

The Impact Of Market Structure On The Performance Of The Islamic Banking Industry In Indonesia

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Abstract. *The relationship between market structure and performance has been studied meticulously by most countries around the world. The development of the Islamic banking market share that is sustainably developed over the years has made the curiosity whether the market structural changes affect the behaviour of the Islamic banking industry which even mean changing the market to be more competitive or more collusive. Which structure-conduct-performance hypothesis is supported in the Indonesian Islamic banking industry, the traditional, differentiation, or efficiency hypothesis? This study aims to analyse the impact of market structure on the performance of the Islamic banking industry in Indonesia which specifically also would like to prove whether market share and concentration in the Islamic banking industry are a proxy for efficiency. With the chosen method Panel data with 13 cross-sections and time series data from the first quarter of 2015 to the last quarter of 2021 and chosen model Fixed Effect Model. It came with the result that shows the efficient structural hypothesis is supported by the Indonesian Islamic banking industry which also means that the Islamic banking performance has been influenced by market share as a proxy to market structure with no collusion indeed.*

Keywords: *Market Structure, Banking performance, Islamic Banking.*

Abstrak. *Hubungan antara struktur pasar dan kinerja telah diteliti secara mendalam oleh sebagian besar negara di dunia. Perkembangan pangsa pasar perbankan syariah yang berkembang secara berkelanjutan selama bertahun-tahun telah menimbulkan pertanyaan apakah perubahan struktur pasar mempengaruhi perilaku industri perbankan syariah, yang bahkan dapat berarti mengubah pasar menjadi lebih kompetitif atau lebih kolusif. Hipotesis struktur-perilaku-kinerja mana yang didukung dalam industri perbankan syariah Indonesia, apakah hipotesis tradisional, diferensiasi, atau efisiensi? Penelitian ini bertujuan untuk menganalisis dampak struktur pasar terhadap kinerja industri perbankan syariah di Indonesia, yang secara khusus juga ingin membuktikan apakah pangsa pasar dan konsentrasi di industri perbankan syariah merupakan proxy untuk efisiensi. Dengan metode yang dipilih, yaitu data panel dengan 13 cross-section dan data time series dari kuartal pertama 2015 hingga kuartal terakhir 2021, serta model yang dipilih adalah Fixed Effect Model. Hasilnya menunjukkan bahwa hipotesis struktur efisien didukung oleh industri perbankan Islam Indonesia, yang juga berarti kinerja perbankan Islam telah dipengaruhi oleh pangsa pasar sebagai proksi struktur pasar tanpa adanya kolusi.*

Kata Kunci : *Struktur Pasar, Kinerja Perbankan, Perbankan Syariah.*

Introduction

The development of the Islamic banking industry can be seen in the last few years. There are variant different ways to identify the performance of the banks in Indonesia, one of the ways is through the asset namely the third fund asset and its finance which has experienced significant improvement. Based on the statistical data of the financial services authority, Indonesian Islamic Banking assets grew by 6.27% over the last ten years. Nevertheless, if it is compared with conventional banks the Islamic banking industry is still considered relatively small. To improve the Islamic banking market share, the government has established a regulation which encourages the development of the Islamic banking industry. in UU No.10 the year of 1998 about the alteration of UU No.7 the year of 1992 about banking, it strictly stated that Islamic Banking is considered as part of national banking. The crucial point of this regulation is that conventional commercial banks and even rural banks can operate the Islamic banking system through their sharia branch offices or convert its conventional branch offices into the sharia branch office. Through that regulation, it is hoped that it could support and encourage the Islamic Banks in Indonesia, even more, to be developed significantly (Arifin & Antonio, 2009). However, on the other hand, market structure, market concentration and even the level of competition may be affected significantly by this government policy (Nurwati et al., 2014).

