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Liquidity Improvement Model for Regional Development Banks in Indonesia

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Abstract

Purpose - This study examines the effect of ownership concentration, product diversification, and capital adequacy ratio on bank liquidity in Regional Development Banks (BPD) in Indonesia. Method - The data was collected from BPDs in Indonesia's publicly accessible financial records. There were two phases of the research. In-depth interviews with banking administrators (Board of Directors - BOD and Board of Commissioners - BOC) from several BPDs in Indonesia were conducted in the study's initial phase to acquire background data on the banking management process. The second step involved quantitative research employing multiple regression approaches for secondary data analysis. Finding - The results showed that ownership concentration and capital adequacy affect the level of bank liquidity, while product diversification does not affect bank liquidity. Practical Implication - The results of this study are expected to provide recommendations for capital management and risk management in BPD. In addition, this study can also offer suggestions for local government policies in developing BPD in Indonesia. This is important in supporting Indonesia's overall economic growth. The results can provide recommendations for regulators and banks in making policies to improve banking liquidity in Indonesia. Originality/value: Few studies still model the improvement of liquidity and capital stability in regional development banks in Indonesia using the factors of ownership concentration, product diversification, and capital adequacy. They are mainly related to ownership concentration. Ownership concentration impacts regional development banks' liquidity differently than private banks.

Keywords: *Ownership Concentration, Product Diversification, Capital Adequacy, Liquidity*

Introduction

The Regional Development Bank (BPD) is a financial institution owned by numerous local governments in Indonesia. There are 27 regional development banks in Indonesia, all of which contribute to regional development. Based on the most recent report released by the Financial Services Authority (OJK) during the third quarter of 2021, it was observed that the average liquidity ratio for BPD institutions in Indonesia stood at 118.15%. This figure suggests that the level of liquidity maintained by these institutions can be satisfactory. The previously stated ratio increased compared to the previous year, as the average liquidity ratio of Indonesian BPDs reached 114.27%. The previously mentioned ratio rose compared to the last year's corresponding period, during which the average Capital Adequacy Ratio (CAR) of Indonesian

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Regional Development Banks (BPDs) stood at 18.62%. In the third quarter of 2021, the average CAR of Indonesian Regional Development Banks (BPDs) attained a level of 20.11%, indicating robust capital stability. The ratio mentioned above shows a rise compared to the previous year's corresponding timeframe, during which the average CAR of Indonesian Regional Development Banks (BPDs) stood at 18.62%. Nevertheless, it is imperative to acknowledge that the stability of bank capital is susceptible to fluctuations as economic and banking circumstances persistently develop.

Hence, it is essential to engage in diligent monitoring to evaluate the most recent advancements. BPD is exposed to many risks in its banking operations, including liquidity risk. The potential consequences of this risk can influence the operational efficacy and long-term viability of BPD. Consequently, it is imperative to implement efficient risk management strategies. The user's text might be rewritten more academically as follows: "The provided text can be enhanced by adopting a more academic tone". The concentration of ownership (Liu et al., 2020; Ozili & Outa, 2018), product and income stream diversity (Adem, 2022; Ebrahim & Hasan, 2008), and financial adequacy (Harkati et al., 2020; Karim, 1996) are potential factors that may influence these risks. The concentration of ownership inside a bank can impact its liquidity and capital stability due to possible limitations on its access to a wide range of funding sources.

Theoretical Framework

Bank ownership concentration and capital adequacy are factors that impact bank performance, particularly in terms of liquidity (Claessens et al., 2000). Additionally, implementing product diversification policies is significant for enhancing bank performance. Nevertheless, there remains debate surrounding the extent of the influence of both these factors on bank performance, especially within Indonesia (Asif & Akhter, 2019; Le & Pham, 2021). Therefore, this study will investigate the impact of bank ownership concentration, product diversification, and capital adequacy levels on the liquidity and capital stability of banks in Indonesia. This research aims to enhance the comprehension of the influential factors on bank liquidity and capital stability in Indonesia. The findings may offer guidance to regulators and banks in formulating policies to strengthen the banking sector stability in Indonesia. Bank ownership concentration and capital adequacy levels may impact Indonesia's liquidity and capital stability. Product diversification, however, can potentially enhance overall bank performance (Pratama et al., 2021). To ensure stability in the banking sector, it is crucial to have stringent supervision of bank ownership concentration and capital adequacy, along with appropriate product development and diversification.

