УДК *336.76*
JEL Code *F30, O10*

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Вплив обмінного курсу, валютних резервів та індексу споживчих цін на індекс ісламських акцій країн Азії

Жителі азійських країн, які сповідують іслам, можуть володіти так званими ісламськими акціями, що підтверджують їх участь у капіталі компанії. Ця концепція пайової участі з правами на отримання частки операційного доходу відповідно до утримуваних акцій не суперечить принципам шаріату. Мета даного дослідження – з'ясувати вплив обмінного курсу, валютних резервів та індексу споживчих цін на індекс ісламських акцій на фондових біржах країн Азії. Об'єктом дослідження став ісламський фондовий індекс Індонезії, Малайзії, Японії та Індії. Ісламський фондовий індекс базується на критеріях дотримання шаріату та включає компанії, які обрані за такими критеріями. На фондові індекси впливає чимало факторів, зокрема: внутрішні процентні ставки, курси іноземних валют, міжнародні економічні умови, економічний цикл країни, рівень інфляції, податкове регулювання та грошова маса. В даному дослідженні автори вивчають вплив лише трьох факторів – обмінного курсу, валютних резервів та індексу споживчих цін. Для тестування гіпотези дослідження автори використовують метод панельної регресії, беручи дані за період з січня по грудень 2019 року. Як свідчать результати проведеного аналізу, зміна курсу валют, валютні резерви та індекс споживчих цін разом мали значний вплив на ісламський фондовий індекс країн Азії. Значення R-квадрата дорівнює 0,997762 – це означає, що 99 % усіх змін в ісламському фондовому індексі країн Азії можна пояснити варіаціями таких змінних як обмінний курс, валютні резерви та індекс споживчих цін. Результати проведених тестів показують, що: а) обмінний курс мав значний негативний вплив на ісламський фондовий індекс країн Азії; б) валютні резерви мали значний позитивний вплив на ісламський фондовий індекс країн Азії; в) індекс споживчих цін також мав значний позитивний вплив на ісламський фондовий індекс країн Азії.

Ключові слова: *індекс ісламських акцій, економічна інтеграція, обмінний курс, валютні резерви, індекс споживчих цін.*

DOI https://doi.org/10.33146/2307-9878-2020-3(89)-77-82

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Effect of Exchange Rate, Foreign Exchange Reserves, and Consumer Price Index on the Shariah Shares Index of Asian Countries

Sharia shares are securities proof of equity participation in a company. On the base of this proof of participation shareholders are entitled to a share of income arisen from the company's business. This concept of equity participation with share rights of operating income does not conflict with Sharia principles. This study aimed to analyze the effect of exchange rate, foreign exchange reserves and consumer price index on the Sharia stock index of Asian countries, where the research object was the Islamic stock index of Indonesia, Malaysia, Japan and India. It is known that many factors influence on the stock index movements in a country, including domestic interest rates, foreign exchange rates, international economic conditions, a country's economic cycle, inflation rates, tax regulations, and the money supply. In this study, the authors examine the influence of only three factors – the exchange rate, foreign exchange reserves and consumer price index. The panel data regression method was used for the period of January to December 2019. The results of the regression analysis shown that the variables of exchange rates, foreign exchange reserves and the consumer price index together had a significant effect on the Islamic stock index of Asian countries. The R-squared value was 0.997762, meaning that 99% of the variation in the Islamic stock index of Asian countries could be explained by variations in the variable exchange rates, foreign exchange reserves and the consumer price index. The individual test results show that the exchange rate had a significant negative effect on the Islamic stock index of Asian countries. Meanwhile, foreign exchange reserves and the consumer price index had a significant positive effect on the Islamic stock index of Asian countries.

Keywords: *Sharia share index, economic integration, exchange rate, foreign exchange reserves, consumer price index.*

Statement of problem.

Sharia shares are securities proof of equity participation in a company. On the base of this proof of participation shareholders are entitled to a share of income arisen from the company's business. This concept of equity participation with share rights of operating income does not conflict with sharia principles. Sharia principles recognize this concept as musharaka or syirkah. Sharia stocks are an alternative investment in the capital market besides sukuk and Islamic mutual funds which are part of sharia securities.

