The Response of Financial Performance to The Market Power of Islamic Banking in Indonesia

Chajar Matari Fath Mala¹; M Nadratuzzaman Hosen²; M Nur Rianto Al Arif³
¹,²,³Universitas Islam Negeri Syarif Hidayatullah Jakarta, Indonesia
E-mail: ¹chajarmala@gmail.com, ²mnhosen@gmail.com, ³nur.rianto@uinjkt.ac.id
*Corresponding author

JEL Classification:
G18
G21
G28

Abstract
This study aims to analyze the response of financial performance to the market power of Islamic banking in Indonesia. This study contributes to filling the gap in the literature by combining the variables under the analysis of impulse response friction (IRF) about the relationship between market power, efficiency, liquidity, profitability, and stability. The data of this study covered Islamic banking in Indonesia from the period January 2010 to 2019 and used IRF from the VAR/VECM panel. This study found that shock/innovation of market power of Islamic banking in Indonesia is responded positively by efficiency, liquidity, and profitability. Meanwhile, financial stability responds negatively to shock/innovation of market power. These findings suggest that innovation in market power in Indonesian Islamic banking will lead to an increase in efficiency, liquidity, and profitability. This result poses a dilemma because competition increases stability but reduces efficiency, liquidity, and profitability. The balance between market power and stability at the macro and industrial levels becomes crucial because it is necessary to maintain the financial system's stability and national economic growth.

Keywords:
market power; stability; liquidity; profitability; impulse response function

How to Cite:
INTRODUCTION

Theoretically, Islamic banking in Indonesia has a high opportunity for larger market power. The demand among Muslim customers is driven by religious values that result in a greater market power compared to conventional banks (Kasri & Iman, 2010; Masykurah, 2017). On the other hand, increasing market power and competition are two opposite cases. Market power will increase profitability of a firm but it can affect prices, which is contrary to the public welfare (Smirlock, 1985; Van Hoose, 2010; Christopher, et al. 2020). Tight competition in the banking sector will increase access to lower-cost credit that can trigger the likelihood of corporate credits and increase the growth of the companies’ assets (Nuralyza, et al. 2022). The structure of Islamic banking in Indonesia can be stated as oligopoly and it is concentrated in the power of the large banks (Al Arif & Awwaliyah, 2019). Figure 1 shows the CR4 of Indonesian Islamic banking that ranged from 40% to 70% during the 2010-2019 periods. Although Islamic banking in Indonesia is concentrated, CR4 for the ten years has shown a downward trend. This decrease shows that the Indonesian Islamic banking market is going to be competitive.

![Figure 1. Trend of CR4 of Islamic Banking in Indonesia during 2010-2019](https://example.com/figure1.png)

Sources of processed data: Publication of annual reports

Although Islamic Banking in Indonesia has an oligopoly structure, the trend toward decreased CR4 denotes the potential competition in the Islamic banking industry. This indicates that competition among Islamic banks is getting tougher while market power is decreasing. In Islam, a competitive market is an ideal condition because it creates fairness in determining the price (Mukaromah & Wijaya, 2020). Under such a condition, price is entirely determined by the interaction between supply and demand, not by government intervention because Islam respects price-fixing resulted from the market mechanisms more highly than from government intervention (Rahmi, 2015; Hakim, 2016).

Some literature has suggested that competition is closely associated with efficiency. Therefore, efficiency plays a crucial role in competitive behavior among banks. They need to be efficient to win the global competition. More efficient banks will manage to increase profitability, and in turn banks with high profitability will survive in competing with other banks (Demsetz, 1973; Yin, 2021). If the efficiency level of the banking industry in a country is low, the banking industry in the country will not be able to compete with that of other countries that employ more sophisticated technology and offered lower interest rates (Remolona & Shim, 2015). In addition, competition will
make the company work more efficiently so it will have implications for the profitability increase.

The relationship between competition and profitability can be viewed from the structure-conduct-performance (SCP) paradigm which suggests that the greater market power will trigger market power authorities to fix the prices which will affect increasing profitability (Smirlock, 1985; Berger, 1995). In its application to the banking industry, the level of concentration as a proxy for large market structures will influence behavior of banks on which banks will increase lending rates and reduce deposit rates to generate bigger profits (Van Hoose, 2010). The positive relationship between market power and profitability means that a greater level of concentration in the banking industry will increase bank profits due to collusion by market authorities in the banking industry to determine prices.

