Could Different Financing and Funding Schemes Harm Banking Competition?

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ABSTRACT

Background and purpose: This study aims to examine the relationship between off-balance sheet (OBS) financing and funding schemes and the market power. This study also analyzes the funding mechanism as a moderating variable in the relationship between OBS and market power. Data and methodology: This research involves banks in Indonesia from 2013 to 2022. The learner index is used to determine the market power involving gross income as a price level. OBS is measured through commitment and contingency loan facilities that have not been drawn by the debtor. The funding mechanism comes from deposits and internal capital funds. Findings: The results show that OBS financing and funding mechanisms are related to market power. OBS loans have a negative effect while loans on the balance sheet have a positive effect on market power. Other findings found that funding mechanisms from customer deposit strengthen the link between OBS financing and market power, however, internal capital fund reduce it. Potential contributions: There are two main research contributions. First, this research relates to market power literature that answers whether OBS activity affects the bank competition climate. Second, regarding funding portfolios, this study examines whether funding schemes contribute to increasing market power.

Keywords: Off-balance sheet, funding schemes, market power.

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1. INTRODUCTION

The research aims to examine the impact of off-balance sheet (OBS) activity and funding schemes on bank market power in Indonesia. This research also tests the funding mechanism as a moderating variable in the relationship between off-balance sheet activity and market power. The discussion is expanded regarding banking product diversification by comparing loan facilities in OBS and on-balance sheets because diversification and competition can complement each other in increasing stability (Khattak et al., 2021).

Market power in the banking industry shows that imperfect competition can reduce stability (Khattak et al., 2021). The situation of the banking industry in Indonesia which operates with a high level of market power causes the market to become less competitive (Cupian & Abduh, 2017; Lubis, 2012). The structure of the banking market in Indonesia shows that several banks are in a dominant position (Cupian & Abduh, 2017; Khattak et al., 2021; Lubis, 2012; Mulyaningsih & Daly, 2011; Sunarmo, 2018; Widyastuti & Armanto, 2013).

Market power is a bank's performance, defined as the ability to set a margin on a product above the market price. Marginal costs and product prices are included in determining the level of market power (Khattak et al., 2021; Soedarmono et al., 2016). Loan

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volume is also one of the variables used to assess market power (Widyastuti & Armanto, 2013). Higher market power results in higher risks to stability. This is because market power in influencing prices does not only affect individual profits, but also affects competitors' conditions (Lubis, 2012).

Competition is considered one of the main determinants of bank risk because it impacts the ability to distribute credit funds and bank income (Adjei-Frimpong, Gan, & Hu, 2016; Khattak et al., 2021). Apart from that, the product diversification strategy carried out by banks can be seen in the formulation of price levels based on market power (Soedarmono et al., 2016; Khattak et al., 2021). Product price levels are reflected in total loan interest income and non-interest income originating from fee-based income such as committed and contingent loan facilities on the OBS products. This means that loan portfolio diversification and market power are interrelated.

Previous research has examined bank size and product diversification strategies that can increase bank market power. However, previous research has not examined the relationship between loan diversification from OBS product sales through commitment loan facilities and contingencies on market power. In addition, previous research has not involved funding mechanisms as a measure of capitalization that can influence market power. Therefore, the research gap will be discussed in this research.

The motivation in this research is related to signal theory and market power theory, which explains the relationship between product diversification and a dominant position as a bank's market power. Positive signals regarding the level of loan risk appear to be lower in commitment and contingent loan facilities due to their hidden or off-balance sheet nature. In this case, positive signals can be deceptive because future borrowings from loan commitments and contingencies have not yet appeared as loans on the balance sheet. On the other hand, banks that use internal funding to finance their operations tend to diversify their products (Amidu & Kuipo, 2015). Therefore, this study seeks to answer research questions regarding the relationship between market power, off-balance sheet, and financing mechanisms.

