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Impact of The Global Stocks Index on The Shariah And Conventional Stocks Index in Indonesia

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The Islamic capital market plays an important role in the growth of the economy in Indonesia. During its development, the performance of the stock index in a country is often influenced by other stock indices in other countries. This study tries to analyze the dependence of the international stock index towards JII and JCI price, using Autoregression Distributed Lag (ARDL). Results show that there is a long-term cointegration of the global stock index to the Jakarta Islamic Index (JII). On the other hand, there is no cointegration between the global stock index and the Indonesian Composite Stock Price Index (JCI).

Keywords: ASEAN Exchange; ARDL; JII; JCI

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INTRODUCTION

The presence of the Islamic capital market in Indonesia plays an important role in the growth of the economy in this country. In the concept of economic growth, the capital market is one indicator of the stability of macroeconomic conditions where the capital market is an alternative source of financing for companies. In its development, the capital market acts as a place to raise capital. Meanwhile, from the public side, the Islamic capital market acts as an investment alternative to maintain the value of their currency. The progress of the capital market in Indonesia occurs as the public's knowledge increases about how to invest optimally and is supported by domestic economic conditions.

The emergence of sharia products in the capital market originated from a desire to accommodate the needs of Muslims who wish to invest in sharia principles. This was the reason behind PT Danareksa Investment Management to launch of Danareksa Syariah on July 3, 1997. Then on July 3, 2000, the Indonesia Stock Exchange in collaboration with PT Danareksa Investment Management launched the Jakarta Islamic Index (JII). Furthermore, Islamic investment products in the capital market continued to develop with the presence of Islamic bonds (Sukuk), Islamic mutual funds, and the Sharia Securities List (DES) which later transformed into the Indonesian Sharia Stock Index (ISSI).

Investment in Indonesia is currently experiencing a fairly good development. This is indicated by the better performance of the Composite Stock Price Index (JCI), LQ45, Jakarta Islamic Index (JII), and the Indonesian Sharia Stock Index (ISSI), which represent the actual conditions of the national Islamic capital market. The existence of Islamic stocks is in great demand by investors, this is reflected in the number of Islamic stocks which always increase every year. Furthermore, the value of Islamic stock capitalization as shown by the Jakarta Islamic Index (JII) has an increasing trend every year. This shows that the performance of the Jakarta Islamic Index has increased quite well.

During its development, the performance of the stock index in a country is often influenced by other stock indices in other countries. This is due to the increasingly integrated stock market due to increased capital flows between countries and the potential benefits from asset diversification at the international level (Royfaizal et al., 2009). This integration also has weaknesses that can cause an increase in co-movement which is vulnerable to economic shocks. Shocks in a stock market can affect other stock markets for three reasons. First, there is a dominant economic power, which is currently controlled by China because it has the largest GDP value in the world, amounting to 25.27 trillion dollars (IMF, 2019) and the United States where almost all international trade uses the dollar as a medium of exchange. Second, there is investor similarity, when countries that are geographically close together usually have the same pool of investors, so that the stock markets of these countries can influence each other. Finally, there is multiple stock listing, when a stock is listed on two or more stock markets, if there is a shock in a stock market, it can affect other stock markets (Janakiramanan & Lamba, 1998).

Geographically, the stock index in Indonesia is integrated into the ASEAN Exchange which includes the Indonesia Stock Exchange, the Malaysia Stock Exchange, the Hanoi Stock Exchange, the Ho Chi Minh Stock Exchange, the Philippine Stock Exchange, The Stock Exchange of Thailand, and the Singapore Exchange integrated into the ASEAN Exchanges. ASEAN Exchanges is a collaboration between the seven capital markets of ASEAN countries. The aim of establishing ASEAN Exchanges as an integration of the stock market in the Southeast Asian region is expected to bring benefits to the countries that are members of it. This is supported by Endri's research (2009) which states that regional stock market integration will be more attractive to international investors who will invest in areas that have advantages, including high stock liquidity and low transaction costs.