A large of Muslims population in the world is an enormous potential for the Islamic stock market. Malaysia, Japan and India which were the objects of this research had stock indexes that were categorized as sharia. The listed companies were free from the such business fields as alcohol, cigarettes / tobacco, pork, conventional financial services, Défense and Weapons, Entertainment (Hotels, Casino / Gambling, Cinema, Music) (Achsien (2000)).

The following is the average Islamic stock index for Indonesia, Malaysia, Japan and India in 2015-2019:

Table 1

Sharia Share Index Average

Countries	2015	2016	2017	2018	2019
Indonesia	155.30	165.19	182.62	181.47	188.11
Malaysia	840.40	763.23	753.44	837.80	763.00
Japan	1399.47	1470.25	1717.20	1909.40	1856.54
India	2217.08	2081.25	2369.64	2567.63	2552.04

Source: Investing.com (2020).

Table 1 shows the development of the Islamic stock index of Asian countries in five years from 2015 to 2019, where it can be seen that the development of the stock index value fluctuated every year. According to Chabachib and Witjaksono (2011) many factors influenced stock index movements in a country, including domestic interest rates, foreign exchange rates, international economic conditions, a country's economic cycle, inflation rates, tax regulations, and the money supply.

This study used exchange rate variables, foreign exchange reserves and the consumer price index. The three variables were tested for their effects on the Islamic stock index of Indonesia, Malaysia, Japan and India. Beik (2014) in his research stated that the exchange rate had had no significant negative effect on the Jakarta Islamic Index (JII). Zahara et al. (2020) in his research stated that foreign exchange reserves had had a positive relationship with the Jakarta Islamic Index. Meanwhile, Hussin et al. (2012) stated that the Consumer Price Index had had a positive and significant effect on the stock index in Malaysia. The difference between this study and previous research is that this study was to examine the effect of macroeconomic variables on the four Sharia stock indexes of Indonesia, Malaysia, Japan and India.

Beik's research (2014) stated that the consumer price index had not had a significant effect on the Islamic stock index. However, this study is consistent with the results of research by Hussin et al. (2012) which stated that the Consumer Price Index had had a positive and significant impact on the stock index in Malaysia. This possibly happened because investors were still safe to invest by hedging (Hedging Operation). As far as we concern that investment always has unavoidable risks for investors including the risk of fluctuating inflation values.

Literature review.

There had been several studies examining the effect of macroeconomic variables on the sharia stock index. The macroeconomic variable of those study was the exchange rate which was positively and negatively related. Fitriyanti (2016) and Maysami (2004) stated that the exchange rate had had a positive and insignificant effect. Meanwhile, Firdausi (2016), Suciningtias (2015), Ardana (2016), Riadi (2012), Utoyo (2017), Setiawan (2015) stated in their research that exchange rates had had a negative and significant effect on the Sharia Stock Index.

Furthermore, foreign exchange reserves had a proven positive relationship. Mayfi (2014) stated that foreign exchange reserves had had a positive and insignificant effect on stock returns. Also research by Zahara et al (2020) stated that foreign exchange reserves had had a positive relationship with the Jakarta Islamic Index.

Conceptual framework.

The conceptual framework of this study can be seen in Figure 1.

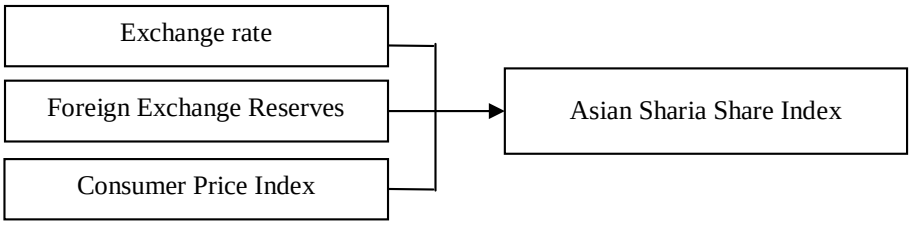

Figure 1. **The conceptual framework of the study**

Source: built by the author.