A compelling description of the improvement in Islamic banking performance that is healthy and efficient may be obtained through corporate conduct implementation. According to Dendawijaya (2005) one of the ways to measure profitability is through Return on Assets (ROA), as Bank Indonesia is role as banking supervisors prioritize profitability, as measured by assets with most of the funds, is a public deposit fund. According to al Parisi (2017) the key performance indicators of banking are represented by Operating Cost to Operational Income. Al Parisi then stated that a good quality performance of a bank is not just reflected through its intermediation function to society, but a bank is also required to keep an eye on the Non-Performing Financing (NPF)

level, According to Dina (2013) three points that may be caught the interest of researchers to study even further the effect of the performance of the Islamic banking industry are as follows, first, this topic may potentially support and help the regulators or policymakers to avoid an unfair business competition. Second, better performance of the Islamic banking industry may be attained if there are found supportive factors and finally, this research may enrich the knowledge and implication of the SCP's hypothesis in the Islamic banking industry. There are many studies that are focussed on the relationship between market structure and banking profitability. Each of them came with variants of conclusions that support either the hypotheses of the structure-conduct-performance, and it has left enough space to present further studies to enrich the SCP concept or paradigm. There are still just a few studies which focus on the Islamic banking industry and especially on developing countries that implement dual banking systems. Therefore, this study aims to fill a research gap by explaining the correlation between market structure and profitability of the Islamic banking industry in Indonesia in the period of 2015-2021 and examining which hypothesis supports the performance of the Islamic banking industry.

Literature Review

Industrial Economy

According to (Lipczynski et al., 2017) The definition of Industry is referring to some companies which produced and sale with similar goods, utilise similar technologies and might access production factors with the same market. Industrial economics is defined as the branch of knowledge which gives stress the connection between market structure, behaviour, and performance, including public policy with the related industry. Essentially, the analysis of industrial economics is discussing the degree of competition, a monopoly in the industry, determinant factors, behaviour, industrial performance, and the relation between market structures. The discussion topics in this matter have covered some aspects such as the company's theory, the

structure of competition, market behavioural, performances analysis, analysis of industrial location, government policies that are related to the company's policies, development and industrialisation process, and finally the superiority of industrial comparative.

Furthermore, Carlton and Perloff (2015) explained that Joe S. Bain defines the industry as a group of firms that produce the same product and utilise the same process. Previously, the correlation between market structure, behaviour and performance was considered as a one-way relationship, although the correlation between those three aspects is quite complex but's in line with economic development. The market structure will determine the company's behaviour in the market and company behaviour will determine various aspects of the company's performance.

In addition to that, Martin (1988) stated that the relationship between structure, behaviour, and performance is actually a correlation that could affect one another in other words means as a two-way relationship, where market performance could be affected by the market structure and vice versa, for example, a company or firms could be encouraged by the efficiency which supports them to alter company's strategies which eventually will change the map of each company, in other words, means changing the existing market structure. Market structure, company behaviour and performance can determine market conditions. And those elements emerged into one paradigm namely the Structure-Conduct-Performance (SCP). Where the element of structure is referred as to the market structure that is commonly defined by the ratio of market concentration, a ratio which could measure the distribution of market share in the industry. While conduct is the representative of the market behaviour which is usually classified either as competitive or collusive, such as through pricing, advertising, production, and predation. Whereas performance is usually explained by a company's profitability.

Structure – Conduct – Performance

According to Naylah and Cahyaningratri (2020) The Structure-Conduct-Performance (SCP) paradigm is a paradigm in industrial economics that is used

to connect elements of market structure with the behaviour and performance of an industry. SCP paradigm is considered the classical approach for industrial economics and also as the starting point and benchmark for developing variant approaches to industrial economics. This paradigm had been conducted by E.S Mason from 1930 to 1940s and continued by his student Joe S. Bain from 1950 to 1960s. The framework of this SCP analysis has stated the relation between the Industrial structure (structure), Industrial behaviour (conduct), and companies' performance in an industry. SCP's paradigm consists of three elements, as follows:

1. Structure of industries, mainly defined by the degree of concentration, market share distribution, etc.
2. Conduct of firms, which involves firms' actions in terms of their price setting, advertising spending, technology, etc.
3. Performance of firms/industries, mainly defined by measures of profitability but which were especially related to the extent of market power.

In practice, the SCP's analysis is generally utilised for studying the connection between the market structure and company performance. The analysis of the connection between a company's behaviour and performance is rarely conducted because of the difficulty in seeking a company's behaviour indicator that can easily be quantified. The level of performance is generally represented by the level of profitability. In this case, profitability is tended to be positively related to the market power that is owned by a company (Ormanidhi & Stringa, 2008).