Market power is related to banking risk in Indonesia. The banking industry in Indonesia is in imperfect competition. Bank performance and efficiency are more susceptible to decline if they are in conditions of imperfect competition (Berger & Mester, 2003). Therefore, it is expected that the results of this research can contribute to the literature on market power and product diversification for regulators who formulate bank policies.

The findings in this study contribute to strengthening banking globally. Asian banks tend to be willing to take higher risks in a less competitive climate. Banking conditions in Asia need attention because their performance will affect the global banking situation (Santoso et al., 2021). Market power is the level of monopoly that is inversely proportional to the climate of banking competition. The findings of this study have outlined the relationship between the level of risk of bank products and market power. So, there are two main contributions from the research findings to the role of banking as a financial intermediary institution. First, the findings of this study provide additional literature on the impact of cross-selling behavior through the growth of conventional loans and off-balance sheet loans on banking market power. Offering alternative products, namely off-balance sheet loans, is an example of risk-taking that can affect financial stability. Second, the findings in this study provide empirical evidence of the relationship between bank capital sources and bank market power. In developing countries, bank consolidation is a conventional way to increase market power during the financial crisis period. The two mechanisms of bank funding sources have different effects on market power. So, regulators need to regulate bank funding sources to maintain a climate of competition and stability.

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2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.1 Competition and bank structure in Indonesia

Several studies conducted on the structure of the banking industry in Indonesia show that the structure of the banking market is subject to imperfect market competition. Research on the Sharia banking industry in Indonesia from 2010 to 2014 shows that banks are in monopolistic market competition (Sunarmo, 2018). The banking industry in Indonesia operates at a high level of market power, so the market becomes less competitive (Cupian & Abduh, 2017; Lubis, 2012).

Research conducted on commercial banks in Indonesia from 2001 to 2006 showed the existence of monopolistic competition or collusive oligopoly (Widyastuti & Armanto, 2013). Another study conducted by a group of large, medium, and small banks in 2001 to 2009 showed that the market structure in the Indonesian banking industry was monopolistic competition (Mulyaningsih & Daly, 2011). Therefore, it can be said that several banks in Indonesia are in a dominant position (Cupian & Abduh, 2017; Khattak et al., 2021; Lubis, 2012; Mulyaningsih & Daly, 2011; Sunarmo, 2018; Widyastuti & Armanto, 2013).

2.2 The level of competition and market power

The level of competition and market power are inversely proportional to each other, meaning that the higher the competition, the lower the monopoly power of banks in a market. The less competitive a market is, the greater its market power, and vice versa (Lubis, 2012; Cupian & Abduh, 2017; Azmi et al., 2019; Khattak et al., 2021). Banking competition determines the structure of the banking market because the more competitive an industry is, the greater the possibility of creating a perfect market competition structure with lower market power (Lubis, 2012).

Market power is associated with bank risk in Indonesia (Mulyaningsih & Daly, 2011; Lubis, 2012; Widyastuti & Armanto, 2013; Sunarmo, 2018; Cupian & Abduh, 2017; Khattak et al., 2021;). Imperfect competition in banks can reduce bank stability. Product diversification and market competition can complement each other in increasing bank stability (Khattak et al., 2021). Research on commercial banks in the Asia-Pacific region found that higher bank-level market power is associated with lower bank risk, but higher bank concentration at the country level aggregates bank risk (Fu et al., 2014). Used a new approach to capture market stability and found that greater competition reduces bank risk due to increased profitability and asset quality (Goetz, 2018).

