

The Potential of Islamic Finance Stocks to Encourage Economic Sustainability

Akbar Arta Putra¹, Brian Pratistha², Megawati Suharsono Putri³, Bertho Tantular⁴, Syandi Negara⁵, Nurlia Rahmatika⁶, Yurike Patrecia Marpaung⁷, Syarah Siti Supriyanti⁸, Lindri Setyaningrum⁹, Ahmad Syafiq Kamil¹⁰, Athifah Fauzia Afiz¹¹, Lyfia Indah Maulia¹², Achmad Efendi¹³, Solimun¹⁴

{akbar20003@mail.unpad.ac.id¹, brian.pratistha@umj.ac.id², mega010@brin.go.id³, bertho@unpad.ac.id⁴, syan001@brin.go.id⁵, nurl014@brin.go.id⁶, yuri003@brin.go.id⁷, syar020@brin.go.id⁸, lind010@brin.go.id⁹, ahma089@brin.go.id¹⁰, athifah2706@gmail.com¹¹, lyfiaindahm22@gmail.com¹², a_efendi@ub.ac.id¹³, solimun@ub.ac.id¹⁴}

Padjadjaran University, West Java, Indonesia^{1,4}, University of Muhammadiyah Jakarta, South Tangerang, Indonesia², Directorate of Economy, Employment and Regional Development Policy, National Research and Innovation Agency, Jakarta, Indonesia^{3,5,6,7,8,9,10}, Brawijaya University, East Java, Indonesia^{11,12,13,14}

Abstract. Indonesia's large Muslim population leads to an increasing public preference for Islamic banking. This is according to the ranking of Indonesia, which ranks first in the "Islamic Finance Country Index" which released in Global Islamic Finance Report. Sharia stocks in Indonesia have continued to rise over the past five years, but Indonesian public interest in Islamic stocks is still low. In this study, the authors use a fundamental stock analysis approach and statistics to recommend the best Islamic stock investment. The three stocks selected on PBV, EPS and P/E values are forecast using the ARIMA method and double exponential smoothing to determine the potential of the stocks over the next three years. The two forecasting methods are compared to determine which way is better based on the MAPE value. The results showed that the three stocks perform better with the ARIMA method than with the double exponential smoothing method because the MAPE value is smaller. The BRIS share price forecast shows a price increase over the next three years, while the estimates for BTPS and PNBS shares show a decline over this period. From this, it can be concluded that Islamic financial stocks have no potential for the next three years. However, stocks for Islamic banking have excellent prospects.

Keywords: Islamic Finance, Stocks, Economic, Forecast.

1 Introduction

Indonesia comprises 254.9 million people, with a Muslim percentage of 85% (Muhammad Hikmah, 2017). The Muslim community's preference for Islamic banking is increasing. This is according to the ranking of Indonesia, which ranks first in the Islamic Finance Country Index (IFCI) in the Global Islamic Finance Report 2021 (Ajeng, 2021). Also, in the Global Islamic Economy Indicator 2020, Indonesia ranks fourth in the world in Sharia economic indicators (Ahmad et al., 2022). The Ministry of Finance stated that during the Covid epidemic, the performance of Islamic banking in Indonesia was rather more stable (Ulinnuha et al., 2020 & Sri Mahargiyantie, 2020). This can be seen from the fact that Islamic banks' assets grew 10.97% faster than conventional banks, which grew just 7.77% in 2020. Islamic banks' third-party funds grew by 11.65%, slightly faster than traditional banks' 11.49%. Sharia bank financing distribution increased by 9.42% compared to conventional financing, which increased by only 0.55% (Sri Mahargiyantie, 2020).

In the master plan of Indonesia's Islamic financial architecture, the capital market is one of the development areas of Islamic finance. Islamic stocks are the most stable Islamic capital market (Ulinnuha et al., 2020). Sharia holdings in Indonesia have continued to rise over the past five years. This was reinforced by a 6.02% increase in the ISSI index at the end of June 2022 (Gita, 2023). However, the interest of the Indonesian public in Islamic stocks is still low. This may be observed in the Islamic banking market share in 2022, which is still about 7% (Dedi et al., 2023).