The diversification of products within a bank's portfolio has the potential to influence its liquidity risk and capital stability. This is achieved by reducing the bank's dependence on a single product and enhancing its income derived from a range of goods (Nguyen, 2018; Wu et al., 2020). The capital adequacy level has the potential to impact the liquidity risk and capital stability of banks, as it determines the bank's ability to fulfill financial obligations and safeguard the interests of shareholders. Hence, it is imperative to research the effects of ownership concentration, product diversity, and capital adequacy levels on the liquidity and capital stability of Indonesian Regional Development Banks. The implementation of this strategy will have a positive impact on the improvement of risk and capital management within the context of BPD.

In the context of globalization and increasing competition, banks must improve their capital stability and liquidity performance. One potential approach to attain this objective is

implementing a product diversity strategy. However, the degree to which it affects bank performance, specifically in Indonesia, is a topic of ongoing discussion. The use of product diversification strategies has been found to positively impact the overall performance of banks, leading to improvements in liquidity and capital stability (Berger & DeYoung, 1997; Sufian & Habibullah, 2009). Therefore, implementing a proficient product development and diversification plan is of utmost importance in ensuring the stability of the banking sector in Indonesia. Nevertheless, it is important to acknowledge that product diversification can include some risks, necessitating thorough oversight from bank management and regulatory authorities to ensure the effectiveness of product diversification plans (Setiawan & Pramika, 2020; Soedarmono et al., 2013).

The Capital Adequacy Ratio (CAR) is a metric that quantifies the amount of capital a bank holds to mitigate potential risks (Abou-El-Sood, 2017). Capital stability refers to a bank's capacity to maintain an adequate level of capital to mitigate losses resulting from encountered risks. Hence, a robust correlation can be observed between the Capital Adequacy Ratio (CAR) and capital stability inside banking institutions. According to (Mishkin & Eakins, 2012; Saunders & Cornett, 2018), a bank's capacity to cover risks and keep sufficient capital is enhanced when its CAR increases. Therefore, it can be argued that the bank typically exhibits higher capital stability. However, if a bank's CAR is low, the bank's ability to mitigate risks and uphold sufficient capital is constrained. The potential consequences of this situation include financial losses and potential bankruptcy, particularly if the stakes involved are substantial.

Research Methodology

This study is centered on the examination of Regional development Bank (BPDs) within the context of Indonesia, in accordance with the established research objectives. There exists a total of 27 Regional development Bank (BPDs) in Indonesia, except one BPD that needed to be encompassed within the scope of this particular study. The data used in this study consists of secondary data obtained from the financial reports of BPD organizations over six years. Simultaneously, scholars have obtained primary data by conducting interviews with administrators of BPD, specifically the Board of Commissioners (BOC) and Board of Directors (BOD). The research variables in this study are ownership concentration, product and revenue diversity, and the level of capital adequacy and liquidity of Indonesian BPDs. These variables are derived from secondary data obtained from the financial statements of Regional Development Banks. The utilization of a binary variable conducts the assessment of ownership concentration. This variable takes on a value of 1 when the shares of BPDs are controlled by a single local government with a majority stake of over 50% and a value of 0 when no local government possesses BPD shares exceeding the 50% threshold. The determination of product diversification is contingent upon the proportion of non-interest income about interest income. The Net Stable Funding Ratio (NSFR) is used to ascertain liquidity. The data acquired through the Focus Group Discussion (FGD) will serve as a valuable addition to the study findings derived from secondary data analysis.

Results and Discussions

Based on the financial statement data from regional development banks throughout Indonesia, Table 1 presents the descriptive statistics of the research data.

Table 1.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Product Diversification	157	1	33	11,44	6,873
Capital Adequacy Ratio	157	9	43	23,13	4,857
Liquidity Bank	157	0	5	,97	1,009
Valid N (listwise)	157				

Source: Created by Author.

The Effect of Ownership Concentration, Product Diversification, and Capital Adequacy on Liquidity in Regional Development Banks in Indonesia

The present study employed SPSS to investigate the influence of ownership concentration, product diversity, and capital sufficiency on Indonesian Regional Development Banks (BPD) liquidity. The results are displayed in Table 2.

Table 2 Hypothesis Test.

