 ISSN 3123-3465 (E)

VECM ANALYSIS OF SHARIA FINANCING ON ROA OF SHARIA COMMERCIAL BANKS IN INDONESIA

Andrie Firmansyah[1], Nasrulloh[2]

[1] Islamic Economics, Faculty of Islamic Studies, Universitas Trunodjoyo Madura, Bangkalan, Indonesia
Email: andriefirmankhan@gmail.com
[2] Islamic Economics, Faculty of Islamic Studies, Universitas Trunodjoyo Madura, Bangkalan, Indonesia
Email: nasrulloh@trunojoyo.ac.id

Abstract

This study aims to analyze the effect of murabahah, ijarah, and qard financing on the financial performance of Islamic commercial banks in Indonesia, as measured by Return on Assets (ROA) during the period 2015–2023. Unlike previous studies that generally examine only one or two financing contracts using conventional regression methods, this study simultaneously analyzes the dynamic short-term and long-term relationships among murabahah, ijarah, qard financing, and financial performance using the Vector Error Correction Model (VECM). This approach provides a more comprehensive understanding of financing behavior in Islamic commercial banks. This research employs a quantitative approach using time series data obtained from Islamic Banking Statistics published by the Financial Services Authority (OJK). The analytical method used is Vector Autoregression (VAR) and Vector Error Correction Model (VECM), supported by Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD). The results indicate that, both in the short term and long term, murabahah financing has a significant and positive effect on ROA. Meanwhile, ijarah and qard financing show a weak and insignificant effect on ROA. The findings suggest that murabahah financing plays a dominant role in improving the financial performance of Islamic commercial banks. This study also highlights the importance of expanding research variables by including macroeconomic factors and applying causality analysis in future studies.

Keywords: Islamic Banking, Murabahah Financing, Ijarah Financing, Qard Financing, Return on Assets (ROA).

INTRODUCTION

In the late 1960s, Islamic groups and Muslim intellectuals in Indonesia began to explore the status of Islam, which led to concepts and ideas regarding the establishment of Islamic banking in Indonesia (Zaini et al., 2019). A national seminar on Indonesia's relations with Middle Eastern countries was held in 1974 to discuss the discourse on establishing Islamic banks. In 1976, LSIK and the Bhinneka Tunggal Ika Foundation held an international seminar (Akbar Novi Maimory, 2018). Compared to Islamic banking in member countries of the OIC, the growth of Islamic banking in Indonesia has been relatively slow (Quatro et al., 2021). In the early 1980s, several Islamic economic scholars, such as Karmen A. Perwataatamadja, M. Dawam Rahardjo, A.M. Saefuddin, and M. Amin Aziz, were still limited to discussing ideas related to Islamic banking (Santi, 2019).

The establishment of Islamic banking in Indonesia began with a workshop titled "Bank Interest and Banking" on August 19–20, 1990. On August 22–25, 1990, the findings of the workshop were further discussed at the 4th National Conference (MUNAS) of the Indonesian Ulema Council (MUI) held at the Sahid Hotel, Jakarta. With support from the government and the public, the first Islamic bank was established on November 1, 1991, under the name PT Bank Muamalat

Indonesia (Zia Ulhaq & Rasyad Al Fajar, 2022). Subsequently, with the approval of the Minister of Justice No. C.2.2413.HT.01.10, notary Yudo Paripurno signed the deed of establishment of the first Islamic bank (Yasin, 2010). Bank Muamalat Indonesia officially began operations on May 1, 1992, with an initial capital of IDR 106,126,382,000. Islamic banking has since made significant progress and has increasingly established its position within the national economic system. Many conventional banks were liquidated during the 1998 monetary crisis in Indonesia, while Islamic banks were able to survive and remain operational (Maulidizen, 2019). After the crisis, several Islamic rural banks were established, including BPRS Dana Mardhatillah and Amanah Rabaniah in Bandung, and BPRS Hareukat in Aceh (Utama, 2018).

