The Impact of Monetary Policy on Capital Structure, Credit Risk and Bank Profitability in Indonesia

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Abstract
This research discusses the impact of monetary policy on bank capital structure, credit risk and bank profitability in Indonesia. It is hoped that the findings of this research can contribute to the development of financial science, especially monetary policy theory and economic policy theory, after going through the process of understanding the variables of monetary policy and macroeconomic policy that influence decisions regarding bank funding patterns, and bank profitability and company financial performance. which maximizes the welfare of its owners and stakeholders.The bank's capital structure can be determined or explained by monetary policy, where if there is an increase in the minimum statutory reserve, central bank interest rates and the Capital Adequacy Ratio (CAR) it will cause a decrease in the level of debt in the bank's capital structure. Bank credit risk cannot be determined or explained by monetary policy. Bank profitability cannot be determined or explained by monetary policy. If there is a change in the debt to asset ratio and debt to equity ratio it will cause a change in bank profitability as measured by Earning Per Share (EPS), Return On Assets (ROA), Return On Equity and Net Internet Margin (NIM), where if there is an increase Debt in the bank's capital structure also contributes to high interest costs reducing which causes a decrease in the bank's income level. If there is a change in Loan Loss Provision (LLP), Non-Performing Loan Gross (NPLG) and Non-Performing Loan Net (NPLN) it will cause changes in bank profitability as measured by Earning Per Share (EPS), Return On Assets (ROA), Return On Equity and Net Internet Margin (NIM), where if there is an increase in bank credit risk, namely problem and bad loans, also contribute to high costs, causing a decrease in the bank's income level, even loss of income.Provides empirical evidence of the research concept (Mendoza & Rivera, 2017) which states that credit risk has a significantly negative effect on profitability. Providing empirical evidence of the research concept (Dang, 2022) states that monetary policy drives bank profitability asymmetrically. Concretely, interest rates (i.e., loan interest rates and policy interest rates) have a positive effect on net interest income, but a negative impact on non-interest income. Banks with more diversified funding patterns will be associated with weaker bank sensitivity financially in facing monetary shocks to limited alternative funding.
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1. Introduction

Banking has always played an important role as an intermediary transmitting monetary policy. During this process of transmitting monetary policy it influences bank business results in various ways in central bank monetary policy. The easing of central bank monetary policy means that commercial banking companies have abundant access to funding sources at lower costs, so that banks can improve performance and reduce bad loans to lending banks (Bernanke & Gertler, 1995). However, there are also costs besides the benefits of easing monetary policy, for example reducing interest rates hampers net interest margins.

The monetary policy mechanism is complex and complicated in terms of theory influencing banks in business activities, causing ambiguity in increasing profitability. It should also be emphasized that bank profits form a capital buffer, thereby determining the safety and soundness of banks as the main concern in the economy (Dang, 2022). This fact shows that the influence of monetary policy on capital structure and capital adequacy, credit risk and bank profitability needs to be considered. The impact of monetary policy on capital structure, credit risk and bank profitability is a concept that has long existed in the literature, however, given the considerable changes in global financial conditions, monetary policy and bank behavior in various countries, research on the relationship between monetary policy variables on capital structure, credit risk and bank profitability has so far remained limited in scope and context.

Previous researchers often used only one single monetary policy indicator in the analysis, mostly short-term interest rates, although many countries have added new monetary policy tools to the unconventional framework after the 2008 financial crisis (Chen et al., 2017). In this case, the effectiveness of different monetary tools is heterogeneous, in addition, the components of bank income have not been carefully considered to accurately identify the "transmission channels" of overall bank profitability. This gap has been partly filled by recent efforts

from the Eurozone, however, there is no clarity on the relationship between monetary policy and non-interest income (Altavilla et al., 2018). Another important weakness is that previous studies that focused on leading developed countries used data from the United States, but neglected emerging markets (e.g., Borio & Gambacorta, 2017), (Lambert & Ueda, 2014), (Lambert & Ueda, 2014).

This research will describe more and more clearly the topic of the impact of current monetary policy on bank capital structure, credit risk and bank profitability. Research on changes in credit portfolio performance with interest rate shocks, it breaks down bank earnings into net interest income and non-interest income, along with overall profits indicated by asset returns, specifically monetary policy transmission channels caused by different monetary policy tools. Besides short-term lending rates, this study also considers another important tool as a monetary policy indicator for regression analysis. In addition, the heterogeneous effect of monetary policy on bank profitability, according to moderators of bank funding patterns (Dang, 2022).

This theory shows that bank funding determines the effectiveness of monetary policy transmission through bank credit channels (Bernanke & Blinder, 1988); (Bernanke & Gertler, 1995). Funding elasticities are sometimes considered as a way to interpret variations in bank profits (Hancock, 1985). Additionally, existing documents highlight growing concerns that banks' responses to monetary policy shocks depend on banks' financial strength, which is thought to be linked to access to alternative funding.

This research aims to empirically clarify the role of modifications in funding patterns that shape bank capital structures in the relationship between monetary policy and credit risk and bank profitability, thereby providing more insight into this topic. While fewer difficulties experienced by banks in obtaining funding sources makes lending less sensitive to monetary shocks, it is important to examine whether funding diversification reduces the impact of monetary policy on credit risk and bank profitability, which is primarily shaped by lending.

Indonesia provides a favorable environment for research, based on the following unique characteristics: (1) it is an emerging market, where monetary policy is set to serve multiple objectives. Great expectations are placed on the capacity of the banking and lending system – in the Indonesian context, capital markets are relatively underdeveloped, (2) the Indonesian banking industry has undertaken comprehensive reforms over the last decade, such as increasing equity capital and shifting to non-interest-bearing activities. However, a few state-owned banks still dominate the market; (3) Banks in Indonesia simultaneously use various tools to implement monetary policy. Some quantitative-based tools, such as securities trading and foreign exchange reserves, are used regularly. Uniquely, mandatory reserves and basic interest rates are constant for a long period of time in Indonesia.

This study contributes to the literature in several ways exploring an emerging market that has attracted little attention from academics on this topic. These findings provide new insights for Indonesia, as well as other emerging markets. In this case, the study takes good advantage of various monetary policy tools, some of which (such as foreign exchange reserves and policy interest rates) are barely taken into account in other articles. This study applies bank profitability measures in various dimensions to determine the transmission channels and asymmetric effects of monetary policy. This research also aims to enrich existing literature by showing the moderating role of funding patterns that shape bank capital structure and credit risk on the relationship between monetary policy and profitability. The impact of monetary policy on funding patterns that shape bank capital structures on credit risk and bank profitability has been neglected in the literature.

2. Literature Review
2.1 Monetary Policy
Monetary policy is an economic policy that regulates the size and growth rate of the money supply in an economy. It is a powerful tool for managing macroeconomic variables such as inflation and unemployment. This monetary policy is implemented through a variety of tools, including adjusting interest rates, buying or selling government securities, and changing the amount of cash circulating in the economy. Central banks or similar regulatory organizations are responsible for formulating monetary policy. The main objectives of monetary policy are the management of inflation or unemployment and the maintenance of currency exchange rates (Team, 2022) (*Corporate Finance Institute* (CFI) Team, updated November 24, 2022.
(*https://corporatefinanceinstitute.com/resources/economics/monetary-policy/*).
1) Monetary Policy Tools
Central banks use a variety of tools to implement monetary policy. Widely used policy tools include: (1) Interest Rate Adjustment. The central bank can influence interest rates by changing the discount rate. The discount rate (base rate) is the interest rate charged by the central bank to banks for short-term loans. For example, if the central bank increases the discount rate, bank borrowing costs increase. Next, banks will increase the interest rates they charge their customers. Thus, the cost of borrowing in the economy will increase, and the money supply will decrease. (2) Change Reserve Requirements. Central banks usually set a minimum amount of reserves that commercial banks must hold. The central bank can influence the money supply in the economy. If monetary authorities increase the amount of reserves required, commercial banks find less money available to lend to clients, and thus, the money supply decreases. Commercial banks cannot use reserves to make loans or fund investments

into new businesses. Since this is a lost opportunity for commercial banks, central banks charge interest on reserves. The interest is known as interest on reserves or interest on required reserves (IOR or IORR) (3) Open Market Operations. The central bank can buy or sell securities issued by the government to influence the money supply. For example, the central bank can buy government bonds. As a result, banks will get more money to increase loans and the money supply in the economy.