Structure – Conduct – Performance in Banking Industry

Based on the research conducted by Smirlock (1985), Banking Industry Market Concentration does not affect profitability. This statement is different from most SCP studies in general, which believe that Market Concentration could improve a company's profitability. Essentially, how concentration could affect profitability isn't just by being collusive, but also indirectly through non-price competition (Strickland & Weiss, 1976). According to (Burgess, 1988)

analysing the banking industry, it is necessary to use some variables that are relevant to the banking industry which is observably proved that these variables could differ from one industry to another general industries. Therefore, burgess had developed to what has been stated by Michael R. Baye, on the Structure-Conduct-Performance (SCP) which he believes that the SCP could potentially be affected by companies and their market condition.

- Basic Conditions consist of history, regulations, technology, supply and demand elastically.
- Structure consists of concentration variables, economic scale barriers to entry and exit, and product differentiation.
- Conduct, which consists of branch network, spread, metro branches, staff, diversification, advertising, financing, merger, and Operational cost.
- Performance, which consists of Return on Asset, Return on Equity, Stability, Profitability of branches, allocative efficiency, and technical efficiency.

There are also some important branches in this industrial economics theory which has relevancies to the banking industry which had also been a basic theory for microeconomics in financial intermediation, namely the incomplete Information and principal-agent problem. Consequently, the SCP's traditional framework needs to be added with incomplete information so that it can be more useful in banking industry analysis (Neuberger, 1997). He then also stated that the connection of SCP in the Banking Industry is different for every country. For example, in the United States, the banking Industry Market Concentration does not seem to affect profitability, but there's a positive connection between Market Share and Profitability in the Banking Industry. On the other hand, the opposite situation happens in European countries which shows that there's no connection between Market Share and Profitability, but there is a positive connection between Market Concentration and Profitability. In this case, this could happen because those two areas have different

characteristics of the Banking Industry. According to Smirlock (1985) There are 3 different competing hypotheses on SCP's paradigm, as follows:

Traditional Hypothesis

Which believes that concentration is a proxy of market power, where a big market concentration could cause collusive prices to become lower which encourages a company to obtain super-normal profits. Thus, market concentration could positively affect profitability, and because of this collusion, all firms in an industry will eventually obtain monopoly rents. It is only natural to expect such a relationship to prevail in the banking industry.

Efficient Structural Hypothesis

This Hypothesis believes that Market Share and Market Concentration are not proxies of Market Power but more of a proxy of a company's efficiency, therefore, a higher concentration is unidentical with collusion. Because a company that operated efficiently is the one that could obtain a bigger Market Share, therefore the industry itself will concentrate more. Based on this hypothesis, the correlation between concentration and profitability is a correlation that is not really happening, recall that concentration is just a Market Share aggregate that is caused by efficiency, which means that the more efficient a company is the higher profits will be gained. Several studies that have directly tested this hypothesis using manufacturing data (Carter, 1978; Demsetz, 1973; Peltzman, 1977; Smirlock, 1985) have provided evidence in favour of the efficient structure hypothesis.

This is in line with the Chicago school framework which believes that profitability is not supposed to be obtained through market power, because if it is, then the profits can only be satisfied by those who have a higher concentration. Consequently, bank performance can only be reflected through efficiency (Martin, 1988).

Previous Study

The SCP paradigm is a theory of Industrial Organisation that was developed by Bain, in 1951 (Martin, 1988) through research with the title of Barriers to new Competition, which was only utilised in industrial manufacture

in America, it has stated that there is a positive correlation between concentration and profitability. But then SCP started to be utilised in the banking industry afterwards to examine even further the correlation between market structure and banking performance. moreover, several studies on the 1960s found evidence of some mergers that had happened in America in the 1960s that caused the merged banks to become more dominated in the American banking industry which was specifically caused by the incremental market concentration (Gilbert, 1984).

