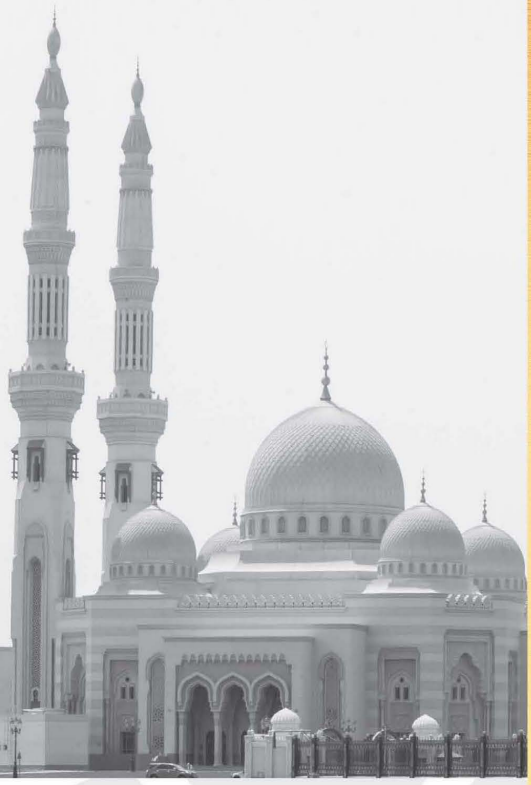
# AL QASIMIA UNIVERSITY JOURNAL OF ISLAMIC ECONOMICS



Bi-annual Refereed Journal

Vol.1, No. 2
Rabi' II ,1443 A.H. / December 2021 A.D.
ISSN: 2788-5542

*AQU Journal of Islamic Economics,* Vol. 1 No. 2, pp. 82-101 (Dec. 2021)
DOI:10.52747/aqujie.1.2.79
E-ISSN 2788-5550 / ISSN 2788-5542

# دراسة العلاقة بين المؤشرات المركبة والإسلامية والتقليدية في إندونيسيا

# INVESTIGATING THE RELATIONSHIP BETWEEN COMPOSITE, ISLAMIC, AND CONVENTIONAL INDEXES IN INDONESIA[1]

**إكرام نور محرم**

*جامعة بادجادجاران ، إندونيسيا*

**Ikram Nur Muharam**
*Universitas Padjadjaran, Indonesia*

**محمد عبده**

*جامعة بروناي، دار السلام*

**Muhamad Abduh**
*Universiti Brunei Darussalam*

**الملخص**

بصرف النظر عن مسألة ما إذا كانت جميع المؤشرات في الأسواق المالية مدفوعة بعوامل مماثلة، تبحث هذه الدراسة في العلاقات طويلة المدى والقصيرة بين المؤشر المركب (JKSE) والمؤشر الإسلامي (JII) والمؤشر غير الإسلامي (NST7) في السوق المالية بإندونيسيا. تظهر النتائج أن هناك معادلة واحدة على الأقل بين المؤشر المركب (JKSE) والمؤشر الإسلامي (JII) والمؤشر غير الإسلامي (NST7)، علاوة على ذلك ، يُظهر ناتج (VECM) أن المؤشر الإسلامي JII فقط له علاقة طويلة المدى

[1] Article received: Aug. 2021; article accepted: Nov. 2021

مع المؤشر الإسلامي (JKSE). في حالة العلاقات قصيرة المدى، لا يؤثر JII و NST7 بشكل كبير على (JKSE)، بينما تأثر (JII) بشكل كبير بـ (JKSE). بخلاف ذلك، تُظهر وظيفة الاستجابة النبضية أن صدمة على (JII) ستؤثر سلبًا على كل من (JKSE) و (NST7) ، في حين أن الصدمة على (NST7) لا تؤثر بشكل كبير على (JKSE ) أو (JII).

**Abstract**

Apart from the question of whether all indexes in financial markets are driven by similar factors, this study examines the long and short-run relationships between the composite index (JKSE), Islamic index (JII), and pure non-Islamic index (NST7) in the Indonesia financial market. The results show that there is at least one cointegrated equation among the JKSE, JII, and NST7. Furthermore, the output from VECM shows that only the JII has a significant long-run relationship with the JKSE. In the case of short-run relationships, the JII and NST7 do not significantly affect the JKSE, while the JII was significantly influenced by the JKSE. Otherwise, the Impulse Response Function shows that a shock on the JII will negatively affect both the JKSE and the NST7, while a shock on the NST7 is not very influential on the JKSE or the JII.

