Market structure and Islamic banking performance in Indonesia: An error correction model

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CHRONICLE	ABSTRACT
	The research aims to highlight the importance of market structure and behavior on Islamic banking performance by using the Structure Conduct Performance (SCP) analysis to approximate the growth of Islamic banking performance in the short and long term using error correction model. The data used in this study is time series obtained from the financial statement of each Islamic bank, Financial Service Authority and Bank of Indonesia on Islamic banking statistics monthly reported from April, 2015 to October, 2018. Population of this study covers all Islamic commercial banks in Indonesia. The purposive sampling method is used to select samples based on criteria to get samples that are feasible to be analyzed. Error correction model is applied to characterize the joint dynamic of variables in both in the long and short term relationships. The Johansen co-integration results indicate a stable long term relation between market structure and Islamic banking performance. Results show that Market structure variable outside market share of financing in the long term had a significant effect on the Islamic banking performance, but in the short term market structure, the variable had no significant effect on the Islamic banking performance in Indonesia.

1. Introduction

Islamic finance has the potential to improve the level of country's interrelated intermediary activities by offering numerous impartial solutions compared with conventional corporate practices (Abidin & Haseeb, 2018). The Islamic banking as the part of Islamic finance system is considered to be a developed segment of the global financial market with a broad perspective; it is proliferating in all parts of the globe (Nizar, 2015). Islamic Banks established themselves in the comparatively short period by capturing a good market share from its competitors (Basheer et al., 2018). Investigation on the effect of market structure and Islamic banking performance is performed based on the Structure Conduct Performance (SCP) analysis. The market power of the bank will affect the behavior and then affect the performance, so there is a paradigm to analyze the significant effect of the linkage between the market structure, conduct and performance; namely Structure Conduct Performance (SCP) analysis. Market structure is the industry characteristic that affects the price/output decision made by the firms. The SCP framework examines the degree of concentration in a specific market which influence on the competition among companies in that market (Naylah, 2010; Katib, 2004; Bhatti &

Hussain, 2010). The high concentration of the market will affect competitive domination. The effects are that firms in less competitive condition will charge higher prices and earn the monopolistic income.

The Islamic banking and financial services industry have shown rapid growth during the last ten years, having accomplished a milestone reaching a value of more than \$2 trillion by 2015 (Haseeb, 2018). Along with improving national economic performance, the grow of the Islamic banking industry in 2017 records good encouraging growth from the asset, financing, and third-party funds (TPF). Islamic banking growth which consists of Islamic Commercial Banks (BUS), Islamic Business Unit (UUS) and Islamic Rural Bank (BPRS), although experienced little slowdown compared with 2016, asset, financing, and Third Party Fund (TPF) growth are still maintained a quite high number (two digits), that is, each amounting to 18.97%, 15.24% and 19.83% (Islamic Financial Report, 2017). The high growth of Islamic banking assets is mainly underpinned by the growth of investment and financing managed by Islamic banks. This shows that public trust is maintained to save funds in Islamic banks and people who want to get financing from Islamic banks. Likewise, the development of Islamic banking growth is supported by capital, sufficient liquidity, financing quality, and efficiency of Islamic banks.

The total asset of the Islamic banking industry in Indonesia during 2015 – 2018(Q3) increased 43.43% in the last four years so with the number of Islamic banking which increased from 12 to 13 Islamic banks. In 2015, the assets of Islamic banking was 213.423 billion increased to 306.121 billion in 20189(Q3). The growth of the market share of Islamic banks in Indonesia was more than 0.25% in 2001 to 3.98% in 2011, rose to 4.86% in the year 2015 and 5.74% in 2017 lagging behind the expected target to achieve 15% (Islamic banking Statistic, 2017). The Islamic banking industry was able to show a high growth accelerated to an average of 19.92% year by year during the last five years (2011-2015), while the average growth of the national banking system amounted to only 13.9% year by year. Islamic banking in Indonesia still has a long way to achieve the target market of Islamic banking based on the blueprint of Islamic banking. The market concentration of the Islamic bank in Indonesia also has a high level of concentration. The market power is managed by some of the Islamic bank both in an asset, third party fund, and financing. The bank which has the most significant market share and the biggest income can earn the supernormal profit. The regulation from the government, Bank Indonesia, and Financial Service Authority (FSA) as an effort to increase the performance of each bank are still in progress.