2) Expansionary vs. Expansionary Contractionary Monetary Policy

Depending on its objectives, monetary policies can be expansionary or contractionary. (1) Expansionary Monetary Policy aims to increase the money supply in the economy by lowering interest rates, purchasing government securities by the central bank, and lowering reserve requirements for banks. Expansionary policies reduce unemployment and stimulate business activity and consumer spending. The overall goal of expansionary monetary policy is to encourage economic growth. However, it could also lead to higher inflation. (2) Contractionary monetary policy aims to reduce the amount of money circulating in the economy, by increasing interest rates, selling government bonds, and increasing statutory reserves for banks. Contractive policies are used when the government wants to control the inflation rate (Corporate Finance Institute (CFI) Team, updated November 24, 2022. (https://corporatefinanceinstitute.com/resources/economics/monetary-policy/).

Monetary Policy is the framework used by the Central Bank to regulate money circulation, interest rates and credit to achieve broad economic goals (Dang, 2022). Monetary policy tools include; Central Bank Interest Rates, Money Supply, Cash Reserve Ratio and Open Market Operations among others. Modern monetary theory can be traced back to John Maynard Keynes. Keynesian-based theory states that monetary policy is transmitted through interest rates and investment. Expansionary monetary policy will reduce interest rates and vice versa which affects banks in three ways (Mishkin & Eakins, 2018), namely: The first way is a direct impact on existing assets and liabilities, where for example, a simple mismatch in the maturity of liabilities and assets can affects bank profit margins and bank profitability as measured by net interest income (NII) and return on assets (ROA).

The second way is an indirect impact through the real economy, where under the credit channel, monetary policy tightening typically leads to an increase in loan interest rates, which reduces loan demand and economic growth, raising default rates and leading banks to increase loan loss provisions to cover expected loss. This indirect impact has an impact on bank profitability (Borio et al., 2015). The third way is the impact through the bank's endogenous response to changes in policy interest rates. For example, under the interest rate path of monetary policy, the central bank sets short-term interest rates such as the central bank interest rate and interbank interest rate, which influences long-term interest rates including the Treasury bill interest rate and the yield curve through bank profitability (English, 2002).

Bank Indonesia Regulation no. 15/12/ PBI /2013 concerning Minimum Capital Requirement Provisions, defines credit risk as the risk of loss due to the failure of the debtor or other party (counter party) to fulfill obligations to the bank. The Bank for International Sattlements (BIS), known as Basel 1 (1988), regulates the minimum capital adequacy of conventional banking (BIS, 1988) so that banking is the first financial institution to be subject to internationally coordinated capital adequacy regulations (Berger et al., 1995). These provisions for banking purposes in Indonesia have been outlined in Bank Indonesia regulation No.15/12/PBI/2013 article 2 paragraphs 3a to 3d, concerning Minimum Capital Requirements for Commercial Banks. This provision regulates and explains that capital adequacy is the provision of funds in the form of main core capital (tier 1), undivided retained earnings, and additional core capital (additional tier 1). The main core capital (tier 1) is in the form of ordinary shares (common stocks), and the undistributed retained earnings are in the form of remaining undivided profits which accumulatively become part of the main core capital (common equity tier 1). Additional core capital (additional tier 1) is in the form of subordinated financial instruments with dividend payments or non-cumulative returns (Bank Indonesia, 2013).

Capital adequacy based on regulations is measured by the capital adequacy ratio (CAR) indicator, namely the comparison between capital (equity) and risk-weighted assets (RWA). Assets included in risk-weighted assets are the entire debit balance of loans disbursed by the bank at the end of the financial year. The higher the CAR means the better the capital's ability to support any risk of loss that will occur in lending activities to customers. Risk occurs due to the debtor's failure to repay the loan on time according to the agreement agreed with the bank (Data et al., 2021).

Minimum capital adequacy or CAR 8% (PBI no.15/12/PBI/2013) means that for every IDR 1, capital availability will cover credit risk (RWA) of IDR 12.50. Thus, the amount of capital will limit the amount of credit distribution to a maximum of 12.5 times the amount of bank capital (Bank Indonesia, 2013). The aim is for banks to have a good level of health from the aspect of capital availability based on regulations (Astawa et al., 2019).

Higher capital adequacy helps relatively small banks to improve their survival both in financial crisis situations and normal situations, as well as improving the financial performance of large banks in crisis situations that occur in banks in the United States (Berger & Bouwman, 2013). Financial performance depends on whether the bank's capital position is higher or lower than the optimal capital ratio. In the long term, capital adequacy requirements (CAR) can exceed a bank's optimal capital ratio, and encourage a negative relationship between

capital adequacy and firm value (Data et al., 2021). In general, the level of capital adequacy is negatively related to financial performance and company value, but this relationship becomes positive when banks experience pressure (savings and loan crisis) in the 1980s, and the global financial crisis in 2008-2010. This finding is not consistent with the hypothesis in these conditions, where an increase in the capital adequacy ratio will be relatively not high because it can reduce bank risk and improve financial performance (Osborne et al., 2012).

2.2 Bank Profitability

Profitability is the driving force of every company and the main indicator of company performance. Banks are a special type of company that mobilizes savings and loans (Dell'Ariccia et al., 2014). Bank profitability is not only a performance measure but a necessary condition for the bank's success in competitive conditions as well as the successful implementation of monetary policy (Abel et al., 2018). Bank profitability also provides an indication of the health and stability of banking institutions and is an important predictor of financial crises (Mbabazize et al., 2020).

Factors that influence bank profitability can be divided into internal and external factors. There are three ratios that are usually used to measure bank profitability in empirical studies; return on assets (ROA), return on equity (ROE) and net interest margin (NIM) (Tan, 2018). Return on assets (ROA) is the simplest measure of bank profitability (Kohlscheen et al., 2018) and reflects a bank's ability to generate profits from its asset management function and minimize differences resulting from differences in capital structure. Return on assets (ROA) is most often used to evaluate bank profitability (Borio et al., 2015); (Abel et al., 2018); (Kohlscheen et al., 2018).

Loan interest rates and bank profitability. A study by Rao in India found that credit interest rates had a positive relationship with bank profits, indicating that an increase in credit interest rates would increase bank profitability (Rao, 2006). Okoye & Eze (2013) also concluded similarly that loan interest rates have a significant and positive influence on the performance of deposit money banks in Nigeria. The implication is that credit interest rates are a good parameter for measuring bank performance. Banks in the UK followed an increase in capital requirements, banks increased loan interest rates and on average cut loan growth for real estate, loans guaranteed by companies and other households, which affected profitability (Bridges et al., 2014).

Obillo (2015) examined the extent to which loan interest rates affect the profitability of commercial banks in Kenya. This study uses secondary data obtained from the Central Bank of Kenya for five years from 2010 to 2014. Bank profitability is measured by return on assets (ROA). The author uses OLS to estimate empirical model coefficients. This study found that loan interest rates have a significant positive effect on the financial performance of commercial banks in Kenya at the 95 percent confidence level (Obillo, 2015).

Altavilla et al. (2018) analyze the impact of standard and non-standard monetary policy on bank profitability using data on individual euro area bank balance sheets and market prices. The author uses a GMM estimation technique based on panel data. The research results show that easing monetary policy, namely reducing short-term interest rates and/or flattening the yield curve is not associated with lower bank profits after policy endogeneity measures expected macroeconomic and financial conditions. Controlled (Altavilla et al., 2018).

Treasury bill interest rates and bank profitability (Mbabazize et al., 2020). Treasury bills are very important to, and also popular with, commercial banks. In addition, treasury bills are considered liquid assets of commercial banks while providing attractive interest rates for their holders. Treasury bills dominate the money market in Uganda, accounting for the largest share of all domestic government debt.

Ogunbiyi and Ihejirika used annual data covering a thirteen year period from 1999 to 2012, using time series multivariate regression analysis under an econometric framework to examine how interest rates (i.e.: minimum rediscount rates, loan rates, deposit rates, debentures country). interest rates, as well as interbank interest rates) affect the profitability of bank money deposits in Nigeria. This study considers return on assets as a measure of savings bank profitability. Model estimation was carried out using OLS methodology. This study found that there was no significant relationship between interest rate variables (minimum re-discount rate, prime lending rate, savings deposit rate, maximum lending rate and treasury bills rate) on the profitability of deposit banks in Nigeria (Ogunbiyi & Ihejirika, 2014).

Inflation and bank profitability. The empirical literature has documented inflation to be another important determinant of banking performance. However, findings on the relationship between inflation and bank profitability are mixed. Inflation has a negative impact on the performance of the banking sector and is very detrimental to the economy as a whole, while on the other hand, inflation leads to an increase in bank performance during this period. Banks can anticipate future inflation and adjust interest rates to generate higher income (Umar, 2014).