The existence of Islamic stocks was relatively more stable than conventional stocks during the Covid 19 pandemic (Ahmad Rizali, 2022). Therefore, this research will examine whether Islamic financial stocks are more stable during the current global uncertainty. Moreover, Islamic financial stocks can be used as a supporting instrument for waqf as a driving force for fresh funds so that it can encourage economic sustainability (Khafid Al-hakim, M. L., 2020)

2 Literature Review

In previous research, Ahmad (2019) predicted Islamic stocks using the Long Short Term Memory Network (LSTM) method. However, this study only forecasts all Islamic stocks using the Jakarta Islamic Index (JII), not specifically for Islamic financial stocks. Zahra et al. (2021) did the same, using trend analysis to predict all Islamic stocks using the Indonesia Sharia Stock Index (ISSI). Mery (2022) forecasts all Islamic stocks which release by Jakarta Islamic Index (JII) by using Generalized Autoregressive Conditional Heteroscedasticity (GARCH). Therefore, this research is made more specific using Islamic financial inventory data. The best Sharia financials are selected and forecasted for the next few years. The method used was also done in stages, namely using fundamental analysis as the parameter for selecting the best stocks, then forecasting using the autoregressive integrated moving average (ARIMA). Another method used for forecasting is double exponential smoothing (DES). Selecting the best model by comparison of Mean Absolute Percent Error (MAPE).

3 Methods

Based on the Resolution of the Board of Commissioners of the Financial Services Authority Number KEP-81/D.04/2022, there are five Islamic financial stocks in Indonesia, namely PT. Bank Aladin Syariah Tbk. (BANK), PT. Indonesia Sharia Bank Tbk. (BRIS), PT. Bank BTPN Syariah Tbk. (BTPS), PT. Sharia Life Insurance Jasa Mitra Abadi Tbk. (JMAS), PT. Bank Panin Dubai Syariah Tbk. (PNBS). This study uses 5 Islamic financial inventory dates. Historical data consisted of 59 observations. The dates range from June 2018 to April 2023.

The first step is fundamental analysis to determine the safety level of a stock over the long term (Annuridya et al., 2020). In this study, the three companies with the highest fundamental factor scores in terms of corporate sustainability assurance are selected. There are three factors used in fundamental analysis, namely Price Book Value (PBV), Earnings Per Share (EPS) and Price Earnings Ratio (PER) (Yuli et al., 2020). The function of each factor is

$$PBV (Ratio) = \frac{\text{Current share price}}{\text{First share price}}$$

$$EPS (Rupiah) = \frac{\text{Net profit}}{EPS}$$

$$PER (Rupiah) = \frac{\text{Stock price}}{EPS}$$

A good PBV value is close to 1. The ideal EPS value is that the ideal stock has a higher EPS value than other stocks compared to other stocks. The ideal P/E ratio is when the outstanding stock has a higher P/E ratio than other stocks relative to other stocks. 3 Selected stocks are further analyzed using autoregressive integrated moving average (ARIMA). After that, it is analyzed by using double exponential smoothing. The ARIMA(p,d,q) model is described as follows

$$(1 - \phi_1 B - \dots - \phi_p B^p)(1 - B)^d X_t = (1 - \theta_1 B - \dots - \theta_q B^q) a_t$$

with X_t : time series data; p: order autoregressive; d: order of differentiation, ϕ_p : autoregressive coefficient of the highest order p; θ_q : The coefficient of the highest order moving average; q: moving average order; B: backshift operators; d: differentiation process of the highest order; a_t : Error processing time series (Nabilah et al., 2020). Another forecasting method uses double exponential smoothing with functions.

$$S_t = \alpha_e X_t + (1 - \alpha_e)(S_{t-1})$$

$$S_t^* = \alpha_e S_t + (1 - \alpha_e)(S_{t-1}^*)$$

$$c_t = S_t + (S_t - S_t^*)$$

$$d_t = \frac{\alpha_e}{1 - \alpha_e} + (S_t - S_t^*)$$

$$F_{t+m} = c_t + d_t m$$

With S_t : Single smoothing value; S_t^* : Double smoothing value; α_e : constant with a value between 0 and 1; c_t, d_t : smoothing constants; F_{t+m} : forecast value m goes forward; m: Current period (Megawati et al, 2022). In this study, double exponential smoothing is used using two parameters

$$S_t = \alpha_e X_t + (1 - \alpha_e)(S_{t-1} + T_{t-1}), 0 < \alpha_e < 1$$

$$T_t = \beta_e(S_t - S_{t-1}) + (1 - \beta_e)T_{t-1}, 0 < \beta_e < 1$$

$$F_{t+m} = S_t + mT_t$$

With S_t : The level or average smoothing value of the data; X_t : Actual data at time t; T_t : trend smoothing value; α_e, β_e : constants with values between 0 and 1.