Figure 1 is a conceptual framework that had been analyzed to see the effect of exchange rates, foreign exchange reserves and the consumer price index on the Islamic stock index of Asian countries in the period of 2015-2019.

H_1: The rupiah exchange rate had a negative effect on the development of Islamic stock prices in Asian countries;

H_2: Foreign Exchange Reserves had a positive effect on the development of Islamic stock prices in Asian countries;

H_3: The Consumer Price Index had a negative effect on the development of Islamic stock prices in Asian countries.

Model and method analysis. The data was secondary data where the data was a report on the development of the closing stock price index at the end of the month cited from the Indonesian Sharia Stock Index (ISSI), the Dow Jones Islamic Market Malaysia Index (DJIMY), the Dow Jones Islamic Market Index (DJIJP), Dow Jones Islamic Market India Index (DJIMIND), Exchange Rate, Foreign Exchange Reserves and Consumer Price Index. The models used in this research are:

$$ISSA_{it} = \alpha + \beta_1 Kurs_{it} + \beta_2 Dev_{it} + \beta_3 IHK_{it} + e_{it}$$

Remarks:

$ISSA_{it}$: Asia share sharia Index variable

α : Constanta

B : Regression Coefficient of each variables

$Kurs_{it}$: Exchange rate

Dev_{it} : Foreign exchange rate

IHK_{it} : Consumer price index

e : *error term*

Result and discussion.

Table 2

Best model selection

Model selection	Criteria	Conclusion
Chow test	Value of Prob Cross Section F (0.0000) < *sig* (α = 5%)	*Fixed Effect* better than Common *Effect*
Hausman test	Value of Prob Cross Section F (0.0000) < *sig* (α = 5%)	*Fixed Effect* better than *Random Effect*
LaGrange Multiplier test	-	-

Source: built by the author.

Table 3

Classical assumption test

Exam	Probability	Conclusion
Normality Test	0.145743 > *sig* (α = 5%)	*Free from normality problems*
Multikolonieritas Test	Values among variables < 0,8	*Free from autocorrelation problems*
Heterocedasticity Test	All variables have probability value > *sig* (α = 5%)	*Free from Heterocedasticity problems*

Source: built by the author.

Table 3 shows that this research model was free from any classical assumption test, and it meant that this had been eligible to go further to the next step.

Table 4

Regression Data Panel Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.181646	0.471807	8.863035	0.0000
KURS	-0.965661	0.112398	-8.591455	0.0000
DEV	0.730867	0.095446	7.657362	0.0000
IHK	0.670037	0.154039	4.349783	0.0000

Indonesia-C	3.374170
Malaysia-C	-2.715432
Japan-C	-0.543807
India-C	-0.114932

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.997762	Mean dependent var	8.157034
Adjusted R-squared	0.997704	S.D. dependent var	2.138475
S.E. of regression	0.066727	Sum squared resid	1.037437
F-statistic	17313.34	Durbin-Watson stat	0.436272
Prob (F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.995566	Mean dependent var	6.750422
Sum squared resid	1.075347	Durbin-Watson stat	0.281280

The relationship between exchange rate and Sharia Stock Index of Asian countries.

The exchange rate variable had a coefficient value of -0.965661, the coefficient value which was negative, indicated that if the exchange rate variable had increased, the level of the Islamic stock index in Asian countries would have decreased, on the other hand, if the exchange rate variable had decreased, the Islamic stock index of the countries Asia would have experienced a decline. With a coefficient of -0.965661, meaning that if the exchange rate had increased by 1 point, the value of the Islamic stock index of Asian countries would have decreased by -0.965661, assuming other variables were considered constant. The exchange rate variable had a probability value of 0.0000, this value was smaller than the significance level of 0.05, so it can be concluded that the hypothesis had been accepted, which means that the exchange rate had a significant effect on the Islamic stock index of Asian countries. There was a significant negative relationship between the exchange rate and the Islamic stock index of Asian countries. If the exchange rate had depreciated, this would have resulted in companies importing raw materials from abroad. The companies would have experienced an increase in production costs, and this would have reduced the level of company profits and would have resulted in a decrease of investor interest in stock index. The significant relationship occurred due to the fact that almost all countries experienced problems related to their consistency in suppressing the value of their currency against the US Dollar. This result was not in line with Fitriyanti (2016) and Maysami (2004) who had stated that the exchange rate had had a positive and insignificant effect. Furthermore, this study was consistent with Firdausi (2016), Suciningtias (2015), Ardana (2016), Riadi (2012), Utoyo (2017), Setiawan (2015) who stated in their research that exchange rates had had a negative and significant effect on the sharia Stock Index.