**الكلمات المفتاحية**: المؤشر الإسلامي ، إندونيسيا ، المؤشر المركب.

**Keywords:** Islamic index, Indonesia, Composite index.

## 1.0 Introduction

Since the decision of the International Fiqh Academy in 1994 to loosen Islamic criteria related to investment in companies whose primary activities are halal (Hayat and Kraeussl, 2011), investing in the stock market is becoming more open and popular for Muslim investors. As a result, Islamic investment and capital markets were then developed very rapidly. Many global players then entered the markets, such as Dow Jones, MSCI, FTSE, and S&P. In Indonesia, the Islamic capital market refers to the Law Number 8 Year 1995 regarding capital markets and some policies related to the Islamic capital market. To date, the types of Islamic securities in Indonesia can be categorized as follows: Islamic stocks, Sukuk, and Islamic mutual funds. In order to support its development, the National Islamic Council of the Indonesian Ulema Council (DSN-MUI) as the religious authority in Indonesia have issued fatwas related to the guidelines for these instruments. However, Abduh *et al.* (2012) mentions that Muslim investors are still dominated by rational investors whose objectives are looking for ways to secure their assets' value from falling. Therefore, it is crucial for them to know the behavior of those Islamic securities towards the movement of its conventional counterparts so that they may decide to or not to diversify their investment portfolios with Islamic securities.

To further deepen the knowledge upon the causes of volatility within Islamic securities, this paper proposes a novel idea by distinguishing the securities between Islamic index, the composite index, and pure non-Islamic index. Unlike the composite index, the pure non-Islamic Index is an index developed by the authors specifically for this study which contains stocks that do not meet Islamic requirements at all. With this new approach, this research is expected to provide new information regarding the true relationship between Islamic securities and non-Islamic securities. The use of pure non-Islamic index is a differentiator of this study from previous studies that used the composite index as the representation of the conventional index (see Al-Khazali et al., 2014; Alexakis et al., 2017; El Khamlichi et al., 2014; Guyot, 2012; Habib and Ul Islam, 2014; Miniaoui et al., 2015).

We structure the rest of the paper as follows. Section two discusses the literature review related to Islamic-compliant stocks, Islamic index, and the nexus between Islamic and conventional index. Data and methods of analysis are elaborated in section three. Section four and five presented the findings and discussion, and conclusion respectively.

## 2.0 Literature Review

### *2.1 Islamic-compliant Stocks and Islamic Index*

Islamic capital market is part of capital markets. Therefore, in principle, there is no difference in the operational mechanism except that the Islamic capital market has several additional criteria related to Islamic values and principles. In Indonesia, based on the Financial Services Authority regulation number 35/POJK.04/2017 concerning the criteria and issuance of a list of sharia securities, it is stated that Islamic stocks are shares of companies that meet the following conditions: do not conduct business activities that are contrary to Islamic teachings, do not make transactions which is prohibited in Islam, has a ratio of interest-based debt to total assets of no more than 45%, and total interest income and/or other non-halal income below 10%. Islamic stock transactions have received approval in the form of a *fatwa* from the Indonesian Ulema Council.

Furthermore, stocks that have passed the Islamic screening process will usually be grouped into several indexes. This needs to be done in order to find out the development of the stocks with specific characteristics, as well as to facilitate investors in understanding the performance and characteristics of the stocks that are incorporated in those indexes.

With regard to Islamic index, Indonesia introduces it in 2000 when one of the securities companies, PT. Danareksa Investment Management collaborates with the Indonesia Stock Exchange to launch the Jakarta Islamic Index (JII). This index is presented to facilitate investors who are interested in investing their funds in an Islamic way. JII covers 30 of Indonesia's most liquid Islamic stocks. The liquidity criteria are mainly based on market capitalization and daily transaction value (IDX, 2018).

### *2.2 The Nexus between Islamic and Conventional Indexes*

Since Islamic capital markets are considerably new in the global financial markets, there is a limited number of studies done to investigate the nexus between Islamic and conventional indexes. Among them is Guyot (2012) who investigated the relationships between those two indexes in developed and emerging markets using daily and weekly data for the period 2000 to 2008. The use of weekly data is intended to resolve non-synchronous data and to avoid short-run serial correlations, while the daily data used as a comparison.

The Islamic index used in the study is the Dow Jones Islamic Market Index, while the conventional index used includes Asia Pacific, Canada, Developed ex-U.S., Emerging, Europe, World, Japan, UK, and the US. Using comparative analysis of market quality to test efficiency by using random walk hypothesis and variance ratio analysis to test liquidity using indicators compiled by De Nicoló and Ivaschenko (2014), the results indicate that the application of Islamic principles is not statistically proven to increase the cost of inefficiency. Regarding liquidity costs, in general, both indexes are similar. However, it should be noted that the results show that Islamic index is more responsive to geopolitical occurrences.

A method similar to that used by Guyot (2012) was duplicated by El Khamlichi *et al.* (2014) but using more various Islamic indexes. This study uses Islamic Indexes which has never been used by previous studies, such as FTSE Islamic all world (FSAWRD), S&P 500 Islamic (SP500S), MSCI AC world IS (MSACWS). The difference can be seen in the data processing that is divided into several periods. Daily data collected from Factset, Datastream, and Reuters are grouped into four periods: 1998 - 2011; 2007-2011; 2007-2011; 2008-2011. Interestingly, despite the data grouping done by El Khamlichi *et al.* (2014), the results of this study are consistent with what was obtained by Guyot (2012) that Islamic indexes have the identical degree of (in)efficiency as conventional indexes. However, the absence of co-movement among these indexes shows that the Islamic Index can be used as an alternative for portfolio diversification.

