el Barka: Journal of Islamic Economic and Business
Vol. : 4 (1), 2021, 1-17
DOI : 10.21154/elbarka.v4i1.2778
p-ISSN : 2657-1153
e-ISSN : 2657-1862

MACROECONOMIC VARIABLES AND PROFITABILITY IN THE INDONESIAN ISLAMIC BANKING INDUSTRY

M. Nur Rianto Al Arif, Rahmi Rahmawati
UIN Syarif Hidayatullah Jakarta
mnur.rianto@uinjkt.ac.id, mi.rahmawati23@gmail.com

Abstract: Profitability level is one of performance indicator in banking industry, including the Islamic banking industry. The purpose of this study is to analyse the short-run and long-run impact of macroeconomics variables to profitability in the Indonesian Islamic banking industry. The method that used in this paper is vector error correction models (VECM). The variables that used in this paper are industrial production index, inflation, exchange rate, the Bank Indonesia's rate, and stock exchange composite index. The result shows that in the long-run, all of the macroeconomics variables affect significantly in profitability level. In the short-run, all macroeconomics variables do not impact the profitability. This result implies that the macroeconomics variable had a time-lag to affect the profitability in the Indonesian Islamic banking industry.

Keywords: Profitability, Macroeconomics Variables, Vector Error Correction Model

Abstrak: Salah satu indikator kinerja dalam industri perbankan termasuk industri perbankan syariah adalah tingkat profitabilitas. Tujuan dari penelitian ini ialah untuk menganalisis pengaruh variabel makroekonomi terhadap profitabilitas di industri perbankan syariah, baik dalam jangka pendek maupun jangka panjang. Metode yang dipergunakan dalam artikel ini ialah model vektor koreksi kesalahan. Variabel yang dipergunakan ialah indeks produksi industri, inflasi, nilai tukar, tingkat bunga Bank Indonesia, dan indeks harga saham

gabungan. Hasil penelitian menunjukkan bahwa seluruh variabel makroekonomi berpengaruh dalam jangka panjang terhadap tingkat profitabilitas. Sedangkan, dalam jangka pendek seluruh variabel makroekonomi tidak berpengaruh terhadap tingkat profitabiltas. Hasil ini memberikan implikasi bahwa variabel makroekonomi memiliki jeda waktu untuk memengaruhi tingkat profitabilitas pada industri perbankan syariah di Indonesia.

Kata Kunci: Profitabilitas, Variabel Makroekonomi, Model Vektor Koreksi Kesalahan.

INTRODUCTION

Within a decade, the sharia banking industry in Indonesia is growing so fast, right after the Law Number 21 of 2008 had been issued. The number of Islamic commercial banks increased to 13 Islamic commercial banks in line with the spin-off of five sharia business units (Al Arif, Nachrowi, Nasution, & Mahmud, 2017) and followed by two converting banks. The Islamic banking industry in Indonesia was born because of the needs of people who want a banking system that is usury-free. The presence of this law was part of an effort to accelerate the growth and development of the Islamic banking industry. In order to develop the Islamic banking industry in Indonesia, Bank Indonesia prepared a blueprint for the development of the Islamic banking industry in 2002 and its revised edition in 2005-2006 (Ismal, 2011).

In addition, Bank Indonesia collaborated with all stakeholders in the sharia banking industry to develop an acceleration program for 2007-2008, in which this program concentrated on achieving a market share of 5% by the end of 2008 but the result

showed that just 2.10% of market share was achieved. Due to this unachieved target, Bank Indonesia changed its share target market which was expected to reach 3.5% by the end of 2009, and 4.75% by the end of 2010 (Ismal, 2011). One of the separation policies contained in the Act above is an attempt to increase the market share of 5% of the national banking industry. However, by the end of 2014 the target market share of 5% had not yet been achieved, giving rise to the term "five percent trap" among the Islamic banking industry for not having achieved this target. This target was only achieved after the complete conversion to a Sharia Commercial Bank carried out by Bank Aceh in 2016. Referring to the data in Table 1, it can be seen that in general there is a significant growth in the Islamic banking industry. This can be seen from the indicators of assets, third party funds, and the amount of financing disbursements.