This study is to investigate the relationship between market structure and Islamic banking performance in Indonesia for the long term and short term relationship use structure conduct performance analysis. The market structure variables used in this study are concentration ratio, Herfindahl-Hiershman Index, and market share. The SCP analysis has been applied in different industries in terms of economic factors. In the banking sector, this paradigm is used to determine the effect of the possible linkage between market structure and profits. While several studies have supported this hypothesis, some others have found that greater concentration does not lead to higher profits (Ahamed, 2012; Arize et al., 2008). Therefore, it is necessary to do more research about the structure of performance which is according to the literature and previous studies, market structure and behavior of the banks have to influence the performance of banks.

This issue is one of the essential topics, not only for the parties of Islamic banking but also the regulator such Bank Indonesia, Financial Service Authority, and Government to make some breakthrough in developing Islamic Banking in Indonesia and to take a right decision in developing Islamic banking performance growth. Globally, the result of this research will describe the specific relationship between market structure, behavior, and performance of Islamic banking in Indonesia in the short term and long term relationship. Learning more about the linkage between market structure and Islamic banking performance will be useful for organizations and regulators, specifically, to distinguish the basic determinants of the performance of the Islamic Banks. This paper analyzes the impact of market concentration and different components of market structures on the performance of Islamic banking in Indonesia in the long and short run relationship.

2. Material

This section will explain the literature review consist of structure conduct performance, market structure, market concentration, market share, and performance of Islamic banking. This research uses structure conduct and performance (SCP) approach to analyze the significant effect of market structure and Islamic banking performance in Indonesia.

2.1. Structure Conduct Performance

Structure Conduct Performance (SCP) is a theory which states that the market structure occurs because of the policies (by design) that are applied to a particular sector or industry (Beck et al., 2003, 2006). Policies that restrict the level of competition in the industry such as mergers and acquisitions policy or policies related to market entry barriers (barriers to entry) can form a concentrated market structure. This strong market subsequently forms of collusion between actors in it, which in the end only formed a few players who will enjoy supernormal profits. Collusion among market participants enables the bank to set a price higher than the current price compared with; when the market is at a high level of competition. The implications of the market, in the end, is inefficiency. The market structure occurs because of the policies (by design) that are applied to a particular sector or industry (Beck et al., 2003, 2006). Policies that restrict the level of competition in the industry such as mergers and acquisitions policy or policies related to market entry barriers can form a concentrated market structure (Beck et al., 2003, 2006). This strong market subsequently forms of collusion between actors in it, which in the end only formed a few players who will enjoy supernormal profits (Beck et al., 2003, 2006; Nurwati, et al.; 2014; Belkhaoui et al., 2014). The implications of the market, in the end, is inefficiency (Beck et al., 2003, 2006).

2.2. Market Structure

The main factor in bank performance is market structure. The structure is one of the important variables that will affect the behavior in an industry because it explains about the market segmentation going on in the industry, diversification of existing product, the structure of the costs incurred in the market, as well as it explains various obstacles that happen to fall within a competition. At the end, the structure will affect the quality of the performance within the company. As indicated by Koch in Naylah (2010), the structure of the market is the generally permanent strategic component of the nature of a firm that impact, and are affected by the conduct and the performance of the firm in the market roommates it operates.

2.3. Market Concentration

Shepherd in Naylah (2010) states the concentration level as a combination of market share from the market leader companies, where the amount should not be less than 2 (two) and more than 8 (eight). The concentration ratio is the percentage of the value of sales represented by some largest firms in the industry (Bade & Parkin, 2007). Industries that have a high level of concentration tend to have poor performance. This is because the companies that are in the industry cannot allocate its resources efficiently, while the industry with a low concentration level is more likely to be able to allocate its resources efficiently to create a better performance. The most common size in the measurement of the concentration ratio of the market has been the widely used to measure the market share of the output, turnover, number of employees or the total value of the assets of the industry. Concentration Ratio (CR) is defined as the percentage of the overall industrial output generated by the largest companies. Usually, the number of companies that count is 4, so often referred to as CR_4 (Douglas in Maghfuriyah, 2017). Usually, the number of companies that count is 4, so often referred to as CR4 (Douglas, 1992). Bade and Parkin (2007) stated that Herfindahl-Hirschman Index (HHI) is the square of the percentage market share of each firm summed over the largest 50 firms (or summed over all the firm if there are fewer than 50). Herfindahl-

Hirschman Index (HHI) is used to obtain an accurate description and mutual support of the analysis concentration ratio (CR). HHI focuses on a certain proportion of the market share in the industry.