Different techniques were done by Al-Khazali *et al.* (2014), Habib and Ul Islam (2014) and Miniaoui *et al.* (2015). These studies utilized Dow Jones Islamic Indexes or MSCI and compared them with various conventional indexes. Despite using different methods of analysis, the two studies had produced a similar conclusion which says that Islamic index has the similar risk profile as the conventional index. Another additional information is the existence of volatility differences in both indexes, which shows that throughout the previous global financial crisis, the Islamic index accomplishes slightly better than the conventional index.

Another different method is used by Alexakis *et al.* (2017) who use Hidden Cointegration to explore the hidden value of Islamic investment. They adopted a model by Granger and Yoon (2002). This method separates variables into negative and positive groups. In their research, Alexakis *et al.* (2017) use daily data for the period of 2000 to 2014. The results show that the Islamic index is the least responsive in poor market conditions; this shows the robust nature of Islamic investment. However, if the control variable is not used, there is a bidirectional connection between Islamic and conventional indexes.

Further research from Saiti and Noordin (2018) tries to examine how investors can benefit from Islamic and conventional portfolio diversification. The results of this study illustrate that the level of benefits obtained from this diversification in each country can vary. More specifically, this study focuses on investors in Malaysia and shows how understanding cross-border markets can provide benefits to investors. This research uses daily data from 2007 to 2016.

This study tries to enhance the literature by examining the relationship between Islamic and conventional indexes with a specific case of Indonesia. The analysis in this study is also attractive due to its ability to develop a specific pure conventional index which is not containing any stocks listed in Islamic index. Hence, the volatility tests will be conducted to the Islamic index, the composite index, as well as the newly developed pure conventional index.

## 3.0 Research Methodology

### *3.1 Data*

Three equity indexes are used in this research. Firstly, is the IDX Composite Index (JKSE), which formerly known as Jakarta Stock Exchange Composite Index. This index comprises all equities listed in the Indonesia Stock Exchange Market, including Islamic and conventional altogether; therefore, its movements show an upwards and downwards of the overall Indonesian Market. Secondly is Jakarta Islamic Index (JII). It represents selected equities that comply with the Islamic principles. As many as 30 Islamic-compliant companies selected based on the assessment conducted by the regulator every six months. The selection is mainly based on the size of market capitalization and the level of liquidity. Thirdly is the Non-Islamic Index (NST7) which specifically developed for this research. The top 7 non-Islamic compliant companies were selected based on the overall market capitalization which matches with the market capitalization of all companies included in the Jakarta Islamic Index. The stocks included in NST7 index are BBCA, HMSP, BBRI, BMRI, BBNI, GGRM, BDMN. The indexing method used is the weighted average. Several necessary value adjustments are made because there are issuers that add shares or conduct stock split.

Table 1: Index Comparison

| JII | | NST7 | |
|---|---|---|---|
| Stocks | Market Cap.* (in IDR Billion) | Stocks | Market Cap.* (in IDR Billion) |
| 30 | 2.302.445 | 7 | 2.382.695 |

Note: * valid per March 2019

The sample consists of 1,648 daily observations from the period of March 2012 to March 2019. Data are collected from the historical prices of the Indonesia Stock Exchange Market. Daily data are used in order to get a robust result, while the period selection was intended to provide the most recent illustration of the Indonesian market condition.

### *3.2 Empirical Framework*

This research utilizes Cointegration and Vector Error Correction Model (VECM) tests. The former is used to observe the presence of a long-term relationship, while the latter is used to estimate the short-term dynamics. This research uses the most popular method to conduct unit root test, which is the ADF Test (Augmented Dickey-Fuller). If the t-value is less than the critical value, then it can be concluded that the data used is not contain the unit root (stationary). To confirm the test results, the comparison will be carried out with the Phillips-Perron test method.

To avoid autocorrelation issues, the optimum lag should be determined. Following the suggestion from Liew (2004), HQ Criterion (Hannan Quinn) will be used to test the optimum lag due to a significant number of observations in this research. Afterward, the Johansen-Juselius cointegration test and Granger causality are used in order to see the causal relationship among them. If a variable (*ex.* A) is known to trigger another variable (*ex.* B), then it can be said that the current B condition can be explained by the A and B values in the previous period.

Once the cointegration is proven exist, the next process is to run the VECM. It is a terrestrial VAR model due to the existence of cointegration among non-stationary series. VECM is frequently mentioned to as a VAR design for non-stationary data which has cointegration relationships. The VECM arrangement restricts the long-run relationships of the endogenous variables to move toward into their cointegration relationships, while still allowing the presence of short-run dynamics.