2.3 Capital Structure

Capital structure is a combination of debt and equity in funding a company's assets, called leverage. Capital structure indicators are the ratio of liabilities to total assets, the ratio of total liabilities to total equity and the ratio of total long-term liabilities to total equity (Data et al., 2017). Market-based bank capital requirements ("bank's

market capital requirement") with a proxy for equity to total assets ratio (EAR) can maximize company value without following regulation-based capital adequacy (CAR) (Berger et al., 1995). However, the EAR ratio is still associated with assumptions in MM theory such as; tax relief on debt interest, transaction and intermediation costs, asymmetric information problems, and the assumption of government guarantees for third party savings funds (bank debt) which may still have deviations in their application. The banking industry can still increase its share price by optimizing the use of debt, and company value will increase or decrease depending on the financing combination decided by bank managers, so that banks will adjust their capital structure at any time (Kwan, 2009).

If the banking financial sector business is compared with the non-financial industry in the context of its capital structure, several distinguishing characteristics can be seen, namely: the bank's capital structure is influenced by several variables such as; deposit guarantees, short-term loan facilities from the central bank, (access to the federal safety net in the USA), minimum capital adequacy regulations, and supervision by the Monetary Authority, as well as the government's view of the role of the banking financial sector in the economy which is referred to as "too big - to fail" (if large banks experience difficulties due to the influence of the global financial crisis, the government will save them). This condition encourages bank managers to tend to take higher risks at certain levels of capital adequacy as an indication of the existence of a "moral hazard" factor, so that supervision and regulations in the form of minimum capital limits are necessary.

The existence of Deposit Insurance Agency, short-term loan facilities from the central bank and capital adequacy ratio, can reduce the risk of financial difficulties or bank failure, but with the possibility that banks can increase their debt position (leverage), so that the minimum capital limit will force a bank to increase the portion of its capital adequacy ratio to offset the possibility of increased risk due to portfolio expansion. credit that has been realized (Berger et al., 1995). From the perspective of packing order theory, banks can choose a policy to increase the debt portion (third party deposit funds) before issuing additional new shares, in order to avoid low market valuations. However, when an economic and financial crisis occurs, sufficient additional capital is needed to offset the absorption of the risk of financial difficulties. The problem of asymmetric information between managers and owners (investors) related to the quality of their credit portfolio positions will make it difficult for banks to add new share capital. In conditions like this, a good choice for banks is to issue preferred shares to avoid delusions for existing shareholders, and not to increase debt funds which could increase the risk of financial difficulties. The preferred stock issuance policy balances capital adequacy and debt in accordance with minimum capital adequacy regulations (Kwan, 2009).

Preferred shares are a preferred source of funds, because dividend payments can be postponed when bank liquidity is not yet possible, so they will not disrupt liquidity or cash flow, and will not cause financial difficulties that lead to bankruptcy. Preferred shares require higher dividend compensation than ordinary shares, this can be overcome by convertible preferred stock which gives the right to be converted into ordinary shares at a specially determined price (Kwan, 2009).

2.4 Credit Risk
Risk in a business context is the uncertainty or deviation of a company's operational income from what is expected and also the risk contained in the financing used (Data et al., 2017). Business risk or variability in returns on assets and is influenced by the company's investment decisions. Financial risk is the increased variability in returns for common stockholders as a result of financing with debt or preferred stock. When financial risk increases, the investor's required rate of return and the cost of capital will move in the same direction. If risks and capital costs are managed well and appropriately, failure can be reduced (Data et al., 2017).

The final factor that determines a company's cost of funds is the level of financing required for the company. As the company's financing increases, the weighted cost of capital increases, for several reasons. For example, the more securities issued, the additional costs the company obtains from the securities issued, which will affect the company's cost of funds. Also, if management enters the market for an amount of capital relative to the size of the company, the rate of return required by investors will increase. Capital providers will be hesitant to provide large amounts of funds without proof of management's ability to absorb funds into the business. This is often called "too much too soon". An increase in the number of securities issuances will make it difficult to offer them in the market, so that the market will force companies to lower the price of these securities, which will also increase the company's cost of capital (Data et al., 2017).

Financial risk is related to the threat of bankruptcy. If the percentage of debt in the capital structure increases, the interest expense also increases, and it is possible that the company will be unable to pay the interest and principal. The risk of a business is a deviation from earnings before interest and taxes. The dispersion of earnings before interest and tax (EBIT) flows is measured from the deviation coefficient of several influences that are causally related. The cost structure of the company, characteristics of product demand, competitive position in the industry influence the company's business risk. The risk itself is a result of the company's investment decisions and funding decisions.

Credit risk refers to the risk that a borrower will default on any type of debt by failing to make required

payments. Default is the debtor's failure to pay part or all of the principal and interest to the lender, but also the risk of a decline in the borrower's credit position which results in credit risk. Risks related to the banking sector business are defined as a reduction in firm value due to changes in the business environment. Most of the causes of impairment are identified as: market risk, credit risk, operational risk and risk of performance decline. Credit risk is defined as changes in the value of a bank's asset portfolio (credit provision) caused by changes in the debtor's ability to fulfill its obligations to creditors in accordance with the agreement between the creditor and debtor. Debtors who fail to fulfill their obligations to the bank as agreed in the credit agreement.

The Basel Committee on Banking Supervision (1988) defines credit risk as the potential for a bank's debtors to fail to fulfill their obligations in accordance with the terms of the agreed agreement. Banks channel or place funds in various financial instruments other than providing credit, namely; acceptances, interbank transactions, foreign currency exchange transactions, bank guarantees, derivative transactions; futures financial transactions, swaps, bonds, options, and others (BIS, 1988). Bank Indonesia defines credit risk as the opportunity for loss due to the failure of debtors and/or other parties to fulfill their obligations to the bank (Bank Indonesia, 2013). Systemic risk in the financial system is a failure that simultaneously occurs in a large financial institution, then one way to measure it traditionally is to focus on bank financial report information such as; the ratio of non-performing loans to the amount of credit granted, income and profitability, liquidity, and capital adequacy ratio (NPL, earnings and profitability, liquidity, and capital adequacy ratio) (Bank Indonesia, 2013).

Credit risk is a change in net asset value due to changes in the debtor's ability to fulfill agreed obligations. Bank Indonesia Regulation no. 15/12/PBI/2013 concerning Minimum Capital Requirements, defines credit risk as the risk of loss due to the failure of the debtor or other party (counter party) to fulfill obligations to the bank (Bank Indonesia, 2013). NPL or non-performing credit is credit that is categorized as substandard, doubtful and non-performing. The higher the NPL ratio, the lower the quality of a bank's credit in generating interest income. The NPL ratio shows the ability of bank management to manage the quality of the loan portfolio distributed. The better bank management is at managing its credit portfolio, the lower the NPL and LLP ratios will be, and vice versa (Data et al., 2021).

Loan Loss Provision (LLP) is a fund or reserve set aside to anticipate bank losses due to a decline in the quality of the credit portfolio. Similar to NPL, higher LLP indicates declining credit quality. If the higher the NPL, the higher the LLP, so the subsequent impact will reduce bank income, because the formation of reserves comes from income or Net Interest Income. LLP in the Indonesian banking system uses the term Allowance for Impairment Losses for financial assets, or called Allowance for Losses on Earning Assets (Data et al., 2021).

Theoretically, researchers argue that capital adequacy for banking institutions is related to the level of risk of loss that will be faced when symptoms of financial difficulty occur or the bank fails. If a bank has a capital adequacy level that is higher than the minimum limit (CAR 8%). Basel I, 1999, the bank in question will be able to better support risks. However, at the same time, an increase in capital that exceeds the minimum limit has the potential to increase credit risk, because banks have the opportunity to add new credit portfolios and increase assets (Ghosh & Maji, 2014).

Opinions that differ from this concept state that provisions or regulations regarding minimum capital adequacy have an effect on reducing the risk level of commercial banking, because banks will be more conservative. An increase in capital adequacy causes banks to dare to take greater credit portfolio risks and will reduce company value. Additional capital beyond the minimum requirement is also seen to increase the costs of issuing new shares or a rights issue. Banks will take greater risks in order to increase return on equity so that capital adequacy levels can be met from internal sources in the form of retained earnings.