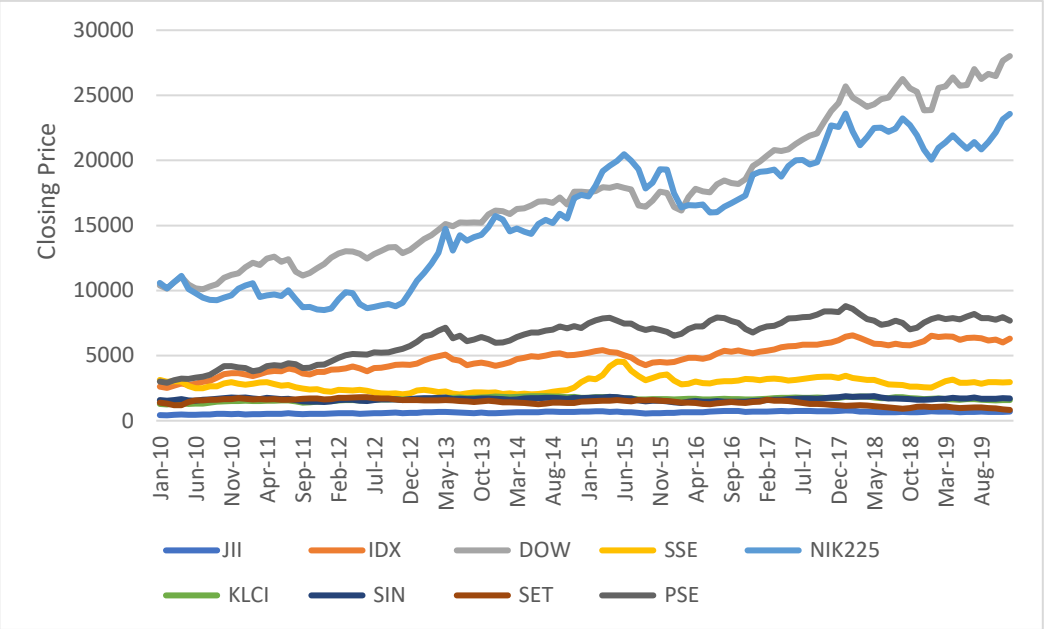

Figure 1: Global Stock Index Chart for 2010-2019
Source: Investing.com (data processed)

Figure 1 shows a graph of the movement of the stock exchange indexes of ASEAN countries, China and the United States stock index for the period 2010 to 2019. Based on this graph, the Jakarta Islamic Index (JII) activity tends to move stable, does not experience significant increases or decreases during the period. the. Besides, the graph also shows that in 2015 to 2016 there was a decline in most stock indices caused by several foreign sentiments such as Brexit, namely the referendum declaring Britain's exit from the European Union, Donald Trump's victory in the United States presidential election and the increasing interest rates of the central bank of the United States. However, according to Beik and Wardhana (2011) the performance of the Jakarta Islamic Index, which consists of the 30 most liquid stocks and has a very large-capitalization value, is proven to be empirically more stable than the performance of other stock markets.

There are several studies regarding the relationship between Islamic and conventional stock indices, one of which is Majdoub et al., (2016) who conducted a study entitled Market integration between conventional and Islamic stock prices, to assess market integration between conventional and Islamic stock prices from a long-term perspective. long and short for France, Indonesia, UK and the US. The results show long-term relationships for all countries, except for the UK where there is no cointegration between conventional and sharia stock prices. From a correlation perspective, there is evidence of a weak relationship between the Indonesian market and developed markets for conventional and Islamic stock prices, thus suggesting that investors can diversify their portfolios at the international level to minimize risks. However, there is a high relationship between developed country markets for conventional and Islamic indices. Meanwhile Rusydiana et al., (2019) examines some of the most important indicators of financial sector stability.

This study uses a quantitative method of Autoregressive Distributed Lag (ARDL) followed by an Error Correction Model (ECM) if there is cointegration. Previously, the available data would go through several tests, namely the unit root test (stationarity) and the cointegration test. The period used in this research is from January 2010 to December 2019. The data used are monthly data taken from the Indonesia Stock Exchange and Yahoo Finance.

LITERATURE REVIEW

Stocks are defined as proof or certificate of ownership of a person or an entity against the company that issued the securities, which can also be interpreted as the participation of investors as investors in a company so that they have a claim on the company's income and assets (Harsonon 2013). Stocks are one of

the most popular forms of investing. Stocks are issued by companies to raise capital. Stocks in the form of securities as proof of deposit of funds from investors to the company. Companies that issue stocks to be owned by the public are called public companies (Go Public). The stock trading mechanism is regulated by the Indonesia Stock Exchange (IDX) under the supervision of the OJK (Financial Services Authority). In investing, especially in stocks, there are two important things, namely the rate of return or return and risk. Investors generally want a maximum return with minimum risk (Nastiti & Suharsono, 2012).