Khan et al., (2018) examined the relationship between market structure and performance with the title of "Market Structure, Bank Conduct and Bank Performance: Evidence from ASEAN nations" the result shows that bank concentration leads to anti-competitive conduct which leads a bank to obtain higher profitability, these robust findings then believed that the ASEAN banking industry is supported by the SCP hypothesis. On the other hand, it also stated that there are also some other aspects that may partially affect the bank's performance as well. The result may show that banks are profitable partially through collusion or monopoly rents. However, the higher profitability cannot be entirely attributed to these factors the findings implications of these findings require regulators to make sure that the consolidation policy for ASEAN is achieving its purpose such as achieving financial stability and not allowing the banks to earn monopoly rents. There are potential reasons that may include efficiency and/or product differentiation. Therefore, further research on this topic deserves to be conducted. The Efficiency Hypothesis is explained that the good performance of a bank is reflected through its high profits which it is gained by the efficiency of the bank. This is in line with the research conducted by Chortareas, Garza-Garcia and Girardone (2011) which is robust findings show the efficient structure hypothesis supported the Latin American countries specifically in the region of Brazil, Argentina, and Chile. Moreover, accordingly, it also stated that among the most important factors, capital ratios and bank size are the variables that could explain higher profits for Latin American banks. The same goes to the banking sector of Pakistan which is

evidenced by Khan and Hanif (2019) to be supported by the efficient structure paradigm.

Research conducted by Bhatti and Hussain (2010a) with the title of Evidence on Structure Conduct Performance Hypothesis in Pakistani Commercial Banks, utilising a sample of 20 scheduled commercial banks incorporated in Pakistan, the annual and pooled data for the period of 9 years from 1996-2004. Used variables such as return on assets (ROA), return on capital (ROC), and return on equity (ROE) as the bank's performance measurement. Concentration ratio (CR) and market share (MS) as the proxy of market structure. And bank size, market size, a risk to owners, liquidity measure, market risk, and market growth as the control variables. Those provided data, it concluded with the evidence that shows a positive coefficient on the concentration ratio with profitability which indicates that the Pakistani banking industry is still concentrated. But the market trend shows that this is not last any longer because private banks have begun to compete with the existing leading banks.

Bod'a (2018) conducted research with the title Market power and efficiency as the source of performance in banking: a case study of the Slovak banking sector. The empirical investigation is conducted with respect to two measures of banking performance, namely the ROA and Net ROE for a period of 11 years from 2005 to 2015. It evidenced a tied positive correlation between market share and performance. In other words, concentration does not have any impact on banking profitability. Thus, a higher market share could affect the bank gaining higher profitability in the industry. However, it is also important to note according to the research that there is a pattern in the relationship between efficiency and performance. Both technical efficiency (X-Efficiency) and scale efficiency are positive related to ROE. While on the other hand, ROA as the proxy of bank performance seems to have a negative correlation with X-efficiency, the direction of influence of scale efficiency upon ROA is unsure; yet, given its insignificance, it rather implies that scale efficiency is not a factor in explaining ROA.

Ayadi and Ellouze, (2013) examined research with the title of Market Structure and Performance of Tunisian Banks by investigating 10 Tunisian commercial banks for the period 1990-2009. The result shows that it supports the hypothesis of α -efficiency (ESX). While the SCP hypothesis of relative market power (RMP) and scale efficiency (ESS) have not been verified in the Tunisian context. In addition, for the control variables, the result showed that public banks are more efficient than private banks, and size does not affect bank performance.

However, Neuberger (1997) stated that the relation of SCP is different for every country. In the American banking industry, concentration does not affect profitability, but market share does seem to have a positive effect on the profitability of the American banking industry. On the other hand, in Europe it shows the opposite, the SCP analysis found that there is no such relationship between market share and profitability, but there seems to be a positive relationship between concentration and profitability. This happened because both areas have different banking characteristics.

Mohd Khan (2014) examined the SCP analysis on the performance of SEA banks after experiencing the financial crisis in Mid-1997 focusing on six SEA countries such as Indonesia, Korea, Malaysia, Philippines and Thailand, within the recovery period of 1999 to 2005, with used variables such as return on assets (ROA) and net interest margin (NIM) for its dependent variable and the measurement of profitability, while for the independent variable is market share (MS), concentration (CR), technical efficiency (TE), scale efficiency (SE), and control variables which consist of over total assets (ETA) and gross domestic product (GDP). It came with result that it rejects the traditional SCP paradigm, which specifically means that there is no positive correlation between concentration and profitability.

Anaswah (2019) examined the competition in the banking industry with the research titled Competition in the Banking Industry, Market Power and Islamic Banking Performance: Evidence from MENA countries. by using

standard forms. The research concluded with a statement that it strongly denies the claims that Islamic banks use monopolies to obtain their returns.