Banks in general have a tendency to take greater risks related to the problem of "moral hazard", namely when banks exploit guarantee facilities for savings funds collected from the public (bank debt) which encourages bank managers to take greater risks by increasing their credit portfolio. or placing funds in other producing assets (Tanda, 2015). In conditions of an unhealthy banking system, managers have a tendency to be careful about taking risks. If the majority of banks experience financial difficulties due to increased credit and other risks, and are certain to endanger the stability of the financial system, then with the argument of too – big – too fail or too big to be allowed to fail, large banks will rely more on action. rescue (bail out) carried out by deposit insurance institutions or the government as a final solution.

The banking sector business cannot be separated from the issue of risk (risk taking), namely the potential for failure and if this is not the case then the banking system will not be in a position to encourage growth in the real economic sector (Altunbas et al., 2015). The theory underlying the relationship between risk in the banking business (credit risk) and capital adequacy is in accordance with the "Capital Buffer Theory" which states that excess capital from a CAR position of at least 8% is intended as a "risk buffer" and reduces the possibility of financial difficulties or bank failure. Capital adequacy and risk portfolio are assumed to be positively correlated, in the sense that banks will increase their capital adequacy ratio when the risk on their credit portfolio and other earning assets increases.

Jokipii and Maline state that Capital Buffer Theory predicts that banks will maintain capital levels above

minimum requirements (a buffer of capital), distinguishing long-term and short-term relationship patterns between credit risk and capital adequacy. In the long term the relationship between credit risk and capital adequacy will be positive, in the short term the relationship will be positive if the bank has capital adequacy above the minimum, and conversely if the bank only has capital adequacy at the minimum level, then the relationship between credit risk and capital adequacy will be negative (Jokipii & Milne, 2011).

In Athanasoglou's (2011) study in Greek banking, it was revealed that the relationship between regulatory capital adequacy ratio (CAR) and risk was positive and negative and a two-way positive relationship between CAR and risk was only found in banks that had capital adequacy below the minimum requirement. . It is also stated that the relationship between capital adequacy ratio and risk varies depending on the level of minimum capital adequacy owned by the bank. Banks with capital adequacy close to the minimum or lower will choose to increase capital and reduce their risk level, while banks with CAR above the minimum will increase their risk level in proportion to the CAR level. Theory on Risk and leverage explains that banks must combine all costs related to other risks outside of credit risk (bankruptcy costs) into the calculation of loan interest rates (Fatouh et al., 2022). Bankruptcy costs will increase if a bank takes excessive risks both in providing credit and placing other funds. If the use of debt compared to equity (leverage) increases, then the capital structure or level of bank capital adequacy (high or low) will affect the level of credit risk at the bank. In carrying out its business activities, the Bank always manages credit risks, including; 1) by maintaining the quality of financial assets so that they remain productive and generate interest regularly and on time based on the agreement agreed with the debtor. 2) set aside funds for asset write-off provisions (PPA), known as loan loss provisions (LLP).

The credit risk variable in this research uses three indicators, namely; non-performing loans (gross NPL and net NPL), and loan loss provisions (LLP). Non-performing loans are divided into two categories, namely; Gross NPL is the ratio between the number of non-performing loans (substandard, doubtful and bad loans) and the total number of loans recorded on the bank's balance sheet at the end of the financial year in accordance with PBI no.14/15/PBI/2012 (Bank Indonesia, 2012). Net NPL is the ratio between: the total amount of non-performing loans minus the position of allowance for impairment losses on credit distribution assets, and the total amount of credit recorded on the bank's balance sheet at the end of the year. The higher the NPL ratio of a bank indicates the higher the potential credit risk it will face in the future. The next indicator is the loan loss provision (LLP), namely the reserve for impairment losses on financial assets caused by the quality of credit distributed to debtors with the potential to experience losses. Allowance for impairment losses is a fund provision established with the aim of covering credit risk or decline in the value of financial assets. The amount of Loan loss provision is the "less difference" between the current recorded asset value and the initial asset value calculated with a certain (%) based on the quality of the credit facilities that have been distributed to the debtor (current, special mention, substandard, doubtful and non-performing). The formation of Allowance for impairment losses is also known as allowance for asset losses.

The amount of Allowance for impairment losses must be equal to/or greater than the amount of reserve for asset write-offs, if the amount of Allowance for impairment losses that has been formed is smaller/lower than the amount of reserve for asset write-offs, then the difference will be compensated as a reduction in the nominal capital adequacy ratio, and will affect the amount of the capital adequacy ratio (PBI no. 14/15/PBI/2012). The higher the Allowance for impairment losses amount of a bank is an indication that the bank is facing potentially high credit risk. Based on this description, the credit risk variable in this research is proxied by three indicators, namely gross NPL, net NPL and loan loss provision (LLP). The banking business, especially in Indonesia, is dominated by fund placement products in the credit sector which is the main source of bank income (Data et al., 2021).

From the perspective of the risk concept, bank income in the form of credit interest should be received in full without any arrears. This means that the debtor can fulfill the obligation to pay interest as agreed, so that the NPL and LLP ratio will be 0%. However, banking financial report data shows that credit interest income (actual return of an investment) will always be lower than what should be received (expected interest income). This occurs because of risk factors which are reflected in the NPL position and LLP formation.

Rationally, the amount of credit risk with NPL and LLP indicators will affect the bank's financial performance and company value in a certain period. The reason is because the banking sector in general and conventional commercial banks in particular, until the period this research was conducted, still depended on sources of income which were dominated by interest receipts from credit portfolios which reached an average of 71.50% of total commercial bank income, the rest being non-interest income or fee based income.

All bank income after taking into account all intermediation costs and tax liabilities, influences the level of profitability which is seen in the amount of earnings per share (EPS). The amount of EPS is one of the financial performance indicators that influences the share price volatility of each banking issuer in the capital market. Predictions of potential credit risk are based on factors: Debtors' ability to repay their loans to banks, collateral value, ability to generate income and fulfill tax obligations.

The results of the Mbarek and Hmaied study have confirmed that large (USA) banks with high LDR and high credit portfolio market share in the real estate sector are likely to experience serious shocks in declining economic

conditions. Banks with rapid expansion in lending tend to have high NPLs and are more vulnerable to the risk of loss, so that aggressive credit policies will also be more vulnerable to the risk of loss (Mbarek & Mezzez Hmaied, 2012).

The level of risk (NPL) has a significant negative effect on the operational efficiency (profit efficiency) of public banking in Indonesia for the 2004-2008 period. D'Avack and Levasseur revealed that banks in Eastern and Central European countries are risk takers, with a tendency to have high NPLs and high capital buffers (Viverita & Ariff, 2011). This condition is in accordance with capital buffer theory, however, because there is a moral hazard factor where banks continue to take high credit risks followed by policies that maintain capital buffers in a low position. This negative risk and capital buffer relationship can occur because banks have sophisticated risk management systems that allow them to maintain low capital buffers to support high credit risks (D'Avack & Levasseur, 2007). Credit risk has a negative and significant effect on bank financial performance. The theoretical implication is that credit risk has an influence in determining financial performance, namely credit risk will reduce financial performance (Data et al., 2021).

Based on the empirical literature, it is noted that several studies have investigated the impact of monetary policy on bank profitability by considering various predictor variables, including government bond interest rates, interbank interest rates, credit interest rates, money supply, bank capital and assets. Evidence reveals mixed findings, and there is limited empirical evidence. This study contributes to the available literature on related studies by investigating the impact of monetary policy on profitability which is mediated by the role of funding patterns in shaping the capital structure and Capital Adequacy Ratio (CAR) of commercial banks in Indonesia and the credit risk that cannot be avoided by banking companies. Because non-performing loans are loans that are categorized as substandard, there is doubt about repayment, and bad debts will reduce banking cash flow, so the bank will lose the opportunity to reinvest the money.

2.5 Conceptual Development and Research Hypothesis
Banks as interest intermediaries are also useful for illustrating the relationship between monetary policy, capital structure and risk management. Stakeholders are not only concerned about getting a better return on their investment, but are also concerned about the level of risk they may be exposed to. Implementing monetary policy in good corporate governance will result in better risk management and higher expected returns.

The monetary policy transmission mechanism is applied in corporate governance in the banking sector through various perspectives, defined as risk management. Monetary policies such as Interest Rate Adjustment and loan interest rates. One of the well-known measures of risk management that banks regulate is the Capital Adequacy Ratio (CAR) policy, which measures bank capital over risk-weighted assets (Binh & Giang, 2012). The market does not have sufficient power to control bank operations. In this case, the main responsibility of regulators and regulations is to serve stakeholders by controlling and managing bank operations with the aim of limiting events that have the potential for uncertainty risk.