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,878	,429		4,375	,000
	Ownership Concentration	,871	,241	,276	3,620	,000
	CAR	-,036	,016	-,174	-2,241	,026
	Product Diversification	-,015	,011	-,100	-1,291	,199
3.6.1.a. Dependent Variable: Likuditas						
3.6.2.Adjusted R^2 = 0,118 3.6.3.F = 6,836						

Source: Created by Author.

The liquidity of regional development banks in Indonesia is influenced by ownership concentration and capital sufficiency, as indicated by the Net Stable Funding Ratio (NSFR), as observed through data processing results. The agency challenges experienced by banks are more complex compared to those surveyed in non-financial firms. Bank managers have many responsibilities to multiple stakeholders, including shareholders, depositors, and regulatory bodies. Due to its peculiarity, the concentration of power in the banking sector may lead to a heightened significance of agency costs. According to the research conducted by (Jensen & Meckling, 1976), it was observed that there exists a positive relationship between the dispersion of ownership structure and the level of agency expenses. According to (Shleifer & Vishny, 1986), substantial shareholders mitigates the typical problem of agency between owners and managers. This is achieved through their strong incentive to acquire information and considerable power to influence management decisions.

Consequently, this results in establishing a more efficient governance structure, ultimately generating substantial value for shareholders. Agency theory posits that significant shareholders are incentivized to manage banks effectively. These shareholders have the ability to reduce discretionary management conduct and improve corporate value.

The Impact of Ownership Concentration on Liquidity in Regional Development Banks in Indonesia

The presence of concentrated ownership in regional development banks in Indonesia has yielded noteworthy and statistically significant outcomes in terms of liquidity. This implies that local governments play a crucial and influential role in overseeing the liquidity of regional development banks in Indonesia. According to several studies, concentrated ownership has the potential to mitigate free-rider issues and enhance business performance using enhanced management supervision (Admati et al., 1994; Shleifer & Vishny, 1986). The findings of this study are consistent with prior research conducted by (Liu et al., 2020), which established that ownership concentration, encompassing both public and private ownership, exerts an influence on liquidity levels inside Chinese national banks. The findings of their study also indicate that a higher level of ownership concentration in privately owned banks diminishes the effectiveness of board monitoring. Conversely, when banks are under government control, there is an enhancement in the monitoring of bank credit. The findings suggest that government banks exhibit greater efficacy in the role of monitoring compared to privately-owned banks.

Within the banking industry, significant stakeholders exhibit a keen interest in overseeing the activities of bank management by closely monitoring lending practices, operational efficiency, and risk management (Unite & Sullivan, 2003). However, the presence of concentrated ownership in the bank emphasizes the significant influence that major shareholders possess, which incentivizes them to take advantage of minority shareholders and depositors. The presence of significant shareholders has the potential to yield personal advantages in terms of control, hence posing a threat to the overall value of the firm (Johnson et al., 2000; Tribo & Gutiérrez Urtiaga, 2011). In the context of the banking sector, the act of extracting private advantages not only poses a disadvantage to minority owners but also to depositors. According to (Stulz, 1988), stockholders who possess significant influence have the ability to appropriate smaller shareholders. Insider takeovers have the ability to influence management decision-making and perhaps jeopardize the welfare of small shareholders (Shleifer & Vishny, 1997).

The conclusions of prior studies diverge from the observed effects of share ownership concentration on regional development banks. In many cases, majority shareholders, often local governments holding more than 50% of shares, exhibit a tendency to unduly intervene in the management of banks, particularly with respect to the board of commissioners (BOC) and the board of directors (BOD). Frequently, this poses a threat to the financial stability of banks. The outcomes of the study indicate that there is a positive and substantial relationship between ownership concentration and the liquidity level of BPD. Local governments that possess shares in BPD are expecting significant dividends from their investments in the company.

In addition, individuals place their whole monetary holdings in BPD, so facilitating the bank's expeditious acquisition of new capital for its operating endeavors. In the event of loan default, the bank has the authority to directly debit the salary account of local government employees, as their salary payment account is maintained with BPD. Therefore, the probability of client default is diminished, thereby exerting a favorable influence on the bank's liquidity.