Table 1. The Growth Indicator for Islamic Banking Industry

(*in Billion IDR*)

Indicator	2015	2016	2017	2018	2019	2020
Asset	270,735	356,504	424,181	477,327	524,564	593,948
Third Party Fund	272,750	279,336	334,888	371,828	416,150	465,977
Financing	212,996	249,087	286,822	321,305	355,182	383,944

Source: Financial Service Authority (Data Processed)

Table 1 shows that the asset value of the Islamic banking industry generally shows an increase in asset value year after year. However, there was a decline in asset value in 2015, in general in 2015 there was a decline in performance in both the Islamic and conventional banking industries. The trend of increasing growth can

also be seen in third party funds and the amount of financing disbursement to the Islamic banking industry in Indonesia.

Other indicators in observing the performance of the Islamic banking industry can be used by several financial ratios as shown in Table 2. In fact, the value of financial ratios tends to fluctuate. The capital adequacy value as reflected by the CAR indicator experienced a decline in 2015. The value of the profitability ratio in the 2014-2019 period experienced fluctuations that fluctuated. The NPF is still below 5 percent, which means it is still below the minimum requirement. This shows that Islamic Banking has not neglected the principle of prudence in carrying out its function as an intermediary institution. The low FDR financing ratio in 2015 was only 88.03 percent, indicating the ineffectiveness of the distribution of Sharia Banking financing. In 2015-2017, the operational efficiency ratio of the sharia banking industry was high above 90%, but in 2018-2019 there has been an increase in performance with a decreasing BOPO ratio.

Table 2. Financial Ratio of Islamic Banking Industry

Indicator	2015	2016	2017	2018	2019	2020
CAR	15.02	16.63	17.91	20.39	20.59	21.64
ROA	0.49	0.63	0.63	1.28	1.73	1.40
NPF	4.84	4.42	4.76	3.26	3.23	3.13
FDR	88.03	85.99	79.61	78.53	77.91	76.36
BOPO	97.01	96.22	94.91	89.18	84.45	76.36

Source: Financial Service Authority (Data Processed)

Perceiving level of profitability is one way to measure financial performance used in the Islamic banking industry. Indahsari (2015) stated that the level of profitability is important for a bank and

is an indicator to measure the financial performance of a bank, because profitability is a determining factor for the sustainability of a bank so that it can continue to develop in a sustainable manner. The financial ratios that are often used as a proxy for the level of profitability are return on assets (Endri & Wakil, 2008; Hamdi & Lestari, 2015; Harianto, 2017; Kanwal & Nadeem, 2013; Sanwari & Zakaria, 2013). Return on assets (ROA) can be defined as a ratio that measures a bank's ability to obtain net income on total assets owned by the bank and indicates that the company uses all available assets properly (Endri & Wakil, 2008).

The above description raises a question about how the real condition of the financial performance of Islamic banking in Indonesia. Due to the immense role of banking, it is important to ensure that the financial and economic system in a country also runs smoothly and efficiently. The bank's own performance can be influenced by internal and external factors. The internal factors in question can be in the form of each one's competitiveness. Meanwhile, external factors can be in the form of macro and financial conditions of a country in general.

In general, the macroeconomic variables that are often used as a determinant of banking performance are economic growth, inflation and interest rates (Hamdi & Lestari, 2015; Kanwal & Nadeem, 2013). According to Aviliani, Siregar, Maulana, & Hasanah (2015) conducive macro conditions can provide a positive environment for banking development itself. On the other hand, unstable macro and financial conditions can affect market risk and bank credit risk, which

in turn can have an impact on bank performance. Bank performance can be seen from the financial ratios, the decline in the value of ROA indicates that the bank's performance is in a bad position. So that raises the question what causes a decline in the performance of Islamic banking in Indonesia.

As previously stated, macro conditions can affect the financial performance of Islamic banking. Explicitly, the objective of this study is to examine the effects, short and long term periods, of macroeconomic conditions on the financial performance of Islamic banking in Indonesia. This is intended to observe the sensitivity of financial performance indicators to shocks that occur in macroeconomic indicators. Macro variables used include IPI, inflation, the policy interest rate (BI Rate) and the exchange rate. In terms of the stock market, the JCI is used. Meanwhile, the financial performance of Islamic banking is peroxided by the level of profitability with the proxy for return on assets.

