBs signify bank-specific risks for foreign Islamic banks. Likewise, MER_DCBs indicates macroeconomic risks for domestic conventional banks, MER_FCBs shows macroeconomic risk for foreign conventional banks, MER_DIBs denotes macroeconomic risks for domestic IBs, and MER_FIBs represent macroeconomic risks for foreign IBs.

Table 6.8 consists of two section: Panel A and Panel B. Panel A demonstrates the estimated results for research variables which enables us to explore the effects of both types of risks across domestic and foreign IBs and CBs. There are observed negative effects of both types of risks in all models for IBs and CBs. However, we find differential effects of these risks in terms of size of the coefficient across domestic and foreign IBs and CBs

Looking at the estimated coefficient of bank-specific risks, we find that foreign CBs are exposed less to bank-specific risks as compared to domestic CBs. Similarly, the effects of bank-specific risks are greater in the case of domestic IBs rather than foreign

IBs. Moreover, the estimated coefficients of macroeconomic risks show that both types of domestic banks are more exposed to macroeconomic risks as compared to both types of foreign banks.

Overall, the estimated results suggest that the growth, profitability, and stability of domestic IBs and CBs are more affected by bank-specific and macroeconomic risks as compared to foreign IBs and CBs. Usually, foreign banks have higher capital, high profit, lower financial instability, and high operational efficiency. In addition, foreign banks have better regulation and supervision, advance technology, superior management practices, and better techniques and tools to mitigate and diversify risks effectively (Rahman & Reja, 2015; Noor & Mohamed, 2019). Moreover, foreign banks have ability to increase liquid funds or capital easily from international market and obtained supports in term of management, skills, financial and expertise which increased the soundness and stability of foreign banks and decrease their risks (Ongore, 2011; Rahman et al.. 2012).

Foreign shareholders are playing significant role in the monitoring moral hazards of the managers and forcing firms to develop transparent corporate governance, which leads to better relationships among stakeholders and mitigate informational asymmetries (Oh et al., 2011).

In all three models, the coefficients of lagged growth, lagged profitability, and lagged stability are statistically significant and positive. This finding suggests that all dependent variables are persistent, and banks having high growth and more profitable and stable in previous period would have high growth and more profitable and stable in current periods. By looking at the coefficients of control variables in all models, bank size is positively and statistically significant to growth, profitability, and stability of

banks. It means that large banks have high growth in their deposits, assets, and loan/financing. Further, large banks are highly profitable and stable.

Table: 6.8 Moderating Role of Bank Ownership (Domestic versus Foreign)

	Model-1 Growth		Model-2 Profitability		Model-3 Stability	
Regressors	**Coefficient**	**SE**	**Coefficient**	**SE**	**Coefficient**	**SE**
			Panel A: Estimation results			
Lagged growth^{CBs}	0.380***	(0.516)				
Lagged growth^{IBs}	0.932***	(1.029)				
Lagged profitability^{CBs}			0.395***	(0.114)		
Lagged profitability^{IBs}			0.143**	(0.193)		
Lagged stability^{CBs}					1.209***	(0.297)
Lagged stability^{IBs}					1.590***	(0.312)
BSR_DCBs	-0.555**	(0.098)	-0.664***	(0.284)	-0.087**	(0.081)
BSR_FCBs	-0.402**	(0.102)	-0.122**	(0.077)	-0.012**	(0.030)
BSR_DIBs	-0.452*	(0.083)	-0.110***	(0.370)	-0.049***	(0.013)
BSR_FIBs	-0.334**	(0.061)	-0.527***	(0.179)	-0.017**	(0.010)
MER_DCBs	-0.488**	(0.211)	-0.423*	(0.218)	-0.044*	(0.023)
MER_FCBs	-0.347**	(0.111)	-0.040*	(0.103)	-0.010 **	(0.011)
MER_DIBs	-0.404*	(0.171)	-0.282**	(0.239)	-0.046**	(0.019)
MER_FIBs	-0.170***	(0.629)	0.119***	(0.105)	-0.031***	(0.010)
Bank size	0.634*	(0.886)	1.641*	(0.901)	0.053**	(0.042)
Tax	-0.359**	(0.148)				
Cost efficiency	0.764*	(0.281)				
Deposit			0.903*	(0.388)		
Saving			- 0.133**	(0.702)		
Asset structure					0.795*	(0.277)
Financial development					0.406**	(0.178)
Constant	4.067***	(0.287)	3.021**	(1.367)	0.621***	(0.087)
			Panel B: Diagnostic tests			
Observations	286		286		286	
Banks	22		22		22	
Instruments	19		18		21	
AR(1)	0.068		0.010		0.022	
AR(2)	0.732		0.782		0.415	
P-value	0.301		0.397		0.981	
J-state	7.46		6.830		8.05	
P-value	0.487		0.981		0.709	