In the last part, the Impulse Response Function (IRF) analysis used to determine the reaction of an endogenous variable to a particular variable's shock and to see how long the effect occurs. This method tracks the impact of a single standard error on an endogenous variable against another endogenous variable. It is also necessary to check the stability of the model so that the results obtained will be valid. To conduct this check, the roots of a characteristic polynomial of all variables used are multiplied by the number of lags of each VAR. A VAR system is declared stable if all of its roots have a modulus smaller than 1.

## 4.0 Findings and Discussion

### *4.1 Unit Root Test*

The ADF test results confirm that each variable is non-stationary at a level, but stationary after first-difference. It means that all variables are integrated of order 1, or I (1). As can be seen from Table 2, at first-difference, the p-value of each variable is lower than 5%. This means that there is a valid reason to further the test to cointegration analysis. Comparison with the Phillips-Perron test method also shows similar results.

Table 2: Unit Root Test

| **ADF Test** | **Level** | | **First-difference** | |
|---|---|---|---|---|
| | **t-Statistic** | **Prob.*** | **t-Statistic** | **Prob.*** |
| JKSE | -0.938172 | 0.7764 | -15.75302 | 0.0000 |
| JII | -2.412232 | 0.1385 | -16.55491 | 0.0000 |
| NST7 | -0.121522 | 0.9453 | -15.85463 | 0.0000 |
| **Phillips-Perron Test** | | | | |
| JKSE | -1.083443 | 0.7244 | -39.18920 | 0.0000 |
| JII | -2.609860 | 0.0911 | -42.03846 | 0.0000 |
| NST7 | -0.250152 | 0.9295 | -38.80589 | 0.0000 |

Note: JKSE: IDX Composite Index. JII: Jakarta Islamic Index. NST7: Non-Islamic Top 7 Index.

### *4.2 Optimum Lag*

Liew (2004) provides empirical evidence that for samples over 120, Hannan-Quinn criterion outperforms other methods to identify the most appropriate lag length. Therefore, following the Hannan-Quinn criterion, the lag used in this study is 3, as shown in table 3. Thus, since the selected lag is 3, the lag used in the Cointegration test and the VECM is 3 minus 1, since the variables are differentiated.

Table 3: Optimum Lag

| Lag | LogL | LR | FPE | AIC | HQ |
|---|---|---|---|---|---|
| 0 | -27119.57 | NA | 4.65e+10 | 33.07631 | 33.07997 |
| 1 | -14977.98 | 24223.95 | 17445.50 | 18.28047 | 18.29513 |
| 2 | -14931.12 | 93.33667 | 16658.17 | 18.23429 | 18.25994 |
| 3 | -14908.07 | 45.80607 | 16375.31 | 18.21716 | 18.25381* |
| 4 | -14892.03 | 31.82827 | 16235.31 | 18.20857 | 18.25622 |
| 5 | -14882.22 | 19.43043 | 16219.28 | 18.20759 | 18.26623 |
| 6 | -14875.88 | 12.52562 | 16272.07 | 18.21083 | 18.28047 |
| 7 | -14865.88 | 19.74293 | 16252.16 | 18.20961 | 18.29024 |
| 8 | -14852.92 | 25.52925* | 16173.85* | 18.20478* | 18.29640 |

Note: * Indicates selected lag. LR: Sequential Modified LR Test (each test at 5% level). FPE: Final Prediction Error. AIC: Akaike Information Criterion. HQ: Hannan-Quinn Information Criterion

### *4.3 Cointegration Test Results*

Trace and Max-Eigenvalue tests indicate at least one cointegration equation at a 5% level of critical value. It can be seen from Table 4, where at r = 0 (None), the Trace value and Max-Eigenvalue are higher than the critical values. It means that in the long-run, at least one cointegration exists among the variables tested. In other words, all variables tend to adjust to each other to achieve their long-term equilibrium. The existence of cointegration also means that the VECM test is possible.

Table 4: Cointegration Test

| Hypothesized No. of CE(s) | Trace | Critical Value (5%) | Max-Eigen | Critical Value (5%) |
|---|---|---|---|---|
| None* | 35.23112 | 35.01090 | 26.49119 | 24.25202 |
| At most 1 | 8.739927 | 18.39771 | 7.437165 | 17.14769 |
| At most 2 | 1.302763 | 3.841466 | 1.302763 | 3.841466 |

### *4.4 Granger Causality*

This test is performed to see if two variables have a reciprocal relationship. In other words, whether one variable has a causal relationship with other variables because each variable in the study has the opportunity to be an endogenous or exogenous variable. The variables have a causality relationship when the test result shows a probability value of less than 5%. Table 5 demonstrates that the causality relationship that occurs between variables is one way. JII significantly affects JKSE, but JKSE does not significantly affect JII. JKSE significantly affects NST7, but NST7 does not significantly affect JKSE. JII significantly affects NST7, but NST7 does not significantly affect JII.