LITERATURE REVIEW

The level of profitability is one of the performance indicators of the Islamic banking industry. There have been several studies that seek to find the factors that affect the level of profitability in Islamic banks. Dodi et al. (2018) conducted a study on the determinants of profitability in Islamic banks by including bank specific variables (covering bank size, capital, credit risk, and liquidity) and macroeconomic variables (covering GDP and inflation rate). The results show that bank size and inflation rate have a positive effect on the level of profitability, while capital, credit risk, and liquidity have a

negative effect on the level of profitability of Islamic banking in Indonesia. Amzal (2016) shows that macroeconomic variables such as GDP, BI rate, and inflation rate affect the level of profitability of Islamic banks in Indonesia. On the other hand, the inflation rate and exchange rate have no effect on the level of profitability in Islamic banks (Tumewang et al., 2019).

Widyaningrum & Siswantoro (2014) conducted a study on the determinants of profitability in the Islamic banking industry in Asia. The results of the study show that capitalization, firm size, gdp growth, and inflation have a positive effect on the level of profitability. While operating expense and leverage have a negative effect on the level of profitability.

Abduh & Issa (2018) found that the Islamic banking industry is more stable than conventional banking, especially during the crisis period. Therefore, Islamic banking requires support through good regulations and political will from the government (Dodi et al., 2018).

METHODS

This research discusses the influence of external variables on macroeconomic conditions including the Industrial Production Index (IPI), inflation, BI Rate, stock exchange composite index (IHSG) and exchange rates towards bank financial performance by observing through ROA, FDR and BOPO ratios. The scope of the Islamic banking industry analysed in this study includes Islamic Commercial Banks and Sharia Business Units. The data used in this study are

secondary data. There are two variables occupied in this study, dependent and independent variables.

To see the relationship between banking financial performance indicators and macro variables, the analysis method was conducted using the Vector Error Correction Model (VECM). VECM is a form of Vector Autoregressive (VAR) which is restricted, the VECM specification restricts the long-term relationship between the existing variables to convert into a cointegration relationship but still allows short-term dynamic changes (Widarjono, 2009). The VECM test involves testing the stationarity of the data, determining the optimal lag and testing the cointegration relationship with the Johansen Jesellius Method. Meanwhile, there are two ways to see the dynamic characteristics of VECM through Impulse Response Function (IRF) and Variance Decomposition (VD). In VECM, there is a speed of adjustment from the short term to the long term. The general VECM model is as follows:

$$\Delta y_t = \mu_{0x} + \mu_{1x} t + \alpha\beta y_{t-1} + \sum_{i=1}^{k-1} \tau_k \Delta y_{t-1} + \varepsilon_t$$

Wherein,

y_t : *Vector containing the variables analysed in the study (ROA, IPI, Inflation, BI Rate, IHSG and Exchange Rates)*

μ_{0x} : *Vector* of *intercept*

μ_{1x} : *Vector* of regression coefficient

t : *Time trend*

α : *Speed of adjustment* coefficient

β : *Vector* cointegration

y_{t-1} : Variable *in-level*

τ_k : Matrix of regression coefficient

k-1 : ordo VECM from VAR

k : *lag*

ε_t : *Error term*

RESULT AND DISCUSSION

After conducting several previous tests, including the stationarity test, determining the optimal lag and cointegration test and passing the test according to the criteria specified in the test, VECM estimation can be carried out and this VECM test is carried out using the Impulse Response Function (IRF) and Variance Decomposition (VD). Obtained t-table value of 1.963683, it can be analysed the effect of the short term and the long term. Based on Table 3 in the long term, the BI Rate and Stock Exchange Composite Index (IHSG) have a positive and significant relationship to Return on Assets (ROA). Meanwhile, in the industrial production index, inflation and exchange rates in the long run have a negative and significant relationship with the ROA of Islamic banking in Indonesia. In this short-term analysis, the variables of industrial production index, BI Rate, Stock Exchange Composite Index (IHSG) and Exchange Rate have positive relationship with Return on Assets in Islamic Commercial Banks and Sharia Business Units yet indicates an insignificant relationship.

Table 3. Estimation of VECM Long Run and Short Run

Variable	Coef.	t-stat.	Note	Coef.	t-stat.	Note
		Short Run			Long Run	
CointEq1	0,09126	-2,3366	-	-	-	-

Variable	Coef.	t-stat.	Note	Coef.	t-stat.	Note
		Short Run			Long Run	
Industrial Production Index (-1)	0,013	-1,23419	Not Sig	-0,13294	-6,5329	Sig.
Inflation (-1)	0,07012	0,97526	Not Sig	-0,28557	-5,35211	Sig.
BI *Rate* (-1)	0,3418	-1,63701	Not Sig	0,71444	5,24122	Sig.
IHSG (-1)	0,27569	1,10163	Not Sig	0,54942	3,2831	Sig.
Exchange rate (-1)	0,02784	-0,43271	Not Sig	-0,07112	-5,271	Sig.