Research conducted by Nur Rianto Al-Arif and Awwaliyah (2019) with the title *Market Share, Concentration Ratio and Profitability: Evidence from Indonesian Islamic Banking Industry*. Investigate 10 out of 13 Islamic full-fledged banks over the period of 2012-2016 utilising the ROA as the dependent variable and proxy of the Islamic banking performance and classify the independent into 2 different variables namely the market structure variable and control variable. The market structure consists of concentration ratio (CR4) Market share (MS) and multiplication of CR and MS (MSCR4). While for the control variable, it consists of the financing-to-deposit ratio (FDR), non-performing financing (NPF), and operational efficiency ratio (OER). The result of this study shows that the Indonesian Islamic banking industry is not supported either by the SP hypothesis or the EH hypothesis.

Ahamed (2012) investigated the degree of concentration and performance of the banking industry through research with the title *Market Structure and Performance of Bangladesh Banking Industry: A Panel Data Analysis*. The research utilises data from the Bangladesh banking industry over the period of 1999-2011 by using Random Effect (RE) estimator. The result of its main sample does not find any support for either of the SCP and ES hypotheses. However, a sub-sample (2002-2011) of the study supports the SCP hypothesis, which indicates that the Bangladesh banking industry's profitability is explained by market concentration. While the control variables such as capitalisation, liquidity and asset size of the banks seem to be positively associated with the banking profitability.

Furthermore, previous research related to the relationship between market structure and performance in Islamic banks was conducted by Mohammed et al., (2019) with the title *Does Efficiency Matter for Competition? A Case of the Dual Banking Industry* which aims to investigate whether the type of efficiency matters for banks to remain viable in the highly competitive market and investigate the links between competition with concentration and

other bank-specific variables. Utilises data sourced from both Islamic and conventional banking firms operating in a dual banking system in Malaysia from 1997-2016, which included both foreign and domestic banks. It came to the conclusion that concentration and competition are negatively related in the Islamic banking market. the study also evidenced a positive correlation between Income Efficiency (IE) and competition in the conventional banking market, while Islamic bank is positively related the Cost Efficiency (CE). Additionally, this study also found evidence of a positive correlation between age and competition. In other words, means Banks with more years of operation can face competition in a highly competitive market. however, the coefficients of age are significant in the estimation model for the Islamic banking market only.

Based on several research findings above, it can be concluded that Islamic bank does not support any monopolies behaviour in an industry, on the other hand, the efficiency hypothesis seems to be an alternative for the Islamic banking industry to be supported for its profitability to be explained because it provides a different interpretation of the relationship between profit, performance, and concentration mentioned by the traditional Structure-Conduct-Performance view which is sharply in contrast with the Islamic principle. There are many aspects that may provoke this trusted institution to behave collusively in an industry such as the occurrence of moral hazard and adverse selection due to asymmetrical information on an industry structure that is not perfectly competitive or oligopolistic. Consequently, it is necessary for the banking industry to be facilitated with regulation and supervision in its operation so that the banking industry is known as a highly regulated industry.

Potentially, the market structure of the Islamic banking industry might be affected by established regulations and deregulation carried out by the government. But the question is to what extent does the influence of the market structure of the Indonesian Islamic banking industry tend to be efficient on banking performance in terms of profitability? is the correlation between market structure and the performance of the Indonesian Islamic banking

industry in accordance with the Efficient structure hypothesis concept, namely that high profits are the result of competitive behaviour in superior efficiency, or in accordance with the differentiation hypothesis which believes that banking performance is explained through differentiation behaviour that is reflected by a large market behaviour, or is it more in line with the efficiency hypothesis which states that high profitability is obtained from the company's efficiency behaviour?.

There are many studies that are focussed on the relationship between market structure and banking profitability. Each of them came with variants of conclusions that support either the hypotheses of the structure-conduct-performance, and it has left enough space to present further studies to enrich the SCP concept or paradigm. There are still just a few studies which focus on the Islamic banking industry and especially on developing countries that implement dual banking systems. Therefore, this study aims to fill a research gap by explaining the correlation between market structure and profitability of the Islamic banking industry in Indonesia during the period of 2015-2021 and examining which hypothesis supports the performance of the Islamic banking industry.

