Bank Capital Structure and Its Determinants

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Financial institutions, particularly banks, have long grappled with the dilemma of structuring their capital optimally. This process, commonly referred to as capital structure decision-making, is of paramount importance, especially within the financial services sector, where strict regulations are imposed by reserve and central banks in alignment with global Basel guidelines.

Keywords: asset tangibility ; Basel III Accord ; capital adequacy ratio ; leverage ; profitability ; pecking order theory

1. Introduction

Banks' financing decisions, also referred to as capital structure, have remained a puzzle for decades, leaving those charged with the responsibility of directing and controlling the banks in a state of dilemma. These decisions have received enormous research attention in the academic and corporate finance world due to their importance for the profitability and growth of firms (Kayo and Kimura 2011). Banks and other financial services companies are not exempt from the challenges they face when choosing between different financing options, such as debt and equity, among others. According to Nikoo (2015), choosing the optimal capital structure among alternatives is essential for a bank's performance, operational efficiency, and resilience.

According to the Bank for International Settlements (BIS 2017), banks are financial institutions that provide intermediary functions in an economy through channelling surplus financial resources from depositors to borrowers of funds who are in deficit. To reduce distress and the likelihood of failure in banking firms, and to promote the economic health of countries and international markets, it is necessary for regimes across the world to regulate bank capital structure and financing decisions. Due to the need to regulate the financial structure of banks, the Basel Committee for Banking Supervision (BCBS) has established a series of international banking standards from the first to the third. These Basel agreements are internationally accepted standards in banking finance laws because the BCBS acts as the supreme international coordinator of banking policies and provides banking monitoring agreements (Bank for International Settlements BIS 2017).

The Basel III Accord, which is currently the most recent of the three Accords improving on the capital composition requirements of banks by addressing the under-capitalisation, over-leverage, and excess reliance on short term funding of the banks globally (BIS 2017). The Basel III requirements represent a stricter definition of capital and improve on the quality of the capital, which invariably affects the capital structure of the banks.

The global Basel III regulation has impacted the financing decisions of banks in several ways. According to BIS (2017), the elements of the Basel III Accord, such as the capital adequacy requirements, mandate banks to maintain higher levels of regulatory capital as a buffer against potential losses. This influences banks' financing decisions by encouraging them to raise additional equity capital or retain earnings to meet the new requirements. Also, the liquidity coverage ratio mandates banks to hold sufficient high-quality liquid assets to meet short-term liquidity needs during times of financial stress. This consequentially impacts the financing decisions of banks as they prioritise holding liquid assets over riskier investments. The introduction of the Basel III leverage ratio also limits a bank's overall leverage by comparing its Tier 1 capital to its total exposure. This means banks now carefully manage their financing decisions to ensure compliance with the prescribed leverage limits (Obadire et al. 2022b). As a result of this, the global Basel regulation plays a crucial role in the financing decisions of banks.

Yitayaw (2021), Lemma and Negash (2014), and Frank and Goyal (2009) added that, despite the capital regulation mandated by the BCBS, other factors can significantly impact its financing decisions. These factors are internal to the bank and reflect its unique characteristics, performance, and risk profile. Profitability, risk, size, stability, earnings volatility, and asset tangibility are popular factors that influence the financing decisions of banks (Yitayaw 2021; Lemma and Negash 2014).

2. Conceptual Understanding of Banks' Capital Structure

The understanding of the capital structure decision of banks is an imperative and a crucial concept in corporate finance. Acharya et al. (2016) argue that the capital structure of banks is not influenced by similar variables as compared to the non-banking sectors. Owing to the importance and the peculiarity of banks' financing behaviour as compared to the non-financial firms, an enormous research attention has been given to the study of banks' capital structure and its determinants.

According to Kalemli-Ozcan et al. (2012), the funding of banks is unique because they are obliged to follow the regulations set out by the country's delegated regulatory body, such as the prudential regulatory authority, which assesses their capital structures. The Central or reserve banks fully or partially adopt the guidelines set out by the Basel Committee on banking regulation in regulating the capital structure of local banks (Al-Najjar and Hussainey 2011). Acharya et al. (2016) and Kalemli-Ozcan et al. (2012) concede that the bank capital structure consists of the minimum regulatory capital, capital buffers, and the discretionary capital. According to the guidelines set out by the Basel Committee on Banking Supervision (BCBS 2013), banks are expected to retain a minimum capital base and capital buffers to foster banks stability, safeguard against unexpected shocks, and to maintain their financial resilience. Furthermore, banks are free to keep more capital than the threshold recommended by the Basel Accord (Delimatsis 2012).