The development of Islamic banking in Indonesia accelerated after the enactment of Law No. 10 of 1998. This law allowed conventional banks to open Islamic banking branches, thereby enabling the expansion of Islamic banking networks (Muyasaroh, 2022). Following the law’s approval, several banks began providing Islamic banking training to their employees. Some banks attempted to open Islamic branches or divisions, while others planned to fully convert into Islamic banks (Antonio, 2001). As an institution responsible for religious matters and the interests of Muslims, the Indonesian Ulema Council (MUI) established the National Sharia Council (DSN) in 1999 through Decree No. Kep-754/MUI/II/1999 dated February 10, 1999 (Ahyani & Nurhasanah, 2020). According to Law No. 21 of 2008 concerning Islamic Banking, “Islamic banking encompasses all matters related to Islamic banks and Sharia business units, including institutional aspects, business activities, and methods and processes of conducting business.” Furthermore, “Islamic banking operates based on Sharia principles, economic democracy, and the principle of prudence.” From this definition, it can be concluded that Islamic banks must conduct their operations in accordance with Sharia principles (Tiyah, 2022). Since the enactment of this law, Islamic banks have been able to develop gradually while maintaining operations aligned with the values of maqashid sharia (Mahendra & Adityawarman, 2023).

Bank Indonesia issued several circular letters in 2010 to complement the Bank Indonesia Regulations (PBI) related to licensing issued the previous year. In addition, it continued to collaborate with public and related institutions in efforts to socialize and educate the public, while also strengthening both domestic and international cooperation (Frastiawan Amir Sup & Hartanto, 2020). Towards the end of 2013, the development and supervision of banking shifted from Bank Indonesia to the Financial Services Authority (OJK). The OJK continued to refine its vision and strategic procedures for the development of the Islamic economic sector, which were later outlined in the Indonesian Islamic Commercial Bank Roadmap 2015–2019, following the 2014 Islamic People's Market program (Setiawan et al., 2022).

Islamic banks have the responsibility to collect and distribute funds to the public, operating in accordance with Sharia principles (Khotijah, 2020). In general, the purpose of Islamic banks is to encourage and accelerate the economic development of society in conducting business activities (Yanti, 2020). A key distinction between Islamic banks and conventional banks lies in the absence of interest charges. Instead, Islamic banks apply a profit-and-loss sharing principle in their operations. Thus, Islamic banking aims to support the community, particularly Muslims (Fardillah et al., 2021). Islamic banks are committed to adhering to Islamic social and ethical principles and prohibit all forms of transactions that may harm or disrupt society, such as gambling, drug trafficking, prostitution, and others. They also emphasize justice and avoid elements of oppression. Any form of transaction involving uncertainty or unethical elements is not acceptable. The implementation of justice in economic activities is enforced through muamalah rules, including the prohibition of riba (usury), injustice (zulm), gambling (maysir), uncertainty (gharar), and other unlawful transaction objects (Mardani, 2017).

The purpose of this study is to identify the influence of murabahah, ijarah, and qard financing on the development of Islamic banks in the financial sector. This is because there are still limited studies that specifically analyze the simultaneous effect of these three types of financing on the financial performance of Islamic commercial banks. The research problem is: how significant is the influence of murabahah, ijarah, and qard financing on the Return on Assets (ROA) of Islamic commercial banks during the period 2015–2023?

Previous studies have reported inconsistent findings regarding the influence of Islamic financing contracts on bank profitability. While several studies identified murabahah financing as the dominant determinant of profitability, others reported insignificant effects of ijarah and qard financing across different research settings. Moreover, relatively few studies have examined these financing contracts simultaneously using a dynamic time-series approach capable of capturing both short-term adjustments and long-term equilibrium relationships. This study seeks to address this gap by applying the VECM approach to Islamic commercial banks in Indonesia.