Bank market structure influences bank risk because it is related to the bank's ability to distribute loans and earn income (Adjei-Frimpong, Gan, & Hu, 2016; Khattak, 2021). Higher market power results in higher risks to bank stability. This can be seen from the market power formulation. Market power can dictate prices which will affect individual and competitor profits (Lubis, 2012). Bank performance and efficiency are more susceptible to decline if they are in conditions of imperfect competition. Thus, bank structure and market power in the banking industry influence company policies. (Berger & Mester, 2003)

2.3 Hypothesis development

Diversification theory explains the relationship between OBS product diversification and risk levels. The increasing diversification of non-interest income products can improve bank

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performance, but banks must face increased exposure to higher risks (Köhler, 2014; Williams, 2016; Alouane et al., 2022). Market power theory explains bank performance measures that show how much a monopoly company can raise or influence prices above marginal costs (Church & Ware, 2000). Market power involves gross income as a price level that includes interest and non-interest income (Soedarmono et al, 2016; Khattak et al., 2021). Several previous studies found a relationship between the level of risk and market power (Cupian & Abduh, 2017; Khattak et al., 2021; Lubis, 2012; Mulyaningsih & Daly, 2011; Sunarmo, 2018; Widyastuti & Armanto, 2013).

The benefits of diversification can occur in conditions where product diversification has lower risks or produces high profits, but diversification is detrimental if product diversification is more dangerous or contributes to low profits (Moudud-Ul-Huq, 2018). Unused committed and contingent loan facilities contribute to non-interest income but do not contribute to interest income. In addition, the risk exposure for this loan facility is hidden because it cannot yet be recognized in the bank's balance sheet. Thus, the hypothesis of this research is:

H1: OBS has a negative effect on market power

Distribution of credit funds is the main banking product that makes the largest contribution to bank profits. Banks that have higher credit ratios tend to have better performance, despite higher credit risk exposure due to larger loan receivables (Alaeddin, Khattak, & Abojeib, 2019). The number of outstanding loans is one of the measurements that can determine market power (Widyastuti & Armanto, 2013). This is apparent in the market power formulation, which involves gross income as a price level that includes interest and non-interest income. In other words, a higher total revenue contribution results in higher monopoly power. (Soedarmono et al., 2016; Khattak et al., 2021). So, it can be hypothesized

H2: Loans have a positive effect on market power

Banks are deposit-taking institutions with a high leverage composition in response to their operational activities which facilitate credit financing for debtors. (Hoque & Pour, 2018). Traditionally bank deposits are related to liquidity ratios which describe the bank's ability to cover losses in loan distribution through the provision of liquid assets (Iannotta et al., 2007).

Customer deposits are the main source of banking financing (Iannotta et al., 2007; Amidu & Kuipo, 2015). Banks that have higher leverage generally obtain a higher level of security and soundness (DeAngelo & Stulz, 2013). Study in banks accessibility has observed that the bank's ability to increase total customer deposits can affect the bank's profitability (Pham et al., 2022). In line with previous research, it was found that banks that have larger deposits are more resistant to financial stress (Han & Melecky, 2013). The greater the customers' deposits, the higher the market power will be. So, the hypothesis is

H3: Customer deposits have a positive effect on market power

A bank's capital structure is influenced by its asset structure, with larger banks being more likely to issue equity at a lower cost due to their reputation. In the financial industry, the amount of bank capital is highly regulated by bank capital requirements set by the regulator (Mishkin, 2000; Hoque & Pour, 2018). The aim of establishing bank capital regulations is to protect banks from bankruptcy and maintain the level of competition (Hoque & Pour, 2018). Imperfect competition in banks is a concern because it can reduce bank stability and determine the main risks of banks (Lubis, 2012; Fu et al., 2014; Adjei-Frimpong, Gan, & Hu, 2016; Khattak, 2021).