Aboura and Lépinette (2015) and Gropp and Heider (2010) define bank capital as "the difference between a bank's assets and its liabilities, which represents the net worth of the bank or its equity value. The asset portion of a bank's capital includes cash, government securities, and interest-earning loans such as mortgages, letters of credit, and inter-bank loans, while the liability portion includes the short-term and long-term deposits amongst others, such as equity and regulatory equity capital" (Lim 2016). Aboura and Lépinette (2015) further argue that for banks to maximise their capacity to absorb losses, they should move from the composition of 100% equity towards a composition that includes debt capital to benefit from lower costs of financing and reduce the level of taxable income. Beltratti and Stulz (2012) argue that banks, like any other firm, enjoy a tax shield when they use debt funding up to a certain point when the current worth of the tax buffers on extra debt is balanced out by a rise in current value of economic stress costs and the agency implications. This implies that banks are able to benefit from an optimal mix of financing in their capital structure.

According to Lim (2016), bank operations are financed predominantly through equity and debt capital. On one hand, bank funding through equity capital consists of the owners' equity, minimum regulatory capital, reserves arising from revaluations of non-current assets, and long-term securities. On the other hand, debt capital consists of unsecured, fully paid debt instruments, and other subordinate debts with a minimum fixed maturity date of five years (BCBS 2013). Pistor (2013) further indicates that banks finance their operations through depositors' funds, which include the customers' deposit and savings accounts.

Along with the customers' deposits and savings accounts, banks are also involved in a lot of other profitable activities such as investment in safe government securities in order to raise additional funding. Furthermore, banks provide loans and other credit facilities to their customers and charge interest on the loans advanced. Nonetheless, banks face the risk of loan default from their customers and this kind of hazard is identified as credit risk. According to Okafor and Fadul (2019) and Badawi (2017), other risks that banks face which arise from their trading activities include market, counterparty, credit risk, liquidity, and operational risks.

Affinito and Tagliaferri (2010) argue that, despite all the sources of finance available to them, banks largely rely on debt capital to meet their financial and operational needs. In support of this finding, Acharya et al. (2016) argue that the financing implication of using debt funding is lesser as compared to the financing implication of other sources, especially equity capital, and with debt funding firms enjoy debt interest tax shields. The heavy reliance of banks on debt capital often explains the reason why banks have high leverage (Berger and Bouwman 2013). Nonetheless, Lim (2016) argues that the choice and mix of bank funding and its capital structure have a direct influence on its earnings, operational efficiency, stability and the risk of bank failure.

Berger and Bouwman (2013) posit that one of the major risks arising from the capital structure of a bank relates to the high proportion of short-term funding, such as customers' deposit and savings accounts, which is used to finance long term loans, which could lead to a liquidity crisis. Furthermore, Adrian and Shin (2010) posit that depositors and other creditors can demand payment on their deposit or savings accounts anytime without proper prior notice which contributes to increased liquidity risk. However, Al-Najjar and Hussainey (2011) indicate that many countries insure deposits as a safeguard to mitigate the risk of customers' unannounced notice of withdrawals of funds leading to bank operational failure.

The safety, efficiency, and stability of banks have been questioned by the public. Because of this and the credit and liquidness risks related to the sources of bank funding, the need for bank regulations arises. These guidelines, such as the Basel Accords, are designed to limit banks' exposures to credit, market, solvency, and liquidity risk (Obadire et al. 2022a).

3. Empirical Review of Bank Capital Structure and Its Determinants

The impact of the Basel III Accord in determining the financing choices and capital structure of banks cannot be overemphasised. The current Basel III guidelines have been amended in respect of the capital structure, constraining the elements of capital that are eligible for inclusion in the definition of regulatory capital (BIS 2017). Ramli et al. (2019) and Chadha and Sharma (2015) posit that the capital requirement and the new liquidity framework also can influence the choices and decisions made by those charged with the governance of the bank. They further indicate that financing decisions play a vital role in the performance and stability of the financial institution.

Similarly, Lim (2016) observes that a bank can decide to finance its projects with common stock, preferred stock, or debt. These elements are components of the bank's capital structure. On the one hand, the financial institution raises equity in the form of common and preferred stock, which is held by the owners of the bank. A long-term relationship exists with these equity holders, who hope that the firm will have high growth in the future and who expect regular dividend payments. On the other hand, debt can be made of loans payable, bonds, notes payable, and debentures amongst others. The debt holders, such as the individual and the institutional investors, do not have any long-term commitment to the bank except in the case of irredeemable debentures. This is because they are mainly interested in the repayment of the principal amount and the interest. Most importantly, for the bank, the depositors' funds are regarded as capital, through short-term funds (De Silva et al. 2019; Aboura and Lépinette 2015).

The main function of capital is to finance the banks' operational activities and the acquisition of assets. Moreover, bank capital is needed to protect the bank from all kinds of unsecured and uninsured risks that may turn into losses. According to De Silva et al. (2019), capital has a loss-absorbing function that allows the bank to cover any losses with its own funds, and thus, any loss that occurs decreases the bank's capital. Furthermore, the interest margins and other spreads have sufficient capacity to cover the ordinary expenses that ensue from the normal course of business activities.