Source: Data processed

In the short term, this finding is similar to Sodiq (2015) who found that inflation had no effect on the level of profitability in the Islamic banking industry in Indonesia. Hong & Razak (2015) found that the inflation rate had no effect on the profitability level of the Islamic banking industry in Malaysia. Aslam, Inamullah, & Ismail (2016) also found similar results in the Islamic banking industry in Pakistan. Different results were found by Abduh & Idress (2013); Isfaq & Khan (2015); Syah (2018) who found that inflation had a positive effect on profitability in Islamic banks.

The dynamic behaviour of the VECM model can be seen through the response of each variable to the shock of other variables. Impulse Response Function (IRF) provides an overview of how a variable will respond in the future if there is a shock from one variable to another. Table 4 shows that the return on assets (ROA) variable responds to shocks given the Industrial Production Index (IPI), Inflation, Stock Exchange Composite Index (IHSG) and Exchange Rate variables are positive at the beginning to the end of the period or can be said to be permanent positive. Meanwhile, the shocks given by

the BI Rate variable are permanent negative or negative at the beginning of the period until the end of the period.

The shocks given by the IPI variable are responded to by ROA, this is different from the research conducted by Hamdi & Lestari (2015) which shows that gross domestic product showed a negative effect on ROA. But the results of this study are in accordance with the research of Kanwal & Nadeem (2013) and the existing theory that the amount of national output is about how efficient the existing resources in the economy (labour, capital goods, money and entrepreneurial ability) are used to producing goods and services. In general, the greater the income of a country, the better the efficiency of the allocation of economic resources. Meanwhile, the ROA responded positively to the inflation variable shock. This is in line with the theory that if inflation is fully anticipated, the interest rate imposed by the bank will increase to cover the risk of inflation so that the increase in income is faster than the increase in costs, so that it has a positive impact on bank performance, especially the level of profitability. The results are the same as research conducted by Hamdi & Lestari (2015) that inflation has a positive effect on ROA. But research conducted in Pakistan by Kanwal & Nadeem (2013) shows different things that inflation represent a negative impact on ROA.

Table 4 Impulse Response Function (IRF)

Period	ROA	IPI	Inflation	BI *Rate*	IHSG	Exc. Rate
1	0,344874	0,000000	0,000000	0,000000	0,000000	0,000000
2	0,270500	0,060378	0,047893	-0,08488	0,038711	0,002579
3	0,248382	0,097232	0,069753	-0,09489	0,049780	0,019764

Period	ROA	IPI	Inflation	BI *Rate*	IHSG	Exc. Rate
4	0,246630	0,076401	0,070964	-0,0865	0,052476	0,018000
5	0,257425	0,064247	0,066818	-0,08578	0,050283	0,015012
6	0,259063	0,067502	0,064601	-0,09015	0,051941	0,014357
7	0,256834	0,070045	0,064256	-0,09194	0,052762	0,014769
8	0,256282	0,070056	0,064036	-0,09185	0,052779	0,014914
9	0,256533	0,069552	0,063731	-0,09169	0,052704	0,014794
10	0,256683	0,069494	0,063560	-0,09177	0,052685	0,014729

Source: Data processed

Shocks on the stock market could signalize a positive or negative impact, if the developing stock market conditions and bank performance are complementary, it can have a positive impact. The results showed that the JCI was responded positively by ROA. Then the shock given by the exchange rate variable is responded positively by ROA. This research is in line with the following theory. If it is assumed that the bank takes an open position when the bank is in a buying position, profits will occur when the local currency values strengthens (increase) and the dollar value is low (decrease).

The shocks that occur in the BI Rate are responded to a negative ROA. In line with the existing theory that the interest rate will influence the decision to invest, whether the owner of the capital will invest in real assets or in financial assets, the interest rate will affect the sustainability of the business of banks and other financial institutions. This result is in accordance with Kusuma & Rahman (2018) who also found a negative relationship between the BI rate and the performance of Islamic banks.