Table 5: Granger Causality Tests

| **Null Hypothesis** | **Obs.** | **F-Statistic** | **Prob.** |
|---|---|---|---|
| JII does not Granger Cause JKSE | 1646 | 2.08332 | 0.1248 |
| JKSE does not Granger Cause JII | | 8.70002 | 0.0002 |
| NST7 does not Granger Cause JKSE | 1646 | 4.58196 | 0.0104 |
| JKSE does not Granger Cause NST7 | | 1.82409 | 0.1617 |
| NST7 does not Granger Cause JII | 1646 | 6.80700 | 0.0011 |
| JII does not Granger Cause NST7 | | 2.20551 | 0.1105 |

Source: Authors' own

### *4.5 VAR Stability Check*

A VAR model is confirmed stable if all of its roots have a modulus smaller than 1. Table 6 displays that modulus for all roots is smaller than 1, thus the VAR is stable.

Table 6: VAR Stability Check

| **Root** | **Modulus** |
|---|---|
| -0.008356 - 0.358950i | 0.359047 |
| -0.008356 + 0.358950i | 0.359047 |
| -0.153975 - 0.234758i | 0.280749 |
| -0.153975 + 0.234758i | 0.280749 |
| 0.053549 - 0.263814i | 0.269194 |
| 0.053549 + 0.263814i | 0.269194 |

Note: No root lies outside the unit circle. VAR satisfies the stability condition. Endogenous variables: D(JKSE) D(JII) D(NST7).

### *4.6 VECM Results*

Table 7 below shows that in the long-run, at 1% significance level, JII significantly affects JKSE, but interestingly not for NST7. The reason could be due to the composition of the index itself. Quite a significant number of the JKSE stocks are also included in JII, and thus, there is a substantial cause that they may have shared the movement.

Table 7: Factors that affect JKSE in the long-run

| **Variable** | **Coefficient** | **T Stat.** |
|---|---|---|
| JII (-1) | -54.64320 | -4.12420* |
| NST7 (-1) | 11.89335 | 0.63742 |

Note: * = 1% significance level.

Based on the information derived from Table 8 below, all variables have significant error correction parameters. It shows that there are adjustments from short to long-term, the amounts are 0.000992, 0.000261, and 3.61E-05, for JKSE, JII, and NST7, respectively.

Table 8: Factors that affect each variable in the short-run

| **Error Correction** | **D(JKSE)** | **D(JII)** | **D(NST7)** |
|---|---|---|---|
| ECM | 0.000992 | 0.000261 | 3.61E-05 |
| | (0.00051) | (8.5E-05) | (2.1E-05) |
| | [ 1.93879]*** | [ 3.08072]* | [ 1.69793]*** |
| D(JKSE(-1)) | -0.057854 | 0.044233 | -0.002586 |
| | (0.10598) | (0.01751) | (0.00440) |
| | [-0.54589] | [ 2.52605]** | [-0.58731] |
| D(JKSE(-2)) | -0.145506 | -0.009693 | -0.003671 |
| | (0.10543) | (0.01742) | (0.00438) |
| | [-1.38017] | [-0.55644] | [-0.83800] |
| D(JII(-1)) | 0.106279 | -0.252946 | 0.005459 |
| | (0.45347) | (0.07493) | (0.01884) |
| | [ 0.23437] | [-3.37599]* | [ 0.28973] |

| | | | |
|---|---|---|---|
| D(JII(-2)) | 0.066357 | -0.082140 | 0.016789 |
| | (0.45282) | (0.07482) | (0.01881) |
| | [ 0.14654] | [-1.09787] | [ 0.89239] |
| D(NST7(-1)) | 2.357479 | 0.025082 | 0.094042 |
| | (1.36056) | (0.22480) | (0.05653) |
| | [ 1.73272]*** | [ 0.11157] | [ 1.66367]*** |
| D(NST7(-2)) | 1.464321 | 0.183267 | -0.035518 |
| | (1.35678) | (0.22417) | (0.05637) |
| | [ 1.07926] | [ 0.81752] | [-0.63009] |
| C | 1.381491 | 0.035099 | 0.090491 |
| | (1.20554) | (0.19919) | (0.05009) |
| | [ 1.14595] | [ 0.17621] | [ 1.80670]*** |