Methodology and Data

This study uses a panel data method with Generalised Least Squares (GLS) that can be used in research to analyse The Impact of Market Structure on The Performance of The Islamic Banking Industry in Indonesia. The classic assumption test will not be necessary in this research because this method is capable to minimise bias, providing more information and a degree of freedom with panel data, it provides the capability of studying more complex information, therefore, it will not be necessary to conduct a classical assumption test. Specifically, with the GLS method, it will support research to collect information explicitly and consequently would produce Best Linear Unbias Estimator (BLUE) (Gujarati, 2003).

Research Model

The methodology utilised in this research is based on (Naylah & Cahyaningratri, 2020; Nur Rianto Al-Arif & Awwaliyah, 2019) using Weiss's model by taking both market share and concentration into account at the same time. The research model is presented as follows:

$$\pi_{it} = \alpha_0 \text{it} + \alpha_1 \text{MS}_{it} + \alpha_2 \text{CR4}_t + \alpha_3 \text{MS}_{it} \text{CR4}_t + \sum \alpha_{it} \text{Z}_{it} + \varepsilon_{it}$$

π = Profitability (Return on Assets / ROA)

MS = Market Share Asset

MSCR4 = Interaction variable, multiplication between MS and CR4

Z = Control Variable that previously had been assumed could possibly affect the profit.

The author will examine the effect of market structure on the performance of the Sharia Banking Industry in Indonesia. To analyse the competition level in an industry, the Weiss model may be utilised, where this model will combine the variable of both market share and concentration into one account. Thus, it can be said that both market share and concentration are the proxies of the market structure's variable. (Ahamed, 2012; Nur Rianto Al-Arif & Awwaliyah, 2019).

Based on Structure-Conduct-Performance (SCP) paradigm, there is a notion that states that the performance of the sharia banking industry in Indonesia was affected by collusive behaviour that is caused by a high market concentration. There is a possibility that MS might not be significant, while CR4 is significant or $a_1 = 0$, $a_2 > 0$ which shows that the produced profit in an industry is produced by collusion that occurred by the companies in the corresponding industry, and hence profit would only have a positive connection with market concentration. In that case, it supported the traditional hypothesis. By using the variable of MSCR4 it will support and continuously prove whether profit is produced by collusion. If the profit were produced by collusion, then it can be said that $a_3 > 0$, which means the profit sharing will be improved in accordance with the proportion of market share towards the

industrial concentration. And if the collusion did not occur in an industry, then $a_3 < 0$.

However, if the case happens in the opposite way where MS is significant, CR4 is not significant or shows $a_1 > 0$, $a_2 = 0$ which indicates the companies that had earned big MS tend to concentrate by themselves. In that case, it can be said that this situation is a triumph for a company to operate efficiently. Thus, the sharia banking industry can improve its profitability just by improving its efficiency.

There is also a chance for both MS and CR4 to be significant, which shows $a_1 > 0$, $a_2 > 0$ means that all concentrated companies in the industry had utilised the profit, the profit that was caused by collusive behaviour. In other words, companies that are relatively big can enjoy and utilise higher collusion profit. There could also be a possibility for both MS and CR4 to be insignificant $a_1 = 0$ and $a_2 = 0$. This result shows that there is no effect for both variables on the performance of the market in an industry, which means that the SCP's paradigm is incapable of describing or explaining the level of profitability that occurred in the Islamic banking industry.

Data

The data used in this study is secondary data, in which all data are collected from the financial services authorities. In this study, the data used as the dependent variable is the Return on Assets of 13 Islamic Commercial Banks in Indonesia. Furthermore, the independent variables consist of Market Share (MS), Concentration Ratio (CR4), Multiplication result between MS and CR4 (MSCR4), and the control variables which in previous studies were found to significantly affect profit such as Financing to Deposit Ratio (FDR), Capital Adequacy Ratio (CAR), Net Operation Margin (NOM), Non-Performing Financing (NPF), Operating Cost to Operating Income (BOPO).