Standard errors are in parenthesis

*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Unlikely, the coefficient of tax ratio is negatively related to the banks' growth. This results suggests that high tax rate diminish the growth of banks. Next, we find the

positive coefficient of cost efficiency, which imply that effective management of cost boost up the growth of banks.

Looking at the estimated coefficient of deposits, we find a positive and statistically significant relationship between deposits and profitability of banks. This result shows that banks having greater deposits would be more profitable. In opposite, we find a negative coefficient of saving, which suggests that increase amount of saving as percentage of GDP decreases the profitability of banks. Moreover, the coefficients of control variables in stability model indicate that both variables asset structure and financial development are positively related to the stability of banks. It means that high portion of loan/financing in total assets increases the stability of banks because banks earn more return on the granting of loan/financing. In addition, the increase amount of credit to private sector increases the bank stability.

The value of diagnostic tests in Panel B, provide evidence regarding the overall validity of model. The values of autocorrelation test; AR (1) suggest that all models are free from the problem of 2nd order autocorrelation. Similarly, the value of *J*-test stipulate evidence that all instruments applied to the models are valid and no over-identifying restrictions are existing in the instruments.

6.4 Concluding Remarks

We present the descriptive statistics and empirical results of all regression models. The descriptive statistics described that there are differences in the mean values of IBs and CBs. The mean value of IBs growth is higher as compared to CBs. On the contrary, the mean value of profitability variables of CBs is higher than that of IBs. Yet, we find no considerable difference in the stability of both types of banks. Likewise, in the case of risks variables, we find that the mean value of credit risk is greater in the case of CBs, while the mean value of all other bank-specific risks are higher in the case of IBs.

The empirical results of baseline models show the negative effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of IBs and CBs. Next, we explore the comparative differential effects of both types of risks across IBs and CBs. Yet, we find that IBs are less exposed to credit risk as compared to CBs. On the other side, we observe higher coefficients values for liquidity risk, operational risk, and capital risks in the case of IBs. Concerning the macroeconomic risks, we document that IBs are more exposed to inflation rates risk and exchange rates risks. However, the growth, profitability, and stability of IBs are not affected by the interest rate risk. Yet, Interest rates risk has a significant impact only in the case of conventional banks.

The estimated values of augmented models testify the significant moderating role of corporate governance in the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of IBs and CBs. We document that corporate governance mitigated the impacts of both types of risks. At the end, the results of extended models suggested the differential effects of both types of risks across domestic and foreign IBs and CBs. We find that both types of domestic banks are more confronted to bank-specific and macroeconomic risks. Overall, the empirical results satisfied all our research questions and hypotheses constructed based on the theoretical underpinning.

CHAPTER 7

CONCLUSION AND POLICY RECOMMENDATION

7.1 Introduction

The purpose of this chapter is to enlighten the conclusion, key findings, policy recommendations and implications, and future research suggestions. The chapter is divided into sub sections. First, the chapter describe the key finding which we obtained from the estimation of panel data by using the technique of two-steps system GMM. Next, we comprehensively discuss the policy recommendations and implications for banks in the light of key findings. Finally, the chapter provides some suggestions to academician and researchers for conducting further research.

7.2 Conclusion and Key Findings

This empirical study is conducted to examine the growth, profitability, and stability of IBs and CBs in Pakistan over the period 2007-2019. Specifically, we have analyzed the impacts of bank-specific and macroeconomic risks on the growth, profitability, and stability of banks operating in Pakistan. The bank-specific risks include credit risk, liquidity risk, operational risk, and capital risk, while macroeconomic risks consist of inflation rates risk, exchange rate risks, and interest rates risk. Our next objective is to determine the effects of both types of risks across IBs and CBs. In addition, this study is aimed to inspect whether corporate governance moderate the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of both types of banks. Moreover, the study investigates the impacts of both types of risks across domestic versus foreign IBs and CBs. Most importantly, it is noted that we also studied theoretically the Shari'ah perspective of risk.

