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BANK GOVERNANCE AND RISK-TAKING: A SURVEY OF THE LITERATURE

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Abstract: This paper aims to review the existing theoretical and empirical literature on the relationship between bank governance mainly board of directors' features and risk-taking to provide a full understanding of the prior research and offer guidance for investors, regulators, and researchers about the points of consensus and disagreement among researchers around the issue and to suggest opportunities for future research in this field. The relationship between corporate governance and risk-taking in the banking industry gained increased attention in the last few years due to a series of financial scandals particularly, the global financial crisis that escalated in 2007-2008. Banks are unique financial institutions and they differ from non-financial institutions which justifies that the set of traditional corporate governance mechanisms does not hold for banks. Thus, focusing on the vast number of the key elements of corporate governance such as the features of the board of directors that may affect the risk-taking decisions, this paper attempted to bring together this diverse body of knowledge to clarify the main issue about corporate governance of banks. In light of the discussion of the existing literature, this paper concludes that the effect of the board of directors features on the risk-taking of banks still requires more empirical investigation using alternative analytical methods and alternative measures of risks of the banking industry in general and IBs particularly. Besides that, future studies should pay more attention to the risk-taking of IBs and the differences across their Shariah governance models, the effect of the features of the Shariah supervisory board (SSB), and the role of SSB with interaction with the board of directors.

Keywords: Banks, corporate governance, risk-taking.

1. Introduction

The majority of the countries across the world have witnessed several financial scandals and crises in the last few decades. This can be seen clearly in some notable cases such as WorldCom Inc, Enron, and Adelphia and the Asian financial crisis in the late 1990s as well as the last global financial crisis (GFC) in 2007 (Quadri, 2010), which have been attributed to the failure of the most developed and best-equipped global governance system (Goldin and Vogel, 2010). Although in response to the 2007/2008 GFC, a lot of new regulations and governance reforms have been taken place, the corporate governance system in emerging economies is still weak (Mehmood et al., 2019). For example, recently, some large banks failed such as the first NBC bank in 2015 and the NBC bank of New Orleans in 2017. Thus, it could be argued that banks' new efforts to improve corporate governance mechanisms remain ambiguous and under debate.

More precisely, the global financial crisis shows, among various issues, governance mechanisms of banks are still weak and not understood by scholars as well as the policymakers in terms of its influence on bank risk-taking (Kirkpatrick, 2009). For Basel Committee on Banking Supervision (BCBS, 2015) the effectiveness of corporate governance is crucial to reach the proper function of the banking sector and the economy as a whole. This is because banks perform a crucial role in the economy as intermediating funds from savers and depositors to activities that support enterprise and help drive economic growth. Thus, the safety and soundness of banks are the key elements of financial stability and central to economic health. This means that any weakness in the governance of banks as the hub of the financial system may result in the transmission of problems across the banking sector and the economy as a whole. The importance of the effectiveness of corporate governance of the banks' sector has much emphasized due to the importance of the banks' sector in the economy (Fernandes et al., 2018). In the same manner, Stulz (2015) argues that the structure of good governance policies of banks might enable them to experience an optimal level of risk which helps managers to increase the value of shareholders. Before the global financial crisis in 2007-2008, only a few studies have been focused on banks' governance (e.g., Macey and O'Hara, 2003; Levine, 2004; Adams and Mehran, 2005; Caprio et al., 2007), but after 2007, a significant body of researches have tried to examine the governance of banks (e.g., Pathan and Faff, 2013; Abedifar et al., 2013; Safiullah and Shamsuddin,2018; Aljughaiman 2019; Nsaibi and Rajhi,2020; Brogi and Lagasio,2021; Liu and Sun,2021). This is because there are arguments the last financial crisis in 2007 is due to the failure in governance mechanisms, such as lax board oversight and flawed executive compensation practices that encourage aggressive risk-taking (Erkens et al., 2012; Krikpatrick, 2009; Sharfman, 2009).

Corporate governance is a set of mechanisms mainly set up to address the agency problems and control the risk of the firms. However, the nature of the banking industry and the complexity of its business increase the challenges of governance mechanisms such as existing information asymmetry and the limitation of stakeholders to monitor bank managers' decisions. The complexity of banks' business is related to the idiosyncratic nature of the banking industry, making it difficult for stakeholders to monitor their banks. Banks' complexity can take the form of the quality of loans not being clearly due to for example the absence of critical standards of credit rating as to perceived, absence of transparent of financial engineering, complicated of proving financial statements, the ability to modify risk of investment (Levine, 2004). Therefore, banks business complexity is one of the reasons that aggravates the banks' governance problem, thus banks need a board of directors (BoD) has not only to have to monitor the efficiency of managers but also have to provide valuable advice to managers to run the bank (De Andres and Vallelado, 2008). The Board of directors is the representative of shareholders in the corporation (Adams and Mehran, 2012; De Andres and Vallelado, 2008). Thus, boards are one of the most important, arguably even the most important corporate governance mechanisms that fulfill the role of monitoring the management and identifying the risk. It is undoubtedly being as vital to deeply understand the governance of banks and their boards as it is now in the aftermath of the financial crisis, this is because the BoD is at least partly, being blamed for occurring these crises (Fernandes et al., 2018). The BoD has a function to supervise, establish the risk control system, and advise the management, all these are the key elements of the governance mechanisms. In prior literature, the role of the strong BoD in terms of its size, the fraction of the independent BoD, experts, and qualification of its members are received much debate (e.g. Yermack 1996; Jensen 1993; Cheng 2008; Huang and Wang, 2015; Akbar et al., 2017; Wang, 2012; Coles et al. 2008; Koerniadi et al., 2014; Mamatzakis et al., 2017; Hunjra, et al., 2020; Liu and Sun, 2021), but the evidence for the beneficial effect of boards' structure on bank risk-taking has remained far from convincing. One of the main reasons that stand behind the inconclusive results of prior studies is failed to account for the endogeneity issue that emerges from the joint determination of board structure and the value of the firm. Roberts and Whited (2012) argue that "Endogeneity leads to biased and inconsistent parameter estimates that make reliable inference virtually impossible"(p.6). Therefore, attention has to pay when analyzed the findings that examine the board structure-performance relationship whether the empirical method employed is enough appropriate to control for all relevant sources of endogeneity (Wintoki et al., 2012). Furthermore, the complexity and the uniqueness of banks' governance, suggest that the effect of BoD on bank risk-taking may be different from the effect of BoD on nonfinancial firm risk-taking, thus, worthy of special attention.

Surveying the prior literature shows that most of the researches focus on the relation between corporate governance and the financial performance of banks (see, e.g. Aebi et al., 2012; Mollah and Zaman, 2015; Farag et al., 2018; Nomran et al. 2019), while the relationship between banks corporate governance and risk-taking do not hold. In addition, we can also infer the following:

First, most of the prior studies when dealing with the effectiveness of BoD, exclude financial firms from their sample (Adams and Mehran, 2012). In more recent years, corporate governance of banks and financial institutions are examined and the question of whether strong BoD leads to control risk-taking has been not answered yet. This research is very relevant, in terms of better knowledge and shows how the corporate governance of banks impacts their risk-taking at the bank level and country-level (e.g., regulators, regarding the development and improvement of corporate governance codes and best practices recommendations).

Second, most of the past studies focus on investigating the corporate governance of developed countries compared with developing countries' contexts, being even there are more scarce studies in the context of OIC cross-country and the studies that have been done in this area seem to have limited scope and provide an insufficient figure for the issues of the governance mechanisms.

Third, unlike past studies that only focus on empirical analysis of market risk and credit risk, this study is consider risk-taking from different risk perspectives such as credit, liquidity, and operational risks, to assure how BoD characteristics affect the main types of banks risk using distinct measures of risk-taking:

- The ratio of loan loss reserves to gross-loans
- The ratio of impaired loans to gross loans.
- The ratio of loan-loss provisions to average gross loans
- Liquid Assets to deposit and short-term borrowing
- Liquid Asset to total assets
- The three-year rolling standard deviation of net income after tax to total assets
- The ratio of operating expenses to gross earnings

This review paper is organized into seven sections. Section two discusses the concept of corporate governance and its importance. Section three describes the features of banks and corporate governance implications. The literature review on the relationship between the characteristics of BoD (i.e., the board size, board independence, and more directors with experience in finance, banking, and insurance) and bank risk-taking are presented in section four. Despite this survey mainly focusing on banks, some relevant studies of other financial institutions and non-financial firms are discussed, for more knowledge. In section five short analyses are presented in the area of the impact of BoD characteristics on bank risk-taking. In section six, suggested recommendations for future research are presented. The major conclusion is provided in section seven.

2. Concept and Importance of Corporate Governance of Banks

In the academic literature, the concept of corporate governance is often used and it is mainly concerned with the impact of firms' performance to define ideal governance structures. However, the standard definition of corporate governance has emphasized the protection of shareholders' interests and excluded the defense of the interest of other stakeholders. In reality, the managerial decisions do not only impact the investors as there are a set of stakeholders who have an interest in the firm, such as employees, depositors, and regulators (Fernandes et al., 2018). According to Shleifer and Vishny (1997) that corporate governance deals with ways in which the suppliers of finance to corporations assure themselves about getting a return via their investment. On the other hand, governance from an Islamic perspective is defined as "fairness" to all stakeholders, which can be achieved through greater transparency and accountability (Chapra and Ahmed, 2002).