2.4. Market Share

Market share is the section market dominated by a company as the strength of the market or better efficiency for achieving better economies of scale. The market has become central in assessing market power. Small market share indicates that companies are not able to face the competition (Katib, 2004). The market share of each company is in different ranges from 0 to 100% of the total output of the entire market. According to the Neo-Classical literature, the market share achieved is the foundation of enterprise bargaining. Motivation or purpose of the company is to gain a large market share in the industry. Companies with a large market share will gain from the sale of products and the increase in its share price (Naylah, 2010). According to Schuster (1984) a company with a larger market share of more profitable for large economic scale have greater market power and better manage quality. The role of market shares as well as elements of the market structure is a source of profits for the company as a general hypothesis that the market share of each company is associated with gains (Arize et al., 2008).

2.5. Performance

Performance is the result of market behavior. Performance is multidimensional and has linkage to the fundamental of interest (Rahman et al., 2018). This performance illustrates how the market condition in an industry organization is, discusses the market performance of efficiency, justice and progress. Efficiency describes how well the market is in utilizing the limited resources. Justice explains how unfair the market in distributing the benefits of economic activity to the economic actors, while market effectiveness can explain changes in new and better products and progress in production techniques (Naylah, 2010). According to Molyneux and Forbes in Katib (2004), the banking industry is a multi-product industry; the use of the price can be misleading because of the cross-subsidies between the goods and services offered. Company performance is measured by financial success and profitability such as return on assets (ROA), return on equity (ROE), return on sales (ROS), and return on investment (ROI) (Rahman et al., 2018). The banking performance in this study is measured by return on asset (ROA) ratio that can be seen in the Islamic banking statistic. Market power has settled the company to maximize the profit by pricing level that formed monopoly structure. But the effective market structure is the market with perfect competition where only the price and quality talk. The competition is created by differences in the performance of every company in the industry. The efficiency of production and allocation (function of the productivity of assets and the costs) can measure the company's performance (Basheer et al., 2018). The efficiency of production and allocation can measure the company's performance. Market structure and profit are benchmark in production efficiency while market force is a benchmark in the allocation of efficiency. Allocation efficiency and fairness will create resemble the behavior of perfect competition. Meanwhile, the productive efficiency would create a market with few companies with different products.

3. Methods

This section explains about data and methodological framework to conduct the research. The methodological framework contains the data analysis technique for testing the data in the error correction model.

3.1. Data Source

This study utilized monthly time series data for the period 2015M4 to 2018M9. The datasets were acquired from the Islamic banking monthly report and Islamic banking statistics published by the Financial Service Authority and the financial statement of each Islamic bank in Indonesia. While the source of the data used in this research is secondary data, the research data were obtained either indirectly or through

an intermediary medium. In particular, the total merchandise of monthly market structure and performance data (measured in Indonesia rupiah value) was used for the study. The variables of the study are in ratio from before the estimation process.

3.2. Method

The methodology is described as the time series data and the econometric techniques utilized in the study. The Augmented Dickey-Fuller and the Philips - Perron tests are econometric techniques used to test for the order of integration of market structure and Islamic banking performance. To resolve the problem of causal direction between variables we used Granger causality test. Engle-Granger two-step way is utilized to test for co-integration in the long run equilibrium between market structure and Islamic banking performance. The error correction model is employed to model the relationships between market structure and Islamic banking performance in the long term and short term relationship.

3.3. Data Analysis Technique

Various tests have been created and applied to time series data in order to test for the presence of a unit root. This segment examines the normally utilized test for stationery such as the augmented Dicky-Fuller test and the Philips-Perron measurements. Likewise, the Engle-Granger co-integration test has been presented and sequentially utilized to model the market structure and performance for further examination. This study discusses the econometric model and the error correction model that is utilized in the study.