In particular, regulators and regulations, as parties to "external corporate governance", consider it necessary to manage managerial behavior to make relevant decisions to increase the effectiveness of active risk management. Competent managers are able to reduce unethical behavior, corporate governance also offers reasonable incentives, compensation and career plans as healthy motivation and better risk management for better company performance. The interrelationship between monetary policy, funding patterns that shape the bank's capital structure, credit risk management and bank profitability, as in Figure 2.1 of the conceptual framework, follows:
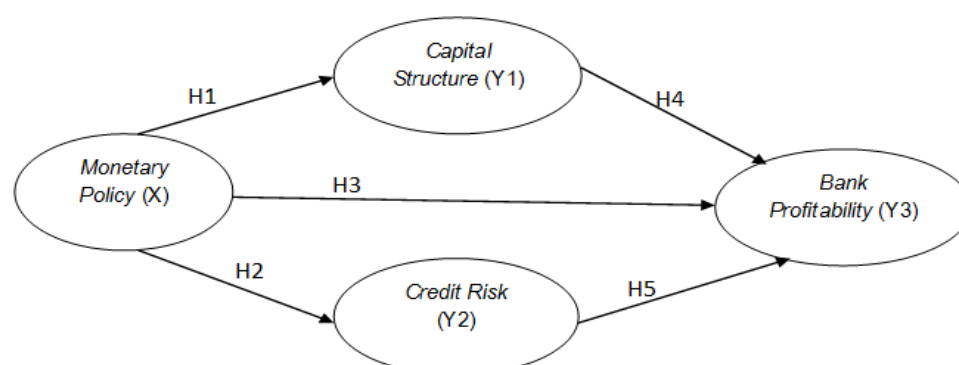

Figure 2.1 Conceptual Framework
Source: Developed for this research (Data et al, 2023)

2.5.1 Impact of Monetary Policy on Capital Structure and Bank Credit Risk
The literature on monetary policy transmission highlights the role of banking funding patterns, in accordance with the function of banks as lending channels, in periods of tightening monetary policy, banks are more likely to cut

supply credit aggressively if it cannot find alternative sources of funding, for example by issuing debt securities and equity instruments (Bernanke & Blinder, 1988); (Bernanke & Gertler, 1995).

Bank funding patterns play an important role in shaping the impact of monetary policy transmission activities. Financially weaker banks (such as smaller, less liquid, and less capitalized banks) are more sensitive to such monetary policy shocks (Dang, 2022). These banks are considered vulnerable by the market, making it difficult to access alternative funding sources. Banks that have various non-deposit funds help banks to overcome the decline in deposits, thereby reducing the impact of monetary policy shocks (Bernanke & Gertler, 1995).

Gambacorta and Marques-Ibanez made the first attempt to incorporate market funding patterns into an empirical model examining the functioning of bank lending channels. Ultimately, it is these modifying factors that drive the strength of monetary policy transmission. From the perspective of the interrelationship between monetary policy and bank profitability, the literature needs further evidence to explain the importance of bank funding patterns that shape bank capital structure (Leonardo Gambacorta & Marquez-Ibanez, 2011).

The capital structure which is a combination of debt and equity in funding company assets is called leverage. Capital structure indicators are total debt to total asset ratio (DAR), debt to equity ratio (DER)). Total debt to total assets ratio (DAR) is the ratio of total liabilities to total assets. The ratio of total debt to total assets (DAR) is used to measure how much of a company's assets are financed with debt (Data et al., 2017). The debt asset ratio (DAR) indicator is a comparison between the amount of debt (liabilities) and the amount of assets on the bank's balance sheet at the end of the year, which shows the portion of the bank's liabilities to its total assets at the end of the financial year. The higher the DAR ratio indicates the lower the portion of equity owned and the greater the portion of debt (third party deposit funds) in total bank assets.

Debt to equity ratio (DER) is the ratio of total liabilities to total equity. Debt to equity ratio (DER) is used to measure how much equity is used as collateral for total liabilities. The Debt equity ratio (DER) indicator is the comparison between the amount of debt to the amount of equity recorded in the balance sheet at the end of the year. DER describes the portion of debt that is several times larger than the amount of equity at the end of the financial year. The higher the DER means the greater the debt portion (leverage) of a bank's total capital (equity), which indicates that the bank's equity portion is getting lower and conversely, if the DER is lower it indicates that the equity portion is higher compared to the amount of third party funds or debt (Data et al., 2021).

Based on an assessment of the health of a bank, it can be seen from the bank's performance. The health bank measurement used is the Capital Adequacy Ratio (CAR). Capital Adequacy Ratio is the adequacy of a bank's equity capital to cover unforeseen circumstances. CAR describes a bank's ability to withstand losses or face financial risks. The CAR limit determined by the government of a country where a bank operates indicates the health of the banking system which should be seen from the capital structure. Banks with high CAR will have higher strength to face financial risks. According to Bank Indonesia Circular Letter No. 15/11/DPNP dated 8 April 2013, Bank Indonesia stipulated a minimum capital ratio requirement for commercial banks of at least 8% (Ginting et al., 2013).

Capital adequacy is an important aspect in implementing the prudential principle in bank management based on regulations issued by the Financial Services Authority. Bank capital comes from shareholders (ordinary shares) and the accumulated net profit after tax is not divided or retained profit. Capital functions as a buffer against the risk of loss due to non-performing loans (NPL). Minimum capital requirements include two consecutive components, namely: Tier 1 is core capital that is fully paid up, and Tier 2 is complementary capital as additional reserve capital (Data et al., 2021). The capital adequacy indicator used in this research is the capital adequacy ratio (CAR), which is a comparison between the amount of equity (equity) and the amount of risk-weighted assets (RWA), used to measure the level of capital adequacy or the ability to cover or support the risk of loss on assets that have risk or weighted average risk (Data et al., 2021).

Strong government and central bank support is an unavoidable aid to save the banking sector from problems of financial difficulties and bank failure. Similar failures were experienced by banks in Indonesia in the 1997/1998 period when the financial crisis occurred in Asia. In 2008 there was also a case of takeover (bail out) of a commercial bank that went public by the Indonesian government (Deposit Insurance Corporation), because it was experiencing financial difficulties. The reason for the monetary authority at that time to carry out a bail out was to avoid a systemic impact on the stability of the domestic banking system as an indirect result of the banking financial crisis in the USA.

Discussions are still ongoing regarding how to prevent and avoid incidents and experiences of failed banks so that they do not happen again in the future. Two suggestions proposed by experts are: increasing the ratio of capital adequacy to risk-weighted assets (RWA), or increasing the ratio limit for "equity to assets without risk" or non-risk weighted leverage ratio. It is further stated that all theories related to capital structure and its influence on financial performance and company value, namely; MM theory, packing order, trade-off, has been studied by previous researchers with mixed findings and applies to manufacturing (non-financial) companies with lower debt ratios in their capital structure compared to banking financial institutions.

The empirical findings of the research state that increasing capital (or reducing debt) has no effect on the

average cost of capital, because savers want a lower market risk premium, meaning that savers are willing to accept low interest if the potential risk is not high. This happens in such a way because there is a guarantee policy for savings funds (bank debt) which reduces the potential risk of financial distress.

Regulators (Monetary and Financial Services Authorities) as stakeholders in the banking financial sector may also have different goals from shareholders in the context of profit maximization. Greenspan (1996) who suggests that banks and regulators have the same interests in utilizing the development of new technology, to align goals, namely: maximizing profits and company value for shareholders, and to maintain a strong and profitable banking system. system) for the interests and expectations of the regulator. The theoretical implication is that monetary policy has an impact on bank capital structure. Based on the explanation of the concept of monetary policy and previous empirical studies that monetary policy has an impact on bank capital structure, the research hypothesis is formulated as follows:

H1: Monetary policy has an impact on bank capital structure.

The transmission channel of the central bank's quantitative easing program is through the banking sector when the central bank begins buying corporate bonds. We find evidence consistent with a "capital structure channel" of monetary policy. The announcement of central bank purchases reduces the bond yields of companies whose bonds qualify for central bank purchases. These companies replaced bank term loans with bond debt, thereby relaxing banks' lending constraints: banks with low tier-1 ratios and high non-performing loans increased lending to private (and profitable) companies, which experienced investment growth. Credit reallocation increases bank risk taking in corporate credit (Grosse-Rueschkamp et al., 2019). Based on the explanation of the concept of monetary policy and previous empirical studies that monetary policy has an impact on bank credit risk, the research hypothesis is formulated as follows:

H2: Monetary policy has an impact on bank credit risk.