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By considering equity regulation as part of banking capital requirements that are in line with market power to maintain the level of competition, the following hypothesis is formulated

H4: Internal capital funds have a negative effect on market power

This research involves funding schemes as a moderating variable. The relationship between OBS and market power has been explained through diversification theory, where increasing diversification through OBS products carries greater risks and has an impact on reducing bank performance in determining product prices. On the other hand, customer deposits are the main source of bank funding which increases the bank's market power in competition. Meanwhile, equity as a source of internal funding is highly regulated by government policy to maintain climate competition. Therefore, customer savings and internal capital funds as moderating variables can be hypothesized as follows

H5: Customer deposits moderate the relationship between OBS and market power

H6: Internal capital funds moderate the relationship between OBS and market power

3. RESEARCH METHODS

This research involves financial data from the commercial banking industry in Indonesia from 2013 to 2022 and observation data from 420 banks that have commitment and contingency facility products. Researchers used data provided by the financial services authority in processing the research variables. Commitment and contingent loans are taken from the productive assets report. Meanwhile, the bank market power variable is calculated from the price and marginal cost formulation. The funding scheme is obtained from the financial position report.

3.1 Market power

The Lerner index formulation is used to determine market power involving gross income as a price level that includes interest and non-interest income. A higher learner index reflects higher market power in influencing prices (Santoso et al., 2021).

For bank i in year t, the Lerner index is described by the following formulation:

$$LERNER_{i,t} = \frac{P_{i,t} - MC_{i,t}}{P_{i,t}} \quad (1)$$

The market power formulation is related to the accounting approach, namely gross income and marginal costs on the income statement. P as gross income is calculated from a mixture of interest income and non-interest income activities. Meanwhile, marginal costs (MC) are costs from operational activities which are calculated using the following formula:

$$MC_{i,t} = \frac{TC}{TA}\left(\propto_1 + \propto_2 \ln(TA) + \sum_{j=1}^{2} \gamma_j \ln(W_j)\right) \quad (2)$$

TC is total costs, which is the sum of non-interest costs and interest costs.

$$\ln(TC) = \propto_0 + \propto_1 \ln(TA) + \frac{1}{2} \propto_2 (\ln(TA))^2 + \sum_{j=1}^{2} \beta_j \ln(W_j) + \sum_{j=1}^{2}\sum_{k=1}^{2} \beta_{jk} \ln(W_j) \ln(W_k) + \sum_{j=1}^{2} \gamma_j \ln(TA) \ln(W_j) + \varepsilon$$

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(3)

W1 is the cost of external party funds obtained through the ratio of interest costs to bank deposit funds from depositors

3.2 Off-balance sheet

Commitment and contingent loan facilities contribute to non-interest income and interest income. Loan commitments that have been used by the debtor will appear on the balance sheet and the bank will receive interest income. Nevertheless, unused loan commitments do not appear on the balance sheet as loans, so they become off-balance sheet. Although the off-balance sheet loan facility has not been used, this product contributes to non-interest income (Widyatini, 2024).

In this research, the off-balance sheet is measured through committed and contingent loan facilities that have not been drawn by debtors. The formulation used is the ratio of unused commitment and contingent loan facilities to total loans.

3.3 Funding mechanism

Bank funding sources can come from deposits, non-deposits, and internal capital funds (Amidu & Kuipo, 2015). The bank funding mechanisms used in this research are bank deposits and internal capital funds. Bank deposits are measured by total customer deposits which cannot be withdrawn at any time. Bank deposits in this study did not involve savings and current accounts. Deposit funding is calculated from the ratio of customer deposits to total assets (DEPOSIT). The higher the deposit market share is, the higher deposit incentive fees are to prevent the risk of withdrawal from bank depositors (Soedarmono & Tarazi, 2016).

Meanwhile, internal capital funds are total bank equity including net profit before interest and tax (Amidu & Kuipo, 2015). Internal capital funds are the ratio of total equity to total assets (EQTA). The EQTA variable is a measure of bank capitalization level which can moderate the relationship between bank market power and risk-taking (Soedarmono et al., 2013)

3.4 Control variables

The control variables were used in this study through consideration of their relationship with the level of risk and banking efficiency. OVER as a control variable was calculated from the ratio of total costs to total income. Interest income and non-interest income are involved in the calculation formula of the OVER variable including interest and non-interest costs.