Unit Root Test

Unit root test can be considered as a stationary test since it is a test to observe whether a particular coefficient of an autoregressive model has a value of one or not (Widarjono, 2016). If the data that has been observed in the unit root test is not stationary, then the next step is to test the integration level. This test is done to find out in the integration of how the data level is stationary. This integration test is similar to a unit root test. Fixed procedures for determining whether the data has become stationary or not, can be seen by comparing the values obtained from the PP statistical regression coefficients with the critical values of the statistical distribution. Before conducting any test to distinguish the presence of a long-run relationship among the variables, the time series data have to be confirmed for stationary. A series is said to be stationary if the mean and variance of the series are independent of any predefined time. It is essential to check on the lasting status of the data before estimating an econometric model in order to avoid spurious regression. This is on the grounds that the utilization of non-stationary data will naturally result in crucial linkage among independent variables, even though theoretically, no such relationships exist. To check on the stationary of the time series, the unit root test has been utilized.

Causality Granger Test

Granger Causality Test is a test of the two-way relationship between the independent variables and the dependent variable in a regression model (Widarjono, 2016). Regression models usually focus on the one way relationship is and how independent variables influence on the dependent variable. On the other hand, the behavior of economic variables not only maintains a one-way relationship but also shows a two-way relationship, known as causality. Thus the Granger Causality Test is a test in econometrics used to determine whether two variables have a two-way relationship (causality) or not.

Co-integration Test

Co-integration test between variables is aimed to show the relationship or long-term balance between the independent variables with the dependent variable (Widarjono, 2016). However, in the short run, there is a possibility that an imbalance occurs among these variables. This imbalance is what we often encounter in economic behavior, due to the inability of economic actors to immediately adjust the changes that occur to the behavior of economic variables. Because of this imbalance, the Error Correction Model

(ECM) is used. ECM exploits the rest/errors of long-term relationships to balance short-term relationships.

$$ROA = a_0 + \alpha_1\,CR + \alpha_2\,HHI + \alpha_3\,MSF + \alpha_4\,MSD + \alpha_5\,CAR + \alpha_6\,NPF + \alpha_7\,OER + \alpha_8\,JKPS + \varepsilon \quad (1)$$

where ROA is Return on Asset as the Islamic banking performance indicator, CR is Concentration Ratio, HHI is Herfindahl – Hiershman Index, MSF is Market Share of Financing, MSD represents Market Share of Deposit, CAR denotes Capital Adequacy Ratio, NPF is Non Performing Financing, OER is Operating Efficiency Ratio, and BO is Branch Office. After doing the regression equation, we know the residual value. Then we perform the unit test on each remaining root, to determine the stationary level. If the result becomes stationary, it can be said that the data group is co-integrated or in other words, there is a relationship in the long run. Co-integration tests used in this study is the co-integration test developed by Johansen. Johansen test uses statistical trace analysis and critical value for the significant level α = 5 %. The null hypothesis if the value of the trace statistic is greater than the critical value at the confidence level α = 5 % or probability value (p-value) is less than α = 5 %, indicated co-integration.

4. Discussion and Empirical Results

In this study, the ADF and PP tests are utilized to examine the stationary behavior of the market structure and Islamic banking performance models. The empirical results of the ADF and PP tests on each variable in levels and first differences are presented in Table 1.

Table 1
Philips – Peron Result for Unit Roots Test

Variable	Unit Root Test			
	PPt-statistics ADF	Level Prob.	PPt-statistics ADF	1 Difference Prob.
ROA	-1.866324	0.3444	-8.153352	0.0000
MSF	-2.132692	0.2334	-6.204932	0.0000
MSD	-0.922261	0.7711	-6.741150	0.0000
HHI	-1.195773	0.6670	-8.781362	0.0000
CR	-1.381377	0.5820	-7.723929	0.0000

Table 1 shows that all the variables are not stationary at the current level when the level of significance is 5%. The standard ADF and PP unit root test were applied to check the order of integration of these variables (Abidin et al., 2015). Because there are variables that are not stationary, it is necessary to proceed with the unit root test on the level of the first integration degree (First Difference) which is the value of the variable statistics PP is higher than the critical value and it means that this data has been stationary with p < 0.05 on the degree of integration and can proceed to the next of co-integration test.