To fulfil the objectives of research, this study has undertaken panel dataset of IBs and CBs operating in Pakistan for the period 2007-2019. We constructed twelve (12)

regression models. First, we constructed three baseline models to investigate the panel dataset of full sample banks. Next, we expanded the bassline models for inspecting the effects of bank-specific and macroeconomic risks on IBs and CBs. Further, three models were constructed by augmented baselines models to evaluate the moderating role of corporate governance. Finally, we developed another three models for the evaluation of impacts of risks across domestic versus foreign banks. All regression models were estimated by using two-steps system Generalized Method of Moment (GMM).

The first objective of the study is to critically analyze the Islamic perspective of risk. The literature review concluded that Shari'ah recognize the general concept of risk. There are certain Qur'anic verses, hadiths, Shari'ah maxims, and events occurred in the life of Prophet Muhammad (P.B.U.H) which provide evidence that Shari'ah not only recognized the concept of risk, but also provide general guidelines about the identification, mitigation, and management of risk occurred in daily life and business transactions.

As for descriptive statistics discussed in previous chapter, we found that averagely IBs have shown higher growth in their assets, deposits, and financing than their conventional counterparts. Contradictory, CBs averagely generate higher net return on their investment of assets and equities. However, in the case of stability no considerable difference exist in the mean value of both types of banks.

Reviewing the descriptive statistics of independent variables, the mean value of credit is higher in the case of conventional banks. On the other side, the mean value of liquidity risk, operational risk, and capital risk proxies were higher for IBs. Concerning to the macroeconomic risks, all risks have same mean value for both types of banks. Because these risks are specific to macroeconomic factors. Additionally, the descriptive

statistics indicated that CBs are averagely larger in size, hold more deposits, and paid more tax as compared to IBs. On the other hand, on average, IBs are more effective in cost management and hold larger financing as portion of total assets. The other control variables financial development and saving have same mean value for both types of banks because these are specific to macroeconomic conditions.

The mean values of corporate governance attribute conclude that conventional banks have larger board size, greater board independence, and higher number of meeting per year, and larger audit and risk management committee. Additionally, we conclude from the mean value of CEO duality that most of the banks have separate CEO and chairman of the board. Moreover, the mean value of bank ownership indicates that most of the IBs shares hold by the foreign shareholder.

After the depiction of descriptive statistics, we estimate all empirical models through two-steps system Generalized Method of Moment (GMM). We conclude the following main findings from the estimation of all models.

- All bank-specific risks have negative and significant impacts on the growth, profitability, and stability of all banks.
- All macroeconomic risks have negative and significant effects on the growth, profitability, and stability of all banks.
- When comparing IBs versus CBs, the results show differential effects of both types of risks. Yet, the growth, profitability, and stability of CBs are more exposed to credit risks as compared to IBs. On the other side, the growth, profitability, and stability of IBs are more exposed to liquidity risk, operational risk, and capital risk. Additionally, the inflation rates risk and exchange rates risk have higher negative and significant impact on the growth, profitability, and stability of IBs. However, interest rate risks have insignificant and negative

impact on the growth, profitability, and stability of IBs. Interest rate risks have only significant and negative effect in all models for only CBs.

- Corporate governance has positive and significant impact on the growth, profitability, and stability of IBs and CBs.
- Corporate governance also significantly moderates the effects of both types of risks on the growth, profitability, and stability across IBs and CBs. Corporate governance reduces the negative effects of both types of risks.
- The effects of both types of risks on the growth, profitability, and stability of both types of banks are sensitive to the bank ownership. The growth, profitability and stability of domestic IBs and CBs are more exposed to both types of risks as compared to foreign IBs and CBs.
- Finally, we determined from the literature survey that Shari'ah (Islamic law) documented the concept of risks distinctly from other related term like Gharar (uncertainty). Shari'ah allowed to consider and encounter the negative effects of risks in all field of life.