The existing body of work mostly centers around the examination of the influence of ownership concentration on credit risk, the effects of ownership concentration on bank risk in relation to equity risk and accounting-based risk measures, and the evaluation of capital as a risk measure in terms of accuracy and appropriateness. In this study, we investigate the impact

of ownership concentration on the liquidity of banks. Limited study has been conducted on this particular subject matter (Ashbaugh et al., 2004; Bhojraj & Sengupta, 2003; Boubakri & Ghouma, 2010; Elyasiani et al., 2011). Although there are relevant studies available, none of them specifically focus on the banking industry. The given research focus on examining the impact of ownership concentration on risk-taking behavior, particularly with regard to the negative consequences associated with increased debt. The findings yield varying outcomes. According to the findings of (Iannotta et al., 2007), there is a negative relationship between ownership concentration and bank risk, as indicated by the provision for loan losses to total loans ratio. According to (Ellul & Yerramilli, 2013), it has been established that banks with concentrated ownership structures, characterized by large shareholders, tend to exhibit higher levels of risk-taking compared to banks with more dispersed ownership structures. The findings of (Shehzad et al., 2010) do not support the aforementioned claims, as their research indicates that more ownership concentration is associated with less bank risk, as evidenced by lower non-performing loan ratios and capital adequacy ratios.

The preservation of liquidity is a vital function that banks fulfill inside the economy. The financial crisis that occurred in recent times demonstrated the potential failure of financial institutions in effectively managing liquidity, despite possessing sufficient amounts of capital (Díaz & Huang, 2017). Banks acquire liquidity for their balance sheets by funding long-term liquid assets through short-term liquid liabilities (Bryant, 1980). In the meantime, financial institutions primarily produce off-balance sheet liquidity through utilizing loan commitments and related claims, as discussed in previous studies (Holmström & Tirole, 1996; Kashyap et al., 2002).

In a seminal publication, (Berger & Bouwman, 2009) presented a thorough approach for assessing the extent of liquidity creation. Numerous research have been conducted to investigate the determinants of liquidity production, utilizing the aforementioned statistic as a basis for analysis. The aforementioned research examined several aspects of the financial sector, including regulatory capital (Horvath et al., 2016), monetary policy (Berger & Bouwman, 2009), economic output (Berger & Sedunov, 2017), government intervention (Berger et al., 2016), and bank governance (Díaz & Huang, 2017). However, there is a need for further scholarly research that explores the impact of bank ownership structure on the generation of liquidity.

The present study examines the impact of ownership structure on the generation of bank liquidity. The objective of this study is to ascertain the impact of ownership concentration and the type of eventual owner on this particular process. The study conducted by (Berger & Bouwman, 2009) examines the impact of liquidity creation on the performance of banks in the United States. The argument put up is that an increase in liquidity creation leads to a higher net surplus that is distributed among stakeholders and the non-bank public, thereby resulting in a rise in the value of banks. In essence, banks enhance their liquidity by transforming highly liquid liabilities, such as demand deposits with lower interest rates, into comparatively less liquid assets, such as commercial loans that yield greater returns. This phenomenon leads to an augmentation in the excess allocated to shareholders, hence creating a motivation for bank shareholders to seek a greater provision of liquidity from bank managers. This research aims to analyze the relationship between liquidity creation and ownership composition by closely examining the provided proof. Numerous studies have demonstrated that the level of control shareholders possess over management is positively correlated with the degree of ownership concentration (Barth et al., 2004; Shleifer & Vishny, 1986), among others. The potential risk

posed by minor and scattered shareholders to management is contingent upon their ability to effectively organize themselves. According to (Shleifer & Vishny, 1997), the presence of significant or concentrated shareholders mitigates the occurrence of free rider issues. Given the assumption that shareholders possess a vested interest in the generation of value through liquidity creation, an inquiry arises regarding the potential impact of ownership concentration on shareholder power and its influence on management's propensity to enhance liquidity production.