There are two types of corporate governance mechanisms, internal and external mechanisms. Internal mechanisms are all internal procedures and policies used by companies to persuade the managers to pay more effort to maximize the value of shareholders. External mechanisms may work to overcome the limitation of the internal mechanisms and contributes to control the conflict between the shareholders and managers. These mechanisms are carried out by the market such as the financial market, goods and services market, and labour market managers. Banks' governance is defined by BCBS (2006) as the mechanisms in which the business and affairs of individual financial institutions are governed by the BoDs and senior management. The importance of governance mechanisms of financial entities has been early emphasized by Basel Committee on Banking Supervision. In September 1999 and then in February 2006, the BCBS has called for enhancing corporate governance of banking firms by structuring composed of a board of directors and senior management. By adopting these structures shareholders able to monitor and control managers and mitigate the agency problems which enable them to ensure the managers work according to the interest of the principal (Hill and Jones, 2009). BCBS believes that with good corporate governance, banks can increase the efficiency of monitoring as well as guarantee a sound financial system, consequently, a country's economic development (De Andres and Vallelado, 2008). In the same manner, Stulz (2015) argues that the structure of good governance policies of banks might enable them to experience an optimal level of risk which helps managers to increase the value of shareholders.

The global financial crisis shows, among various issues, governance mechanisms of banks are still weak and not understood by scholars as well as the policymakers in terms of its influence on bank risk-taking (Kirkpatrick, 2009). Before the global financial crisis in 2007-2008, only a few studies have been focused on banks' governance while after 2007, the governance of banks has been well discussed (Pathan and Faff, 2013). This is because the corporate governance weak of banks is often identified as one of the causes of the 2007 GLC or its main cause (Zedek and Tarazi, 2015). Particularly, there are arguments the last financial crisis in 2007 is due to the failure in governance mechanisms, such as lax board oversight and flawed executive compensation practices that encourage aggressive risk-taking (Erkens et al., 2012). Besides, the United States Financial Crisis Commission (2011) concluded in its final report that the key cause behind the dramatic failures of many financial institutions in the 2007 crisis is the failures of corporate governance and risk management.

In response to the 2007 global financial crisis, corporate governance codes of many countries over the world emphasize board of directors characteristics highlighting, amongst others, that: (1) the size of the board of directors have to be enough to enable it to perform its duties efficiently and (2) board members must have relevant experience, knowledge, qualifications, competence, and diversity. Although a lot of new regulations and governance reforms have been taken place after the 2007 GFC, the corporate governance system in emerging economies is still weak (Mehmood et al., 2019). However, the nature of the banking industry and the complexity of its business increase the challenges of governance mechanisms such as existing information asymmetry and the limitation of stakeholders to monitor bank managers' decisions. The problem of information asymmetries exists in all sectors, but the problem is arising for financial intermediaries such as banks due to the complexity of their business (Levine, 2004; Morgan, 2002). The complexity of banks' business is related to the idiosyncratic nature of the banking industry, making it difficult for stakeholders to monitor their banks. Banks' complexity can take the form of the quality of loans not being clearly due to for example the absence of critical standards of credit rating as to perceived, absence of transparent of financial engineering, complicated of proving financial statements, the ability to modify risk of investment (Levine, 2004). Therefore, banks business complexity is one of the reasons that aggravate the banks' governance problem, thus banks need a board of directors has not only to have to monitor the efficiency of managers but also have to provide valuable advice to managers to run the bank (De Andres and Vallelado, 2008).

The Board of directors is the representative of shareholders in the corporation (Adams and Mehran, 2012; De Andres and Vallelado, 2008). However, the role of the BoD is monitoring the management and identifying the risk. Furthermore, the BoD has a function to supervise, establish the risk control system, and advise the management, all these are the key elements of the governance mechanisms. In prior literature, the role of the strong BoD in terms of its size, the fraction of the independent BoD, financial experts, and qualification of its members are received much debate (e.g. Yermack 1996; Jensen 1993; Cheng 2008; Huang and Wang, 2015; Akbar et al., 2017; Wang, 2012; Coles et al. 2008; Alman 2012; Koerniadi et al., 2014; Mamatzakis et al., 2017; Hunjra, et al., 2020), but the evidence for the beneficial effect of boards' structure on bank risk-taking has remained far from convincing. The structure of the BoD is one of the key internal governance mechanisms that might provide a solution to agency problems and improve firms' performance (Leung et al., 2014).

Theoretically, the main role of BoD is monitoring and advising the management, thus, one of the crucial factors that may affect its duties is the size of its membership. On the one hand, shareholders of banks have benefited from high risk and high return of business projects, under the scheme of deposit insurance, BoD would like to act in the interest of shareholders by encouraging the management's risk-taking decisions. On the other hand, responding to other stakeholders concerning respect to the business risk and failure, BoD should play a strong role in monitoring management and constraining excessive risk-taking. However, comparing the research that investigates the effect of BoD on performance, little researches have been conducted to study the impact of BoD on risk-taking (Liu and Sun 2021).

Besides, BoD independence is introduced as a director who "has only business relationships with the bank and his or her directorship, i.e. an independent director is not an existing or former employee of the banks or its immediate family members and does not have any significant business ties with the bank" (Pathan, 2009). Many of the stakeholders believed that independent or outsider directors are better than dependent directors in terms of monitoring the management as they have a good reputation in the directorship market (Fama and Jensen 1983). Therefore, it is expected from independent directors to be more objective and offering to the corporation more stringent monitoring. Unfortunately, in reality, Erkens et al., (2012) find that financial firms with more independent directors report worse stock returns during the crisis. Alsartawi (2019) found that board activity of IBs in GCC countries affects the performance negatively, which made most of the institutional investors refuse to appoint independent members, to decrease the meeting frequency, which then improves the performance. This suggests that independent directors might have lack financial experience to cope with the complex nature of the banking activities.

The working experience of the BoD in the field of finance and banking knowledge is arguably one of the key elements of corporate governance, yet studies investigating traits of corporate governance in mitigating risk-taking behavior have ignored board experience (Akande et al, 2020). The existence of financial expertise in the composition of the BoD has crucial importance; this is because lack of the financial expertise of the board of directors may play a role as one reason for increasing the financial crisis (e.g. Kirkpatrick, 2009; and Walker, 2009). Thus, this review has the objective to explain the impact of BoD's size, independence, and financial experience on bank risk-taking. In other words, the study will explain whether large or small board size leads to reduce risk-taking, how the existence of an independent director can reduce risk-taking, investigate the effect of the financial background of the BoD in reducing risk-taking.

3. Banks have special activities, special risks and require unique corporate governance implications

According to Staikouras et al. (2007), banks are specialist financial institutions and that led to creating special challenges for their corporate governance. Consistency, the difference in the corporate governance of the banking industry and non-financial firms are emphasized earlier by Adams and Mehran (2003) and Macey and O'Hara (2003), as the characteristics of banks, differ from the characteristics of the non-financial institutions that increase corporate governance problems and might made the traditional corporate governance mechanisms less effective (Laeven, 2013). One of the main differences between the corporate governance of banks and the corporate governance of non-financial institutions is the BoD of banks which is considerably different, for example, the role of the board is fundamental to decide neither the small equity and debt holders nor the market for corporate control (e.g., takeovers) and market competition can enforce effective governance at banks (Caprio and Levine 2002). Further, Becht et al., (2011) argued that the nature of business of the banking sector weakens the traditional corporate governance institutions of the board and shareholder oversight. This is because banks may be able to take risks very quickly and that may not immediately be visible to directors or outside investors.

Besides, the risks in the banking sector are wider than the risks in the non-financial firms. Risks in the banking sector are classified into business risks and financial risks. Business risk is related to the nature of business and factors of production while financial risk comes from the probability of loss that might be due to the volatility in the variables of the financial market such as changes in the variables of money market, forex market, equity market and government securities market (Jorion and Khoury 1996). Another point of view regarding the classification of risk is, divide risk into systematic risk and unsystematic risk. Systematic risk is that risk comes from the changes in the market factors like changes in demand and supply, and overall changes in the economy, while unsystematic is an endogenous risk that comes from the changes in specific assets. Unsystematic risk can manage and overcome by diversifying the portfolio, while the systematic risk is non-diversifiable, but can reduce by adopting some techniques either to mitigate or transfer it. In this regard, Oldfield and Santomero (1997) have classified financial institutions' risk into three types, the risk that can be eliminated, transferred to others, and the risk that can be managed. The complexity of banks' risks and activities makes it more difficult to measure and evaluate their risks.

In the literature, many studies examined the particularities of banks that make them unique and some justification can be summarised in the following.