The prediction results between ARIMA and DES are compared by comparing the mean absolute percentage error (MAPE) to function

$$MAPE = \frac{1}{n} \sum_{t=1}^n \frac{|X_t - \hat{X}_t|}{X_t}$$

with X_t : Actual data at time t; \hat{X}_t : Forecast data at time t; n: The number of forecast periods involved. The lowest MAPE value is the best model to forecast the data for the next three years.

4 Results and Discussions

This study uses fundamental analysis to select the best stocks for forecasting. The fundamental factors used are PBV, EPS, and PER. A good PBV value is close to 1. The outstanding EPS value is that the outstanding stock has a higher EPS value than other stocks compared to other stocks. The ideal P/E ratio is when the ideal stock has a higher P/E ratio than other stocks relative to other stocks. Table 1 is the results of a fundamental analysis of Islamic stocks in the financial sector using the three parameters above.

According to Table 1, BRIS, BTPS, and PNBS have the best parameter values for fundamental analysis when compared to other companies. Therefore, the three companies will forecast their stock prices. The stock price forecast for each company uses two forecasting methods, namely the ARIMA method and the exponential smoothing method. The model formed from the two methods is used to predict or predict the stock prices for the following timeframes.

Table 1. Fundamental Analysis of Sharia Stocks in the Financial Sector

Sharia Stock Company	Fundamental Factors		
	PBV	EPS	PER
PT. BANK SYARIAH INDONESIA TBK	2.28	126.45	13.68
PT. BANK BTPN SYARIAH TBK	1.66	220.53	8.62
PT. BANK ALADIN SYARIAH	6.08	-12.60	-101.96
PT. ASURANSI JIWA SYARIAH JASA MITRA ABADI TBK	0.54	3.20	15.72
PT. BAND PANIN DUBAI SYARIAH TBK	0.86	6.20	9.03

Stock data is secondary data sourced from April 2018 to April 2023 from Yahoo Finance. The stock price data used is divided into two parts. The initial closing price data of 80% of the total data is used as in-sample data for the forecast, and the final closing price data of 20% of the

total data is used as out-sample data for comparison with the results of the forecast that was made.

Research data used must be in a steady state in ARIMA. Good forecasts are obtained under steady-state data conditions. In the first phase, the static data for all inventory data are checked using a time series chart and a Uni-Root test. If the data are not steady during verification, the differencing process can be performed to make the data to be stationary. **Figure 1**, **Figure 2**, **Figure 3** are charts of each stock's time series chart before and after differentiation. Results of data processing using R Studio.