According to Rivai & Buchari (2013), in general, two categories of stocks are commonly known in stock trading, namely preferred stocks and common stocks. Preferred stocks have a right to claim against the earnings and assets in the company where they invest the funds, but they cannot have voting rights in the election of directors and company decisions. And if a company goes bankrupt, preferred stockholder claims will take precedence over overpayments over common stockholders. Meanwhile, common stock has voting rights in the election of directors and decisions relating to the company. The dividends received by owners of common stocks may be greater than the owners of preferred stocks.

Sharia Stock

Sharia stocks are investment activities in the form of equity participation in companies that do not violate sharia principles in their activities (Heykal, 2012). According to Soemitra (2009), Islamic stocks are stocks issued by a company that has met the following requirements:

1. The type of business, goods or services provided and the contract and management method of the company that issues stocks (issuer) or the public company that issues sharia stocks must not be contrary to the principles of sharia. Types of business activities that are contrary to sharia principles include:
   a. Conventional financial institutions (*ribawi*/interest-based), including conventional banking and insurance;
   b. Producers, distributors and/providers of goods or services that destroy morals and are harmful;
   c. Conducting transactions with issuers which at the time of the transaction the company's debt level to the Ribawi financial institution is more dominant than its capital;
   d. Issuers of public companies that issue sharia stocks are required to sign and comply with the terms of the contract in accordance with the sharia stocks issued.
2. Issuers of public companies that issue sharia stocks are required to ensure that their business activities comply with sharia principles (Fatwa DSN No. 40/2003).

Stock Price Index

The stock price index is an indicator that shows stock price movements. The index serves as a trend indicator of the stock market that describes market conditions in certain conditions, both in good and sluggish conditions, the movement of the index is an important indicator for investors to determine whether they will sell, hold, or buy a certain amount of stocks (Masodah, et al. 2012).

In general, almost all countries have their stock index. There are even some countries that have more than one stock index, such as Indonesia which has the Composite Stock Price Index (JCI), the Jakarta Islamic Index (JII), and the Indonesian Sharia Stock Index (ISSI). The United States has Dow Jones, Dow Jones Islamic Market US (IMUS), and NASDAQ.

Composite Stock Price Index (JCI/IHSG)

The Jakarta Composite Index or JCI Composite is one type of index on the Indonesia Stock Exchange. JCI is to measure the performance value of all stocks listed on a stock exchange by using all stocks listed on the stock exchange as a component of the index calculation. JCI is used to determine the development and general situation of the capital market, not the situation of a particular company. This index includes the price movements of all common stocks and preferred stocks listed on the IDX.

According to Anoraga & Pakarti (2001), the JCI is an index that shows general stock price movements listed on the stock exchange as a reference for the development of activities in the capital market. This JCI can be used to assess the general market situation or to measure whether stock prices have increased or decreased. JCI also includes all stock prices listed on the stock exchange.

Jakarta Islamic Index (JII)

The Jakarta Islamic Index (JII) is one of the Islamic stock indices in Indonesia which is used as a measure of the performance of Islamic stocks. The Jakarta Islamic Index was introduced by the IDX and Danareksa Investment Management (DIM) on July 3, 2000, which aims to guide investors who wish to invest their funds in sharia. According to Hidayat (2011), stocks that are included in the 30 stocks of JII are stocks that meet the criteria, namely that the main type of

business does not conflict with sharia principles and has been recorded for more than three months (unless included in the top ten capitalizations), based on annual financial statements or mid-year has a maximum ratio of liabilities to assets of 90 percent, including into 60 stocks of the stock composition based on the largest average market capitalization order during the past year, then entering into 30 stocks in order based on the level of liquidity of the average regular trading value for one last year.

Autoregressive Distributed Lag (ARDL)

This study uses an estimation method with Autoregressive Distributed Lag (ARDL) analysis. The ARDL method is an econometric method that can estimate linear regression models in analyzing long-term relationships that involve cointegration tests between time series variables. The ARDL method was first introduced by Pesar and Shin (1999) with a cointegration test approach with Bound Test Cointegration testing. The cointegration test in this method is carried out by comparing the F-statistic value with the F-table value compiled by Pesar and Shin (1999).