Data Analysis and Results

Var: ROA	MS	CR4	MSCR4	FDR	CAR	NOM	NPF	BOPO
CEM R² = 0.81	0.024 (0.601)	0.001 (0.125)	-0.0003 (-0.529)	0.003 (1.899)	0.0298 (9.0437)	0.1958 (9.227)	0.0001 (0.0238)	-0.0588 (-19.89)
FEM R² = 0.89	0.318 (3.110)	0.0009 (0.083)	-0.004 (-2.477)	0.0016 (1.081)	0.0376 (8.3636)	0.0963 (6.2908)	-0.011 (-1.607)	-0.064 (-25.57)
REM R² = 0.67	-0.2727 (-1.427)	-0.115 (-3.986)	0.0059 (1.742)	0.0019 (0.8020)	0.0308 (11.795)	0.169 (9.175)	-0.0344 (-2.389)	-0.060 (-17.00)
Chow test				42.397 (0.000)				
Hausman test				69.746 (0.000)				

The figure above shows the model estimation through 3-panel data model approaches, namely Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To choose the best model for this study, several tests were carried out. First, the results of the Chow test show that the F-statistic is 42.397 with a probability value of (0.000) which is below 5 percent ($0.000 < 0.5$). Thus, the selected panel model is the Fixed Effect Model (FEM). Second, the Hausman test results show that the probability of 0.000 is lower than 5 percent ($0.000 < 0.5$). So, the selected panel model is the Fixed Effect Model. Hence, it can be concluded that the best estimation model in this study is the Fixed Effect Model (FEM).

Empirical Results

The regression result has shown that the Market share (MS) has a positive and significant correlation with profitability. This is in line with the Efficient Structural Hypothesis, which believes that superior efficiency could encourage a bank to obtain supernormal profits. This theory is also strengthened by the further result which shows that concentration (CR4) has no significant effect on profitability which indicates that the relationship between concentration and profitability is more of a spurious relationship which has no indication to provoke a bank to be collusive, moreover it also means that there's no evidence of the Islamic banking industry to be supported by the differentiation hypothesis. This is supported by the MSCR4 which shows the negative and significant effect to profitability which indicates additional evidence that it is against the traditional hypothesis. Consequently, it has shown how accurate the Efficiency Structure Hypothesis is. These results are in sharp contrast to the findings of Nur Rianto Al-Arif and Awwaliyah (2019) which found no evidence for the market structure variables to be significantly correlated with banking performance. while research conducted by (Naylah & Cahyaningratri, 2020) evidenced that neither concentration nor market share shows a significant effect on profitability, as well as the MSCR ratio.

FDR partially has a positive effect but is not significant on the profitability (ROA) of the Indonesian Islamic banking industry. This is exactly shown by the result of the T-test FDR T-statistic $>$ T-table and probability $>$ 0.05. Although, this may not be significant as expected. Because the higher this ratio is the more expectation for this ratio to indicate a better function of a bank to be operated efficiently. If the ratio shows a high value of FDR, then it indicates more optimal a bank is in distributing its third-fund party, other studies (Bhatti & Hussain, 2010) proved the positive and significant correlation between FDR and Profitability. There is also another research on the Islamic Economy that evidenced an insignificant effect of FDR which was evidenced by Pertiwi and Suryaningsih (2018).

The finance to Deposit Ratio has a positive and insignificant impact on Return on Assets in other words the increase in FDR has no effect on profitability (ROA). This is because there is a high gap between each bank that provides credit. There are banks that have a low FDR ratio that is due to the lack of optimal use of third-party funds. While on the other hand there are banks that are excessive in providing credit to make the FDR ratio level very high. This resulted in a high gap between banking companies every year. The other potential cause that leads the FDR to be insignificant is a large amount of financing disbursed by the Islamic Commercial Bank to the public but not offset by the substantial return on the financing.

The finance to Deposit Ratio is too high, indicating aggressive credit expansion so that with the quality of controlled assets, the bank will be able to create profitability, but on the other hand, will disrupt the liquidity of the bank in case of withdrawal of funds by customers. A low Loan to Deposit Ratio will lead to over liquidity so that it is possible idle funds because the funds are not channelled which affects the decline in the ability of banks in creating profitability (Kusmayadi, 2018)

According to al Parisi, (2017). A high value of CAR indicates greater capital of a bank; therefore, a bank could expand its finance. Moreover, it could also improve customer trust in the corresponding bank, because society's funding security is highly guaranteed. Through incremental capital and customer trust, a bank could expand its finances to improve its operational income. The regression result has shown that CAR has a positive significant effect on the profitability (ROA) of the Indonesian Islamic banking industry. This is exactly shown by the result of the T-test CAR T-statistic $>$ T-table and probability $<$ 0.05. result studies that are in resemblance with this case evidenced by Bhatti and Hussain (2010) al Parisi (2017) which have evidenced that CAR has a positive effect on profitability.