This study investigates the relationship between ownership structure and liquidity production by further exploring the various aspects that influence it. The scholarly discourse on corporate governance frequently highlights the substantial impact of ownership structure on both corporate governance and performance. A comprehensive analysis of this topic can be traced back to the early days of this field, as exemplified in the work of (Berle & Means, 1932). Numerous academic studies have indicated a positive association between ownership concentration and profitability. Notable references supporting this claim include the works of (Cubbin & Leech, 1983; Ebrahim & Hasan, 2008; Short, 1994; Zeckhauser & Pound, 1990). While there has been ongoing debate on this concept in both theoretical (Demsetz, 1983) and empirical (Demsetz & Villalonga, 2001) contexts, it continues to receive substantial support in the existing body of work (Hill et al., 1988). There are two notable concerns that have garnered considerable interest in scholarly discourse. The first pertains to the probable non-linear relationship between focus and performance, as discussed by (McConnell & Servaes, 1990; Morck et al., 1988). The second concern is around the institutional framework. (La Porta et al., 2002) have conducted extensive study on the latter, focusing on the institutional framework that potentially explains the variation in mean concentration between civil law nations and common law countries. The authors illustrate that in nations characterized by a significantly more concentrated ownership structure, the role and influence of the greatest owner become more pronounced.

The matter of bank governance is commonly perceived as being exclusive to individual banks for a comprehensive examination of existing research on this topic, please consult (Fernandes & Pinto, 2019). This phenomenon can be primarily attributed to the observation made by (Becht et al., 2011) that banks have the ability to quickly undertake risks that may not be easily identifiable by external directors or investors. Assessing a bank's asset quality and determining the level of risk it carries is often a complex task, as highlighted by scholarly works such as (Barth et al., 2004; Morgan, 2002; Mülbert, 2009). Additionally, it is worth noting that banks are business entities that operate with a significant amount of borrowed funds, resulting in potential conflicts of interest between the owners of the company (shareholders) and the lenders (debtholders). These conflicts might have implications for the management and oversight of the bank's equity. This observation has been made by (John et al., 2016) study. Finally, it should be noted that banks are subjected to comprehensive regulation and supervision. According to (Adams & Mehran, 2012), a potential conflict may arise between the safety and stability objectives of regulators and the shareholders' desire to maximize profit. The prevalence of the free rider dilemma in banks may be more pronounced compared to other types of businesses when there is a scarcity of shareholders. This can be attributed to the specific qualities inherent in the banking industry. According to (Shleifer & Vishny, 1997), the issue of free-riding presents a challenge for individual investors, leading to their lack of motivation to gain knowledge about the companies they have invested in or engage in governance activities.

Likewise, individuals may not perceive the act of obtaining information regarding political candidates and exercising their right to vote as advantageous. Therefore, the managerial control rights carry substantial importance. On the other hand, a significant proportion of minority shareholders are driven by the desire to acquire information, supervise the activities of the bank's management, and ultimately exert influence on management decisions by means of voting control.

The Effect of Product Diversification on Liquidity in Regional Development Banks in Indonesia

The effects of diversification on the stability and risk of banking institutions remain a subject of ongoing scholarly debate, yielding inconclusive findings. The implementation of product diversification strategies by banks can lead to the attainment of a competitive advantage, primarily through the realization of economies of scale and the exploitation of synergies derived from the effective utilization of the bank's resources and competencies across several product lines. Nevertheless, the findings of this study have led to the conclusion that there is no significant impact of product diversification on liquidity in regional development banks in Indonesia. The bank's capacity to fulfill its financial obligations is not significantly enhanced by product diversity in terms of liquidity value. According to (Adem, 2022), an increase in diversity beyond the ideal level can lead to a decrease in the financial stability of banks. This implies that countries with higher levels of political barriers may have a positive impact on the likelihood of bank vulnerabilities.

There has been a growing body of empirical research that has examined the determinants of bank liquidity creation (Berger & Bouwman, 2009; Horváth et al., 2012). (Berger et al., 2010; Berger & Bouwman, 2009, 2014) made a significant contribution by introducing a complete metric for assessing bank liquidity creation. They also conducted an analysis of its interaction with other financial instruments and events, including monetary policy and financial crises. The study conducted by (Horvath et al., 2016) aims to evaluate the influence of competitive pressure on the liquidity generation capacity of banks. Based on their research findings, more rivalry has a negative impact on the generation of liquidity. In their study, (M. Chen et al., 2017) examine the factors that drive money formation inside the banking system when adhering to the Liquidity Coverage Ratio (LCR). It has been suggested that the implementation of regulatory measures via the LCR might potentially lead to a contraction in lending and have a significant impact on the money multiplier.