Apart from efficiency and profitability, competition is also closely related to financial stability. In this case, there are two different paradigms. First, the competition-fragility paradigm argues that excessive competition can result in financial fragility because it reduces market power, profit margins, and reduced franchise value that encourage the banks to take higher risks (Keeley, 1990; Ariss, 2010). The second is the competition-stability paradigm which entails that competition ensures bank stability through new product innovations, financing efficiency, and diversification of the credit portfolio (Caminal & Matutes, 2002; Boyd & De Nicolo, 2005). Kabir & Worthington (2017) used Vector autoregression and Double-stage quantile regression to estimate the relationship between competition and stability. The results of the study support the competition-fragility hypothesis in Islamic and conventional banks. Furthermore, Albaity, et al. (2019) found that banks that face less intense competition tend to have a lower likelihood of bankruptcy and credit risk and enjoy higher profitability. The results of this study reveal that the competition-fragility effect is more pronounced in Islamic banks than in conventional banks in MENA countries.

Increased competition is also associated with liquidity. According to the view of the fragility channel, enhanced competition among banks will reduce the creation of liquidity (Petersen & Rajan, 1995). Competition will reduce the profit of the banks and the capital will also decline. Consequently, banks will limit financing to avoid loss. The second view is called price channel, which is an assertion that banks will enhance liquidity creation through the fixing price policy that is reduced lending rate- and increased deposit rate-oriented. This will lead to increased demand for financing and deposits (Carbo et al., 2009; Love & Martinez Peria, 2012).

The earlier studies have partially investigated the relationship between market power and financial performance. For instance, there have some studies had discussed that examined the relationship between market power and profitability. Besides that there are examined the relationship between market power and efficiency that stated in the efficiency hypothesis. The other studies also examine the relationship between market power and stability that stated in the competition-fragility and competition-stability paradigm. Next, the other studies also investigated the relationship between market power and liquidity

http://journal.uinjkt.ac.id/index.php/signifikan
https://doi.org/10.15408/sjie.v11i2.26777
which is stated in the theory of price channel and fragility channel. The present study fills the gap in the literature by combining these variables in the analysis of impulse response function (IRF) on the relationship between market power, efficiency, liquidity, profitability, dan stability. This study is critical in determining the effect of shock of one variable on the other variables for the present and future periods.

**METHOD**

This study used a quantitative approach that combined time-series and cross-sectional data of Islamic banking in Indonesia and Malaysia from January 2010 to December 2019. The data were collected from Bankscope and annual reports of each bank that meet our criteria namely, active banks and annual reports that contain data about the variables investigated in the present study.

In this study, market power was measured using the Lerner Index, while efficiency was measured based on X-efficiency, liquidity was measured from the net stable funding ratio (NSFR), stability was measured from Z-score, and profitability was measured using return on assets (ROA). This research model was developed from the analysis of the existing model on the impact of competition which is suspected to increase the liquidity risk of banks with significant market power in assets to charge high-interest rates despite the low-risk profile of the borrowers so that the customers are on interested in becoming the partners of the banks (Khan et al., 2017). For this model, PVAR/VECM was used to identify the causal relationship among the variables.

\[
\begin{align*}
\text{ROA}_{it} &= a_0 + \lambda \text{ROA}_{i,t-1} + \sum_{i=1}^{k} a_1 \text{Zscore}_{i,t-1} + \sum_{i=1}^{k} a_2 \text{NSFR}_{i,t-1} + \sum_{i=1}^{k} a_3 \text{XEFFI}_{i,t-1} + \sum_{i=1}^{k} a_4 \text{LRNRIDX}_{i,t-1} + e_{it} \\
\text{Zscore}_{i,t} &= a_0 + \lambda \text{Zscore}_{i,t-1} + \sum_{i=1}^{k} a_1 \text{L1}_{i,t-1} + \sum_{i=1}^{k} a_2 \text{NSFR}_{i,t-1} + \sum_{i=1}^{k} a_3 \text{XEFFI}_{i,t-1} + \sum_{i=1}^{k} a_4 \text{LRNRIDX}_{i,t-1} + e_{it} \\
\text{L1}_{i,t} &= a_0 + \lambda \text{L1}_{i,t-1} + \sum_{i=1}^{k} a_1 \text{NSFR}_{i,t-1} + \sum_{i=1}^{k} a_2 \text{XEFFI}_{i,t-1} + \sum_{i=1}^{k} a_3 \text{LRNRIDX}_{i,t-1} + \sum_{i=1}^{k} a_4 \text{Zscore}_{i,t-1} + e_{it} \\
\text{NSFR}_{i,t} &= a_0 + \lambda \text{NSFR}_{i,t-1} + \sum_{i=1}^{k} a_1 \text{XEFFI}_{i,t-1} + \sum_{i=1}^{k} a_2 \text{LRNRIDX}_{i,t-1} + \sum_{i=1}^{k} a_3 \text{Zscore}_{i,t-1} + \sum_{i=1}^{k} a_4 \text{L1}_{i,t-1} + e_{it} \\
\text{XEFFI}_{i,t} &= a_0 + \lambda \text{XEFFI}_{i,t-1} + \sum_{i=1}^{k} a_1 \text{LRNRIDX}_{i,t-1} + \sum_{i=1}^{k} a_2 \text{Zscore}_{i,t-1} + \sum_{i=1}^{k} a_3 \text{L1}_{i,t-1} + \sum_{i=1}^{k} a_4 \text{NSFR}_{i,t-1} + e_{it}
\end{align*}
\]