First, banks' operations and their activities are more complex than non-financial firms. For example, the quality of bank loans and the quality of other assets of banks are not observable and that is the main challenge to accurately assess the risk. According to (Gup et al, 2007) banks may experience failures due to reasons such as low assets quality, lack of banking experience, insufficient regulation, deposit insurance, corruption, and mismanagement but the main reason for bank failures is the credit risk. In general, credit risk in the banking industry refers to the probability of defaulting the borrowers to meet their loan obligations (Hull, 2007). Banks should accept deposits from lenders and then have to provide loans to the borrowers. The credit risk of the bank is usually can be found at the assets side of their financial position statement; while the liquidity risk arises at their liability side. By giving several types of loans, banks can reach the highest part of bank assets. But in the case the bank has financed too many distressed projects, that may make it is harder for the bank to meet the depositors' demand. Thus, default on a loan by the borrower positively contributes to the liquidity risks. Besides if the economic situation gets worse, banks may face a "bank run" that will ultimately lead to deterioration of the value of assets financed by banks (Imbierowicz and Rauch, 2014). Therefore higher credit risk results in higher liquidity risks. These defaulting cases could be efficiently controlled by the proper internal control of the institution. Thus, it is crucial to study and understand the internal and external factors that have a contribution to credit risk (Al-Smadi and Ahmad 2009).

On the other hand, liquidity risk is the potential loss arising from the bank's inability either to meet its obligations or to finance any increases in the assets, without incurring unacceptable costs or losses (Reyazat, 2012). Similarly, according to BCBS (2001), liquidity risk is the incapability of banks to provide a fund of new assets and meet their obligations at the due date. In the financial system, the liquidity of the bank is classified into, funding (or liability) and market (or asset). Funding liquidity risk (liability) raises when a bank fails to meet its liabilities on its due date, while market liquidity risk (asset) occurs when banks are not able to sell assets at a market price due to market distraction. Thus, banks should control their liquidity level to absorb losses and strengthen solvency, this is because insolvency is one of the significant determinants of the crisis in the banking industry (Hugonnier and Morellec, 2017). Liquidity risk is constituted as an important risk type within Islamic banks (IBs) as well as their counterpart conventional banks (CBs). Safiullah and Shamsuddin (2018) point out that like CBs; IBs are also exposed to liquidity risk. Liquidity risk in IBs takes place differently as compared to CBs. Firstly; IBs have to pay profits on the deposits which they received. Due to the limitation of investment venues, IBs find it harder to pay the profits and that situation increases the liquidity risk. Secondly, the limitation of the money market of IBs makes it harder for them to raise funds during the shortage of liquidity. Furthermore, it is a regulatory requirement for both CBs and IBs to keep a statutory reserve in Central Bank. Bank has to receive interest for its statutory reserve, but due to the prohibition of the interest according to Islamic law, IBs do not receive any payment over their reserves. Thereby, it is recommended for IBs to keep more cash on hand to overcome their liquidity risk (Hassan, Khan, and Paltrinieri, 2019). In the banking sector, the efficiency of assets and liabilities management is based on its ability to provide more funds (increase the assets) and pay the obligations as they come due. However, if there is mismatching between the maturity of liabilities and assets, the liquidity risk will arise.

Due to the absence of a money market and secondary capital market, Vogel and Hayes, (1998) argued that the maturity mismatched problem is more complicated in Islamic financial institutions (IFI). This makes the liquidity risks a major impediment to IBs' growth (Oldfield and Santamero, 1997). This issue made some countries such as Malaysia attempt to reduce the internally and externally severe liquidity risk in IBs by constructing the liquidity framework by Bank Negara Malaysia in 1998 (Yaqoobi, 2008).The risk comes from unexpected changes in the market price such as the volatility in the price of securities, rate of interest, and fluctuation of the exchange rate is known as market risk as described by (Dowd, 2005). From IBs perspective, market risk is referred to the adverse impact of changing interest rate (markup), inflation risk, foreign exchange (FX) risk, and the changes in the price of the financial market either in Sukuk or securities price (IFSB,2005). Shafii, et al. (2010) stated that IFIs should have a suitable framework for market risk (including reporting) because it has no money market. The fluctuation of the foreign exchange rate would cause losses or profits, that have direct effects on bank' returns (Kasman, et al., 2011). Ryan and Worthington (2004) examine the sensitivity of stock returns of Australian banks to market interest rate and foreign exchange rate over the period 1996 to 2001. The results show that market risk plays an essential role to determine bank stock returns. Similarly, Choi et al. (1992) investigate the sensitivity of the banks' stock returns to market interest rate and exchange rate risks. They used a multifactor index model to study the sensitivity of the rate of return of common stocks for the largest 48 banks in the USA over the period 1975-1987. The findings show that the exchange rate has a positive and significant relationship with the banks' stock returns.

Another more completed risk in the banking sector is operational risk. Operational risk in its wide concept is all types of risks that are not classified as credit and market risk. According to BCBS (2001), operational risk is a risk that might arise due to direct or indirect loss as a result of the weakness of the internal processes such as people and system or may due to external events. Based on Van Greuning and Iqbal (2008), operational risks are closed with the bank's functions and it includes the policies and procedures, computerized system, technologies, employees, and financial corruption. Therefore, operational risk is not like market and credit risk which are related to a specific part of the business, operational risks are related to all processes of the business. BCBS (2001) has identified the main categories are associated with operational risk:

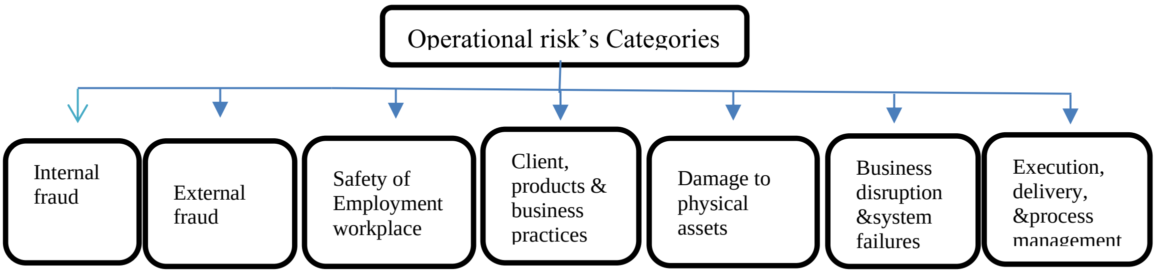

Figure 1 Categories of Operational Risk
Source: BCBS (2001).

Internal fraud is any type of defrauding, misappropriate property, and breach of the regulations, the company law, and discrimination against any party involved with the company. On the other hand, external fraud is any type of defrauding, which may take the form of misappropriating property and breach of the law by a third party. Employment practices and workplace safety such as inconsistent between the employees and the firm regarding health or safety rights or disagreement regarding the payment for personal injury or any other clams. Client, products, and business practices are such as the failure to find professional criteria to rate the obligation of a specific client or the failure to address the design of a product. Damage to physical assets is the loss that arises from damage to tangible assets due to natural disasters or another event. Business disruption and system failures refer to the risk that comes from failures such as lack of the ability to use information technology in improving performance. Finally, execution, delivery, and process management indicate to risk comes from the failure in the process of transaction or from the long-run management' procedures in dealing with clients and vendors (BCBS, 2001).

Khan and Ahmed (2001) surveyed the severity of operational risk in IBs and CBs and they conclude that the managers of IBs perceive operational risk as the most critical risk. This is because both in form and substance the IBs' dealings differ completely from CBs in their banking operations (Abdullah et al., 2011). According to Izhar (2010), IBs are characterized with an additional feature in their contracts thus making the operational risk exposure to the IBs different from that of its counterpart CBs. Despite, the IBs being exposed to the most risks that are faced by their counterpart CBs; they still have an extra burden of complying with Shari'ah in their operations to ensure all activities are in line with Shari'ah (Hassan et al., 2017).

Second, a wide range of conflicting interests in the banks. Banks are the main source of funds to supply finance to individuals, private, public, and government investments. Thus, the ability of banks to achieve their functions depends on their management of both tangible assets such as physical assets, labor, and capital and intangible assets like managerial skills, competence, reputation, intellectual property (Hassan and Aliyu, 2018). To achieve that, banks have to manage a range of conflicting interests for their stakeholders that may arise due to the information asymmetry such as the conflict between "owner, managers and the regulator", between "borrowers, managers and the regulator" and between "depositors, bank shareholders and the regulator". The banking industry is affected by owners' and managers' conflicts of interest (Fama and Jensen 1983). Managers might be reluctant to take a risk to protect their wealth, their human capital, and their job position which may make them choose less risky investment projects than the owner would want. In this case, owners have inadequate control over the bank and the information is asymmetric with the expectation of poor outcomes, managers may induce to take risker decisions and in such cases, the agency conflict between the managers and owners disappears. In high leveraged institutions like banks, the conflict of interest between shareholders and debt holders interacts with the banks' equity governance (John et al., 2016). The depositors' known as claim holders in banks and their interests might differ significantly from the shareholders. The shareholders have the incentive to take a high-risk investment to maximize the value of their shares while that may oppose the interest of depositors (García-Marco and Robles-Fernandez, 2008). Deposit insurance (DI) is suggested as a mechanism to mitigate the conflict between shareholders and depositors, who can compensate for the deficiencies in the monitoring of banks by employing a rate of deposit insurance. Although the aim of applying deposit insurance is to protect the interest of depositors, moral hazard problems might be raised. This is because, under the deposit insurance scheme, depositors have little incentive to monitor the banks' activities and to withdraw funds; this may induce banks shareholders to encourage banks' management to take the excessive risk (Macey and O'Hara, 2003). The borrowers, managers, and regulator conflict are coming from the contribution of managers in rating credit to promote and maintain the overall quality of assets. Ratings are managed either by managers' relationships or the credit staff (Treacy and Carey, 2000). Therefore, the managers may be rating the borrowers based on insufficient standards of rating which may increase credit risk as some borrowers might fail to fulfill their obligation. In such cases, the conflict between managers and shareholders will increase as well as with the regulators. Thus, it is expected to find higher risk-taking in the industry which may affect the entire stakeholders. Baysinger and Butler (1985) stated that the BoD that has the authority power to hire, fire, and compensate the management, can resolve the conflicts of interest among the decision-making parts.