7.3 Recommendation and Policy Implications of the Study

This study has substantial application and recommendations for various stakeholders: bank management, policy makers, regulators, and investors. Our findings facilitate stakeholders to build a better understanding of various types of bank-specific and macroeconomic risks that adversely affect the bank activities. Efficient management of risks and execution of good corporate governance practices are essential for bank management to identify the problems timely and bring rapid improvements and to be safe and sound from financial crises. The risk management department of bank are suggested to perform their functions attentively to not only minimize risks but also improve the overall performance of banks.

The bank manager and policy makers need to pay more attention to bank-specific risks, because these risks are in the control of bank management. They might effectively mitigate these risks by devising and implementing effective internal control system. The risk managers and top management are suggested to regularly monitor macroeconomic environments besides with bank' internal environment. Both types of banks are required to be proficient in forecasting volatility in country macroeconomic factors like inflation, interest rates, and exchange rates. The ability of forecasting future inflation may assess banks' management to adjust its interest rate beyond the inflation. It is notable that taking or receiving of interest are not allowed in IBs but forecasting of inflation may assess the decision makers of IBs about the rate of profit sharing, investment of assets, and financing quantity. In addition, the banks are mostly involved in international banking activities. So, bank managers are required to understand the deep knowledge of fluctuation in country exchange rate. This may facilitate banks to hold proper foreign exchange reserve and careful dealing in foreign currencies. Bank managers may also know that fluctuation in macroeconomic factors is not always have adverse effects, but it may be a chance of earing high profit. However, it depends on the condition that mangers could accurately forecast its movement and adjust their resources accordingly. Thus, we clearly suggest that banks' management must thoroughly observe the variation in macroeconomic factors and diversify banks' investment portfolio accordingly to minimize the adverse impact of macroeconomic risks.

The regulators and supervisory authorities of banks may formulate such policies and internal control system that effectively manage various risks and ensure that overall risks are within acceptable level. In addition, they may understand the structural and functional differences exist between IBs and CBs. Hence, they are requiring to

formulate separate risk management policies and strategies for both types of banking system. The growth, profitability, and stability of IBs are more exposed to various risks; therefore, regulators are requiring to devise separate risk management regulation and polices. We also suggest that Shari'ah compliant risks mitigation tools might be design for Islamic banks, because the traditional risk mitigation tools like derivative, securitization, selling of loan, mortgage, and hedging are not allowed in Shari'ah. This will assess Islamic banks to manage and effectively diversify the impacts of various risks.

We documented in key findings that corporate governance reduced the negative impact of bank-specific and macroeconomic risks. The managers might know that implementation and execution of good corporate governance have advantage of reducing risks and increasing performance. Thus, we recommended that managers, shareholders, and regulators may ensure effective corporate governance practices which guarantee transparency and efficient allocation of resources. Efficient corporate governance mechanism restricts bank management from taking excessive risk and maintaining the risks within prudent level.

At the end, the study provides sufficient knowledge for academia about the adverse effects of various types of risks. The discussion about negative impacts of various types of risks are evolving rapidly after the financial crises 2007-08. Financial crises have confirmed that many financial institutions became bankrupt which have improper risk management process and polices to encounter with various risks. Hence, this study efficiently explores the adverse impact of various risks in the case of both types of banks. The study also documented that various types of risks have different impacts across IBs and CBs.

7.4 Recommendations for Future Research

This study has only focused on the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of conventional and full-fledged Islamic banks in the context of Pakistan. The study of risks is a continuous issue in the financial industry throughout the globe, particularly after the financial crises 2007-08. Hence, there will worthwhile for carrying out a comprehensive research study from time to time. The reason is that changes are taking place in term of rules, regulations, policies, strategies, and product innovations. Also, the new techniques and tools are developed to effectively deal with various risks. Further, in the case of Islamic banks, new Shari'ah compliant product are designed with time. Thus, conducting future research on the same topic with different sample period may give different results from this study.

As this study is conducted only on the sample of Pakistani banks, future research can be carried out on the sample of different countries. In addition, the research may be conducted to compare the impacts of risks among various countries or regions. Further, we compare the impacts of risk across IBs and CBs in Pakistan and included limited number of IBs as operating in Pakistan. In future, more IBs may be included from other countries, and examine only the sample of worldwide IBs.