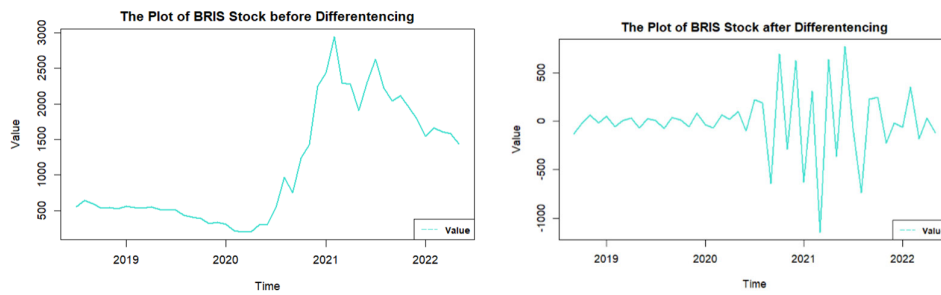


Fig. 1. Time Series Plot of BRIS Shares Before and After Differencing

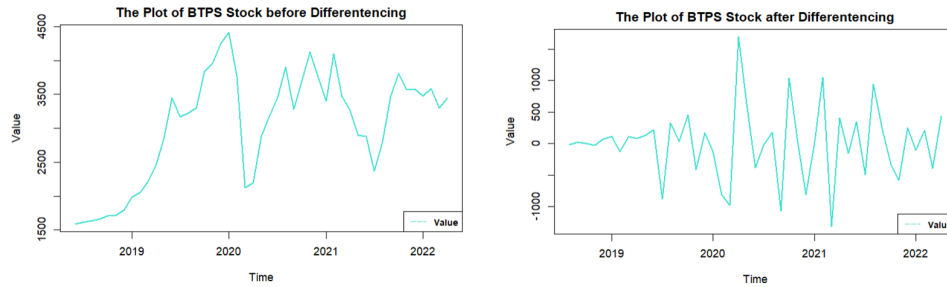


Fig. 2. Time Series Plot of BTPS Shares Before and After Differencing

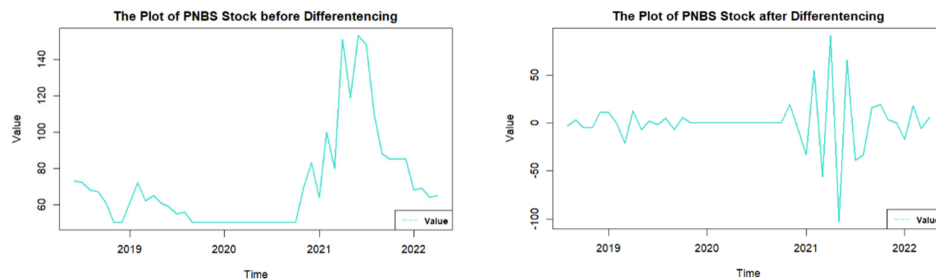


Fig. 3. Time Series Plot of PNBS Shares Before and After Differencing

The autocorrelation function (ACF) and partial autocorrelation function (PACF) graphs can then be used to create an ARIMA model. **Figure 4, Figure 5, and Figure 6** are graphics of each stock price's ACF and PACF charts. Data processing results by using R Studio. The ACF and PACF plot diagrams determine the order in the ARIMA model. The q-order is determined by looking at the delay in the ACF diagram, while the p-order is determined by looking at the delay in the PACF diagram.