Some literature regarding the cointegration test that can be used such as Johansen, Engel-Granger, Phillips and Hansen, Phillips and Loretan require the need for the estimated variables to be integrated with the same level in the order I (1) or first difference. To overcome this problem, Pesar and Shin (1997) developed the ARDL method using Bound Testing Cointegration. According to Fosu and Magnus (2006), the ARDL method has several advantages compared to other econometric methods, namely:

1. The cointegration test is simpler than the Johansen-Juselius cointegration test. This is because the use of bound testing cointegration is sufficient to test the cointegration which is estimated using OLS when the lag of the model has been identified.
2. The bounds test procedure does not require unit root testing of the variables used in the study. This cointegration test can be applied to models where all the variables are stationary at I (0), I (1), or the integration of both (Pesar et al., 2001).
3. Testing with ARDL is relatively more efficient for small and limited data samples.

Estimation and identification of the ARDL model can use Ordinary Least Square (OLS) if the ARDL order has been determined (Pesar, Shin, & Smith, 2001). Furthermore, OLS can be used if several OLS assumptions that are binding on the related econometric estimates are met. An estimator that meets the Best Linear Un] Estimator (BLUE) is a requirement for an OLS estimation model that can be used as a basis for analysis. Meanwhile, some problems in violating OLS assumptions include multicollinearity problems, heteroscedasticity problems, autocorrelation, and errors in functional specifications.

The steps in ARDL testing in this study are as follows (Dilla, 2014):

1. The stationarity test is done by using the Phillip Perron (PP) Test. The test hypothesis of the PP Test is as follows:
   H0: $\delta = 1$; there is root unit / not stationary
   H1: $\delta < 1$; no root unit/stationary
   The test result criterion is to compare the t-statistical value of PP with the critical value of MacKinnon. If the t-statistical value of PP is smaller than the critical value of MacKinnon, the test result is rejected H0 which states the data is stationary at the level. If the test results show that the data used is not stationary at a degree I (0) or level, then there are two possible ARDL models to be used. In the co-integrated data, the ARDL for the Cointegration model is used, while the data without cointegration uses the first difference ARDL model.
2. To determine whether there is a cointegration relationship between variables that are not stationary, a Bounds Test Cointegration is performed. Estimation of the equation is done using OLS by applying the F test which is intended to determine the existence of a long-term (cointegration) relationship between variables. This F test is used to see the joint test for long-term coefficients. The hypotheses tested are:
   H0: $\delta 1 = \delta 2 = 0$; no cointegration
   H1: $\delta 1 \neq \delta 2 \neq 0$; there is cointegration
   The test result criterion is to compare the F-statistic value with the critical value compiled in the table by Pesar and Shin (1999). In the ARDL Bounds Test, there are two asymptotic critical limit values for testing cointegration. The lower critical value assumes the regressor is integrated at I (0) while the upper critical value assumes the regressor is integrated at I (1). If the F-statistic is above the highest critical value, then the null hypothesis about no cointegration or no long-term relationship is rejected. Conversely, if the F-statistic is below the lowest critical value, the null hypothesis is not rejected. If the F-statistic is between the lowest and highest critical values, there is no conclusion (Pesar et al., 2001).

DATA AND METHODOLOGY

Types and Sources of Data

The data used in this study is secondary data in the form of monthly time series obtained from several sources such as the Indonesia Stock Exchange and Yahoo Finance. All data starts from the period of January 2010 to December 2019. As the dependent variable, the Jakarta Islamic Index (JII) is an Islamic stock index which is a composite of 30 Islamic stocks that have the highest level of liquidity. Also, the Composite Stock Price Index (JCI) is a composite stock index of all issuers available on the Indonesia Stock Exchange (IDX). Furthermore, the independent variables used are the Composite Stock Price Index (Indonesia), Dow Jones Industrial Average (US), Kuala Lumpur Composite Index (Malaysia), Nikkei 225 (Japan), Philippines Stock Exchange (PSE), Stock Exchange Thailand (SET), Morgan Stanley Capital International Singapore (Singapore), Shanghai Stock Exchange Index (China).

RESULTS AND DISCUSSION

Stationarity Test

The test method used to test the stationarity of the data in this study is the ADF (Augmented Dickey-Fuller) and Phillips-Perron test using a five percent real level. If the t-ADF and t-PP values are less than the critical value of MacKinnon, it can be concluded that the data used is stationary (does not contain a unit root).