The regression result has shown that NOM has a positive significant effect on the profitability (ROA) of the Indonesian Islamic banking industry. This is exactly shown by the result of the T-test where NOM T-statistic $>$ T-table and probability $0.0000 < 0.05$. research conducted by (al Parisi, 2017; Naylah and Cahyaningratri, 2020), which result shows NOM variable with a positive significant effect on ROA.

This result is in line with the theory that if the operating income is high then it will increase the level of ROA as well. In addition, this is also may be affected by the trend in Islamic banking which is proved by the sustained development of Islamic banking market share over the past years. Islamic banking needs to take concern in attaining a positive trend on net operating income; hence, it will improve the Islamic banking *bargaining position* in Indonesia where most of the society is Muslim (al Parisi, 2017).

Nusantara (2009) in al Parisi (2017) stated that NPF could affect the total asset development to decline. NPF reflects credit risk, the lower this ratio is then the lower the credit risk that must be burdened by a bank. The regression result has shown that NPF has no significant effect on the profitability (ROA) of the Indonesian Islamic banking industry. This is exactly shown by the result of the T-test where NPF T-statistic $(-1.607507) <$ T-table (1.833113) and probability $0.1089 > 0.05$. Although the effect may not be significant the NPF T-statistic value still indicates a negative effect on ROA which is in accordance with the theory where a higher value of NPF indicates a higher risk of finance burdened by the bank. This is also in line with the previous research conducted by Nur Rianto Al-Arif and Awwaliyah (2019) which evidenced a negative coefficient of NPF. The results showed that a large NPF did not provide a significant reduction in ROA, this is because Islamic Commercial Banks can still overcome the problematic financing by covering it from the cost of allowance for losses or allowance for the write-off of productive assets from the financing channelled. Where every financing is provided by a bank, then the bank will form a reserve for loss of earning assets, because of the possibility of risk of losses arising as a result of unacceptable financing provided (Gusmawanti et al., 2020).

The regression result has shown that BOPO has a negative and significant effect on the profitability (ROA) of the Indonesian Islamic banking industry. This is exactly shown by the result of the T-test where NPF T-statistic $>$ T-table and probability $0.0000 < 0.05$ this is actually in accordance with the theory that explains a high value of BOPO indicates the inefficiency of a bank because it will decrease ROA. Moreover, this case is in

line with research conducted by (Nur Rianto Al-Arif and Awwaliyah, 2019).

Conclusion

The result of this research provides evidence that correlation between market concentration and profitability is spurious, in other words, concentration adds nothing to explaining bank profits. This event is supported by the MSCR4 result which shows the insignificant effect on ROA, this indicates that there is no collusion in the Indonesian Islamic banking industry. On the other hand, market share is evidenced to have a positive and significant effect on Islamic banking profitability. Hence these findings are viewed as supporting the Efficient Structural hypothesis (ESH) over the traditional description of Islamic banking performance. in a nutshell, the summaries of this research are as follows:

1. The market structure does affect the Indonesian Islamic banking industry, it's shown by the market share as the proxy of market structure has a significant and positive effect on Islamic banking profitability. Hence, the first hypothesis is accepted.
2. The behaviour of the Islamic banking industry seems to be likely more competitive rather than collusive; this is evidenced by the variable of MSCR4 which showed a negative and significant effect on Islamic banking profitability. Hence, the second hypothesis is accepted.

In our empirical analysis, we have met with some limitations and suggestions in sequence. **Firstly**, we have used only the variable of ROA for measuring profitability. So, our findings may not provide the true picture as required.

Secondly, the role of market structure in bank profitability is indicated in this result. And it showed that the efficient structural hypothesis deserves further investigation, especially in countries that imply a dual banking system.

Thirdly, it is crucial for banks to concern about the level of concentration and competition in an industry, therefore, this evidence may be utilised for Islamic banks to adjust their behaviour to suit the market conditions and to operate efficiently.

Fourthly, the provided evidence in this research can be utilise for policy makers and regulators to formulate policies and strategies that will optimise the number of banks operating in the industry. Therefore, for this should be in concern of policy makers and regulators.

Finally, we recommend that more research be done into authoritative statements regarding concentration and profitability relationships. Future research will hopefully provide additional evidence on the matters focused on

this study, particularly those among profitability, market share, and market concentration in banking.

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