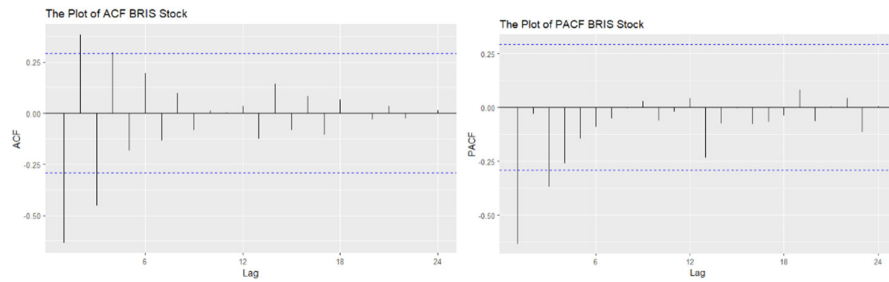


Fig. 4. Graph of ACF and PACF Slots of BRIS Shares

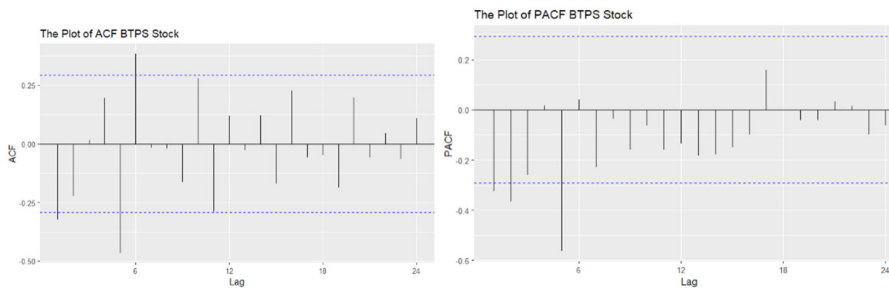


Fig. 5. Graph of ACF and PACF Plots of BTPS Shares

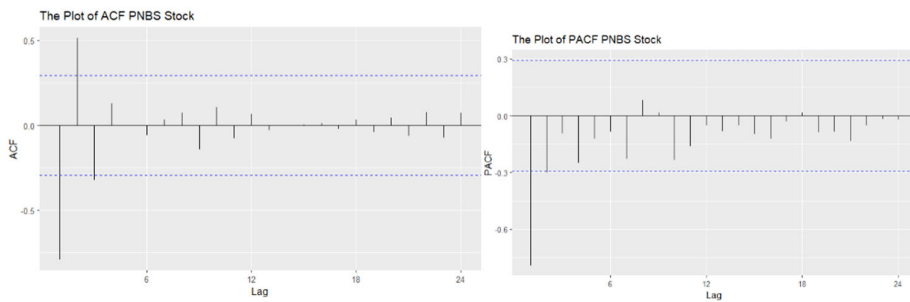


Fig. 6. Graph of ACF and PACF Plots of PNBS Shares

After the model order has been determined, the model is tested for model diagnosis. Testing the model assumptions includes which are normality assumption of the residuals, autocorrelation assumption with white noise, heteroscedasticity assumption with white noise. AIC (Akaike Information Criterion) values are calculated for models that meet all assumptions. The best ARIMA model in the stock is the one with the lowest AIC value. The best ARIMA model for each stock is seen in Table 2. The ARIMA models presented above anticipate stock values over the following three years.

Table 2 Best ARIMA Model

Stock	Arima Model
BRIS	ARIMA (2,2,3)
BTPS	ARIMA (5,2,0)
PNBS	ARIMA (1,2,1)

Holt's double exponential smoothing approach is used in the exponential smoothing method. Because the research data represents a trend rather than seasonal, the Holt double exponential smoothing method is used in this study with two parameters. The next step will be forecasting BRIS, BTPS, and PNBS for the next three years. Based on the forecast results obtained, the MAPE value is used to determine the size of the error resulting from the forecast results for each method. **Figure 7, Figure 8, and Figure 9** are charts showing the forecast results for each stock.

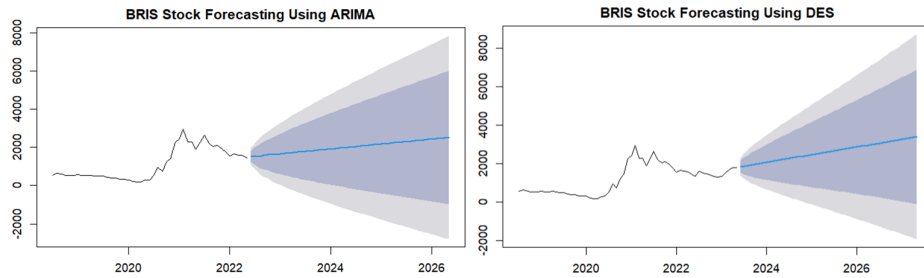


Fig. 7. Forecasting Results of BRIS Stock Prices Using ARIMA and Double Exponential

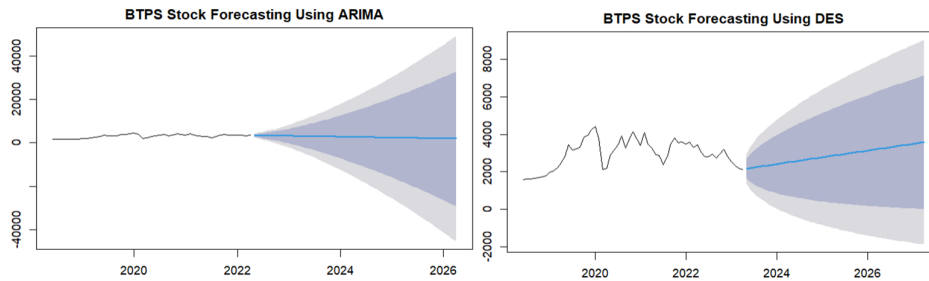


Fig. 8. Forecasting Results of BTPS Stock Prices Using ARIMA and Double Exponential