Third, banks have more tightening regulations and supervision (Becht et al., 2011). Thus to protect the stability of the banking sector, well-governed banks are important. This is because the economic policy uncertainty has expected to increase bank risk-taking (Nguyen, 2021). Bank regulations must be strong enough as the economic policy uncertainty may increase bank risk-taking through three main channels, first, banks could be more fragile due to the adverse effects of economic policy uncertainty on various economic activities such as output losses, government deficit, employment, and equity price and cash flow volatility (Baker et al., 2016). Second, some of the uncertainty of economic policy may reduce the profitability of banks which induces the management of banks to seek higher yield from riskier activities. Third, following the behavior of herding, i.e. the stability of banks might be threatened by the homogeneous lending behavior of the banking system (Wu et al., 2020). This can be explained in terms of the asymmetry of information between banks and their borrowers as banks find it harder for them to price a firm's future exposure to uncertainty (Ng et al., 2020). Therefore, banks imitate each other by offering similar lending and investment decisions. This is due to sharing the same information or intentionally imitating the lending behavior of their peers due to the lack of information.

4. Characteristics of the Board of Directors and Bank Risk-Taking

The BoDs are the cornerstone in the succession of the corporation, thus it is one of the main governance mechanisms (De Andres and Vallelado, 2008). As based on John and Senbet (1998) the center of corporate governance mechanism in market economies is the BoD. Thus, BoD is responsible for appointing the executive director and general management and has to determine the functional responsibilities of the organization as well as their vision, mission, and goals in general (Kanakriyah, 2021). Besides, the BoD has the responsibility to set the policies, strategies, programs and identify the function and power for each corporate department, and form a relationship with stakeholders. By bringing expertise and knowledge, the efficiency of the BoD members can play an important role in formulating and implementing business strategies (Fernandes et al., 2018). Specifically, banks BoD play a relevant role in the governance of banks by monitoring the managers or advising them to implement the strategies (De Andres and Vallelado, 2008). In the past related literature reviews of governance, BoD can fulfill their functions of advising and monitoring the management by choosing adequate board characteristics (e.g. composition and size) (Harris and Raviv, 2008). This means certain features of BoD can reflect the ability to perform their supervision and advise function. For example, the effect of BoD size on the value of the banks is a trade-off between the advantages of monitoring and advising and the disadvantages of coordination, control, and decision-making problems (De Andres and Vallelado, 2008). To perform the function of supervision and advice, banks' BoD composition should contain a fraction of outside directors. Kim et al., (2014) state that the trade-off perspective argues that firms have to balance between monitoring and advising functions by adjusting the proportion of inside directors to outside directors. Advising function is might be performed efficiently by inside directors as they have more specific knowledge about their firms, the critical problem arising from information asymmetry between the board and management. The recent situation of the COVID-19 pandemic and its negative effect on the business profitability has increased the interest of researchers as well as the regulator's bodies on the efficiency of the BoD to improve the company's financial performance.

In the corporate governance reform, the effect of BoD is at the center of public discussion, particularly how the characteristics of BoD can mitigate the risk of banks. Extant literature offers mixed arguments about the role of BoD size, BoD independence, and BoD expertise in mitigating excessive risk-taking. Next, this paper reviews the literature on the relationship between the size of BoD, independent BoD, and BoD financial experience and bank risk-taking.

4.1. Board Size and Banks Risk-Taking

In the past literature, several studies analyzed the BoD size of banks and compared it with board size in non-financial firms as well as examining how it affects the performance of banks while studying the effect of BoD size on the risk of banks is still limited. Many studies show that banks have large BoD sizes compared with non-financial firms (e.g. Adams and Mehran 2003; Walker 2009 and Adams 2012). For example, Adams and Mehran (2003) found in the sample consisting of 35 bank holding companies in the US from 986 to 1999, that the bank holding companies have larger boards and more outside directors than the non-financial firms.

Yermack (1996) notes that the value of the firm and BoD size are correlated negatively. Yermack selected a sample of 452 large manufacturing companies in the USA to investigate the effect of board size on a firm's value over the period 1984-1991. By using a return on assets, Tobin's Q, and return on sale as a proxy of a firm's value, the result of the study shows that board size has a negative relationship with a firm's value. Moreover, BoD with too many members led to many issues such as exercising excessive control over the CEOs which may harm their efficiency. These findings supported the finding of a previous study conducted by Jensen in 1993. Jensen argues that the board becomes less effective as board size increases. It is implied that as board size increases, the board becomes unable to monitor the management as the conflicts among the directors' increase and the decision-making process may take a long time. Besides, Jensen argues with large board size, the cost of coordination and communication of board members is increased which may lead to an ineffective board. In the context of the relationship between board size and banks' risk-taking remains ambiguous (Mamatzakis et al. 2017).

Wang (2012) investigated the systematic relationship between board size and corporate risk choice, the finding shows that small boards encourage and enhance CEOs to take more risks. Furthermore, Wang notes that firms with small boards have an attitude to choose riskier investments than those with large boards. The author argued that board size and its effect on the performance of the firms have received much discussion; relatively few studies investigate how board size is correlated with a firm's risk-taking. This finding is consistent with the hypothesis that the level of firm's risk-taking is positively related to a smaller board. The small size of BoD is in line with agency theory (AGT).

AGT suggests that with the small size of the BoD the costs of agency might be decreased and the consistency level among the board members might be increased (Quttainah et al., 2013). On the contrary, there is also another theory and an argument supporting large board size, such as resource dependence theory (RDT). Coles et al. (2008) argued that a large board is highly recommended in case the firms are big and complex. Their findings show that firm value increase with a large board size, more diversified, or more leveraged. Besides, De Andress and Vallelado (2008) argued that the recommendation of the board size is not unlimited, they suggest that the board should not be oversized and the maximum should be limited to 19 directors, the appointment of more than 19 directors would diminish the bank's performance. More specifically, they come out with this result after controlling the factors such as regulatory and institutional setting for the sample of banks from developed countries. This is because it is expected the differences in regulations and supervisions among the countries under study may affect the results and it was concluded that a "one-size-fits-all board" is not applicable for banking corporations.

Pathan (2009) examines the relevant structure of banks' BoD on bank risk-taking. By using a sample of 212 large US banks over the period 1997-2004, board size measured as the number of directors in the BoD, the study finding shows board size affects bank risk-taking negatively. This finding suggests that a large board is more effective in constraining risk-taking decisions. Consistently, Adams and Mehran (2012) argue that large boards with subsidiary directorships might add value to the BoD as complexity increases, this is because it is suggested that small boards may not able to monitor the complexity of the organization. Nevertheless, large boards are not always preferable and not all time is valuable. This is because the complexity of the organizations may be incentive to induce high risk due to the ability to engage in diverse activities. Salhi and Boujelbene (2012) analyzed the relationship between internal governance mechanisms and the risk-taking of banks in Tunisia over the period from 2002 to 2009. The study results depicted a positive relationship between board size and bank risk-taking in the context of Tunisian banks. They suggested a large number of directors on the board increases the expertise and increases the potential for conflict and disagreement as well. Koerniadi et al. (2014) study the impact of firm-level corporate governance practices on the riskiness of a firm's stock returns in a setting that can be considered as less conducive to managerial risk-taking. Their finding refers that firms with large boards are associated with lower levels of risk-taking. Huang and Wang (2015) studied the effect of board size on a firm's risk-taking in China. They conclude that board size has a negative relationship with risk-taking. This result implies that BoD constrains firms' risk-taking more effectively in China. These findings are consistent with past literature that believe with more number directors in the corporate board, corporation my gathering more human capital, but the cost may be higher than the benefits (De Andres et al., 2005).