2.5.2 Impact of Monetary Policy on Bank Profitability

The impact of monetary policy is measured using interest and non-interest rates, on bank profit components, measured by interest and non-interest income (Dang, 2022). Therefore, the following sections present various transmission channels examined in previous related works. It has long been known that the impact of interest rates on banks' net interest margins has attracted much attention from academic circles. A pioneer, Samuelson (1945), theorized that when interest rates fall, profits from reduced deposit costs cannot compensate for losses caused by reduced credit income, ultimately lowering net interest margins. Hancock (1985) shows the positive impact of an increase in interest rates on the net interest margin, relying on the idea that loan interest rates are more elastic than deposit interest rates.

Regarding credit quality, lower interest rates from loose monetary policy may support borrowers' operations. For some authors, this increases compliance with credit commitments from borrowers and subsequently improves the quality of bank assets, stabilizes income and reduces bank costs (Bernanke & Gertler, 1995). In contrast, other researchers have proposed a hypothesis in which monetary policy easing could reduce banks' incentives to screen borrowers and lend to customers (Dell'Ariccia et al., 2014); (Maddaloni & Peydro, 2010). This results in lower credit quality, riskier portfolios, and the potential for a credit boom. From an empirical point of view, it shows that higher interest rates do not necessarily correlate with better returns for banks (Altavilla et al., 2018).

A growing body of literature focuses on the transmission of monetary policy through bank lending activities, or the "bank lending channel" for short. First proposed by (Bernanke & Blinder, 1988) the channel describes how tightening monetary policy reduces loanable funds. As a result, banks have to cut loans if debtors fail to replace the funds promptly, because the funds available at the bank are reduced. Many studies have verified the existence of bank lending channels worldwide (Yang & Shao, 2016) for a comprehensive review). Considering that many loan and deposit transactions are directly related to fees and commissions (the largest share of non-interest income), shrinking credit portfolios due to tightening monetary policy tends to reduce banks' non-interest income. Apart from the impact on fees/commissions, changes in interest rates also change the prices of financial assets owned by banks.

The general principle is that rising interest rates depress the prices of financial products. In some cases (for example, with available-for-sale securities), such losses can be quickly reflected in the accounting books, and thereby reduce non-interest income. Additionally, it is worth noting other potential channels that are also based on trading assets at lower prices. In this case, demand for asset portfolio management through banks decreases, thereby reducing income from fees/commissions (Dang, 2022). In general, the existing literature seems to have similar expectations about the adverse impact of increasing interest rates on non-interest income. Found empirical evidence supporting the negative impact of interest rates on non-interest income, using a large sample of 109 global banks, headquartered in 14 major developed markets (Borio & Gambacorta, 2017). Compared with interest rate instruments, the impact of non-interest rate instruments on banks' non-interest income is more ambiguous, as seen through financial asset trading. According to portfolio balancing theory, when the central bank purchases financial assets in the bank's portfolio, asset prices have the potential to rise due to increased demand for trading assets (Tobin, 1969).

Many authors agree with this mechanism, in the view that unconventional central bank monetary policy increases asset prices and thereby increases revenues from non-traditional banking activities (Borio et al., 2015). Conversely, the market may interpret central bank purchases as a negative economic outlook (Christensen & Rudebusch, 2016). Such predictions depress financial asset prices and subsequently bank profits. Other research focuses on United States monetary policy, particularly large-scale asset purchases by the Federal Reserve, indicating a potential negative relationship between monetary policy and net interest margins. The transmission channel is that Federal purchases result in a decrease in long-term interest rates and narrow the difference between deposit interest rates (federal funds rates) and loan interest rates (Gagnon et al., 2011). Greater loan interest rate elasticity, interest income losses destroy interest expense profits, thereby reducing net interest margins.

Among the rare empirical studies on unconventional monetary policy and bank profits that use the ratio of central bank assets to gross domestic product (GDP), and (Lambert & Ueda, 2014); (Mamatzakis & Bermpei, 2016) use a sample of central bank assets and excess reserves to show a negative relationship for US banks. However, from an international perspective, similar evidence from other markets has not been found, especially in developing countries. Monetary policy interest rates (Central Bank Interest Rate and Interbank Interest Rate) and bank profitability: The central bank interest rate is the main monetary policy variable set by the central bank as a benchmark for all interest rates in the economy, in an inflation targeting regime (Mbabazize et al., 2020).

It is expected that an increase in interest rates will cause the profitability of the banking sector to increase more overall. Banks benefit from rising interest rates in normal economic conditions (Hancock, 1985), thus bank profitability increases because rising interest rates tend to increase the difference between savings and loan interest rates. The theoretical implication of this empirical is that monetary policy has an impact on bank profitability. Based on the explanation of the concept of monetary policy and previous empirical studies that monetary policy has an impact on bank profitability, the research hypothesis is formulated as follows:

Hypotesis 3: Monetary policy has an impact on bank profitability.

2.5.3 Impact of Capital Structure on Bank Profitability

A capital structure that guarantees capital adequacy is an important variable in determining bank profitability and banks with large capital can signal to the market that performance is better than the expected average (Flamini et al., 2009). Banks that have large capital are less risky and produce higher profitability ratios because they are considered safer, so there could be a negative relationship between capital adequacy and profits. A higher equity to assets ratio will result in lower external funding requirements and therefore higher financial performance which indicates higher financial performance (Naceur, 2003).

Overall, banks with large capital are believed to reduce funding costs and reduce the possibility of bankruptcy. It is important for banks to examine more deeply if an injection of equity capital will result in higher financial performance than an increase in debt. Banks need to ensure strict implementation of internal processes in lending operations and improve internal control in preventing risks such as lending (Mendoza & Rivera, 2017). An increase in bank deposits can function as funds that will be provided as bank loans and so the bank's ability to generate profits will also increase.

Profitability is the ability of a business entity to generate profits from the business activities carried out. Bank profitability is the bank's ability to generate bank profits which can be measured by Return On Assets (ROA) which measures the bank's ability to generate profits with its total assets (Data et al., 2021). The higher the profit generated, the higher the Return On Assets ratio. This means that the company is impactful in using its assets to generate profits. The theoretical implication of this empirical is that the capital structure will guarantee capital adequacy so that banks have a good opportunity to invest and increase profitability. Based on the explanation of the concept that capital structure will guarantee capital adequacy and previous empirical studies that capital structure will guarantee capital adequacy and have an impact on bank profitability, the following research hypothesis is formulated:

H4: Capital structure has an impact on bank profitability.

2.5.4 Impact of Credit Risk on Bank Profitability

Risks associated with the banking sector business are defined as a decline in company value due to changes in the business environment. Credit risk affects profitability, operational efficiency and banking share prices, because increasing NPL and LLP ratios will reduce the bank's potential income, and be an indication that the bank is inefficient. This condition gives a negative signal to the market which causes investors to sell banking shares, which then results in the share price falling. If the NPL and LLP ratio decreases or improves, it will have a positive effect on increasing profitability, the level of operational efficiency and provide a positive signal to the market so that investors are interested in buying bank shares {(Amidu & Hinson, 2006); (Mbarek & Mezzez Hmaied, 2012); and (Epure & Lafuente, 2014)}.

Risk is the uncertainty that the actual return on an investment differs from the expected return. Risk occurs due to investment decisions and funding decisions of companies that have the potential to lose the original investment and the amount of interest accumulated in it. Credit risk is the borrower's failure to fulfill his obligations to pay debts. Credit risk can occur when partners cannot pay or cannot pay on time (Data et al., 2021). Credit risk

is the risk of loss of principal or loss of financial rewards resulting from the borrower's failure to repay the principal and loan interest according to contractual obligations.

Credit risk causes banks to lose cash flow for investments and current liquidity. Investors are compensated for the assumed credit risk by means of interest payments from the borrower or issuer of the debt obligation, and credit risk is the potential loss of investment returns, the most important of which is that the yield on a bond is strongly correlated with the perceived credit risk. Credit risk management affects bank financial performance, therefore management should be careful in setting credit policies (Nawaz, 2012). Risk management indicators (doubtful loans and capital asset ratio) influence bank performance (Oluwafemi, Adeusi et al., 2013). Unwise creditors have a negative effect on net interest margin (Berríos, 2013). Credit risk indicators have a negative effect on bank performance (Kaaya & Pastory, 2013), bank financial performance is influenced by credit risk management and capital adequacy (Ogboi & Okaro, 2013).