The subject of diversification in the banking industry has been extensively studied. The studies conducted by (Berger et al., 2010; Meslier et al., 2014; Mostak Ahamed, 2017; Xue et al., 2013) relevant to the topic. A considerable body of research has been dedicated to examining the relationship between bank diversification and various factors such as risk-taking, business models, and financial success (K. Stiroh, 2004). The primary focus of empirical study is the examination of the relationship between bank diversification and risk-taking. The concept of portfolio theory postulates that the process of diversification, which entails allocating investments among assets that exhibit imperfect correlation, has the potential to mitigate the overall risk associated with a portfolio. Diversification, as it pertains to commercial banks, is a portfolio concept in which banks are viewed as loan portfolios. Within this framework, opportunities for diversification are regarded as an upward adjustment in the risk-return tradeoff confronted by banks (Meslier et al., 2016). Managers have the potential to achieve diversification by engaging in unconventional banking activities, thereby introducing new goods to the market. This approach aims to mitigate risks unique to each activity, resulting in

the identification of risks shared across all activities. In a comprehensive analysis conducted by (K. J. Stiroh, 2005), numerous studies examining the underlying motivations behind banks' pursuit of diversification were analyzed. These research findings indicate that the diversification of bank income may be an effective and favorable strategy, as it has the potential to mitigate both idiosyncratic and overall risks. The expansion of investment alternatives through product diversification can potentially increase the risk-return boundary.

Conversely, many studies have demonstrated the detrimental consequences of bank diversification. The diversification motivations of managers with regard to empire building, corporate control difficulties, management hubris, and self-interest have been investigated by (Berger et al., 1999; Bliss & Rosen, 2001; Milbourn et al., 1999). These incentives could potentially lead to suboptimal diversification outcomes, and an increased reliance on non-interest revenue does not necessarily correlate with a reduction in profit volatility (K. J. Stiroh, 2005). Furthermore, (Berger et al., 2010) propose that the presence of bank diversification discounts can be attributed, to a certain extent, to management's inadequate managerial competence and ineffective incentive schemes for managers to maximize stakeholder value. Hence, in specific situations, the diversification of banks may lead to the dispersion of management resources and a decrease in operational stability. This, in turn, may impede banks' ability to meet their clients' liquidity needs and undermine their capacity to create liquidity. Irrespective of the potential advantages or disadvantages, we expect a significant influence of bank diversification on liquidity generation.The motivations behind banks' diversification plans are derived from the benefits associated with diversity. According to the research conducted by (Berger et al., 2010), the advantages stem from the managerial proficiency the top management team had, as well as the implementation of efficient incentive systems that motivate managers to optimize stakeholder wealth. Banks capable of generating enhanced liquidity are characterized by management teams that exhibit exceptional managerial expertise.

Moreover, they probably possess more comprehensive incentive structures designed to ensure that managers meet the liquidity requirements of depositors and fulfill the financial service expectations of other customers. Hence, the enhanced quantity of liquidity banks generate may be accompanied by heightened advantages stemming from bank diversity. This study aims to investigate the possibility of reverse causation in the association between bank diversification and liquidity creation.

The Effect of Capital Adequacy on Liquidity in Regional Development Banks in Indonesia

The findings of this study are consistent with the research conducted by (Elbadry, 2018), which established a relationship between capital adequacy and liquidity in regional development banks in Indonesia. The capital adequacy ratio is a metric that assesses the correlation between a bank's capital and its assets, which are weighted according to their associated risks. According to the study conducted by (Dalecka & Konovalova, 2014), The evaluation of bank capital adequacy is a crucial matter, as it plays a vital role in sustaining the financial stability of banks. One of the primary prerequisites for maintaining such stability is establishing a strong correlation between risk and capital. The findings indicate a statistically significant and adverse relationship between capital adequacy and liquidity. A more excellent capital adequacy ratio observed in regional development banks in Indonesia has the potential to mitigate credit risk. Based on the findings, it is recommended that regional development banks in Indonesia enhance their capital adequacy ratio to decrease the liquidation rate.