3.5 Hypothesis testing

Multiple regression tests measured commitment and contingency facilities that are still recognized as OBS against market power. The research model is as follows.

$$LERNER_{it} = \beta_0 + \beta_1 OBS_{it} + \beta_2 LOAN_{it} + \beta_3 DEPOSIT_{it} + \beta_4 EQTA_{it} + \beta_5 OVER_{it} + \varepsilon_{it}$$

The test is continued by comparing the influence of two funding schemes as moderating variables that moderate the relationship between OBS and market power. So, there is a regression for two research models involving moderating variables, namely customer deposits (DEPOSIT) and internal capital funds (EQTA).

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$$LERNER_{it} = \beta_0 + \beta_1 OBS_{it} + \beta_2 LOAN_{it} + \beta_3 DEPOSIT_{it} + \beta_5 EQTA_{it} + \beta_3 (OBS\ x\ DEPOSIT)_{it} + \beta_6 OVER_{it} + \varepsilon_{it}$$

$$LERNER_{it} = \beta_0 + \beta_1 OBS_{it} + \beta_2 LOAN_{it} + \beta_3 DEPOSIT_{it} + \beta_5 EQTA_{it} + \beta_3 (OBS\ x\ EQTA)_{it} + \beta_6 OVER_{it} + \varepsilon_{it}$$

4. EMPIRICAL RESULTS AND DISCUSSION

4.1 Descriptive statistics

Table 1 shows descriptive statistics for LERNER, OBS, LOAN, DEPOSIT, EQTA, MOD1, MOD2, and OVER. The observation data consists of 420 conventional banks in Indonesia for the years 2013 to 2022. The LERNER variable is market power formulated with the LERNER index. The higher the LERNER index value, the greater the bank's market power. OBS is an off-balance sheet loan, namely a commitment and contingency facility that has not been used. While LOAN is a debtor's loan receivable that has been recognized in the balance sheet. The moderating variable is the result of the interaction of the funding scheme with OBS consisting of MOD1 (DEPOSIT x OBS) and MOD2 (EQTA x OBS). OVER is the ratio of expenses to total income that reflects the level of efficiency.

Table 1. Descriptive Statistics

Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
LERNER	420	0.1735	0.2250	-18.100	0.6740
OBS	420	0.2749	0.2303	0.0010	16.240
LOAN	420	0.6233	0.1168	0.0830	0.8690
DEPOSIT	420	0.4670	0.1589	0.0620	0.7880
EQTA	420	0.1747	0.1027	0.0320	0.9250
MOD1 (OBS x DEPOSIT)	420	0.1138	0.0805	0.0010	0.4090
MOD2 (OBS x EQTA)	420	0.0454	0.0404	0.0000	0.2890
OVER	420	0.8511	0.2362	0.3360	28.630

4.2 Regression analysis and discussion

At the panel data selection stage, a random effect model was selected for regression testing. Panel data regression testing is to obtain conclusions from research hypotheses based on the p-value and coefficient of each variable with a significance level of 1% (***), 5% (**), and 10% (*).

4.2.1 The significant influence of bank financing and funding schemes on market power

The regression results for the relationship of OBS, funding scheme, and market power can be analyzed in Table 2.

H1 states that OBS has a negative effect on market power. Table 2 shows that the p-value of OBS is 0.000 with a coefficient of -0.0133. Based on the p-value and coefficient, it can be said that OBS has a negative effect on market power. Thus, H1 is supported.

H2 states that loans have a positive effect on market power. The panel data regression results show a LOAN p-value of 0.0017 with a coefficient of 0.0115. This means that loans have a positive effect on market power. Therefore, H2 is supported.