RESEARCH METHODOLOGY

This study employs a quantitative method using time series data. The data source is secondary data obtained from Islamic Banking Statistics published by the Financial Services Authority (Otoritas Jasa Keuangan/OJK). The data consist of monthly financial reports of Islamic commercial banks and are processed using E-Views software. The population in this study includes all Islamic commercial banks listed in the Islamic Banking Statistics of the Financial Services Authority (OJK) during the 2015–2023 period (monthly data). The sampling technique used is saturated sampling, meaning that all members of the population are used as the sample (Alamsyah et al., 2022).

This study utilizes VAR (Vector Autoregression) analysis because the estimation results are considered more effective compared to other more complex methods. The VECM (Vector Error Correction Model) is selected since the data are non-stationary at the level but become stationary at the first difference level, and the cointegration test indicates stability. The VECM model allows for the estimation of both short-term and long-term relationships among variables.

Further analysis in the VAR/VECM method can be observed through two main analytical tools, namely the Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD) (Edriyanti & Khairunnisa, 2020).

The equation model used to examine the influence of murabahah, ijarah, and qard variables is as follows:

$$ROA_t = \alpha_0 + \alpha_1 \ln(MURABAHAH_t) + \alpha_2 \ln(IJARAH_t) + \alpha_3 \ln(QARD_t) + \varepsilon_t$$

RESULTS AND DISCUSSION

Islamic banks operate based on Islamic Sharia principles, which are rooted in the Qur'an and Hadith. Their activities can only be carried out properly if they are grounded in a correct aqidah (faith) (Agustin & Armis, 2022). Sharia principles originate from Islamic law and are applied in banking activities, which must also be based on fatwas issued by the National Sharia Council of the Indonesian Ulema Council (DSN-MUI) or other authorized institutions in the field of Sharia (Munandar, 2022). Islamic banks contribute to improving the national economy while ensuring that financial practices and transactions comply with Sharia principles (Adinugroho et al., 2024).

The population of Islamic Commercial Banks in Indonesia during 2015–2023 is as follows:

Table 1. Islamic Banks Listed in Islamic Banking Statistics

No	Jumlah Bank Umum Syariah
2015	12
2016	13
2017	13
2018	14
2019	14
2020	14
2021	15
2022	14
2023	14

Source: Islamic Banking Statistics, OJK (2015–2023)

Table 2. Stationarity Test Results

	Nilai ADF	Nilai ADF	Nilai kritis MacKinnon 5%	Nilai kritis MacKinnon 5%
Variabel	Level	1st Difference	Level	1st Difference
ROA	-1.692708	-14.98119	-2.888932	-2.888932
MURABAHAH	1.401786	-9.640824	-2.888669	-2.888932
SEWA_IJARAH	0.008225	-8.341529	-2.888669	-2.888932
QARD	0.609490	-8.765989	-2.888669	-2.888932

The results of the stationarity test indicate that at the level form, the ADF t-statistic values are greater than the MacKinnon critical values at the 5% significance level, meaning that the data are non-stationary. Therefore, the test is continued at the first difference level, where the data become stationary.

Table 3. Optimal Lag Test Results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-183.9726	NA	0.000469	3.685738	3.788678*	3.727422*
1	-167.4449	31.43508*	0.000464*	3.675391*	4.190091	3.883811
2	-158.5367	16.24451	0.000534	3.814444	4.740905	4.189600
3	-149.9792	14.93364	0.000620	3.960376	5.298597	4.502267
4	-140.1920	16.31197	0.000705	4.082196	5.832178	4.790823
5	-132.4087	12.36169	0.000838	4.243308	6.405050	5.118671

Based on the Akaike Information Criterion (AIC), the optimal lag selected is Lag 1, as it has the smallest AIC value.

Table 4. VAR Stability Test Results

Root	Modulus
-0.373394	0.373394
0.340094	0.340094
0.032644 - 0.076405i	0.083086
0.032644 + 0.076405i	0.083086

The VAR model is considered stable because all modulus values are less than 1.