This unit root test is carried out at the level up to the first difference. In the ADF test, the variables that reach stationary at the level are LN_IDX and LN_IPI. After the first difference is made, then all data are stationary at the real level of five percent. This means that the data used in this study are integrated into order one or can be abbreviated as I (1). Meanwhile, in the Phillips Perron test only the LN_IPI variable is stationary at the level, so the variables used only experience stationary at the first difference. The results of the unit root test can be seen in Table 1.

Table 1: Stationarity Test Results

Variable	ADF Value		Phillips-Perron Value	
	Level	1st Difference	Level	1st Difference
LN_JII	-3.177394	**-11.32755**	-3.091177	**-11.40112**
LN_IDX	**-4.195763**	**-8.201633**	-3.224484	**-8.239732**
LN_DOW	-2.971987	**-8.994094**	-3.022439	**-8.941578**
LN_KLC	-1.867467	**-8.754021**	-1.768923	**-8.711854**
LN_NIK	-2.164179	**-9.403540**	-2.332546	**-9.423052**
LN_PSE	-1.875942	**-8.379719**	-2.000363	**-8.397793**
LN_SET	-2.763134	**-8.144043**	-1.826988	**-8.144043**
LN_SIN	-2.449181	**-9.645716**	-2.659877	**-9.612272**
LN_SSE	-2.758353	**-7.557676**	-2.418169	**-7.050569**

Cointegration Test

To determine the existence of cointegration in the model, namely by using the Bounds Testing Cointegration cointegration test method. The determination of the level of cointegration confidence based on critical value bounds for the Bounds Testing Cointegration method as stated in Pesar et al. (2001). If the F-statistic value is below the lowest critical value (lower bound), it can be concluded that there is no cointegration in the model. If the F-statistic value is above the highest critical value (upper bound), it can be concluded that there is cointegration in the model. However, if the F-statistic is between the lower bound and upper bound, the result is inconclusive.

Table 2: ARDL Cointegration Test Results

Model	F-Statistic	Decision
Model 1 (JII)	3.503783	Cointegrated
Model 2 (JCI)	2.428546	Not Cointegrated
Significance	**I(0) Bound**	**I(1) Bound**
10%	1.92	2.89
5%	2.17	3.21
1%	2.73	3.9

Based on the results of the cointegration test on the two research models, the JII model has long-term cointegration, while the JCI model is not cointegrated to the long term. This means that the JII model estimation uses the Error Correction Model (ECM) while the JCI model is estimated using the first difference or short term ARDL method.

Optimum Lag Test

Selection of the best ARDL model with an optimal lag combination selected based on Akaike Information Criteria (SC). The optimum lag test results show that the two models have the same lag size in this study.

Table 3: ARDL Optimum Lag Test Results

Model	Lag Optimum								
	LN_JII	**LN_IDX**	**LN_DOW**	**LN_KLC**	**LN_NIK**	**LN_PSE**	**LN_SET**	**LN_SIN**	**LN_SSE**
Model 1 (JII)	4		0	0	4	1	3	2	0
Model 2 (JCI)		1	0	0	0	0	0	4	0

Model Estimation Results

Table 4: ECM Long-Term Estimation Results (Model 1)

Variable	Coefficient
D(LN_JII(-1))	-0.165623
D(LN_JII(-2))	0.103784
D(LN_JII(-3))	**0.180754****
D(LN_DOW)	0.250107
D(LN_KLC)	**0.359860***
D(LN_NIK)	-0.140348
D(LN_NIK(-1))	0.153803
D(LN_NIK(-2))	0.068911
D(LN_NIK(-3))	**0.171084****
D(LN_PSE)	**0.655046*****
D(LN_SET)	0.061342
D(LN_SET(-1))	-0.034146
D(LN_SET(-2))	**0.227178*****
D(LN_SIN)	-0.105217
D(LN_SIN(-1))	**0.280757****
D(LN_SSE)	0.013506
CointEq(-1)	**-0.460922*****