The foreign exchange reserve variable had a coefficient value of 0.730867, the positive coefficient value indicated that if the foreign exchange reserve variable increased, the level of the Islamic stock index of Asian countries would have increased, on the other hand, if the foreign exchange reserve variable decreased, the Sharia stock index of Asian countries would have experienced a decrease. With a coefficient of 0.730867, it means that if foreign exchange reserves increased by 1 point, the value of the Islamic stock index of Asian countries would have increased by 0.730867, assuming other variables were considered constant. The foreign exchange reserve variable had a probability value of 0.0000, this value was smaller than the significance level of 0.05, so it can be concluded that the hypothesis was accepted, meaning that foreign exchange reserves had a significant effect on the Islamic stock index of Asian countries. Foreign exchange reserves had a positive and significant effect, and this result was consistent with Mayfi's (2014) research which had stated that foreign exchange reserves had had a positive and insignificant effect on stock returns. Also research by Zahara et al. (2020) shows that foreign exchange reserves have a positive relationship with the Jakarta Islamic Index.

The consumer price index variable had a coefficient value of 0.670037, the coefficient value which was positive had indicated that if the consumer price index variable had increased, the level of the Islamic stock index in Asian countries would have increased, on the other hand, if the consumer price index variable had decreased, the state Islamic stock index would have increased. Therefore, Asian countries would have experienced a decline. With a coefficient of 0.670037, it means that if the consumer price index had increased by 1 point, the value of the Islamic stock index of Asian countries would have increased by 0.670037, assuming other variables were considerably constant. The consumer price index variable had a probability value of 0.0000, this value was smaller than the significance level of 0.05, so it can be concluded that the hypothesis was accepted, meaning that the consumer price index had a significant effect on the Islamic stock index of Asian countries. The consumer price index which was considered as an obstacle for investors to invest in stocks was not proven in this study. The study result indicated a significant positive relationship between the consumer price index and the Islamic stock index of Asian countries. This occurred due to the price index value, which consumers basically continued to increase. The increase in the consumer price index was closely related to the inflation rate. The higher consumer price index value was, the higher inflation rate would be. However, this apparently had no effect on the level of investment in Islamic stocks because the risk in investing could not be predicted, but investors could remain safe to invest by hedging (Hedging Operation). With all the potential losses associated with fluctuating economic conditions, investors would have felt safe with the investment they made. The consumer price index had a positive and significant effect, this result was not in line with Beik's research (2014) which had stated that the consumer price index had not had a significant effect on the Islamic stock index. However, this study was consistent with the results of research by Hussin et al. (2012) which had stated that the Consumer Price Index had had a positive and significant impact on the stock index in Malaysia. This happened because investors were still safe to invest by hedging (Hedging Operation). As far as we concerned that investment always had risks that investors would not be able to avoid, including the risk of fluctuating inflation values.

Conclusion.

The study results prove that the exchange rate, foreign exchange reserves and the consumer price index together had a significant effect on the Islamic stock index of Asian countries. In particular, these three variables had a strong influence on the Islamic stock index of Asian countries to almost 100%.

The individual test results show that:

– The exchange rate had a significant negative effect on the Islamic stock index of Asian countries;

– Foreign exchange reserves had a significant positive effect on the Islamic stock index of Asian countries;

– The consumer price index also had a significant positive impact on the Islamic stock index of Asian countries.

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