In principle, for the Error Correction Model, there is a continuity in the long term that remains between economic variables. If in the short term there is a discontinuity in one period, then the Error Correction Model will correct it in the next period (de-Graft Acquah & De-Graft Acquah, 2015). This error correction mechanism can be interpreted as aligning the behavior of short term and long term. With this mechanism, spurious regression problems can be avoided through the use of a fixed differentiation variable in the model, but without eliminating the long term information resulting from the use of data differentiation alone. Thus, it can be said that the Error Correction Model is consistent with the concept of co-integration or known as Granger Representation Theorem. Alternative co-integration tests are now used is the co-integration test developed by Johansen. Co-integration test developed by Johansen can be used to determine the number of variables which can be seen in this table below.

Table 2
Result of Co-integration Johansen Test

Hypothesised	Trace 0.05			
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.912754	269.4703	197.3709	0.0000

Table 2 shows that the value of Eigenvalue is 0.912754 with absolute Trace Statistic for 269.4703 higher than the critical value at the rate of 5 % (197.3709), Thus it can be concluded that market structure is mutually co-integrated at a significance level of 5 % on the performance of Islamic banking in Indonesia which measured by Return on Assets (ROA). Granger Causality Test is a test in econometrics used to determine whether two variables have a two-way relationship (causality) or not. Granger Causality Test Results can be seen in Table 3.

Table 3
Result of the Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
D(CAR) does not Granger Cause D(ROA)	38	2.69192	0.0632
D(ROA) does not Granger Cause D(CAR)		1.61812	0.2052
D(NPF) does not Granger Cause D(ROA)	38	0.54926	0.6524
D(ROA) does not Granger Cause D(NPF)		1.70592	0.1862
D(OER) does not Granger Cause D(ROA)	38	1.35669	0.2742
D(ROA) does not Granger Cause D(OER)		2.16049	0.1127
D(JKPS) does not Granger Cause D(ROA)	38	0.09011	0.9649
D(ROA) does not Granger Cause D(JKPS)		1.55423	0.2203
D(MSF) does not Granger Cause D(ROA)	38	0.32847	0.8048
D(ROA) does not Granger Cause D(MSF)		1.52233	0.2282
D(MSD) does not Granger Cause D(ROA)	38	0.43472	0.7297
D(ROA) does not Granger Cause D(MSD)		0.92890	0.4384
D(HHI) does not Granger Cause D(ROA)	38	0.46325	0.7100
D(ROA) does not Granger Cause D(HHI)		2.07401	0.1239
D(CR) does not Granger Cause D(ROA)	38	0.28533	0.8356
D(ROA) does not Granger Cause D(CR)		2.93596	0.0487

The results show that there are variables that have a unidirectional causality of relationship. It can be seen from the significance of each variable, and there was in the top of 5 % (p > 0.05). The existence of co-integration among all variables show a relationship or long-term balance between the variables tested. The result of data processing is accomplished by using a computer program Econometric E-Views version 10.0 with dynamic models ECM can be shown in Table 4.

Unknown Error Correction Term coefficient (ECT) on the model significantly = 0.0001 < 0.05. ECT value can be interpreted that the process of adjusting to imbalances the performance of Islamic banking in Indonesia's period relatively quickly, with little value indicated by the ECT. ECT value of -0.559909 means that if there is a balance in the past amounted to 100 %, the performance of Islamic banking in Indonesia will adjust to a decrease of 55.99 %. Thus it can be interpreted that the process of adjusting the performance of Islamic banking in Indonesia takes 1.78 months (100: 55.99) to achieve balance in full (100 %) change in the level of performance of Islamic banking in Indonesia. The result of the Coefficient determination in the short term relationship is 0.8728 or 87.28%. In the short term relationship, all structural variables are rejected. This condition happened because in the short term relationship the market structure variable did not impact directly toward Islamic banking performance in Indonesia. The market structure in Indonesia is mastered by several Islamic banking which has the biggest market share from asset, financing and third party fund (Islamic Banking Statistic, 2018). These Islamic banks are Bank

Syariah Mandiri, Bank BNI Syariah, Bank Muamalat Indonesia, and Bank BRISyariah. However, although this bank masters the big four of Islamic banking in Indonesia, the other Islamic banking in Indonesia still get the good performance because each Islamic bank has the scope of financing and target of the funding based on their market segmentation (Amirudin & Rahman, 2010).