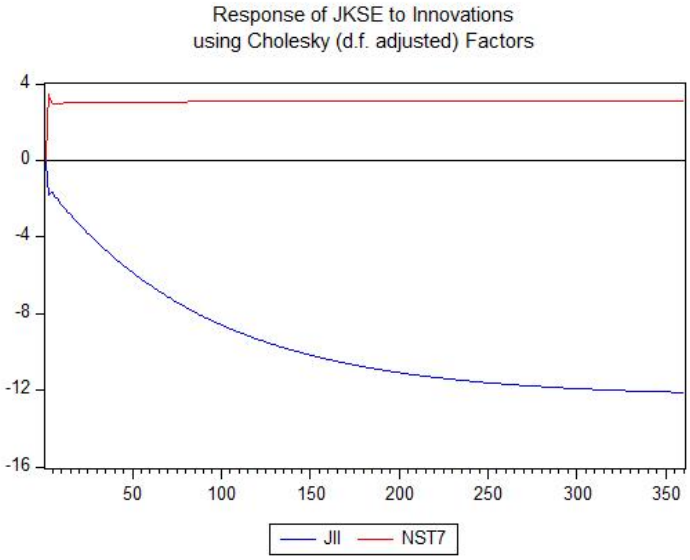
Note: *, ** and *** denote the significance level: 1%, 5% and 10% respectively.

The estimation result shows that NST7 in lag 1 (at a 10% significance level) has a positive impact on JKSE with the magnitude of 2.357479. This means that if there is an increase in NST7 on the previous day, there will be an increase (2.357%) in today's JKSE value. For JII, the significant variables are JKSE in lag 1 at 5% significance level, and JII in lag 1 (at 1% significance level). The effects of these two variables are 0.044233 and -0.252946, respectively. In other words, if there is an increase of JKSE in the previous day, then it means that there would be an increase in today's JII value. The effect of JII on lag 1 is the reverse, which means that when there is an increase in yesterday's JII value, it is likely to decrease the current JII value. As for NST7, this variable in the short-run is significantly influenced by NTST in lag 1 (at a 10% significance level). The test results also show that NST7 is significantly influenced by its coefficient in lag 1.

### *4.7 Impulse Response Function (IRF)*

This analysis explains the impact of shocks that occur on one variable against another variable. With this method, the dynamics that occur in each variable when there is a particular shock of 1 standard error in each equation can be observed. IRF also serves to see how long the influence occurs. The horizontal axis denotes the period while the vertical axis shows the response value in percentage.

Figure 1: IRF (JKSE)




As can be seen in Figure 1, in case of a shock occurring to NST7, it does not significantly affect JKSE. On the other hand, shock on JII has a significant adverse impact on JKSE. It can be seen that the negative impact of JII for JKSE continues to increase throughout nearly a year before its impact becomes stable. This may be related to the number of shares contained in NST7, which only amounts to seven so that even though the market capitalization of these shares is of great value, the shock that occurs only on the seven stocks has not been able to influence the market as a whole.

Figure 2 shows that if there is a shock on the value of NST7, it has almost no effect on the value of JII. This is different from JKSE because if there is a shock to this variable, it will have a constructive impact on the value of JII. Its positive impact reaches more than 7% in the initial few days and will gradually decline for approximately six months after that.

Figure 2: IRF (JII)

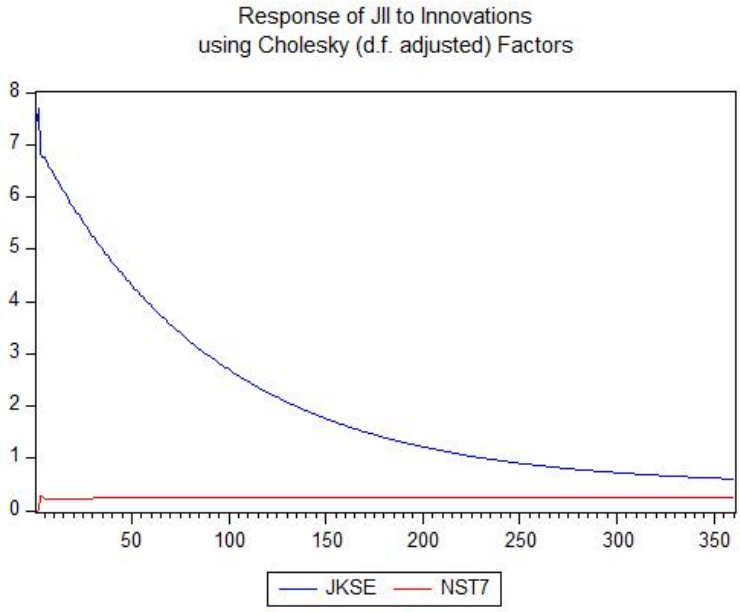
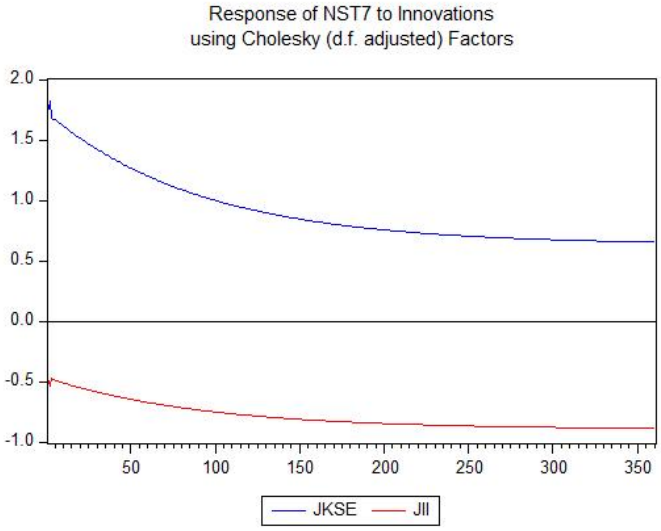