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Table 2. The significant influence of bank financing and funding schemes on market power

Description	LERNER
OBS	-0.0133***
	(0.0000)
LOAN	0.0115***
	(0.0017)
DEPOSIT	0.0181***
	(0.0000)
EQTA	-0.0128***
	(0.0029)
OVER	-0.9594***
	(0.0000)
Adjusted R-squared	0.998623
Prob(F-statistic)	0.000000
Observations	420

H3 and H4 are related to the funding scheme, namely customer deposits and internal capital funds. H3 states that customer deposits have a positive effect on market power. The regression results show a p-value of DEPOSIT of 0.0000 with a coefficient of 0.0181. This means that customer deposits have a positive effect on market power, so H3 is supported. Conversely, H4 states that internal capital funds have a negative effect on market power. The p-value of EQTA is 0.0029 with a coefficient of -0.0128. This means that internal capital funds are negatively related to market power. Therefore, H4 is supported.

4.2.2 Funding schemes as moderating variable in the relationship between OBS and market power

The involvement of funding schemes as a moderating variable is explained through two different research models that can be seen in Table: Model 1 for the regression results involving customer deposits as a moderating variable, and Model 2 for the involvement of internal capital funds. Model 1 is related to H5 which states that customer deposits moderate the relationship between OBS and market power, while Model 2 is for H6 which states that internal capital funds moderate the relationship between OBS and market power.

Table 3 shows the regression results of model 1 which has a p-value of MOD1 of 0.0086, while model 2 shows a p-value of MOD2 of 0.000. Based on these p-values, it can be concluded that customer deposits and internal capital funds moderate the relationship between OBS and market power. So H5 is supported and so is H6.

The regression results of Model 1 in Table 3 explain the MOD1 coefficient of 0.0293. This means that customer deposits strengthen the relationship between OBS and market power. In addition, the OBS p-value in Model 1 is 0.0000 with a coefficient of -0.0230, meaning that the negative relationship between OBS and market power remains consistent even though customer deposits are included as a moderating variable. In contrast, Model 2 shows a MOD2 coefficient of -0.1716, which means that internal capital funds as a moderating variable weaken the relationship between OBS and market power. In addition,

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the OBS p-value in Model 2 is 0.0017 with a coefficient of 0.0153, which means that the relationship between OBS and market power becomes positive after the inclusion of the moderating variable. In other words, the influence of OBS on market power is antagonistic when involving internal capital funds as a moderating variable.

Table 3. The significant influence of bank loan financing on market power with funding schemes as the moderating variable

Description	LERNER	LERNER
	Model 1	Model 2
OBS	-0.0230***	0.0153***
	(0.0000)	(0.0017)
LOAN	0.0120***	0.0133***
	(0.0010)	(0.0002)
DEPOSIT	0.0121***	0.0172***
	(0.0024)	(0.0000)
EQTA	-0.0134***	0.0125***
	(0.0018)	(0.0282)
MOD1 (OBS x DEPOSIT)	0.0293***	
	(0.0086)	
MOD 2 (OBS x EQTA)		-0.1716***
		(0.0000)
OVER	-0.959266***	-0.9553***
	(0.0000)	(0.0000)
Adjusted R-squared	0.998631	0.998731
Prob(F-statistic)	0.000000	0.000000
Observations	420	420

Off-balance sheet loans from commitment and contingency facilities have a significant effect on market power in commercial banking in Indonesia. The results of this study support the research of Moudud-Ul-Huq (2018) which states that loans that have not been used by debtors will be recognized as off-balance sheet loans that have risk exposure. In addition, the results of this study also support the research conducted by Mulyaningsih & Daly (2011), Lubis (2012), Widyastuti & Armanto (2013), Cupian & Abduh (2017), Khattak et al., (2021), and Sunarmo (2018), which found the relationship between the level of risk and the company's monopoly ability. Conversely, the distribution of loan funds has a significant effect on market power. This supports the research conducted by Widyastuti & Armanto (2013) which states that the loans provided for debtors are recognized as a loan receivable which determines the level of bank monopoly.