Non-Performing Loans (NPL) is the level of bank bad loans. The smaller the NPL ratio, the wiser the bank is in providing credit to customers and this is with the aim of achieving the right target (Christaria & Kurnia, 2016). This practice makes customers and investors trust that the money deposited in the bank will be managed well thereby, increasing the bank's ability to generate profits using its assets. This means that the bank's financial performance as a proxy by ROA will also increase (Haneef et al., 2012). According to Regulation No.15/2/PBI/2013 from Bank Indonesia, the ratio of non-performing loans (Non Performing Loans) cannot be more than 5% of total credit (Bank Indonesia, 2013).

Banks must establish an appropriate credit risk environment; the bank operates under a sound lending process; maintaining appropriate credit administration involving monitoring; adequate processing and control over credit risk, and banks need to place and develop strategies that will not only limit the bank's exposure to credit risk, but will develop bank performance and competitiveness (Sulieman Alshatti, 2014). It is critical for banks to understand which risk factors have a greater influence on financial performance and use better risk-adjusted performance measures to support strategy. Banks must establish credit risk management in establishing processes from loan initiation to approval, taking into account sound credit risk management practices issued by regulations (Mendoza & Rivera, 2017). The theoretical implication is that credit risk will reduce profitability. Based on the explanation of the concept of credit risk and previous empirical studies that credit risk influences profitability, the following research hypothesis is formulated:

Hypothesis 5: Credit risk has an influence on bank profitability.

3. Research Method

This type of research is explanatory, namely explaining the influence between one or several variables and one or several other variables, using secondary data. Based on the research model developed, it is hoped that it can better explain the impact of the independent variable on the dependent variable which is analyzed using statistical procedures for hypothesis testing, and at the same time can make research implications that are useful for the development of science and as a method for solving problems in the field. Quantitative research methods are based on the philosophy of positivism, which examines certain populations or samples, through collecting research data, analyzing quantitative or statistical data, with the aim of testing hypotheses.

3.1 Population and Sample

The location of this research is in Indonesia and the objects of observation are all manufacturing companies listed on the Indonesia Stock Exchange, with an observation period starting from 2016 to 2022. The population and sample are all conventional commercial banks on the Indonesia Stock Exchange and Bank Indonesia with an observation period starting from 2010 to 2022 totaling 43 companies. The sample of conventional commercial banks was selected for research over 7 consecutive years (time series and cross-section). The unit of analysis is 30 conventional commercial bank companies using panel data, namely time series and cross-sectional data, with the number of observations being 30 x 7 years = 210 financial reports.

3.2 Measurement of Variables

Monetary Policy is the framework used by the Central Bank to regulate money circulation, interest rates and credit to achieve broad economic goals (Dang, 2022). Monetary policy tools include; Central Bank Interest Rate, Minimum Statutory Reserve (MSR), and Capital adequacy ratio (CAR) are comparisons between total equity (equity) and total risk weighted assets (RWA) used to measure the level of capital adequacy or ability to support (to cover or buffer).) risk of loss on productive assets that have risk or risk weighted average (RWA) or RWA. Capital adequacy ratio (CAR) is calculated using the following formula (Data et al., 2021):

$$CAR = \frac{\text{Total Ekuitas}}{\text{ATMR}} \text{ x } 100\%$$

Source: (Bank Indonesia, 2013)

The capital structure variable is measured by Debt to Asset Ratio (DAR), and Debt to Equity Ratio (DER.

Debt to Assets Ratio (DAR) is a comparison between total debt and total assets. DAR is used to measure how much a commercial bank's assets are financed with debt (third party savings funds). Debt to assets ratio (DAR) is calculated using the following formula (Data et al., 2021):

$$DAR = \frac{Total\ debt}{Total\ assets} \times 100\%$$

Debt to equity ratio (DER) is a comparison between total debt (third party savings funds) and total equity, used to measure the ability of equity (own capital) to support total debt or third party savings funds. DER is calculated using the following formula (Data et al., 2021):

$$DER = \frac{Total\ debt}{Total\ equity} \times 100\%$$

Credit risk is a change in net asset value due to changes in the ability of counter parties to fulfill agreed obligations. Credit risk is measured by Non Performing Loan (NPL) and Loan Loss Provision (LLP) indicators. Referring to the provisions of PBI no.14/15.PBI /2012, NPL or non-performing credit is credit that is categorized as substandard, doubtful and non-performing. The higher the NPL ratio, the lower the credit quality of a bank in generating interest income. The NPL ratio indicates the ability of bank management to manage the quality of the loan portfolio distributed. The better bank management manages its credit portfolio, the lower the NPL and LLP ratio will be reflected, and vice versa. The Non Performing Loan (NPL) indicator is calculated using the following formula (Data et al., 2021):

$$NPL\ Gross\ (NPLG) = \frac{Non\ Performing\ Loan}{Total\ Credit} \times 100\%$$

$$NPL\ Net\ (NPLN) = \frac{Non\ Performing\ Loan - LLP}{Total\ Credit} \times 100\%$$

Source: (Bank Indonesia, 2013).

Loan loss provision (LLP) is a fund or reserve set aside to anticipate bank losses due to a decline in the quality of the credit portfolio. As with NPL, the higher the LLP, the lower the credit quality. The higher the NPL, the LLP will increase so that the subsequent impact will reduce bank income, because the source of reserve formation comes from income or Net Interest Income (NII). LLP in the Indonesian banking system uses the term Allowance for Impairment Losses of financial assets, or called Allowance for Losses on Productive Assets. The loan loss provision (LLP) ratio indicator is calculated using the following formula (Data et al., 2021):

$$Loan\ Loss\ Provision\ (LLP) = \frac{LLP}{Total\ Credit} \times 100\%$$

Bank profitability in this study is measured by indicators: earnings per share (EPS), return on assets (ROA), return on equity (ROE), and net interest margin (NIM). Earning per share (EPS) is the amount of net profit after tax (NOPAT) or net operating profit after tax or net income, divided by the number of common shares issued and fully paid up. EPS is calculated using the following formula:

$$EPS = \frac{Net\ Income}{Common\ share\ outstanding}$$

Return on assets (ROA) is the comparison of net profit with total assets within a certain time. Return on assets (ROA) is used to measure the company's ability to manage assets to gain profits for the company, so that it can increase the company's financial ability to fund projects that have a "positive net present value". Referring to research (Data et al., 2021), Return on assets (ROA) is calculated using the following formula:

$$\textbf{Return on assets} = \frac{Earning\ before\ interest\ and\ tax}{Total\ assets} \times 100\%$$

Return on equity (ROE) is the comparison of net profit after tax with total equity in a certain time. Return on equity (ROE) is used to measure a company's ability to obtain net profit after tax available to equity owners, so that it can increase the wealth of share owners, as a result investors can assess management efficiency.

Referring to research (Data et al., 2021), Return on equity (ROE) is calculated using the following formula:

$$Return\ on\ equity = \frac{Earnig\ after\ tax}{Equity} \times 100\%$$

Net interest margin (NIM) is an indicator that reflects financial performance, which is a comparison between net interest income and average productive assets (credit portfolio that earns interest) in a certain financial reporting period. Net interest margin (NIM) is calculated using the following formula (Data et al., 2021):

$$NIM = \frac{Pendapatan\ bunga\ bersih}{Rata-rata\ aset\ produktif} \times 100\%$$

4. Research Findings
4.1 Data Descriptions
Data descriptions for 12 indicators according to the classification of variables and indicator data on the financial ratio scale of the object company from 2016 to 2022 are presented in table 1. The results of calculating the company's financial ratios for indicators per variable are presented, the indicator values for each group of indicators

for each research variable , as follows:

Tabel 1. *Descriptive Statistics*

No.	Indicator	Minimum	Maximum	Mean	Std. Deviation
1	Indonesian Bank Interest	3.50	6.00	4.85	0.90
2	Statutory Reserve Requirement	2.33	43.00	7.59	4.54
3	CAR	9.01	98.07	22.92	9.26
4	DAR	12.00	94.00	83.14	7.93
5	DER	5.27	5862.00	690.03	610.12
6	NPLG	0.00	15.82	3.49	2.19
7	NPLN	0.00	8.54	1.79	1.38
8	LLP	0.00	11.72	2.63	1.83
9	EPS	-485.00	1371.32	146.40	253.82
10	ROA	-14.75	6.89	0.85	2.46
11	ROE	-95.00	23.00	3.42	17.79
12	NIM	-315.06	87.20	3.72	23.13
	Valid N (listwise)	210			

Data source: company financial report website http://www.idx.co.id 2016 - 2022 and Bank Indonesia annual report, processed in 2023.