Figure 3 provides an exciting explanation upon the impact of shocks on JKSE and JII variables towards NST7. JKSE shocks will have a positive impact on NST7. The impact will be positive at approximately 1.5% in the first few days after the shock, but gradually decline in the next six months and reach the balance point at around 0.5% level. The impact of JII is the reverse. At the start of the shock period, it will have a negative impact of approximately -0.5%, and then the negative impact will increase over the next six months before reaching the equilibrium value again at around -0.9% level.

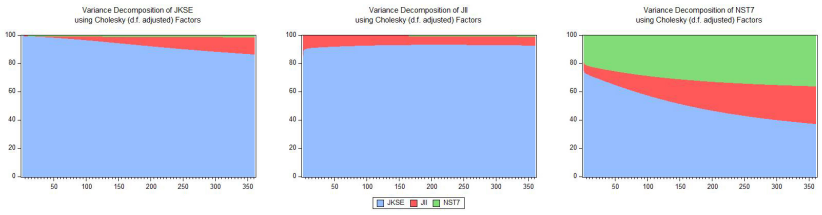
Figure 3: IRF (NST7)




*4.8 Variance Decomposition Analysis*

Variance decomposition aims to measure the magnitude of the contribution or composition of each independent variable to the dependent variable.

Figure 4: Variance Decomposition




Based on information derived from Figure 4, it can be seen that for JKSE, the contribution of JII variable increases over time, contributing around 12% after one year, while the contribution of NST7 to JKSE is minimal and not very influential. For JII, the

contribution or influence of JKSE increases slightly within ten months before then gradually decreases. JKSE is very dominant in contributing upon JII. For NST7, the influence or contribution of JII grows over time, reaching approximately 26% after a year. JKSE's contribution to NST7 declined significantly over time, from about 75% in the initial phase to be only about 37% after a year. It should be noted that although different stocks fill NST7 and JII, JII's contribution to NST7 which tends to increase over time may be due to JII's significant contribution to JKSE which is the entire stock market. That way, NST7 shares, which are also part of JKSE, will undoubtedly be affected.

### *4.9 Discussion*

The Unit Root Test results indicate that all variables are stationary at first difference, it makes the Cointegration test valid. Then, because there is a Cointegration between variables, the VECM test can be done. Furthermore, the results of the IRF and Variance Decomposition analysis are also considered valid because model testing shows that the VAR model in this research is stable.

The Cointegration test displays that there is at least one long-term relationship among the three variables tested. This result conflicts with El Khamlichi *et al.* (2014) and Beik and Wardhana (2011). Two things might be the cause of this difference: the first is because this study focuses on the Indonesian capital market, while previous studies included stock indexes from various other countries; the second is the difference in the period of the data used. Furthermore, based on the VECM, in the long-run, only JII that is significantly affecting the JKSE and the relationship is negative (-54.64320). This is interesting because it shows that in the long-run, only Islamic stocks affect the market as a whole. The same thing does not apply to non-Islamic stocks. This can be used by stakeholders to promote Islamic stocks to investors. The ability to influence the market as a whole shows a relatively strong position of Islamic stocks on the market.

In the short-run, at 5% significance level, JKSE is not significantly affected either by JII or NST7. The same situation applies to NST7, which is not significantly influenced by other variables at a 5% significance level. A different case applies to JII since it is significantly influenced by JKSE lag 1 and JII lag 1. The Impulse

Response Function (IRF) shows that shock on JKSE will affect JII. This confirms the findings of Beik and Wardhana (2011), which states that the composite index shocks influence JII. Furthermore, IRF illustrates that JKSE will be affected if there is a shock on JII; the impact is negative and increases over time for almost one year before it becomes stable again. On the other hand, shock on NST7 does not have a significant impact on JKSE. Besides, Variance Decomposition analysis gives us information about the contribution of each variable to another variable. JII seems to have an increased contribution over time to JKSE and NST7. This information can be used as a rationale by regulators to strengthen the supervision system related to Islamic stocks because empirical results show that the shock that occurred in the JII will affect the market as a whole. In addition, this can also be used as one of the motivations for Islamic investors to continue to consider ethic aspects, and it is hoped that they avoid speculative actions considering that in the event of a shock on Islamic stocks, the overall stock market will be adverse.

The existence of cointegration among these indexes and also the increasing influence of the Islamic index may be due to the increasing number of stocks that meet the criteria as Islamic stocks so that the proportion of Islamic stocks is currently dominant in the overall Indonesia stock markets.