Funding schemes in commercial banks can be obtained through two main sources, namely external funding and internal funding (Amidu & Kuipo, 2015). External funds come from customer deposits and non-deposits such as savings and current accounts. While internal capital funds are explained from bank equity. The results of the study show that internal and external funding schemes have a significant influence on the level of banking market power. According to Hoque & Pour (2018), the funding scheme in banks is highly regulated and affects the bank's resilience in facing financial risks (Han & Melecky, 2013).

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Overall, the results of this study indicate that both off-balance sheet (OBS) and on-balance sheet loan facilities are related to market power. OBS has a negative effect on market power, while loans have a positive effect. The negative effect of OBS on market power indicates that the higher the OBS, the lower the market power. Conversely, a positive loan relationship indicates that the greater the loan distribution, the higher the bank's market power. OBS is a commitment and contingency loan facility that has not been used, while loans are loan receivables recognized on the on-balance sheet. OBS has not contributed to interest income until this facility is used by the debtor. Income from OBS products is recorded as non-interest income.

Market power formulated with the Lerner index defines the monopoly power of a bank. The Lerner index in market power is in the range of 0-1 where the greater the Lerner index indicates greater monopoly power. A negative Lerner index or less than 0 may occur in a situation where total revenue is lower than marginal cost.

The more loans that have not been withdrawn by the debtor, the lower the market power of the bank. Risk exposure to undrawn loans occurs because the bank must provide a reserve fund due to committed loans that give the debtor the flexibility to withdraw their funds at any time. Committed loans will appear on the balance sheet when they are withdrawn or used by the debtor, but the amount cannot be estimated. Likewise, with the uncertainty of time, where the debtor can withdraw committed funds during the period of the committed loan. Thus, it can be said that unused loans have not contributed to interest income but increased risk exposure, which causes the reduction of the banking monopoly power.

Further findings explain that funding schemes, both external funding and internal capital funds, are related to market power. External funds originating from customer deposits are positively related to market power and conversely, the internal capital funds are negatively related. Market power is the monopoly power of banking which is proxied by the Lerner index. So, it can be said that the higher the customer deposits, the greater the monopoly power of the bank. However, the higher the bank's equity, the lower the market power.

Several previous studies have found that deposit funds indicate the level of bank capitalization (DeAngelo & Stulz, 2013; Han & Melecky, 2013). The higher the level of capitalization, the higher the market power. In addition, studies explain that bank equity is highly regulated by bank regulations to maintain a competitive climate and risk level (Lubis, 2012; Fu et al., 2014; Adjei-Frimpong, Gan, & Hu, 2016; Khattak, 2021).

This study involves funding schemes as a moderating variable that moderates the relationship between off-balance sheet and market power. The moderating variable is the interaction between funding schemes and OBS. So, there are two moderating variables involved, namely customer deposits and internal capital funds. However, the regression results show that there is a difference in the moderating role between customer deposits and internal capital funds in moderating the relationship between OBS and market power.

The results of the study indicate that customer deposits as a moderating variable strengthen the relationship between OBS and market power. The relationship between OBS and market power remains negative even though there is the involvement of customer deposits as a moderating variable. The moderating variable is the interaction between customer deposits and OBS. This means that the higher the customer deposits, the more OBS will have an impact on increasing market power.

OBS is an undrawn loan facility, which has risk exposure due to the uncertainty of the amount and time to be recognized on the balance sheet. This means that the more deposit funds that can be collected, the greater the bank's ability to face the risk of offering OBS

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products. However, risk exposure increases along with the increase in OBS products which ultimately leads to a decrease in market power.

Internal capital funds are involved as the next moderating variable that moderates the relationship between OBS and market power. The regression results show that internal capital funds strengthen the relationship between OBS and market power. In addition, the relationship between OBS and market power is antagonistic when there are internal capital funds as a moderating variable.