The most important risk for which financial institutions need equity concerns borrower default, which makes some assets partly or entirely irrecoverable (Goyal 2013). Furthermore, capital has a confidence function because it convinces the bank's creditors and the depositors that their deposits and assets are safe. The ability of banks to absorb losses indicates that they can use their assets to cover the liabilities, which builds and sustains their credibility (De Silva et al. 2019). Demirguc-Kunt et al. (2013) indicate that funding through equity places a restrictive capacity, which places some limits on various banking transactions and prevents banks from taking risk that is too high. Thus, the capital structure of banks runs within the scope of the Basel III Accord through the minimum capital requirements, buffer requirements and leverage requirements.

As previously indicated, the main objective of the Basel III Accord is to increase a bank's stability (BCBS 2013). Chun et al. (2012) suggest that the increase in the capital requirements and a higher proportion of equity funding, as compared to debt funding, restrict a bank's ability to lend, which in turn affects its main operational activities and stability. Conversely, Admati et al. (2013) argue that banks can restructure their financing decision and make significant changes to their capital structure without harming their performance or ability to lend to the public through asset liquidation, recapitalisation and asset expansion. Firstly, banks can achieve these by scaling back the size of their balance sheet in a significant way by liquidating a certain proportion of their assets and reducing their liabilities by using the proceeds from the assets. They can also recapitalise by issuing an amount of additional equity, removing the same amount of liability, and raising additional equity capital to expand the balance sheet and use the proceeds to acquire new assets (Admati et al. 2013).

Gavalas and Syriopoulos (2018) analysed the Basel III accord index on the main banks' leverage. Their study examined nine Brazilian banks for the period of five years from 2012–2016, employing both descriptive and inferential statistics to analyse their data. The major estimator used in their study was the ordinary least square estimator. The findings of their study showed that Brazilian banks suffered a direct impact on the capital structure concerning regulations and their size. This is because the concentration of the sector produced a structure that sought the efficiency of bank activities. The findings also showed that there was a positive relationship between the Basel III index and the leverage size of the Brazil financial institutions.

Similarly, Klefvenberg and Mannehed (2017) investigated the extent to which the capital structure of Swedish banks was affected by the implementation of Basel III. The methodology of their study focused on the use of OLS multiple regression analysis. Furthermore, their study focused on the relationship between capital structure and the implementation of the Basel III Accord. The findings of their study showed that the Basel III Accord caused a decrease in the capital structure and that affected some of the determinants of capital structure of the Swedish banks. They concluded that the findings were probably influenced by the current Swedish negative repo rate policy.

Furthermore, Gabriel (2016) analysed the impact of the Basel III capital requirements on the capital structure of European banks. The purpose of this research was to empirically test the relationship between the new regulatory capital requirements and the leverage and performance of European banks. The study selected a sample of European banks and employed regression analysis to examine the relationship between the Basel III regulatory requirement and the capital structure levels. The findings of this study showed that a positive relationship between the variables existed.

In contrast, Okahara (2018) analysed the capital structure and the effect of regulating the banks' capital adequacy ratios, or the ratio of equity financing to risky assets. Specifically, the study investigated whether bank lending decreased when the banks raised their CAR to satisfy the regulation. The study employed a model in which households had bargaining power concerning deposits, and in which a bank was compelled to adjust its capital structure indirectly through the households' decision-making. The study further postulated that a bank with bargaining power always chose to use equity financing more and that as a result there was no probability that the bank lending would decrease. In other words, the findings showed a negative relationship between the capital adequacy ratio and the level of bank leverage.

Gavalas and Syriopoulos (2018), Klefvenberg and Mannehed (2017) and Gabriel (2016) conclude that the Basel III regulatory requirements have a positive impact on the leverage of banks. On the other hand, Okahara (2018) and Chun et al. (2012) hold contradictory views on the above conclusion. In line with the previous findings, and despite the inconclusive results of some studies, the current study expected the Basel III regulatory requirements to have a positive impact on the capital structure of banks. This is justifiable based on the premise that the overarching aim of the Basel III Accord is to strengthen the capital base of banks to promote their resilience and stability by redefining what constitutes their capital structure component.

Furthermore, studies from developed nations and a few from developing nations have considered some factors as determinants of bank capital structure. Ahmad et al. (2008), in their study of the determinants of bank capital in the developing economy, identified minimum regulatory capital and bank profitability as the concerning factors of bank capital decision. Similarly, Le et al. (2020) reported that stricter capital ratio influences the capital structure decision-making of British and Australian banks. Furthermore, Tran et al. (2020) conducted a novel study on the determinants of bank capital structure in the world and affirm that bank capital structure is largely influenced by similar factors affecting non-financial firms. They concluded that asset tangibility, bank size, risk, profitability and liquidity creation are the main factors that determine banks' capital structure except for growth opportunities. Emphatically, adding the African voice, Sibindi (2016) alluded that bank risk and size are the significant factors that determine the capital structure of financial service firms in South Africa. The richness of these studies formed the bedrock for the selection of bank capital structure determinants being investigated within the African context of the current study.

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