Table 4
Result of Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.013594	0.013305	-1.021764	0.3148
D(CAR)	0.041526	0.027767	1.495520	0.1449
D(NPF)	0.092814	0.058837	1.577468	0.1248
D(OER)	-0.125387	0.009391	-13.35138	0.0000
D(JKPS)	-0.000713	0.000275	-2.596085	0.0143
D(MSF)	0.069115	0.539774	0.128044	0.8989
D(MSD)	0.002219	0.244446	0.009077	0.9928
D(HHI)	12.25771	7.572062	1.618807	0.1156
D(CR)	-6.254622	4.096843	-1.526693	0.1370
ECT(-1)	**-0.559909**	**0.128784**	**-4.347666**	**0.0001**
R-squared	0.901454	Mean dependent var		0.019268
Adjusted R-squared	0.872843	S.D. dependent var		0.214341
S.E. of regression	0.076432	Akaike info criterion		-2.096615
Sum squared resid	0.181097	Schwarz criterion		-1.678670
Log-likelihood	52.98060	Hannan-Quinn criter.		-1.944422
F-statistic	31.50805	Durbin-Watson stat		2.825671
Prob(F-statistic)	0.000000			

The long-term estimates carried out in this section are based on the basic theory and previous research namely the performance of Islamic Banking influenced by the variables of market structure which consist market share of financing, market share of the deposit, Herfindahl-Hiershman Index, and concentration ratio. Equations are expressed in long-term relationships or equilibrium relationships as follows:

$$ROA = a0 + \alpha1\,CR + \alpha2\,HHI + \alpha3\,MSF + \alpha4\,MSD + \alpha5\,CAR + \alpha6\,NPF + \alpha7 OER + \alpha8\,JKPS + \varepsilon \quad (2)$$

The integration between the variables of the market share of financing, market share of the deposit, Herfindahl-Hirschman Index, and concentration ratio through the Islamic banking performance in Indonesia shows there is a long-term balance relationship between variables. The result of a long-term relationship is shown in Table 6.

Table 6
Result of Long Term Relationship between Variables

Dependent Variable: ROA   Date: 12/13/18   Time: 16:17   Included observations: 42
Method: Least Squares   Sample: 2015M04 2018M09

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.34512	3.480026	5.558902	0.0000
CAR	0.015279	0.021918	0.697094	0.4906
NPF	0.011854	0.069563	0.170409	0.8657
OER	-0.128050	0.009843	-13.00906	0.0000
MSF	0.277886	0.628264	0.442307	0.6612
MSD	-0.415416	0.152211	-2.729217	0.0101
HHI	29.39099	8.924361	3.293344	0.0024
CR	-13.13078	4.388904	-2.991812	0.0052
JKPS	-0.000684	0.000218	-3.132767	0.0036
R-squared	0.947299	Mean dependent var		0.821429
Adjusted R-squared	0.934523	S.D. dependent var		0.320461
S.E. of regression	0.082001	Akaike info criterion		-1.976762
Sum squared resid	0.221897	Schwarz criterion		-1.604404
Log-likelihood	50.51200	Hannan-Quinn criter.		-1.840278
F-statistic	74.14713	Durbin-Watson stat		1.818196
Prob(F-statistic)	0.000000			

The results show the long term relationship between variables market structure and Islamic banking performance in Indonesia. Johansen co-integration test result indicates the presence of co-integration which means that there was a relationship or long term balance between variables. Long term analysis model in this study can be obtained OLS regression function as follows:

$$ROA = 19.34512 + 0.0152CAR + 0.0118NPF - 0.1280OER - 0.0006JKPS + 0.2778MSF \\ - 0.4154MSD + 29.39HHI - 13.13CR \tag{3}$$

The result of the Coefficient determination in the long term relationship is 0.9345 or 93.45%. The result of hypothesis testing for the long term relationship of a market structure variable and Islamic banking performance in Indonesia can be seen in Table 7.