Note: \( \text{ROA}_{i,t} \): profitability (ROA) of bank \( i \) during the period \( t \); \( \text{ROA}_{i,t-1} \): profitability (ROA) of bank \( i \) during the period \( t-1 \); \( \text{LRNRIDX}_{i,t} \): Lerner index of bank \( i \) during the period \( t \); \( \text{LRNRIDX}_{i,t-1} \): Lerner index of bank \( i \) during the period \( t-1 \); \( \text{NSFR}_{i,t} \): net funding stable ratio of bank \( i \) during the period \( t \); \( \text{NSFR}_{i,t-1} \): net funding stable ratio of bank \( i \) during the period \( t-1 \); \( \text{Zscore}_{i,t} \): financial stability of bank \( i \) during the period \( t \); \( \text{Zscore}_{i,t-1} \): economic growth of banks during the period \( t-1 \)

Where \( \text{NSFR}_{i,t} \) is an independent variable that was calculated using modification of the substances in Islamic financial statements. Furthermore, \( \text{L1}_{i,t} \) was used to measure competition, while \( \text{Z-score} \) was used to measure financial stability, and \( \text{ROA}_{i,t} \) was used to measure profitability.
VAR/VECM remains a proper estimation technique because it enables the relationship among endogenous variables and does not require specific prior relationships among the variables. The impulse response function (IRF) and variance decomposition that passed through it were obtained and from this how the shock of one variable affects the other variables in the current and future periods can be examined. The response of a variable may occur at that time or sometime in the future depending on the significant lag. In an equation that receives a shock from a variable, at some point, an equilibrium will be reached where the response gets smaller and returns to the equilibrium point. The movement from the response to the equilibrium point is called the Impulse Response Function VAR.

Besides IRF, there is Variance Decomposition which is a method to examine how much impact the shock proportion of a variable has on the variable itself and the shock proportion from other variables. While IRF indicates how much influence a shock has on a variable, variance decomposition provides information about the effect of each shock that occurs on a variable and shows the reciprocal relationship among the variables.

**RESULTS AND DISCUSSION**

**Response of Financial Performance to Shock/Innovation of Islamic Banking in Indonesia**

This study found that the shock/innovation of the market power of Islamic banking in Indonesia is responded positively by efficiency, liquidity, and profitability (see Table 1 and Figure 2). Meanwhile, financial stability responds negatively to the shock/innovation of market power. This finding suggests that the presence of innovation in market power in Indonesian Islamic banking will be followed by an increase in efficiency, liquidity, and profitability.

<table>
<thead>
<tr>
<th>Table 1. Summary of Financial Performance Responses to Market Power Islamic Banking in Indonesia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Lerner Index Shock/Innovation</td>
</tr>
</tbody>
</table>

Therefore, if the bank would like to improve performance in terms of efficiency, liquidity, and profitability, the bank needs to innovate in market power and reduce competition. However, the shock of market power reduces the financial stability of Islamic banking in Indonesia. In general, this means that competition cannot trigger the increase of the three performance variables of Islamic banking in Indonesia because these variables are enhanced by market power. Meanwhile, the negative response to shock of market power means that a shock of market power stability will decline.
The Response of Financial Performance on Shock/Innovation of Market Power

The response of efficiency (XEFF) on market power (Lerner Index) at the beginning of the period was still at zero, in other words, there had been no response from XEFF to the Lerner Index shock. Furthermore, XEFF began to respond negatively to shock of the Lerner index in period 2 with -0.003 and increased to positive by 0.002 in period 2. Furthermore, XEFF’s response to NSFR began to be stable in period 5 with an average of 0.0043. A positive response of efficiency in the presence of innovation in market power does not support a theory that posits the more competitive banks, the more efficient the bank. This is inconsistent with a phenomenon where competition among banks will make banks work efficiently without the power to determine the prices (Berger, 1995). This finding also contradicts to the quiet life theory where market power will lead to inefficiency because management feels they benefit from market power (Hicks, 1935). Such a banking condition that does not confirm the quiet life paradigm is in contrast to the findings of Koetter & Vins (2008), Asongu (2019), and Coccorese & Misra (2020). This condition will have implications for the welfare of customers because they feel efficient.