In the same manner, a study conducted by Sekyi and Gene (2016) examined the effect of board size and board independence as elements of internal control systems on the credit risk of banks in Spain. They measure board size as the number of directors in BoD. Consistent with Salhi and Boujelbene, the study found that the board size reflects a significant positive effect on the credit risk. This finding suggests that high board size, high miscommunication, and disagreement might affect decisions making of risk-taking. Abobakr and Eligiziry (2017) investigate the impact of board characteristics on bank risk-taking (measure bank risk-taking using three different measures, the z-score, the credit risk, and the liquidity risk of each bank). They select a sample of 27 banks in Egypt over the period 2006-2011. The result of the study shows that board size is significantly positively related to bank risk-taking (credit risk and liquidity risk). This result suggests a high size of BoD high credit risk and liquidity risk. This result supports the argument that large BoD is not able to give advice and be involved in long-term strategic planning due to the difficulties associated with organizing and coordinating large groups of directors. The relation of BoD and insolvency risk was negative and significant. However, a high z-score means less insolvency risk. The negative and significant result implies that a small board size will increase the z-score and accordingly decrease risk and enhance the stability of the bank.

Akbar et al. (2017) examine the relationship between board size and risk-taking in a sample consisting of all listed firms (banks are included) in the financial industry in the UK over 10 years (2003- 2012). Their result shows there is no significant effect of board size on the risk-taking of the financial firms. They argue this finding is in line with the arguments in the literature, when the board size exceeds seven; the board becomes ineffective due to miscommunication and coordination problems. Mamatzakis et al. (2017) investigate the effect of seven elements of governance namely, independent directors, the board size, CEO duality, relationship of top 10 shareholders, managerial shareholding, foreign ownership, and external audit firm on the banks' risk-taking. They use a sample of the largest 43 commercial banks from three markets, Mailand China, Hongkong, and Taiwan, over the period from 2006 to 2014. Two proxies of banks' risk-taking have been employed in their study, insolvency risk measured as Z- scare and credit risk measured as impaired loan to gross loan. They measure board size as a dummy variable is equal to 1 if the board size is greater than 6 and less than 13 otherwise is zero. The study result shows board size has a negative relation with banks' risk-taking. They argue that this strong negative relation suggests that the intermediate size of BoD (greater than 6 but fewer than 13) is more efficient governance in terms of it being aligned with shareholders' preference on taking the risk. According to them, this result implies an intermediate BoD with a great number of independent directors is more effective in monitoring and advising the management of banks.

De Vita and Luo (2018) investigate the impact the external regulation on banks' risk-taking. By selecting 493 commercial banks from 54 countries over the period 2001 to 2015. They apply two-step Sys-GMM to estimate the relationship between the regulation and risk-taking proxy by insolvency risk (z-score); credit risk (NPL); and volatility of equity return (SDVOL). The result shows that the markets discipline that imposing by external private monitoring and supervisory are not able to curb the appetite of risk-taking by banks which are resulting from large and independent of BoD. This result implies the significant positive impact of the board size and board independence over-controlling risk-taking of banks. Al-Smadi (2019) examined the effect of board size and independence board on the risk-taking (total risk and credit risk) of listed corporations in Amman's Stock Exchange from 2013 to 2017. The findings of the study were opposite of the hypothesis, the results showed a negative association between board size and corporate risk-taking, which implies that a corporation with a large board size exhibits low risk. The justification of this result is that with more directors on the board, more responsibility of the directors to tighten the supervision over the CEO, which might contribute to reducing the level of risk-taking.

In the same manner, Hunjra et al, (2020) investigated the effect of diversification, corporate governance mainly (BoD size and BoD independent), and capital regulations (deposit insurance and capital adequacy ratio) on bank risk-taking of 116 banks selected from 10 Asian countries over the period 2010 to 2018. By applying GMM, the result of the study shows that the size of BoD is negatively associated with bank risk-taking suggesting that firms with a large size board tend to undertake less risk. They implied from the result that the small size of BoD suggests endorsing high risk aligns to the interest of shareholders. On the other hand, they explain that the negative coefficient of BoD with z-score as a proxy of insolvency risk indicated the increase in the insolvency risk with more board members. This finding is in line with Pathan (2009) empirical result which indicating large board size increases insolvency risk.

Nsaibi and Rajhi (2020) examined the effect of seven key elements of governance mechanisms (board size and board independence are included) on operational loss events in 14 banks over the period 2006-2013. The empirical result reveals that the size of the board of directors has a positive statistically significant relationship with the severity of operational losses. The result implies that as the number of directors sitting on the board increases, the severity of operational losses becomes increasingly high. They explained this result in line with AGT, the higher number of directors, the more problems of coordination and cohesion between members occur. In the same manner, Lee et al., (2020) investigated the effect of BoD size on banks' risk-taking of a sample of 15 CBs and 14 IBs in Malaysia over the period 2007 to 2016. The result of the study shows BoD with the composition of more directors who have banking and finance experience is likely to increase the risk-taking of both banks. This finding is widely found in the prior literature and is in line with RDT. Fakhrunnas and Ramly (2017) investigated the effects of BoD and SSBs on IBs' risk-taking behaviors in Southeast Asia countries. They selected a sample of 24 IBs over the period from 2009 to 2014. The result shows that BoD has positive effects on credit risk, whereas the relationship was negative with a z-score as a proxy of bankruptcy risk. The Z-score is defined as the risk of bankruptcy which means the higher the score of the z-score, the less exposure toward bankruptcy risk. Thus, the negative relation between z-score and BoD, refers to the higher size of BoD, the bankrupt risk is will be lower, conversely, the positive relationship between the size of BoD and credit risk refers to the fact that a higher number of BoD members will contribute in increasing credit risk of IBs.

Najwa, Ramly, and Haron (2020) investigated the effect of BoD size and CRO on banks' risk-taking (insolvency risk and credit risk). The selected sample consisted of 24 IBs from Malaysia, Indonesia, and Brunei over the period 2010-2015. The regression result of the study shows that BoD is not statically significant related to IBs risk-taking. Further, the authors extended their investigation by using SSB as moderators to examine the idea in line with AGT and RDT in explaining the factors that may affect risk-taking. The regression result of moderating effect shows that the coefficient of the interaction term SSB experience in Shari'ah and BoD size became positive and significant at 5% level. This result suggests the interaction between BoD size and SSB members who have Shari'ah experience enhancing the effect of BoD on insolvency risk. As insolvency risk is measured as a z-score, a high z-score refers to low insolvency risk, thus the positive relationship here, explains low risk. In other words, the large size of BoD is contributed to reducing the insolvency risk when the large percentage of SSB who has a wide range of Shari'ah experience is set in the SSB. However, this finding is in line with RDT. Based on this finding, IBs seem to benefit from having a large BoD simultaneously with SSB with valuable prior Shari'ah experience.

Liu and Sun (2021) investigate the effect of independent directors' legal expertise on banks' risk-taking and performance in a sample of 273 bank-year observations for 2011 to 2013 in the USA. The result of regression shows that board size (BDSIZE) is positive for all types of risk and significantly related to idiosyncratic risk. This result implies that with the large size of BoD, significantly higher in the idiosyncratic risk. However, a high z-score means less insolvency risk. Thus, a positive relation between board size and z-score can explain as a small board will lead to a low z-score and accordingly increase insolvency risk of the bank. This finding contradicts with findings of Abobakr and Eligiziry (2017). Brogi and Lagasio (2021) examined the effect of seven elements of CG characteristics (BoD size and board independence are included) on the risk-taking and performance of a sample of 30 Euro Area banks over the period of 2008 to 2016. The result of that study showed that the independence and size factors of the BoD are the most CG characteristics influencing banks' excessive risk-taking, large BoD size decreases the solvency of banks. These findings present vital areas for policymakers and regulators in their pursuit of devising prudent regulatory frameworks on bank CG.

The results of prior studies were inconclusive and the majority of them investigate the relationship between BoD and the profitability of the banks, thus, this is one of the future insights to study the effect of BoD on the risk of banks.

4.2. Board Independence and Risk-Taking

Board Independence is introduced as a director who "has only business relationships with the bank and his or her directorship, i.e. an independent director is not an existing or former employee of the banks or its immediate family members and does not have any significant business ties with the bank" (Pathan, 2009). Many of the stakeholders believed that independent or outsider directors are better than dependent directors in terms of monitoring the management as they have a good reputation in the directorship market (Fama and Jensen 1983). Therefore, it is expected from independent directors to be more objective and offering to the corporation more stringent monitoring. In reality, based on Alsartawi (2019), board activity of IBs in GCC countries affects the performance negatively, which made most of the institutional investors refuse to appoint independent members, to decrease the meeting frequency, which then improves the performance. The theoretical suggestion of Raheja (2005), Adams and Ferreira (2007), Harris and Raviv (2008) is that with high information asymmetry firms, the BoD should not be based on independent directors.