Analysis of this research data uses an equation model approach (PLS). The Smart PLS approach is variance based, is a predictive model, and can be used to confirm theory with empirical data. Model assessment is hypothesis testing carried out by comparing the statistical t value with the t table (Hair et al., 2017) or by paying attention to the significant (*) on the "PLS output". In the model test the hypothesis through showing significance (see PLS output). Testing the goodness of fit of the structural model on the inner model uses predictive-relevance values. The R^2 value of the dependent variable in this research, $R^2 = 0.405$, is the magnitude of the impact of monetary policy, capital structure and credit risk in determining or explaining profitability, which is 40.5% and the remaining 59.5% is determined by other variables not examined in this research model and error.

The indicator with the largest outer loading shows that the indicator is measuring the strongest or dominant variable. The results of the outer loading indicators of the latent variables measured, and the Average Variance Extracted (AVE) obtained through PLS Algorithm calculations are presented in table 2.

Table 2. Test Results of Indicators Measuring Latent Variables

Variable Indicators	*Outer Loading* > 0.3 *(Valid)*	AVE > 0.4	Information
Monetary Policy		**0,415**	Reliable
Indonesian Bank Interest <- *Monetary Policy*	-0.311		Valid
Statutory Reserve Requirement <- *Monetary Policy*	-0.433		Valid
CAR <- *Monetary Policy*	0.988		Valid
Capital Structure		**0,600**	
DAR <- Capital Structure	0.552		Valid
DER <- Capital Structure	-0.553		Valid
Credit Risk		**0,596**	Reliable
NPLG <- Credit Risk	**0,454**		Valid
NPLN <- Credit Risk	0,939		Valid
LLP <- Credit Risk	0,838		Valid
Profitability		**0,615**	Reliable
EPS <- PROFIT	0,687		Valid
ROA <- PROFIT	0,552		Valid
ROE <- PROFIT	0,934		Valid
NIM <- PROFIT	0,900		Valid
Siginicant at *level* 0.05			
Source: Smart PLS 3 analysis results (Data et al, 2023)			

The structural model (inner model) is for testing research hypotheses using the Smart PLS analysis approach as in table 3.

Table 3. Hypothesis Testing Results (Inner Model)

Variable Independent	Variable Dependent	Path Coefficient	t-Statistik > 1.96	P-Value <0.05	Information
Monetary Policy	Capital Structure	-0.592	6,904	0.000	Significant
Monetary Policy	Crdit Risk	-0,236	0,826	0,418	Not significant
Monetary Policy	Profitability	-0,188	0,663	0,508	Not significant
Capital Structure	Profitability	-0,394	2.231	0.012	Significant
Credit Risk	Profitability	-0,593	9,160	0.000	Significant

Siginicant at *level* 0.05
Source: Smart PLS 3 analysis results (Data et al, 2023)

5. Discussion of Research Findings

5.1 The Impact of Monetary Policy on Capital Structure

Monetary policy has a significant impact on bank capital structure. The results of data analysis support accepting hypothesis 1 which states that "Monetary policy has an impact on bank capital structure". The results of statistical evidence show that the path coefficient is negative and significant. The path coefficient is negative, meaning that if there is a change in monetary policy it will cause changes in the bank capital structure in general for all banks. The bank's capital structure can be determined or explained by monetary policy, where if there is an increase in the minimum statutory reserve, central bank interest rates and the Capital Adequacy Ratio (CAR) it will cause a decrease in the level of debt in the bank's capital structure.

5.2 The Impact of Monetary Policy on Bank Credit Risk

Monetary Policy does not have a significant impact on bank credit risk. The results of data analysis do not support accepting hypothesis 2 which states that "Monetary policy has an impact on bank credit risk", the research decision rejects hypothesis 2. The results of statistical evidence show that the path coefficient is negative and not significant. The path coefficient is negative, meaning that if there is a change in monetary policy it will not cause a general change in bank credit risk for all banks. Bank credit risk cannot be determined or explained by monetary policy.

5.3 The Impact of Monetary Policy on Bank Profitability

Monetary policy does not have a significant impact on Bank profitability. The results of data analysis do not support accepting hypothesis 3 which states that "Monetary policy has an impact on bank profitability", the research decision rejects hypothesis 3. The results of statistical evidence show that the path coefficient is negative and not significant. The path coefficient is negative, meaning that if there is a change in monetary policy it will not cause a change in bank profitability in general for all banks. Bank profitability cannot be determined or explained by monetary policy.

5.4 The Impact of Capital Structure on Bank Profitability

Bank capital structure has a significant impact on bank profitability. The results of data analysis support accepting hypothesis 4 which states that "Bank capital structure has an impact on bank profitability". The results of statistical evidence show that the path coefficient is negative and significant. The path coefficient is negative, meaning that if there is a change in the debt to asset ratio and debt to equity ratio it will cause a change in bank profitability as measured by Earning Per Share (EPS), Return On Assets (ROA), Return On Equity and Net Internet Margin (NIM) , where if there is an increase in debt in the bank's capital structure it also contributes to high interest costs reducing which causes a decrease in the bank's income level.

5.5 Impact of Bank Credit Risk on Bank Profitability

Bank credit risk has a significant impact on bank profitability. The results of data analysis support accepting hypothesis 5 which states that "Bank credit risk has an impact on bank profitability". The results of statistical evidence show that the path coefficient is negative and significant. The path coefficient is negative, meaning that if there is a change in Loan loss provisions (LLP), Non-Performing Loan Gross (NPLG) and Non-Performing Loan Net (NPLN) it will cause changes in bank profitability as measured by Earning Per Share (EPS), Return on Assets (ROA), Return On Equity and Net Internet Margin (NIM), where if there is an increase in bank credit risk, namely non-performing and bad loans, it also contributes to high costs, causing a decrease in the bank's income level, even loss of income.

6.Conclusion

The end of this article contains conclusions and recommendations. The conclusion is a short and accurate statement based on the results and discussion, as well as answers to research problems that correspond to the research

objectives. Recommendations are the author's experiences and considerations which are intended for researchers in the field of financial management and monetary policy, who will carry out further research, policies and practical solutions, improve methods, develop the necessary knowledge according to expectations.

Monetary policy has a significant impact on bank capital structure. The path coefficient is negative, meaning that if there is a change in monetary policy it will cause changes in the bank capital structure in general for all banks. The bank's capital structure can be determined or explained by monetary policy, where if there is an increase in the minimum statutory reserve, central bank interest rates and the Capital Adequacy Ratio (CAR) it will cause a decrease in the level of debt in the bank's capital structure.

Monetary Policy does not have a significant impact on bank credit risk. Bank credit risk cannot be determined or explained by monetary policy. Monetary policy does not have a significant impact on Bank profitability. Bank profitability cannot be determined or explained by monetary policy.

Bank capital structure has a significant impact on bank profitability. The results of statistical evidence show that the path coefficient is negative and significant. The path coefficient is negative, meaning that if there is a change in the debt to asset ratio and debt to equity ratio it will cause a change in the bank's profitability as measured by Earning Per Share (EPS), Return On Assets (ROA), Return On Equity and Net Internet Margin (NIM) , where if there is an increase in debt in the bank's capital structure it also contributes to high interest costs reducing which causes a decrease in the bank's income level.

Bank credit risk has a significant impact on bank profitability. The results of statistical evidence show that the path coefficient is negative and significant. The path coefficient is negative, meaning that if there is a change in Loan loss provisions (LLP), Non-Performing Loan Gross (NPLG) and Non-Performing Loan Net (NPLN) it will cause changes in bank profitability as measured by Earning Per Share (EPS), Return on Assets (ROA), Return On Equity and Net Internet Margin (NIM), where if there is an increase in bank credit risk, namely non-performing and bad loans, it also contributes to high costs, causing a decrease in the bank's income level, even loss of income.

7. Recommendations

1) For researchers in the field of financial management, it is hoped that the findings of this research can be used as material for consideration in future research, as a reference in adding other variables that have not been included in this research model, to obtain a more comprehensive research model.
2) For banking companies on the Indonesian Stock Exchange, it is hoped that the results of this research will provide useful input in decision making or understanding of monetary policy variables influencing capital structure decisions in terms of bank capital adequacy, credit risk management and bank profitability which maximizes the welfare of its owners. and stakeholders.
3) For stock exchange investors, the results of this research will be input or information in order to make investment decisions in the capital market, especially the banking financial sector, in order to obtain better returns with minimal risk.
4) For the Financial Services Authority, the results of this research are expected to provide input in efforts to maintain the stability of the financial and banking system in Indonesia in a sustainable manner.
5) For the government as a regulator, the results of this research contribute to the effectiveness of implementing monetary policy and can be used as a reference for consideration in making regulations in the business and economic fields.

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