A shock of market power (Lerner Index) also will be responded positively by liquidity (NSFR). In the 1st period, the NSFR had not responded to the shock of the Lerner Index. However, in the 2nd period, the NSFR began to respond by 0.024 and started to be stable in the 3rd period with an average of 0.041. Meanwhile, the positive response of liquidity to innovation of market power indicates that increasing market power or decreasing competition will increase the internal security of the availability of funds. This indicates that with an increase in market power (decreased competition), banks will disburse more financing to earn profits (Petersen & Rajan, 1995). In other words, competition will increase the creation of external liquidity. Such a condition is
in line with the price channel theory. This finding is consistent with Fadli et al. (2021) where increasing market power will lead to an increase in internal liquidity security in conventional banking in Indonesia. However, this finding contradicts the studies by Berger & Bouwman (2009), Beck et al. (2013), and Horvath et al. (2016) that found competition will impede the creation of external liquidity but increase the security of internal liquidity.

Profitability (ROA) reported a positive response to the shock of market power (Lerner Index). The response of profitability on (ROA) market power (Lerner Index) at the beginning of the period was zero. In other words, there was no response from ROA to the Lerner Index shock. Furthermore, ROA began to respond positively to the Lerner Index shock in the 2nd period at 0.104 and then increased to 0.114 in the 3rd period and decreased to 0.005 in the 5th period. Furthermore, the ROA response to the Lerner Index began to be stable in the 6th period with an average of 0.081. Meanwhile, the positive response of profitability to innovation of market power indicates that competitive conditions will lead to an increase in the profitability of Islamic banking in Indonesia. The banks under the highly competitive condition will be more efficient that in turn will have higher profitability. This finding is in line with the structure-conduct-performance (SCP) paradigm that suggests profitability of a company is determined by market power (Smirlock, 1985; Berger, 1995). This condition is unfavorable for customers because the interest rates will not be determined by the bank’s power under competitive bank conditions. The results of this study are not in line with a study by Naylah & Cahyaningratri (2020) which demonstrated a negative and significant relationship between market power and profitability.

A shock of one standard deviation market power revealed negative response on stability (Z-Score). At the beginning of the period, the response of Z-Score on Lerner Index was still zero. In other words, there was no response from the Z-Score to the Lerner Index shock. Furthermore, the Z-Score began to respond negatively to the Lerner Index shock in the 2nd period with -1.117. In addition, the response of Z-Score to the Lerner Index began to be stable and permanent in the 4th period with an average of -2.695. Meanwhile, financial stability responds negatively to market power shock, which means that financial stability will respond negatively to shock in market power. In other words, if market power increases (competition decreases), financial stability will decrease. This condition is in line with the competition-stability perspective where increased competition can lead to stability through new product innovations, efficiency in financing, and diversification of credit portfolios (Caminal & Matutes, 2002; Boyd & De Nicolo, 2005).

The last, the response of market power (Lerner) on market power (Lerner Index) itself was positive which means shock in Lerner index will result in a positive response on Lerner index itself. Response of Lerner index to Lerner index in the first period was 37.083 and rose to 39.999 in the third period. Afterward, the response of Lerner index started to be stable in responding to the Lerner index shock itself.

http://journal.uinjkt.ac.id/index.php/signifikan  
https://doi.org/10.15408/sjie.v11i2.26777
CONCLUSION

This study's results conclude that efficiency, liquidity, profitability, and stability in Islamic banking have different responses to the parameters of impulse and decomposition. However, generally, they respond positively to changes or market power shock. Meanwhile, financial stability responded negatively to market power shock. Innovations in the market power of Islamic banking will be responded to positively by efficiency, liquidity, and profitability. The trade-off, in this case, indicates that the Islamic banking industry is faced with a dilemma of whether banks should prioritize stability or competition. While industry stability is needed to improve performance, market power is also necessary to make financial performance improve. Managing the balance between market power and stability at the macro and industrial levels is crucial because it is necessary to maintain Financial System Stability and national economic growth. Therefore, maintaining healthy competition among banks is necessary to ensure a more efficient industry, as mismanagement can lead to market failure. Furthermore, uncontrollable market power can produce collusive behavior that will harm the economy and public welfare.

For this reason, the Financial Service Authority (OJK) has implemented a macro-prudential banking policy that goes hand in hand with strictly efficiency-oriented supervision to optimize bank performance and stability. In Indonesia, the role of the Deposit Insurance Corporation and prudent banking practices under OJK supervision has become crucial. This supervision aims to boost the performance of Islamic banking and support financial system stability. The prevailing competition-stability paradigm also needs to be maintained because the increased competition conditions in the industry tend to increase stability towards a more efficient market. Competitive conditions that increase industrial stability are necessary because Indonesia has implemented the MEA in the banking sector since 2015. All banks in the ASEAN Region, including Indonesia, have more significant opportunities to expand their business scale, but they face a higher threat from increased domestic competition.

REFERENCES