Variance Decomposition (VD), also called Forecast Error Variance Decomposition (FEVD), is a tool that describes the relative importance of independent variables in the VECM model because this analysis is used to predict how much the variance contribution of each variable affects other variables at this time and in the future period. In the first period, the ROA variable is influenced by each of these variables. However, with increasing periods, other variables began to influence ROA, FDR and BOPO although the magnitude was not as large as the influence of the variables themselves. BI Rate is a variable among other macro indicators that best explains the variability of ROA. Meanwhile, the greater diversity of FDR is explained by the value of inflation. Meanwhile the exchange rate explains the greater diversity of BOPO among other macro indicators.

Table 5 Variance Decomposition (VD) Value

Period	S.E.	ROA	IPI	Inflation	BI *Rate*	IHSG	Exc. Rate
1	0,344874	100,0000	0,000000	0,000000	0,000000	0,000000	0,000000
2	0,456387	92,23146	1,750193	1,101204	3,458798	0,719439	0,003192
3	0,547801	84,57639	4,365259	2,385687	5,401291	1,325127	0,132383
4	0,621044	81,57434	4,909752	3,161832	6,142540	1,744954	0,187000
5	0,687584	80,56647	4,878521	3,523840	6,567605	1,958353	0,200227
6	0,749541	79,74365	4,916372	3,708186	6,973311	2,128177	0,205183
7	0,806601	78,99928	4,999512	3,836720	7,320873	2,265614	0,210708
8	0,859701	78,42843	5,065024	3,932220	7,585896	2,371279	0,215579
9	0,909678	78,00030	5,108365	4,002855	7,791173	2,453555	0,218992
10	0,957072	77,65934	5,142198	4,057262	7,958019	2,519600	0,221525

Source: Data processed

Another factor that can affect profitability is the policy of separating Islamic business units into Islamic commercial banks. The

separation of the sharia business units is a mandate of the Sharia Banking Law No. 21 of 2008. Hamid (2015) found that there were differences in the level of profitability in the Islamic banking industry between before and after the separation policy. Ramdani (2015) also found that there was a difference in the amount of profit at Bank BNI Syariah between before and after the separation applied. Another factor that may affect the level of profitability in the Islamic banking industry is the market structure. However, Yuhanah (2016) found that market structure had no effect on the level of profitability of the Islamic banking industry in Indonesia.

The Islamic banking industry must take several strategic steps to improve the performance of Islamic banking. Rusydiana (2016) stated that there were three policy recommendations to solve problems in the Islamic banking industry in Indonesia: (1) Strengthening capital and business scale and improving efficiency levels; (2) Improving the quantity and quality of human resources and information technology systems; (3) Reforming Islamic bank funding structure and doing a harmonization on regulation and supervision.

CONCLUSION

Based on the research that has been done with the aim of examining the effect of macroeconomic shocks on financial performance as seen from the return on assets. In the long term, the BI Rate and Stock Exchange Composite Index (IHSG) have a positive and significant relationship to Return on Assets (ROA). Meanwhile, in the industrial production index, inflation and exchange rates in the long run have a negative and significant relationship with the ROA of

Islamic banking in Indonesia. In this short-term analysis, the variables of industrial production index, BI Rate, Stock Exchange Composite Index (IHSG) and Exchange Rate have a relationship with Return on Assets in Islamic Commercial Banks and Sharia Business Units with a positive but insignificant relationship.

In the results of the impulse response function, in general, shocks from macroeconomic conditions were responded to by the financial performance of Islamic banking as seen from the profitability ratio (ROA), liquidity (FDR) and efficiency (BOPO) in Indonesia, both positive and negative impact, with the duration of the shock given both in permanent and not-permanent. As for the results of the variance decomposition in the forecast carried out, Islamic banking financial performance indicators are not much influenced by macroeconomic conditions, it is possible that other variables outside of macroeconomics have more influence on the financial performance of Islamic banking in Indonesia.

REFERENCES

Abduh, M., & Idress, Y. (2013). Determinants of Islamic Banking Profitability in Malaysia. *Australian Journal of Basic and Applied Sciences, 7*(2), 204–210.

Al Arif, M. N. R., Nachrowi, N. D., Nasution, M. E., & Mahmud, T. M. Z. (2017). The Islamic banking spin-off: Lessons from Indonesian Islamic banking experiences. *Journal of King Abdulaziz University, Islamic Economics, 30*(2). https://doi.org/10.4197/Islec.30-2.11

Aslam, M. K., Inamullah, & Ismail, M. (2016). Determinant Affecting The Profitability of Islamic Banks: Evidence From Pakistan.

International Journal of Operations and Logistic Management, *5*(2), 115–127.