Table 5. Cointegration Test Results

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.480158	179.6410	47.85613	0.0000
At most 1 *	0.368428	110.9468	29.79707	0.0000
At most 2 *	0.288530	62.69473	15.49471	0.0000
At most 3 *	0.226377	26.95041	3.841465	0.0000

The results show that cointegration exists among the variables, as indicated by a probability value of 0.000 < 0.05. This implies the presence of a long-term equilibrium relationship.

Estimation Results

Table 6. VECM Estimation Results

	JANGKA PENDEK	
VARIABEL	KOEFISIEN	T-STATISTIC
CointEq1	-1.457975	-8.71908
D(ROA(-1),2)	0.086851	0.85408
D(MURABAHAH)(-1),2)	0.018330	2.28799
D(SEWA_IJARAH(-1),2)	-0.160713	-1.00083
D(QARD(-1),2)	0.053454	1.01538
	JANGKA PANJANG	
D(MURABAHAH)(-1))	0.024712	2.86549
D(SEWA_IJARAH(-1))	-0.265498	-1.65207
D(QARD(-1))	-0.041222	-0.69675

A variable is considered to have a significant effect on another variable if its t-statistic value is greater than the t-table value at the 5% significance level ($\alpha = 5\%$), which is 1.660. With n = 108, the degrees of freedom (df) = 108 – 4 = 104.

Based on the short-term analysis, murabahah financing has a significant effect on the ROA of Islamic commercial banks, while ijarah and qard do not have a significant effect and tend to show negative relationships.

Table 7. Variance Decomposition

Variance Decomposition of D(ROA):

Period	S.E.	D(ROA)	D(MURAB...	D(SEWA_I...	D(QARD)
1	0.225798	100.0000	0.000000	0.000000	0.000000
2	0.244955	93.75485	1.317583	1.601254	3.326315
3	0.252347	89.95372	4.519461	2.348372	3.178449
4	0.256480	88.00291	5.171611	2.759593	4.065884
5	0.260514	85.45747	6.817683	3.579530	4.145320
6	0.264556	83.48790	8.049041	4.056096	4.406967
7	0.268275	81.56915	9.175652	4.645163	4.610037
8	0.272109	79.70444	10.34751	5.144212	4.803839
9	0.275789	77.99913	11.37349	5.636382	4.990994
10	0.279475	76.34407	12.39326	6.096682	5.165986
11	0.283085	74.79361	13.33765	6.535461	5.333283
12	0.286664	73.31036	14.24610	6.951917	5.491624

Sumber: Output *Eviews*

Similarly, the long-term analysis indicates that only murabahah financing significantly affects ROA, whereas ijarah and qard do not influence the ROA of Islamic commercial banks.

Impulse Response Function (IRF)

Based on the IRF analysis, the response of ROA to shocks in murabahah financing decreases over time. Meanwhile, the response of ROA to shocks in ijarah and qard financing increases as the number of periods increases.

Variance Decomposition (FEVD)

The variance decomposition results show that murabahah financing has the largest contribution to ROA compared to other variables, followed by ijarah and qard.

Initially, ROA contributes 100% to its own variance, but this contribution gradually declines over time. Murabahah begins contributing in the second period (1.31%) and continues to increase in subsequent periods. Similarly, ijarah begins contributing in the second period (1.6%) and continues to rise. Qard also starts contributing in the second period (3.32%) and gradually increases over time.

Effect of Murabahah Financing on Financial Performance

The analysis shows that murabahah financing has a significant and positive effect on the ROA of Islamic commercial banks. An increase in murabahah financing leads to an increase in ROA, and vice versa.

This finding is consistent with previous studies by Cut Afrianandra (2014), Cut Faradilla (2017), Ahmad Maulidizen (2019), and Rahma Disa Putri (2020), which found that murabahah financing significantly affects ROA. However, it differs from studies by Elda Firdayati (2020) and Paramadita Khalifa (2021), which found a weak influence.