The capital adequacy needs of the banking system are influenced by many specific elements associated with bank performance. These criteria include profitability, asset quality, management efficiency, earnings quality, liquidity, and sensitivity. This study presents empirical findings about the influence of risk and financing performance of private sector banks in India on their capital adequacy needs. The survey conducted by (Reynolds et al., 2000) investigated banks' financial structure and performance. The researchers employed structural variables, including bank assets, net income, administrative expenses, and time, as independent variables to forecast the dependent variables of capital adequacy, liquidity, profitability, and lending preference. The findings suggest a positive relationship between bank size and profitability and lending preference, whereas a negative relationship exists between bank size and capital sufficiency. This indicates that there is a negative correlation between the size of banks and their capital adequacy ratios, as well as a positive relationship between earnings and capital adequacy. In a study conducted by (Lim & Yu, 2000), it was shown that bank capital ratios in Taiwan are primarily influenced by bank size, liquidity, and profitability factors. The research revealed a statistically significant positive association between the equity-to-assets ratio and liquidity ratio among small banks. In contrast, a statistically significant negative association was observed among medium-sized banks. The study conducted by (Al-Sabbagh, 2004) investigated the factors influencing the CAR of commercial banks in Jordan. The results indicate that the CAR is positively correlated with return on assets, loan-to-asset ratio, risky asset ratio, and dividend payout ratio. Conversely, it is adversely associated with deposit asset ratio, bank size, and loan provision ratio. In a study conducted by (Williams, 2011), an investigation was undertaken to analyze the impact of bank characteristics, financial structure, and macroeconomic factors on the capital base of banks operating within the Nigerian banking system. The results of the study revealed that several economic indicators, such as inflation rate, real exchange rate, demand deposits, money supply, political stability, and return on investment, played a significant role in predicting the determinants of capital adequacy in Nigeria. In a study conducted by (Büyükşalvarci, 2011), an evaluation was undertaken to assess the influence of bank-specific characteristics, namely profitability, deposits, bank size, and liquidity, on capital adequacy requirements.

The relationship between bank liquidity, as represented by the loan-to-deposit ratio (LDR), and profitability, as assessed by return on assets (ROA), has been investigated in European banking institutions. (Bourke Philip, 1989) conducted a study that yielded noteworthy favorable results. This finding illustrates that an increase in disbursed loans has the potential to enhance banks' interest income, thereby leading to an improvement in their return on assets. Moreover, the research findings suggest a negative correlation between the level of unutilized money and the profitability of the bank.

Liquidity is the term used to describe the assessment of a bank's capacity to effectively allocate sufficient funds to fulfill its obligations to customers in a timely manner. The evaluation of a bank's financial soundness through the Camel technique encompasses the utilization of the Liquidity-to-Deposit ratio (LDR). According to the regulations set forth by Bank Indonesia in 2004, A low loan-to-deposit ratio (LDR) suggests that the amount of credit extended is comparatively small, resulting in a reduced potential for generating interest revenue. According to (Camba & Camba, 2020), a bank that exhibits a high loan-to-deposit ratio (LDR) demonstrates a comparatively elevated capacity to create revenue from interest earned on loans. The positive relationship between a bank's lending activity and its ROA and profitability has been supported by empirical studies undertaken by (Jasevičienė et al., 2014; Lartey et al., 2013; Paleni et al., 2017).

Divergent viewpoints exist among specialists, regulators, and bankers within the banking and finance industry over the appropriate levels of capital sufficiency. Regulators place significant emphasis on the safety of banks, prioritizing capital adequacy levels to ensure the sustainability of insurance funds and maintain stability within financial markets. An elevated level of capital adequacy enhances the liquidity of banks and reduces the likelihood of bank insolvency. Conversely, bankers typically exhibit a preference for operating with reduced levels of capital sufficiency. According to (Koch, 1992), there is a positive relationship between the size of the equity base and financial leverage and equity multiplier. This relationship leads to the conversion of average asset returns into higher equity returns. Numerous studies conducted thus far have placed significant emphasis on the significance of capital adequacy. Consequently, it is imperative to undertake a comprehensive evaluation of existing research in order to enhance our comprehension of this subject matter.

According to (Jeff, 1990) research, the level of capital sufficiency in a bank can be inferred by examining its asset size, which serves as a proxy for effective management. Capital sufficiency is widely regarded as the primary criterion and the final indicator of security and resilience for financial institutions and banks. As stated by (Ebhodaghe, 1991), the presence of an adequate level of capital adequacy is observed when the adjusted capital of a bank is deemed sufficient to sufficiently mitigate any unforeseen future losses and account for fixed assets. Furthermore, it is imperative to ensure that there exists a sufficient surplus to adequately sustain both the day-to-day functioning and potential expansion of the organization. According to (Umoh, 1991), the presence of sufficient capitalisation is a crucial determinant within the banking sector.