Aviliani, Siregar, H., Maulana, T. N. A., & Hasanah, H. (2015). The Impact of Macroeconomic Condition on The Bank's Performance in Indonesia. *Buletin Ekonomi Moneter Dan Perbankan*, *17*(4), 380–402.

Endri, & Wakil, A. (2008). Analisis Kinerja Keuangan dengan Menggunakan Rasio-rasio Keuangan dan Economic Value Added (Studi Kasus: PT Bank Syariah Mandiri). *Tazkia Islamic Finance and Business Review*, *3*(2), 113–134.

Hamdi, R., & Lestari, H. S. (2015). Pengaruh Faktor Intenal dan Eksternal Bank terhadap Kinerja Bank di Perusahaan Perbankan di Bursa Efek Indonesia. *Jurnal Manajemen Trisakti*, *2*(1), 15–32.

Hamid, A. (2015). The Impact of Spin-off Policy to The Proftability on Indonesian Islamic Banking Industry. *Al-Iqtishad: Journal of Islamic Economics*, *7*(1), 117–126.

Harianto, S. (2017). Rasio Keuangan dan Pengaruhnya Terhadap Profitabilitas Pada Bank Pembiayaan Rakyat Syariah. *Esensi: Jurnal Bisnis Dan Manajemen*, *7*(1), 41–48.

Hong, S. C., & Razak, S. H. A. (2015). The Impact of Nominal GDP and Inflation on The Financial Performance of Islamic Banks in Malaysia. *Journal of Islamic Economics, Banking, and Finance*, *11*(1), 157–180.

Indahsari, S. N. (2015). Analisis Faktor Makroekonomi yang mempengaruhi profitabilitas Bank (studi pada PT. Bank Rakyat Indonesia (persero) Tbk.). *Jurnal Ilmiah Universitas Brawijaya*, *3*(2), 151–160.

Isfaq, M. J., & Khan, N. U. (2015). Bank Profitability, Inflation and Cost Efficiency: A Case of Pakistani Banks. *International Journal of Business and Management Review*, *3*(1), 41–53.

Ismal, R. (2011). *The Indonesian Islamic Banking: Theory and Practices*. Jakarta: Gramata Publishing.

Kanwal, S., & Nadeem, M. (2013). The Impact of Macroeconomic Variables on The Profitability of Listed Commercial Banks in

Pakistan. *European Journal of Business and Social Science*, *2*(9), 186–201.

Kusuma, D. B. W., & Rahman, D. F. (2018). Analysis of the Impact of Selected Macroeconomic Indicators on Islamic Banks' Profitability Indonesia. *International Journal of Economics, Business, and Management Research*, *2*(4), 142–159.

Ramdani, A. (2015). Pengaruh Kebijakan Pemisahan Terhadap Laba Pada Bank BNI Syariah. *Etikonomi*, *14*(1), 17–34.

Rizal, Fitra, & Humaidi, Muchtim. (2019). Dampak Makroekonomi terhadap Profitabilitas Perbankan Syariah di Indonesia. El Barka: Jurnal of Islamic Economics and Business, 2 (2), 300-328.

Rusydiana, A. S. (2016). Analisis Masalah Pengembangan Perbankan Syariah di Indonesia: Aplikasi Metode Analytic Network Process. *Esensi: Jurnal Bisnis Dan Manajemen*, *6*(2), 237–246.

Sanwari, S. R., & Zakaria, R. H. (2013).). The Performance of Islamic Banks and Macroecpnomic Condition. *ISRA International Journal of Islamic Finance*, *5*(2), 83–98.

Sodiq, A. (2015). Pengaruh Variabel Makro Ekonomi Terhadap Profitabilitas Bank Syariah di Indonesia Periode 2009-2014. *Bisnis: Jurnal Bisnis Dan Manajemen Islam*, *3*(2), 343–363.

Syah, T. A. (2018). Pengaruh Inflasi, BI Rate, NPF, dan BOPO Terhadap Profitabilitas Bank Umum Syariah di Indonesia. *El-Jizya: Jurnal Ekonomi Islam*, *6*(1), 133–153.

Widarjono, A. (2009). *Ekonometrika: Pengantar dan Aplikasinya*. Yogyakarta: Ekonisia.

Yuhanah, S. (2016). Pengaruh Struktur Pasar Terhadap Profitabilitas Perbankan Syariah di Indonesia. *Esensi: Jurnal Bisnis Dan Manajemen*, *6*(1), 125–138.