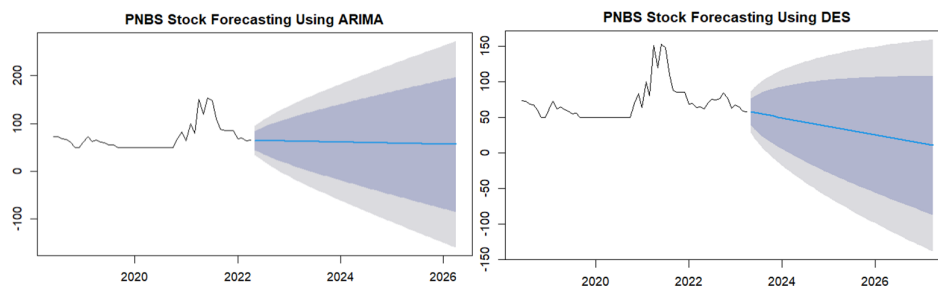


Fig. 9. Forecasting Results of PNBS Stock Prices Using ARIMA and Double Exponential

Based on the forecast results plot above, the ARIMA model and double exponential smoothing plot produce similar forecast plots. The MAPE value is an error parameter to validate the forecast results. The MAPE value is the average total error value in comparing the forecast data of each method and actual data. Table 3 is the MAPE value for each method. According to Table 3, the MAPE value of the ARIMA method and DES method is good because it is still less than 20%. For each organization, the MAPE value of the ARIMA approach and the DES method is comparable. The MAPE value of the ARIMA approach, on the other hand, is less than that of the DES method. As a result, the ARIMA technique with the forecast model ARIMA (2,2,3) for BRIS shares, ARIMA(5,2,0) for BTPS shares, and ARIMA(1,2,1) for PNBS shares is superior. In comparison to the method of double exponential smoothing.

Table 3. MAPE Value (%) of Each Method

Stock	ARIMA Method	Double Exponential Smoothing Method
BRIS	12.68450	18.84164
BTPS	8.59239	10.16631
PNBS	9.747082	10.16811

The ARIMA approach forecasts the three equities' monthly closing prices over the next 3 years. The forecast of the monthly closing price of shares results in several outcomes. Based on the above Monthly Closing Price Forecast results, BRIS shares will see price increases over the next 3 years, while BTPS and PNBS shares will see price declines over the next 3 years.

Table 4. Summary of Monthly Stock Closing Prices

Stock	Lowest Price	Month	Highest Price	Month
BRIS	1747.004	May 2023	2497.737	April 2026
BTPS	1874.208	April 2026	2996.226	June 2023
PNBS	56.21894	April 2026	62.38102	May 2023

5 Conclusion

Islamic stocks in the financial sector can be researched using fundamental and statistical analysis approaches. The fundamental analysis approach produced the top three stocks: BRIS, BTPS and PNBS. They are forecasting the top three stocks using the ARIMA method, and double exponential smoothing results in good forecasts, as the resulting error is still less than 20%. In addition, the ARIMA method is the best method for the three stocks because the error value generated with the ARIMA method is smaller than the DES method.

Forecast results using the ARIMA method for the next three years (May 2023 – April 2023) show different results for each stock. BRIS shares experienced a constant rise over the next three years, while BTPS and PNBS shares experienced a decline over the next three years. Based on these results, the most stable Islamic financial stocks rose, namely only Bank Syariah Indonesia shares. From this, it can be concluded that Islamic financial stocks have no potential for the next three years. However, stocks for Islamic banking have excellent prospects. This is evident from the graph, which continues to rise.