In addition, it is essential for a bank that is insured to have a sufficient amount of capital in order to mitigate any losses. In order to support the operations and growth of the bank, it is important to have an adequate amount of cash. This is crucial for ensuring the protection of deposits belonging to both depositors and stakeholders. According to the findings of (Onoh, 2002), capital adequacy refers to the extent to which a bank's capital can effectively safeguard its operations against potential collapse by absorbing losses. Furthermore, it is imperative to make appropriate adjustments to capital levels in instances where there is an anticipated rise in both overall operating costs and withdrawal requirements. In a study conducted by (Tanaka, 2002), the impact of bank capital adequacy regulation on the monetary transmission mechanism was investigated. The results indicate that when employing a general equilibrium framework, the study demonstrates that the effectiveness of the monetary transmission mechanism is diminished in cases where banks have little capital or when capital adequacy rules are rigid. In their study, (J. Chen, 2003) conducted an analysis on the state commercial banks in China, specifically examining the status and regulatory measures pertaining to capital adequacy. The preference for capital increase is consistently observed in practice, with the principal mechanism employed being the utilization of subordinated debt to fulfill additional capital needs.

(Adeusi et al., 2014) assert that the basic objective of every institution, including banks, is to achieve profit maximization. Profitability can be assessed by measuring the surplus return on capital employed, which is a result of excellent managerial practices and the efficient utilization of available resources. The success of a bank is contingent upon the management's ability to effectively use its strengths and capitalize on opportunities, while simultaneously acknowledging and mitigating weaknesses and threats. This success is measured by the bank's profitability over a given financial term. Numerous research have been conducted to investigate the relationship between bank profitability and compliance with the capital adequacy ratio, as these factors are considered to be of utmost importance.

According to (Dao & Nguyen, 2020), the performance process of capital regulation in Vietnam can be delineated into three distinct phases. The initial period spanned from 1999 to early 2006, during which the State Bank and the State Bank refrained from imposing regulations on the minimum level of retained capital. Consequently, in the year 2000, due to the proliferation of substantial non-performing loans, the government found it necessary to provide a financial injection of VND12,000 billion to major banking institutions. During the period from 2005 to 2009, a capital adequacy ratio of 8% was adopted as a measure to safeguard the banking sector from the crisis. Since 2010, the State Bank of Vietnam has enforced a minimum capital adequacy requirement of 9% during the third quarter, despite encountering potential risks to the banking system and the whole national economy. This decision was made due to the undercapitalization of certain major banks. One prevalent issue observed during the three eras was the divergence in capital levels between commercial banks and central banks. While most commercial banks managed to uphold capital levels exceeding the minimum requirement of 8% as stipulated by Basel regulations, central banks, who hold approximately three-quarters of the market share, pursued a distinct trajectory. (Daoud & Kammoun, 2020) analyzed the factors affecting the financial stability of 81 Islamic banks in 22 countries in the period 2010-2014. The regression results show that the capital adequacy ratio has a positive effect and is an important indicator that contributes to the financial stability of a country's Islamic banks. Top management backing denotes the extent to which leaders within an organization are supportive of adopting fintech and provides resources and investments to advance this goal (Darmawan et al., 2021, Marei et al., 2023).

Conclusions

The findings of the study indicate that the degree of ownership concentration and capital sufficiency have a significant impact on the level of bank liquidity. However, it was observed that product diversification does not have a significant effect on bank liquidity. The anticipated outcomes of this study are anticipated to offer suggestions for the management of capital and the management of risk in BPD. Furthermore, this study has the potential to provide recommendations for local governmental policies aimed at fostering the development of BPD in Indonesia. Supporting Indonesia's overall economic growth is of significant importance. The findings have the potential to offer valuable insights for regulators and financial institutions in formulating effective policies aimed at enhancing banking liquidity within the Indonesian context. A limited number of studies continue to examine the enhancement of liquidity and capital stability in regional development banks in Indonesia, focusing on the variables of ownership concentration, product diversification, and capital sufficiency. These factors mostly pertain to the concentration of ownership. The influence of ownership concentration on liquidity differs across regional development banks and commercial banks.

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