Effect of Ijarah Financing on Financial Performance

The results indicate that ijarah financing has a low and insignificant effect on ROA. Changes in ijarah financing do affect ROA, but not significantly.

This finding is consistent with studies by Nisra & Ramadhani (2021) and Nida El-Husna (2022), but contradicts studies by Deasy Rahmi (2014), Purnama Putra (2018), and Devi Sri Hartati (2021), which found a significant effect.

Effect of Qard Financing on Financial Performance

The analysis shows that qard financing has a low and insignificant effect on ROA. Increases or decreases in qard financing only slightly affect ROA.

This result is supported by Hasna Salamah (2020), who also found that qard financing has a weak influence on the financial performance of Islamic commercial banks.

CONCLUSION

Based on the results of the analysis in this study, it can be concluded that in the long term, the independent variable—murabahah financing—has a strong influence on the dependent variable, namely the Return on Assets (ROA) of Islamic commercial banks. Meanwhile, ijarah and qard financing have a relatively weak effect on ROA.

In addition, the short-term results are consistent with the long-term findings, where murabahah financing has a significant effect on ROA, while ijarah and qard financing have a low impact on ROA.

This study has several limitations. First, it is necessary to extend the observation period of Islamic commercial banks' financial reports to better capture the impact of independent variables on dependent variables. Second, based on the findings, future research is recommended not only to include financial performance variables of Islamic banks but also to incorporate macroeconomic variables as determinants of ROA. Furthermore, the use of VAR methods with causality analysis is suggested to examine the causal relationships among variables affecting ROA.

REFERENCES

Adinugroho, M., Efendi, M. N., & Zuhdi, U. (2024). Mengoptimalkan Peran Perbankan Syariah Dalam Mendukung Wisata Halal di Indonesia. 10(01), 96–105.

Agustin, H., & Armis. (2022). Sejarah Praktek Perbankan Syariah. Jurnal Tabarru': Islamic Banking and Finance, 5(1), 230–244. https://doi.org/10.25299/jtb.2022.vol5(1).9420

Ahyani, H., & Nurhasanah, E. (2020). Peran Strategi Politik Islam Terhadap Perekonomian Di Indonesia. Mutawasith, 3(1), 18–43.

Akbar Novi Maimory, A. (2018). Sejarah Lahirnya Bank Syariah Serta Praktek Di Dunia Perbankan. Jurnal Pahlawan, 1(2), 15–21.

Alamsyah, I. F., Esra, R., Awalia, S., & Nohe, D. A. (2022). Analisis regresi data panel untuk mengetahui faktor yang memengaruhi jumlah penduduk miskin di Kalimantan Timur. Prosiding Seminar Nasional Matematika, Statistika, Dan Aplikasinya, 254–266.

Antonio, S. (2001). Bank syariah_ dari teori ke praktik - Muhammad Syafi'i Antonio - Google Buku. Gema Insani Press.

Disa Putri, R. (2020). Pengaruh pembiayaan murabahah dan musyarakah terhadap profitabilitas bank umum syariah periode 2016-2018. Jurnal Tabarru' : Islamic Banking and Finance, 3(1), 48–56.

Edriyanti, R., & Khairunnisa, A. (2020). Rahmi Edriyanti. Jurnal Nisbah, V o l . 6, 63–74.

Fardillah, F., Yahawi, S. H., & Aulia, T. zuhrotun. (2021). Perbankan Syariah Indonesia, (pp. 4–5). Insania.

Frastiawan Amir Sup, D., & Hartanto, S. (2020). Sejarah Perbankan Syariah (Dari Konseptual Hingga Institusional). Journal of Islamic Banking, I(2), 168–188.

Garwautama, P. K. (2021). Pengaruh pembiayaan murabahah, pembiayaan musyarakah, pembiayaan qardh terhadap profitabilitas. Balance: Jurnal Akuntansi Dan Bisnis, 6(2), 145–156.