De Andres and Vallelado (2008) study the relationship between the dual role of the board of directors and the value of firms, they selected a sample of 69 large commercial banks from six developed countries. By using the OLS estimator, they come out with that large board of directors with balancing members between the outsiders and insiders' directors create more value in the banks. One of the important studies conducted to investigate the effect of board independence on risk-taking was conducted by Pathan (2009) who investigates the impact of BoD structure in banks on bank risk-taking. By selecting a sample of 212 largest USA banks over the period 1997-2004, the ratio of independent directors to total board members is used to measure the independence of a director, the result of the study shows that for more independent directors, risk-taking is likely low. This implies that more independent directors, more independent decision of risk-taking from shareholders interest. Thus, it is argued that independent or outsider directors with good directorship attitudes can monitor the managers than the dependent directors (Fama and Jensen 1983).

According to Duchin, Matsusaka, and Ozbas (2010), the independence board has a positive correlation with the performance of non-bank firms too, if their operation is not based on high information asymmetry. Salhi, and Boujelbene (2012) study the impact of the ownership concentration and BoDs on banks' risk-taking in Tunisia. They collect data of 10 Tunisian banks over the period from 2002 to 2009; the independence board is measured as the ratio of independent directors to the total number of board members. The study shows the percentage of independent directors has a negative correlation with bank risk-taking. This result suggests that the independence board brings greater expertise in the area of risk-taking allows better control of the manager. Erkens et al., (2012) investigate the influence of corporate governance on financial firms' performance during the 2007–2008 financial crises, a sample of 296 financial firms from 30 countries; the study affirmed that risk-taking behavior is also influenced by a large independent board.

Liang et al. (2013) study an independent director as one of the board characteristics in Chinese banks. They find that the proportion of independent directors has a significant positive effect on the banks' assets quality. In case banks operating under high information asymmetry, it is better to depend on insider directors as they have more firm-specific information (Fama and Jensen 1983). Similarly for firms that operate in a more uncertain environment since their job is required specialized knowledge. Minton et al., (2014) examine the role of internal governance mechanisms during the global financial crisis. They collect data of all large US commercial banks over the period 2003 before the crisis till 2008 during the crisis and they use independent board of directors as an element of internal governance mechanism. The study results refer that the independent board of directors with financial experts is associated and supported high risk-taking before the crisis. This finding is consistent with Beltratti and Stulz (2009) who examine the large panel of international banks and they find that the pro-shareholder board is contributed to generating high performance before the crisis. This refers to the decisions that have been taken in line with the interest of shareholders which did not perform as expected during the crisis.

Armstrong et al. (2015) studied the effect of corporate governance (independence board is included) on managerial incentives, and corporate tax avoidance. They aim to examine whether the involve risky expected cash flow, under agency problems lead managers to engage in more or less corporate tax avoidance than shareholders would like. The result reveals a negative relation between board independence and financial sophistication for high levels of tax avoidance. But their result also shows the relation was positive with a low level of tax avoidance. Sekyi and Gene (2016) examine the effectiveness of internal control systems among listed banks in Spain from 2004-2013. The result of regression revealed that a high proportion of independent directors have a significant positive effect on credit risk. This finding suggests that financial firms with large board independence increased their risk-taking behavior.

Mamatzakis et al. (2017) investigated the effect of seven governance elements; an independent director was one of them on banks' risk-taking. They use a sample of the largest 43 commercial banks from three markets, Mailand China, Hongkong, and Taiwan, over the period from 2006 to 2014. The Independence board was dummy variable is equal to 1 if board independence is greater than 50 percent of total board otherwise is zero. The study result reveals that the relationship between board independence and risk-taking was negative and insignificant. It is implied that with a large proportion of the independence board, strategic and decisions making regarding risk should be improved due to wise advice from the independence board. This result adds up to those schools of thought that believe in RDT Vallascas et al. (2017) show that board independence becomes more risk prudent after a financial crisis. Chou and Buchdadi (2017) study the impact of good corporate governance on the performance of banks in Indonesia. They used several variables as proxies of corporate governance, independent directors were one of them. The sample populations of their study are listed banks in Indonesia over the period 2013-2015. They used the natural logarithm of an independent board and their findings show that the independent board of directors has a positive effect on the net interest margin of big-scale banks. Fakhrunnas and Ramly (2017) investigate the effects of BoD size, independence, and SSBs on IBs' risk-taking behaviors in Southeast Asia countries. They select a sample of 24 IBs over the period from 2009 to 2014. They apply random-effect Generalized Least Square (GLS) to analyze the data and the finding of the study reveal that independent directors affect risk-taking behavior positively. This means with more independent BoD the behavior of banks' risk-taking will increase.

Contradictory, Ramly and Nordin (2018) examined the effect of SSB, independent of BoD and RC independent on banks' risk-taking in Malaysia. They select 16 IBs in Malaysia over the period 2010 to 2015. The result shows higher independent BoD is attributed to reducing credit risk when SSBs consist of Shariah expertise and having a banking background. In the same manner, Jiraporn and Lee (2018) investigate the effect of independent directors on daily corporations' risk-taking which is measured as total risk, idiosyncratic risk, and systematic risk of a total of 16,568 firm-years observations over the period 1996 to 2014. The regression result shows that the independence board likely reduces all types of risk. The result suggests, firms intend to increase the independence board to induce managers to adopt significantly less risky strategies. However, with less risky strategies, the profitability of banks might be less too (Pathan, et al. 2013).

Al-Smadi (2019) examined the effect of board size and independence board on the risk-taking (total risk and credit risk) of listed corporations in the Amman Stock Exchange from 2013 to 2017. The results showed a negative significant association between the independence board and corporate risk-taking. This finding indicates that a more independent board set in the BoD is the lower risk-taking of corporations. This is consistent with the thought of RDT. Younas et al., (2019) examined the effect of independent directors on the corporate risk-taking of listed firms in Germany and the USA. The study mainly focuses on the association between the proportion of independent directors and the changes in risk-taking (stock return volatility. and standard deviation of industry adjusted ROA ROA) of unhealthy corporations. The study use sample consists of 564 US firms and 57 German firms from three sectors, manufacturing sector, utility sector, and industrial sector over the period 2004 - 2015. Germany and the USA have a different corporate system, Garman uses two-tier while the USA uses a one-tier board system, whereas the two-tier supervisory board is separate from management while in the one-tier board system executive and non-executive board members work together. The finding of the study shows that more independent directors lead to less corporate risk-taking in both types of systems but the effect was high in two-tier than one-tier. It is implied from this result that when examining the effect of the board features on risk-taking, the type of corporate system should be considered. In this context, Perry (2011) expected the presence of a two-tiered layer in the context of IBs, which similar to the governance structure of Germany, would be described as a strong structure that will work on protecting IBs from failure faced by CBs.

Nsaibi and Rajhi (2020) examined the effect of seven key elements of governance mechanisms (board size and board independence are included) on operational loss events in 14 banks over the period 2006-2013. The empirical result shows that the presence of the independent board of directors has a negative statistically significant relationship with the severity of operational losses. It is implied from this result that the higher the proportion of independent directors, the lower the occurrence of operational incidents. They explained this finding, as more outside directors more exert a counter-power within the board of directors and counter a very effective operational risk policy. Inversely, they point out that SSB affected bank risk-taking negatively. Lee et al., (2020) investigated the effect of the independence of BoD on banks' risk-taking of a sample of 15 CBs and 14 IBs in Malaysia over the period 2007 to 2016. The result of the study shows that the presence of a high percentage of independent directors in the board of state-owned banks contributes to reducing banks' credit risk as a proxy of risk-taking. Furthermore, the result shows that with a high ratio of independent directors, further strengthens of the banks' liquidity has been reported even with huge state ownership. They suggest that government helps in providing funds for projects that would increase job opportunities in line with the social view that could not be offered in private banks. This action seems advantageous from a social point of view but in the long run, has drawbacks on the nation's economic development.

Hunjra et al. (2020) investigate the effect of diversification, corporate governance mainly (BoD size and BoD independent), and capital regulations (deposit insurance and capital adequacy ratio) on bank risk-taking of 116 banks selected from 10 Asian countries over the period 2010 to 2018. The result of the study shows that board independence has a negative and significant relation with bank risk-taking. The result is consistent with several prior studies (e.g. Ramly and Nordin 2018; Salhi and Boujelbene 2012 and Mamatzakis et al. 2017) which reveal that an increase in independent directors increases the level of board monitoring that helps to control risk. It is implied from these results that BoD with more independent directors members take less risky decisions than BoD with more inside directors. In respect to z-score a proxy of risk-taking, the result implies that more independent more the insolvency risk. They explained this finding as more independent directors, more effective monitor of management but after a certain point may a result change and banks back take more risk.

Islam (2020) examines the effect of board composition and activity on bank non-performing loans (NPLs). Using a sample of 102 U.S. commercial banks over the period 2002-2015, the result of the study shows that independent board affects NPLs negatively. This result suggests that boards with relatively more independent directors tend to have a lower ratio of NPLs. Liu and Sun (2021) investigate the effect of independent directors' legal expertise on banks' risk-taking and performance in a sample of 273 bank-year observations for 2011 to 2013 in the USA. The result of regression shows that independent directors' legal expertise facilitates reducing total risk for banks. Besides the result show, independent directors' legal expertise affects the idiosyncratic risk negatively but was insignificant. This finding suggests that with more independent directors who have legal experts, more constrain of systematic risk than other directors.