References

- [1] Fauzi, A. (2019). FORECASTING SAHAM SYARIAH DENGAN MENGGUNAKAN LSTM. *Al-Masraf: Jurnal Lembaga Keuangan Dan Perbankan*, 4(1), 65. <https://doi.org/10.15548/al-masraf.v4i1.235>.
- [2] Fitria, I., Alam, M. A., & Subchan, S. (2017). Perbandingan Metode ARIMA dan Exponential Smoothing pada Peramalan Harga Saham LQ45 Tiga Perusahaan dengan Nilai Earning Per Share (EPS) Tertinggi. *Limits: Journal of Mathematics and Its Applications*. <https://doi.org/10.12962/limits.v14i2.3060>.
- [3] Fitriani, A. K. N. (2022). Peran Akuntan Syariah dalam Menghadapi Society 5.0 Pada Era VUCA. *Eth Hikmah*, M. (2017). TINGKAT KETERTARIKAN MASYARAKAT MUSLIM TERHADAP BANK SYARIAH DI YOGYAKARTA, INDONESIA. <https://jurnal.bppk.kemenkeu.go.id/fikn/article/view/443>.
- [4] Khafid Al-hakim, M. L. (2020). Wakaf Manfaat Saham Syariah untuk Kemaslahatan. *Al-Awqaf: Jurnal Wakaf Dan Ekonomi Islam*, 11(1), 89-100. <https://doi.org/10.47411/al-awqaf.v11i1.30>
- [5] Khodijah, Z., & Sirodj, D. a. N. (2021). Analisis Trend dalam Meramalkan Harga Saham pada Indeks Saham Syariah Indonesia (ISSI) Tahun 2021. *Prosiding Statistika*, 441–448. <https://doi.org/10.29313/v0i0.28764>.
- [6] Mahargiyantie, S. (2020, May 11). PERAN STRATEGIS BANK SYARIAH INDONESIA DALAM EKONOMI SYARIAH DI INDONESIA. <http://jurnal.umika.ac.id/index.php/almsibah/article/view/135>.
- [7] Malik, A. D., Juliana, A., & Widyasella, W. (2020). Perbandingan Metode Eksponential Smoothing dan Arima: Studi Pada Perusahaan Barang Konsumsi di Indonesia. *Moneter*, 7(2), 180–185. <https://doi.org/10.31294/moneter.v7i2.8666>.
- [8] Octasyilva, A. R. P., & Fachroji, F. (2020). Analisis Fundamental Saham Sektor Food and Beverage pada LQ45 Periode I Tahun 2020. *Jurnal Ilmu Pengetahuan Dan Teknologi (IPTEK): Journal of Science and Technology*, 4(2). <https://doi.org/10.31543/jii.v4i2.168>.
- [9] Purwanti, Y., & Nurastuti, P. (2020). KINERJA PERANGKAT DESA: MOTIVASI KERJA DAN KO Putri, M., Prastha, B., Negara, S., Kamil, A., & Pasaribu, A. (2022). MULTIMODAL INTEGRATION MODEL FOR REDUCING NATIONAL LOGISTICS COSTS. *Acta Logistica*, 9(3), 353–360. <https://doi.org/10.22306/al.v9i3.322>.
- [10] Rizali, A. (2022). EKSISTENSI DAN STRATEGI PENGEMBANGAN SAHAM SYARIAH DI MASA PANDEMI COVID-19. *Fakultas Ekonomi dan Bisnis Islam, Institut Agama Islam Negeri (IAIN)*

Palangka Raya

[11] Saputra, D., & Lidyah. (2023). PENGARUH MARKET SHARE PERBANKAN SYARIAH DAN PERTUMBUHAN EKONOMI TERHADAP PENURUNAN TINGKAT PENGANGGURAN TERBUKA DI INDONESIA. *Taraadin : Jurnal Ekonomi Dan Bisnis Islam*, 3(1).

[12] Sukartini, M. (2022, March 31). Penerapan Model Generalized Autoregressive Conditional Heteroscedasticity (GARCH) dalam Peramalan Indeks Saham Syariah di Negara Asia. <https://dspace.uui.ac.id/handle/123456789/39513>.

[13] Syafitri, N. (2020, October 12). Pemodelan Pergerakan Harga Saham Bakrie Menggunakan Metode ARIMA (Autoregressive Integrated Moving Average). <https://journal.itera.ac.id/index.php/indojam/article/view/292>.

[14] Ulinnuha, M. W., Susilowati, D., & Hana, K. F. (2020). Persepsi Investor Pemula Terhadap Pembelian Saham Syariah di Indonesia. *Jurnal Ilmu Ekonomi Dan Bisnis Islam*. <https://doi.org/10.24239/jiebi.v2i1.20.1-14>.

[15] Umar, A. U. a. A., & Haryono, S. (2022). Kinerja Keuangan Bank Syariah: Perbandingan Studi dari Indonesia, Malaysia, Arab Saudi dan United Emirates Arab. *Jurnal Program Studi Akuntansi Politeknik Ganesha*, 6(2), 1830–1840. <https://doi.org/10.33395/owner.v6i2.822>.