***), **), and *) significant at the real level 1%, 5%, and 10%

Based on the long-term estimation results, it is known that in the co-integrated model 1 (JII), there are six significant variables in each of the optimum lags, namely the variable itself (LN_JII), KLCI index (Malaysia), Nikkei (Japan), PSE (Philippines), SET (Thailand) and SIN (Singapore). These six variables have a significant effect on the real levels of one, five and ten percent. Besides, the six variables above have positive coefficients, meaning that these variables have a positive effect on the JII index in the long run. From these results, it can be concluded that the JII Islamic stock index has a long-term relationship to the stock index in ASEAN countries which incidentally has a close relationship in the trade aspect apart from geographical factors. Then, in the JII index, there is a cointegration or long-term relationship so that there is an error correction term (CointEq) value which shows how quickly equilibrium is reached to long-term equilibrium. The CointEq value of the JII index model is -0.460922 and is significant with a real level of 1%. shows that the disequilibrium in the previous period was corrected by 0.460922% in the next period.

Table 5: ARDL First Difference Short Term Estimation Results (Model 2)

Variable	Coefficient
D(LN_IDX(-1))	-0.010632
D(LN_DOW)	0.064758
D(LN_KLC)	0.170892
D(LN_NIK)	**-0.126920****
D(LN_PSE)	**0.582723*****
D(LN_SET)	0.032541
D(LN_SIN)	0.064844
D(LN_SIN(-1))	0.225207
D(LN_SIN(-2))	-0.082244
D(LN_SIN(-3))	0.076113
D(LN_SIN(-4))	**-0.171064****
D(LN_SSE)	-0.003128
C	0.003020

***), and **) significant at the real level 1%, and 5%

Next, the short-term estimation results of ARDL first difference in model 2 (JCI), three variables are significant at its optimum lag, namely the Nikkei index (Japan), PSE (Philippines) and SIN (Singapore) at the real level of one and five percent, and have a value the coefficients are -0.126920, 0.582723 and -0.171064, respectively. Geographically, Indonesia is directly adjacent to Singapore and the Philippines, so that in the short term, the two indices of these countries can influence the JCI stock index due to the similarity of investors (Janakiramanan & Lamba, 1998).

The empirical results in this study state that there is a significant long-term relationship between the Islamic index (JII) and the global index. Besides, this study found a short-term relationship between the conventional index (JCI) and the global stock index. This result is consistent with research from Abduh (2020) which shows that the crisis has been shown to significantly affect the volatility of the conventional index in the short term and the Islamic index in the long term. Abduh (2020) explains that in the short term, the conventional index is more volatile than the Islamic index during the global financial crisis. The Islamic index shows that the crisis does not cause volatility in the index in the short term, while there is a significant crisis impact on the conventional index. The volatility in the short term is caused by the stocks included in the index. Conventional indices have large nominal stocks, particularly in financial institutions, which were badly affected during the crisis. The advantage of the Islamic index is that it only contains stocks from financial institutions that comply with sharia principles.

In terms of movement, the JII index in this study also has low volatility, as can be seen from graph 1 in the background, when compared to other stock indices. This is supported by the empirical results of Rejeb (2017) which show that the conventional stock market tends to be unstable than the Islamic stock market and conventional stocks tend to be high risk-high returns where markets with higher returns tend to be unstable. The Islamic stock market tends not to have high volatility because the selection of Islamic stocks is tighter to comply with sharia principles (Ajmi et al., 2014).

CONCLUSIONS

Based on the results of research that has been conducted regarding the influence of macroeconomic variables on two research models; JII and JCI, several conclusions were obtained. There is a long-term cointegration of the global stock index to the Jakarta Islamic Index (JII). On the other hand, there is no cointegration between the global stock index and the Composite Stock Price Index (JCI), so the estimation in this model only uses the short-term model (ARDL first difference). In the long term, the KLCI (Malaysia), Nikkei (Japan), PSE (Philippines), SET (Thailand) and SIN (Singapore) indexes have a significant positive effect on the JII index. In the short term, the Nikkei (Japan), PSE (Philippines) and SIN (Singapore) indexes have a significant influence on the JCI index.

There are several recommendations that the author can give. For investors, it is advisable to be more critical in analyzing the factors that influence the movement of the JII and JCI. Investors can look for

information related to external factors that affect market conditions, such as macroeconomic variables. This information can help investors to make investment decisions and predict the right time to sell or buy stocks on the stock exchange. Policymakers in Indonesia should remain vigilant and anticipate every economic event that occurs in ASEAN countries to formulate appropriate policies to minimize the negative impact of contagion on the stock market.

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