In brief, the majority of the existing literature supports that board independence reduces the negative effect of risk-taking of both CBs and IBs. However, based on the discussion above, it can be suggested that the board independence might be determined differently across CBs and IBs. Precisely, the present study suggests a larger board size and a higher proportion of outsider directors might improve the monitoring and supervision of BoD on the management, and it is expected to reduce the risk-taking of IBs more than CBs.

4.3. Board Financial Experience and Banks Risk-Taking

Experience of the BoD in the field of finance and banking knowledge is arguably one of the key elements of corporate governance, yet studies investigating traits of corporate governance in mitigating risk-taking behavior have ignored board experience (Akande et al, 2020). As argued by McDaniel et al., (2002) that an audit committee that has financial experts in its membership is likely will improve the quality of financial reports and thus reduce the financial problems in the firms. Thus, the arising question her, is the existence of financial experts in the composition of the BoD is contributed to risk-taking and if so, is the risk-taking increase the value of shareholders.

After the global financial crisis in 2008 and the accounting scandals, regulators have called for increasing the financial experts on the boards of monitoring (Güner, Malmendier, and Tate, 2008). Harris and Raviv (2008) argued that financial experts in the structure of BoD have lower costs and the ability to acquire any type of information associated with the risk of a certain transaction, and that enables them to efficiently monitor senior management. The justification of that is the director with a good level of experience and a better understanding of the principles of finance will be able to achieve its monitoring role of avoiding risky behavior. The existence of financial expertise in the composition of the BoD has crucial importance; this is because lack of the financial expertise of the board of directors may play a role as one reason for increasing the financial crisis (e.g. Kirkpatrick, 2009; and Walker, 2009).

Minton et al. (2014) examined the associations between independent BoD and risk in USA banks over the period 2007-2008 financial crisis. The result shows that independent BoD who has a financial background is positive and statistically significant related to the total risk of the banks. They justified this positive relationship in line with the fact that financial experts acting in the interest of shareholders benefit from more risk-taking. Further, the positive relationship can be explained also consistency within the fact that with more financial knowledge, the board has a better understanding of complex investments and that may motivate them to encourage bank management to take more risk. Lin, Yeh, and Yang (2014) argued that independent directors should be actively involved in essential ideas exchange among themselves and with management. Thus, the availability of a financially knowledgeable board enables them to recognize risks earlier and report them to the senior managers with some scientific advice. Alternatively, hiring financial experts can identify the beneficial risk to the stakeholders in normal times and do recommendations to management to pick up the opportunity of these types of risk. This is in line with resource dependence theory (RDT). According to the RDT, corporate board experts are an important contribution to the firm resource (Hillman and Dalziel, 2003). This contribution is such as gathering the board members variety of experiences (Abdullah and Valentine, 2009).

Nomran et al. (2016) examine the effect of SSB characteristics such as board size, cross-membership, qualification, reputation, and experience on performance. They use a sample of 15 listed IBs in Malaysia over the period from 2008 to 2015. The result of the study refers to SSB experience having a positive impact on the performance and they justify that SSB with financial experience will contribute to giving valuable advice to the management. Sekyi and Gene (2016) examined the effectiveness of internal control systems among listed banks in Spain from 2004-2013. They examine the effects of board size, board independence, and board expertise as elements of internal control system on bank credit risk. They measure board expertise as a ratio of the board of directors with banking or finance background to total board members. The study shows board expertise has significant positive effects on banks' credit risk.

Trinh et al. (2020) investigated the impact of BoD busyness (i.e. multiple directorships of outside board members) on the profitability and stability of CBs and IBs in 14 countries for the period 2010 -2015. The findings of the study show that CBs with busy BoD and superior financial expertise have improved their profitability and financial stability. However, this is less pronounced in IBs. This result might be attributed to the complexity of IBs' governance structure as well as the uniqueness of IBs' financial products that require additional effective monitoring. In the same manner, Najwa et al. (2020) examined the moderating effect of SSB to explain the relationship between the size of BoD and CRO presence on banks' risk-taking. The selected sample consisted of 24 IBs from Malaysia, Indonesia, and Brunei over the period 2010-2015. The regression result of the study shows the interaction between BoD size and SSB members who have Shariah experience enhancing the effect of BoD on insolvency risk. As insolvency risk is measured as a z-score, a high z-score refers to low insolvency risk, thus the positive relationship here, explains low risk. In other words, the large size of BoD is contributed to reducing the insolvency risk when the large percentage of SSB who has a wide range of Shariah experience is set in the SSB. However, this finding is in line with RDT.

Liu and Sun (2021) investigated the effect of independent directors' legal expertise on banks' risk-taking (proxy by total risk, idiosyncratic risk, systematic risk, and insolvency risk) and performance in a sample of 273 bank-year observations for 2011 to 2013 in the USA. The result of regression shows that independent directors' legal expertise facilitates reducing all types of risks for banks. Besides the result show, independent directors' legal expertise affects the idiosyncratic risk negatively but was insignificant. This finding suggests that with more independent directors who have legal experience, more constrain of systematic risk than other directors. Regarding the effect of board members' financial experience, the result shows independent directors' financial expertise is negatively related to insolvency.

From the discussions above, it could be said that the majority of empirical findings refer to the positive effect of the board of directors' experience on the performance and risk in CBs, while the case about the effect of existence the experts in the structure of the board of directors and SSB on bank risk-taking is still limited.

5. Banks Crisis and Corporate Governance

In the prior literature, most of the research has focused on the relationship between corporate governance and banks failures theoretically. Empirically is difficult to establish the direct link between the failures of banks and attributes of corporate governance. This is because the government intervention normally masked the true extent of the main problems and there are so many other factors that may have partly contributed to the failure of banks (Becht et al., 2011). Recently, bank risk-taking is a topical area of research in the banking sectors and finance and it is a crucial issue of concern for the regulation of banks. This is because the banks' risk-taking is expected to influence the likelihood of bank failure either at the micro-level (bank-level) or at the macro-level (affect the stability of the banking system) (Hunjra et al., 2020). In this regard, several of the research about the risk-taking of banks have focused on the impact of the accounting ratio such as the capital ratio (e.g. Konishi and Yasuda ;2004; Agoraki et al., 2011; Abba et al., 2013; Maji and De 2015; Bougatef and Korbi 2019).

The effect of corporate governance on banks' risk-taking became the topic of analysis. The small size of BoD is in line with agency theory (AGT). AGT suggests that with the small size of the BoD the costs of agency might be decreased and the consistency level among the board members might be increased (Quttainah et al., 2013). In the related literature, mixed findings were found about the effect of BoD size, BoD independence, and BoD experience on banks' risk-taking behavior. For example, Wang (2012) find an inverse relationship between the size of BoD and the risk-taking of banks. The author argued that board size and its effect on the performance of the firms have received much discussion; relatively few studies investigate how board size is correlated with a firm's risk-taking. Further, other studies reveal that the board size reflects a significant positive effect on risk-taking (e.g. Sekyi and Gene 2016; Salhi and Boujelbene 2012; Liu and Sun 2021; Abobakr and Eligiziry 2017; Nsaibi and Rajhi 2020 and De Vita and Luo 2018). These findings suggest that high board size, high miscommunication, and disagreement might affect decisions making of risk-taking. On the other hand, Akbar et al. (2017), there is no significant effect of board size on the risk-taking of the financial firms. On the contrary, several studies conclude that board size has a negative relationship with risk-taking (e.g. Pathan 2009; Huang and Wang 2015; Mamatzakis et al.,2017; and Hunjra et al, 2020). These findings are consistent with past literature that believe with more number directors in the corporate board, corporation my gathering more human capital.

Concerning board independence and their influence on bank failures, Berger et al.(2012) performed a study of a sample of US commercial banks for the period 2007-2010. Their objective was to investigate the effect of the number of independent directors, the number of chief officers, the number of other corporate insiders, and the board size on bank's default and the result report that the number of outside directors, the number of chief officers, the number of other corporate insiders and the board size do not influence a bank's default. Many of the stakeholders believed that independent or outsider directors are better than dependent directors in terms of monitoring the management as they have a good reputation in the directorship market (Fama and Jensen 1983). Therefore, it is expected from independent directors to be more objective and offering to the corporation more stringent monitoring. One of the important studies conducted to investigate the effect of board independence on risk-taking was conducted by Pathan (2009), the result of the study shows that for more independent directors, risk-taking is likely low. This implies that more independent directors, more independent decision of risk-taking from shareholders interest. Consistency, majority of the prior literature report that with more outside directors, less risk-taking (e.g.Ramly and Nordin 2018; Salhi and Boujelbene 2012; Mamatzakis et al. 2017; Jiraporn and Lee 2018; Hunjra et al, 2020; Liu and Sun 2021; Lee et al., 2020). They explained this finding as more independent directors, more effective monitors of management. All these findings are consistent with the thought of RDT. On the other hand, Minton et al. (2014) examine the associations between independent BoD and risk in USA banks over the period 2007-2008 financial crisis. The result shows that independent BoD who has a financial background is positive and statistically significant related to the total risk of the banks. They justified this positive relationship in line with the fact that financial experts acting in the interest of shareholders benefit from more risk-taking. Further, the positive relationship can be explained also consistency within the fact that with more financial knowledge, the board has a better understanding of complex investments and that may motivate them to encourage bank management to take more risk. consistent with Minton et al. (2014), Sekyi and Gene 2016; Liang et al. 2013 and Fakhrunnas and Ramly 2017).