## 5.0 Conclusion

This study tries a new approach to comprehend the relationship between Islamic and non-Islamic shares. Unlike previous studies that use the composite index as a representation of the conventional index, this research creates a new index that only contains stocks that do not meet Islamic criteria. As the Islamic index used is the Jakarta Islamic Index (JII), the establishment of this non-Islamic index takes into account the amount of market capitalization of all stocks in the JII; thus, it is expected that the comparison will be more relevant.

Test results show that in the long-term, there is a relationship among the three indexes (JII, JKSE, NST7). Interestingly, the test results demonstrate that in the long-term, only the Islamic index has a substantial influence on the overall market, and the results of the Impulse Response Function show that market conditions are affected

significantly if there is a shock to Islamic stocks. This shows the dominant influence of Islamic stocks on overall market conditions. Empirical evidence of the significant influence of Islamic stocks on the market is expected to increase investor confidence in choosing Islamic stocks in its investment portfolio.

Beyond that, to further deepen the understanding of the advantages of Islamic stocks, further research can be focused on studying Islamic stocks in more detail, for example by considering the level of compliance of each stock. By clustering the stocks based on its Islamic-compliance level, it will be known whether stocks with higher Islamic-compliancy levels have a more positive influence on the market as a whole. If it can be proven that the level of conformity with Sharia is positively correlated with a positive influence on overall market conditions, this will undoubtedly attract more investors to Islamic financial instruments.

## References

Abduh, M., Dahari, Z. and Omar, M. A. (2012) 'Bank customer classification in Indonesia: Logistic regression Vis-à-vis artificial neural networks', *World Applied Sciences Journal*. doi: 10.5829/idosi.wasj.2012.18.07.1226.

Al-Khazali, O., Lean, H. H. and Samet, A. (2014) 'Do Islamic stock indexes outperform conventional stock indexes? A stochastic dominance approach', *Pacific Basin Finance Journal*. doi: 10.1016/j.pacfin.2013.09.003.

Alexakis, C., Pappas, V. and Tsikouras, A. (2017) 'Hidden cointegration reveals hidden values in Islamic investments', *Journal of International Financial Markets, Institutions and Money*. doi: 10.1016/j.intfin.2016.08.006.

Beik, I. S. and Wardhana, W. (2011) 'The relationship between Jakarta Islamic Index and other selected markets: evidence from impulse response function', *Journal of Economics and Business Airlangga*, 21(2).

Granger, C. W. J. and Yoon, G. (2002) *Hidden Cointegration*, *SSRN*. doi: 10.2139/ssrn.313831.

Guyot, A. (2012) 'Efficiency and Dynamics of Islamic Investment: Evidence of Geopolitical Effects on Dow Jones Islamic Market

Indexes', *Emerging Markets Finance and Trade*. doi: 10.2753/ree1540-496x470602.

Habib, M. and Ul Islam, K. (2014) 'Performance of Shariah Compliant Index: A Comparative Study of India and Malaysia', *International Journal of Interdisciplinary and Multidisciplinary Studies*.

Hayat, R. and Kraeussl, R. (2011) 'Risk and return characteristics of Islamic equity funds', *Emerging Markets Review*. doi: 10.1016/j.ememar.2011.02.002.

IDX (2018) *Islamic Stock Index*. Available at: http://www.idx.co.id/en-us/idx-islamic/islamic-stock-index/. [accessed 7 December 2018]

El Khamlichi, A. *et al.* (2014) 'Are Islamic equity indices more efficient than their conventional counterparts? Evidence from major global index families', *Journal of Applied Business Research*. doi: 10.19030/jabr.v30i4.8660.

Liew, V. (2004) 'Which Lag Length Selection Criteria Should We Employ ?', *Economics Bulletin*.

Miniaoui, H., Sayani, H. and Chaibi, A. (2015) 'The impact of financial crisis on Islamic and conventional indices of the GCC countries', *Journal of Applied Business Research*.

De Nicoló, G. and Ivaschenko, I. V. (2014) 'Global Liquidity, Risk Premiums and Growth Opportunities', *IMF Working Papers*. doi: 10.5089/9781451872002.001.

Omar, M. A., Abduh, M. and Sukmana, R. (2013) *Fundamentals of Islamic Money and Capital Markets*, *Fundamentals of Islamic Money and Capital Markets*. doi: 10.1002/9781119198963.

Saiti, B. and Noordin, N. H. (2018). Does Islamic equity investment provide diversification benefits to conventional investors? Evidence from the multivariate GARCH analysis. *International Journal of Emerging Markets*, 13(1), 267-289. doi: 10.1108/IJoEM-03-2017-0081

Thomson Reuters and DinarStandard (2018) 'State of The Global Islamic Economy Report 2018-2019', *Thomson Reuters and DinarStandard*.

Thomson Reuters (2018) 'Islamic Finance Development Report 2018', *Thomson Reuters*.