Table 7
Result of Hypothesis Testing for Long Term Relationship

Hypothesis	t-Table	t-Statistic	Sig. 0.05	Finding
Concentration ratio has a significant effect on Islamic banking performance in Indonesia in the long term relationship	1.69092	|-2.9918|	0.0052	Accepted
Herfindahl-Hirschman Index has a significant effect on Islamic banking performance in Indonesia in the long term relationship	1.69092	3.2933	0.0024	Accepted
Market Share of Financing has a significant effect on Islamic banking performance in Indonesia in the long term relationship	1.69092	0.4423	0.6612	Rejected
Market Share of Deposit has a significant effect on Islamic banking performance in Indonesia in the long term relationship	1.69092	|-2.7292|	0.0101	Accepted

Based on the hypothesis testing above, in the long term relationship, all the market structure variables except the market share of financing have a significant effect on the performance of Islamic banking in Indonesia. Market share of financing in the long and short term relationship have positive and insignificant influence on the Islamic banking performance in Indonesia measured by the value of return on asset (ROA) and the results are consistent with other findings in the literature (Bhatti & Hussain, 2010; Asçioglu et al., 2017; Oloniluyi & Ogunleye, 2016; Bello & Isola, 2014; Ayadi & Ellouze, 2013; Yadaruddin, 2012; Arize et al., 2010). This means that if the market share of financing increases, the Islamic banking performance in Indonesia will increase, and vice versa if the market share of financing decreases, the Islamic banking performance will decrease. Market share of Deposit in the long term relationship has a significant and negative effect on the Islamic banking performance in Indonesia (Bhatti & Hussain, 2010), but in the short term market share of deposit has significant and positive effect on the Islamic banking performance in Indonesia (Oloniluyi & Ogunleye, 2016; Asçioglu et al., 2017; Bello & Isola, 2014; Ayadi & Ellouze, 2013; Yadaruddin, 2012; Arize et al., 2010). This means that if the market share of deposit increased, in the long term the Islamic banking performance will decrease but in the short term the Islamic banking performance will increase. Conversely, when the market share of the deposit decreases, in the long term Islamic banking performance will increase, and in the short term, the Islamic banking performance will decrease.

Herfindahl-Hirschman Index (HHI) in the long term relationship has positive and significant effect through the return on asset as the indicator of Islamic banking performance in Indonesia (Ayadi & Ellouze, 2013; Yadarudin, 2012; Bello & Isola, 2014; Hakimi et al., 2015). However, in the short term relationship, HHI has a positive and insignificant effect through the return on asset. This shows that if the Herfindahl – Hiershman Index increases, in the long term and short term relationship the Islamic

banking performance will increase, while the Herfindahl – Hiershman Index decreases, the Islamic banking performance will decrease. Concentration Ratio (CR) in the long term relationship has negative and significant effect on ROA in Islamic banking in Indonesia, which is consistent with the results of other studies (Bade & Parkin, 2007; Oloniluyi & Ogunleye, 2016; Hakimi et al., 2015; Yadarudin, 2015; Ahamed, 2012; Naylah, 2010; Bhatti, 2010). Concentration Ratio (CR) in the long term relationship has negative and significant effect on ROA in Islamic banking in Indonesia, which is consistent with the results of other studies (Bade & Parkin, 2007; Oloniluyi & Ogunleye, 2016; Hakimi et al., 2015; Yadarudin, 2015; Ahamed, 2012; Naylah, 2010; Bhatti, 2010). However, in the short term relationship, concentration ratio has a negative and insignificant effect through the return on an asset as the Islamic banking performance (Katib, 2004; Arize et al., 2010). This means that if the concentration ratio increases, the Islamic banking performance in the long term and short term relationship will decrease and vice versa if the concentration ratio is decreased then the Islamic banking performance in Indonesia will increase.

5. Conclusion

This study has attempted to study the relationship between market structure and Islamic banking performance in Indonesia in the short and long term. Using co-integration techniques, the study has investigated the long term relationship between market structure and Islamic banking performance in Indonesia in the structure conduct performance approach. The result indicates that the market structure variables were stationary at first difference. Granger causality test has also shown unidirectional causality in the two-way relationship between the independent and dependent variables in a regression model. The result of the error correction model has shown that none of the market structure variables in the short term relationship had any significant effect on Islamic banking performance growth. From the government perspective, since the Indonesia government aimed to improve the economy of the banking industry particularly Islamic banking industry, this study helps Indonesia's development plans in increasing the Islamic banking performance and the management commitment to improve the Islamic banking performance growth.

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1418