Moderation variables are obtained from the results of the interaction of OBS with internal capital funds. Internal capital funds are proxied through bank equity. This means that an increase in equity causes a decrease in OBS. Conversely, the negative relationship between OBS and market power changes to a positive effect when there are internal capital funds as a moderating variable. OBS is a commitment and contingent loan that has not appeared on the balance sheet because it has not been used by the debtor. There is a risk of exposure to OBS loans. This means that a decrease in equity in the funding scheme has an impact on the increase in the amount of loans that have not been withdrawn by the debtor. Interestingly, an increase in OBS due to a decrease in equity causes an increase in the monopoly's ability to determine prices.

Hypothesis testing involves OVER as a control variable that consistently shows a negative effect on market power even when the funding scheme is involved as a moderating variable. That is, the higher the OVER, the lower the market power. OVER is the ratio of total expenses to total income, both interest income and non-interest income. A high OVER ratio describes a less efficient bank and vice versa. Thus, it can be said that less efficient banks have an impact on reducing the ability of banking monopolies to determine product selling prices.

5. CONCLUSION

This study examines the effect of off-balance sheet (OBS) and on-balance sheet loan facilities on banking market power with banking funding schemes as a moderating variable. The research sample is conventional banks in Indonesia with a 10-year research period from 2013 to 2022. Market power is proxied by the Lerner index which describes the monopoly power of banking. OBS facilities are commitment and contingency loans that have not been used so they have not been recognized in bank accounts. Meanwhile, debtor facilities that have appeared in the bank's balance sheet and contributed to interest income are referred to as loans.

The results of panel data regression found three main things that associated with market power. Firstly, financing facilities both OBS and on-balance sheet have a significant effect on bank market power. OBS has a negative effect on market power while loans on the on-balance sheet have a positive effect. This shows that the greater the outstanding commitment and contingent loans, the lower the monopoly power of the bank, and conversely, a greater distribution of loans can increase the bank's market power. Moreover, financing schemes based on sharia principles needs to be studied further considering that banking in Indonesia has great potential in sharia products (Sifa et al., 2022).

The second finding is about the funding scheme that has a significant influence on market power. Banking funding schemes can come from customer deposits and internal capital funds. The influence of funding schemes on market power has different results. Customer deposits have a positive influence on market power, while internal capital funds have a negative influence. This means that the more customer deposits that are successfully collected, the more the banking monopoly ability will increase. Conversely, when a bank has high internal capital funds, market power will decrease to maintain a competitive climate.

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Third, this study places the funding scheme as a moderating variable that moderates the relationship between OBS and market power. Customer deposits strengthen the relationship between OBS and market power. It can be interpreted that customer deposits cause an increase in OBS product offerings and have an impact on decreasing market power. Conversely, internal capital funds weaken the relationship between OBS and market power. In addition, the relationship between OBS and market power shifts in a positive direction. This means that an increase in OBS due to a decrease in equity has an impact on increasing market power.

Internal capital funds are the total equity of banks that are highly regulated by government policy. This study did not examine the equity structure separately, so it did not observe further which equity part contributed the most to influencing the bank's market power. So, further research can examine the differences in this regard. The distribution of loan facilities can increase the strength of the banking market. Diversification of banking loan products can be classified into several types of loans, namely productive, consumer, and investment loans. This study does not examine the differences in the proportion of loan products contributing to increasing the bank's market power.

By examining the impact of banking products on the level of banking market power, regulators can be wiser in determining policies related to banking diversification products. This study found that loan distribution in additional products, namely OBS loans, can affect the level of banking competition. This enriches the empirical findings related to banking behavior in determining the level of product sales risk that affects banking market power. Furthermore, banking funding sources have different impacts on market power. Therefore, attention is needed from regulators not only regarding loan distribution behavior, but also banking funding mechanisms because increasing market power can trigger moral hazard and affect banking stability globally.

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