The existence of financial expertise in the composition of the BoD has crucial importance; this is because lack of the financial expertise of the board of directors may play a role as one reason for increasing the financial crisis (e.g. Kirkpatrick, 2009; and Walker, 2009). The majority of empirical findings refer to the positive effect of the board of directors' experience on the performance and risk in CBs, while the case about the effect of the existence of the experts in the structure of the board of directors and SSB on bank risk-taking is still limited. Minton et al. (2014) examine the associations between independent BoD and risk in USA banks over the period 2007-2008 financial crisis. The result shows that independent BoD who has a financial background is positive and statistically significant related to the total risk of the banks. They justified this positive relationship in line with the fact that financial experts acting in the interest of shareholders benefit from more risk-taking. Further, the positive relationship can be explained also consistency within the fact that with more financial knowledge, the board has a better understanding of complex investments and that may motivate them to encourage bank management to take more risk. Lin, Yeh, and Yang (2014) argued that independent directors should be actively involved in essential ideas exchange among themselves and with management. Thus, the availability of a financially knowledgeable board enables them to recognize risks earlier and report them to the senior managers with some scientific advice. Alternatively, hiring financial experts can identify the beneficial risk to the stakeholders in normal times and do recommendations to management to pick up the opportunity of these types of risk. This is in line with resource dependence theory (RDT). According to the RDT, corporate board experts are an important contribution to the firm resource (Hillman and Dalziel, 2003). This contribution is such as gathering the board members variety of experiences (Abdullah and Valentine, 2009). On contrary, other studies report a negative relationship between BoD expertise and banks' risk (e.g. Liu and Sun 2021; Najwa et al. 2020 and Trinh et al., 2020).

6. Recommendations for Future Research

In light of the abovementioned discussions, several points have to be highlighted for future research on the characteristics of the BoD and banks' risk-taking. These points are related to the characteristics of BoD, issues, methods of analysis, and measurements of variables.

6.1 Characteristics of BoD

An empirical study is in dire need to investigate how BoD characteristics can affect the risk-taking of IBs. Furthermore, the question of how BoD remuneration can affect the risk-taking of IBs need to be addressed interacting with the effect of SSB.

6.2 Issues

The need for empirical studies is crucial to examine the effect of BoD characteristics on the risk-taking of IBs and CBs, and compare the IBs that operate:

(1) Banks ruled under central Shari'ah governance and decentral Shari'ah governance.
(2) Baks ruled under the advisory role of SSB and supervisory role.
(3) Investigation of the interaction effect of BoD and SSB on risk-taking.

6.3 Method of Analysis

One of the reasons that stand behind the inconclusive results in past literature is the failure of several studies to account for the endogeneity issue (Hermalin and Weisback, 2003). According to Roberts and Whited (2012) that "Endogeneity leads to biased and inconsistent parameter estimates that make reliable inference virtually impossible" (p.6). Thus, future studies should control the biased due to the endogeneity issue. One of the recommended methods to solve this issue is using a GMM estimator (Aljughaiman, 2019; Aslam and Haron,2020). Further, future studies may apply Structural Equation Modeling (SEM) in governance and risk-taking studies. By applying the SEM, unobserved influence in the model can be included through latent unobservable variables that can measure by using many observable variables. For more details regarding the suitability of SEM for panel data (see e.g. Roemer,2016).

6.4 Measurements of Variables

(1) For IBs, risk-taking should be measured using the unique risk of IBs such as Shari'ah non-compliance risk, rate of return risk, displaced commercial risk, and equity investment risk as alternative measurements of risk-taking.
(2) Using the liquid assets to total deposits and borrowing (LATOBOR) as a measurement of liquidity, capture the liquidity variable position of both assets and liability side of banks' balance sheet. loans to the total asset (LONTASS) is a familiar measurement of liquidity risk which is focused on liquidity on the assets side of a bank's statement of financial position (see e.g. Etudaiye-Muhtar et al, 2018).
(3) There is a need to create a suitable measurement for BoD remuneration as there is a lack of studies that have provided such measurement besides ignoring the impact of this variable on the risk-taking of IBs.

7. Conclusion

The need for effective corporate governance in both developing and developed economies becomes important; this is due to the willingness of the firms to access domestic and international financial resources (Iskander and Chamlou, 2000). From the inspiration of the global financial crisis that escalated in 2007-2008, for which the excessive risk-taking of banks is much blamed, the present literature review paper attempts to learn more about the effect of corporate governance mechanism mainly the characteristics of the board of directors on banks risk-taking.

Responding to the GFC in 2007, the governance mechanisms of banks have gained significant discussion such as the debate about the effectiveness of the board of directors of banks. This is because the board of directors is a key mechanism to monitor the behavior of managers and their decisions as well as provide advice to them about the strategy setting and implementation. Besides, many academic, economists and policy documents have created some recommendations regarding the governance of banks namely about the independence of BoD. The main idea is that numerous of the directors' characteristics impact their incentives and ability to perform their role and consequently, affect the risk-taking decisions. Further, the effect of the characteristics of the board on the value of banks might be depended on the trade-off between the advantages and disadvantages of monitoring and advising.

In this survey of the literature, the vast body of literature devoted to studying the relationship between boards characteristics of banks and risk-taking has been reviewed in general. The result of the survey suggests that the empirical findings commonly investigate the relationship between the size of the BoD and the profitability of the banks while the empirical studies hold in the effect of board directors and risk-taking of banks are limited in general. The results of the existing prior studies holding to investigate the effect of size of the board and risk-taking of banks were inconclusive and remain ambiguous. The supporters of the large size of BoD argue that with large BoD, gathering more human capital by increasing the pool of expertise, tightens the monitoring over the management and consequently more effective in constraining risk-taking decisions. On the contrary, the opponents of the idea of too many members of BoD suggest that large directors might lead to a high level of miscommunication, less control and flexibility in the decision-making process, and disagreement among the directors might affect decisions making of risk-taking. Thus, this paper suggests that future research should empirically examine how the size of BoD can affect the risk-taking of banks. There is a need for more empirical studies to examine whether the effect of BoD size on banks' risk-taking can be moderated by strong SSB in IBs.

Although independent directors are not (necessarily) beneficial for banks as they do not always have adequate knowledge about the specificities and complexity of the banking business, the majority of the existing literature supports that board independence is associated with bank risk-taking negatively. It is implied from this result that the higher the proportion of independent directors, the lower the occurrence of operational incidents. This can be explained, as more outside directors more exert a counter-power within the board of directors and counter a very effective operational risk policy. Thus, it is argued that independent or outsider directors with good directorship attitudes can monitor the managers than the dependent directors (Fama and Jensen 1983).

Another important feature of the BoD that might affect the risk-taking of banks is the experience of the board of directors in the field of finance and banking knowledge. It is arguably to be one of the corporate governance key elements, yet studies investigating traits of corporate governance in mitigating risk-taking behavior have ignored board experience (Akande et al, 2020). The existence of financial expertise in the composition of the BoD has crucial importance; this is because lack of the financial expertise of the board of directors may play a role as one reason for increasing the financial crisis (e.g. Kirkpatrick, 2009; and Walker, 2009). The result of the survey of prior literature suggests that the majority of empirical findings refer to the positive effect of the board of directors' experience on the performance and risk in CBs. Thus, the availability of a financially knowledgeable board enables them to recognize risks earlier and report them to the senior managers with some scientific advice. The result of prior literature shows that the effect of the existence of the experts in the structure of the board of directors and SSB on IBs risk-taking is still limited. Further, future research should examine whether the existence of more expertise directors can affect IBs risk-taking. From past literature, this paper would like to conclude that the features of BoD are received much debate, but their effect on banks' risk-taking has remained far from convincing and that is due to the failure of overcoming the endogeneity issue. Therefore, this study suggests future studies should control for endogeneity issues by using a GMM estimator.

Finally, it is noted that the prior literature failed to find evidence that can link between the features of directors and banks failures. This is because the government intervention normally masked the true extent of the main problems and there are so many other factors that may have partly contributed to the failure of banks (Becht et al., 2011). Thus, future studies are required to investigate with much more detail the relationship between corporate governance mechanisms of banks in general and the effect of directors' features in particular on the defaults of banks.

This study has some limitations. First, in this paper, the scope of the discussion of board of directors features is limited to the main three features, namely board of directors size, independence, and expertise. Other features of the board of directors such as educations qualification, age, busyness, and remuneration of the board of directors are not included. Second, other key elements of corporate governance mechanism are not included such as ownership, risk committee, chief risk officer, and Shari'ah supervisory board in IBs.

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