It is also suggested that more macroeconomic factors may be included in the future studies. Moreover, it might be interested to conduct compressive study on the same topic where the impacts of risk would be observed across different systematic crises periods, such as before, during, and after the Covid-19 pandemic. Another possible extension is to include more attributes of corporate governance as moderator or included different moderating variables like institutional quality, country governance and political uncertainty etc. In the case of Islamic banks, the role of Shari'ah

Supervisory board (SSB) may examine in the mitigation of risks' impact on the banks' performance.

We only examined the moderating role of bank ownership as domestic verses foreign banks. In future, the moderating role of bank ownership may be examining in different way like private ownership, public ownership, family ownership, and ownership concentration etc.

7.5 Limitations

As this study is conducted to examine the effects of bank-specific and macroeconomic risks on the growth, profitability, and stability of IBs and CBs in Pakistan for the period 2007-2019. There has been some limitation to carry out the research. First, there are limited number of full fledge Islamic banks are operating in Pakistan. Presently, only 5 full fledge Islamic banks is operating in Pakistan, where one Islamic bank (MCB Islamic bank limited) started its operation in 2015 and excluded from the sample because it does not cover the sample period. Also, we do not include Islamic divisions or windows of conventional banks, because these banks do not have separate corporate governance for Islamic division or windows. As corporate governance is our main moderating variables. Hence, our sample includes total of 4 full fledge Islamic banks. Secondly, we only consider Pakistani banks due to the unavailability of other country data. In future, the sample may be enhancing by including more banks from other countries.

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Annexure 1: Scheduled Banks and their Branches in Pakistan

S.No	Banks	Branches
A)	**Public Sector Commercial Banks**	**2651**
1	First Women Bank Ltd.	43
2	National Bank of Pakistan	1,509
3	Sindh Bank Ltd.	322
4	The Bank of Khyber	170
5	The Bank of Punjab	607
B)	**Specialized Banks**	**665**
2	SME Bank Ltd.	13
3	The Punjab Provincial Cooperative Bank Ltd.	151
4	Zarai Taraqiati Bank Ltd.	501
C)	**Domestic Private Banks**	**11376**
1	Al Baraka Bank (Pakistan) Ltd.	184
2	Allied Bank Ltd.	1380
3	Askari Bank Ltd.	486
4	Bank Al Falah Ltd.	666
5	Bank Al Habib Ltd.	771
6	BankIslami Pakistan Ltd.	259
7	Dubai Islami Bank Pakistan Ltd.	235
8	Faysal Bank Ltd.	554
9	Habib Bank Ltd.	1668
10	Habib Metropolitan Bank Ltd.	367
11	JS Bank Ltd.	339

12	MCB Bank Ltd.	1400
13	MCB Islamic Bank Ltd.	179
14	Meezan Bank Ltd	798
15	Samba Bank Ltd.	40
16	Silk bank Ltd.	123
17	Soneri Bank Ltd.	313
18	Standard Chartered Bank (Pakistan) Ltd.	60
19	Summit Bank Ltd.	193
20	United Bank Ltd.	1361
D)	**Foreign Banks**	09
1	Citibank N.A.	03
2	Deutsche Bank AG	02
3	Industrial and Commercial Bank of China Ltd.	03
4	Bank of China	01

Annexure 2: List of Sample Banks

S.No	Banks	Branches	Year of Establishment
1	First Women Bank Ltd.	43	1989
2	National Bank of Pakistan	1,509	1949
3	The Bank of Khyber	170	1991
4	The Bank of Punjab	607	1989
5	Faysal Bank Ltd.	554	1994
6	Allied Bank Ltd.	1380	1942
7	United Bank Ltd.	1361	1959
8	Silkbank Ltd.	123	2008
9	Askari Bank Ltd.	486	1991
10	Standard Chartered Bank (Pakistan) Ltd.	60	2006
11	Bank Al Habib Ltd.	771	1991
12	JS Bank Ltd.	339	2007
13	MCB Bank Ltd	1400	1947
14	Habib Metropolitan Bank Ltd.	367	1992
15	Samba Bank Ltd	40	1980
16	Habib Bank Ltd.	1668	1941
17	Bank Al Falah Ltd.	666	1997
18	Soneri Bank Ltd.	313	1991
19	Meezan Bank Ltd	798	2002
20	Al Baraka Bank (Pakistan) Ltd.	184	1991
21	Dubai Islami Bank Pakistan Ltd.	235	2005
22	BankIslami Pakistan Ltd	259	2004