Husna, N. El. (2022). Pengaruh pembiayaan qard , rahn dan ijarah terhadap profitabilitas bank syari ' ah mandiri periode 2016 -2020. JIMT: Jurnal Ilmu Manajemen Terapan, 4(2), 259–278.

Khotijah, S. A. (2020). Analysis of the Effect of Murabaha Finance in Sharia Banks on the Economic Growth of Agricultural Sector. Amwaluna: Jurnal Ekonomi Dan Keuangan Syariah, 4(2), 246–259. https://doi.org/10.29313/amwaluna.v4i2.5432

Mahendra, A. Z., & Adityawarman, A. (2023). Measuring The Performance of Indonesian Sharia Commercial Banks Using The Maqashid Sharia Index And Profitability Approach. Al-Amwal : Jurnal Ekonomi Dan Perbankan Syari'ah, 15(2), 256. https://doi.org/10.24235/amwal.v15i2.15157

Mardani. (2017). Hukum Bisnis Syariah - Dr. Prenada Media Group.

Maulidizen, A. (2019). Pengaruh Pembiayaan Murabahah Terhadap Profitabilitas Bank Umum Syariah di Indonesia Periode 2010-2017. Jurnal Penelitian, 13(2), 215–250.

Munandar, A. (2022). Pengaruh Camel Terhadap Financial Sustainability Ratio Pada Bank Umum Syariah Periode Juni 2014 – Februari 2022. 8(1), 49–58.

Muyasaroh, N. (2022). Eksistensi Bank Syariah dalam Persfektif Undang-Undang No . 21. SYARIKAT : Jurnal Rumpun Ekonomi Syariah, 5(21), 12–31.

Quatro, C., Oktarina, A., & Amimah, A. (2021). Murabahah Terhadap Kinerja Keuangan Bank Umum Syariah Periode 2015-2020. Al-Intaj, 7(1), 33–46.

Santi, M. (2019). Perkembangan Ekonomi Syariah di Indonesia. Jurnal Eksyar (Jurnal Ekonomi Syariah), 07(01), 47–56.

Setiawan, I., Ahmad Mudzakir, Nurhaeti, Gina Sakinah, & Ponirah, A. (2022). Implementation of Murabahah Financing Transactions at Islamic Commercial Banks After the Abolition of Value-Added Tax. Journal of Islamic Economics Lariba, 8(2), 295–310. https://doi.org/10.20885/jielariba.vol8.iss2.art3

Sri Hartati, D., Dailibas, & Mubarokah, I. (2021). Pengaruh Pembiayaan Mudharabah , Musyarakah Dan Ijarah Terhadap. Jurnal Ilmiah Ekonomi Islam, 7(01), 235–240.

Tiyah, A. (2022). Implementasi Bagi Hasil Di Perbankan Syariah. 120.

Utama, A. S. (2018). History and Development of Islamic Banking Regulations in the National Legal System of Indonesia. Al-'Adalah, 15(1), 37–50.

Yanti, S. I. (2020). Istishna Terhadap Profitabilitas Bank Umum Syariah Di Indonesia Selama 2015-2018. Jurnal Tabarru': Islamic Banking and Finance, 3(1), 41–47.

Yasin, M. N. (2010). Argumen Eksistensi Bank Muamalat Di Indonesia Sebagai Perbankan Syariah. De Jure: Jurnal Hukum Dan Syar'iah, 2(1). https://doi.org/10.18860/j-fsh.v2i1.48.

Zaini, F., Bin Shuib, D. M. S., & bin Ahmad, D. M. (2019). the Prospect of Sharia Banking in Indonesia (Opportunities, Challenges and Solutions). International Journal of Business Management and Economic Review, 02(04), 01–14. https://doi.org/10.35409/ijbmer.2019.2401

Zia Ulhaq, M., & Rasyad Al Fajar, M. (2022). Peluang Dan Tantangan Bank Syariah Di Era Digital. Jurnal Ekonomi Syariah, 5(1), 49–61.