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Integration Analysis of Sharia Stock in Malaysia and Indonesia

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ABSTRACT

The linkage of the Indonesian capital market with foreign capital markets began after foreign investors were allowed to participate in buying shares listed on the IDX where Indonesia is an emerging market. According to Mobius (1996), from the external side, countries including emerging markets can develop rapidly on the grounds that investors are willing to invest in international markets, investors use investment management services, and the need for diversification to avoid sudden turmoil in one market. Model nonlinear in economic and finance riset are often found. One model that can be used to capture nonlinear relationships in data is Threshold Vector Autoregressive (TVAR) model. TVAR model is generalization of VAR model, it divides the time series into different regimes that are separated by a different threshold. The purpose of this research are to see the effects between sharia stock index in Malaysia (DJMY) and Indonesia (JII), and to know the performance with TVAR model. DJMY and JII produce TVAR on lag one with two threshold and three regimes. Each regimes shows different effects.

Keywords : Integration, Capital Market, Nonlinearity, Sharia Stock and TVAR

I. INTRODUCTION

The linkage of the Indonesian capital market with foreign capital markets began after foreign investors were allowed to participate in buying shares listed on the IDX where Indonesia is an emerging market. According to Mobius (1996), from the external side, countries including emerging markets can develop rapidly on the grounds that investors are willing to invest in international markets, investors use investment management services, and the need for diversification to avoid sudden turmoil in one market. Internally, according to Mobius (1996), emerging market stock exchanges can grow rapidly from developed countries because market capitalization is still relatively small when compared to advanced stock exchanges, the economy and capital markets tend to develop faster, when companies develop, the income and savings of workers increase, and technical progress of the stock market will encourage the creation of trading infrastructure.

When the Asian crisis hit in 1997, almost the entire Indonesian economy was destroyed. The Asian financial crisis or in Indonesia better known as the monetary crisis began in Thailand in July 1997 which ultimately had a major impact on stock exchanges in several Asian countries. The Malaysian government is considered very good at taking advantage of the Asian financial crisis, namely by focusing on developing the Islamic capital market. The ways to do this include product innovation, provision of supporting infrastructure (trading system), incentive policies, human resource development (HR), and more in-depth sharia financial regulation.

One of its achievements is that one year before the monetary crisis hit that in 1996, Malaysia was able to create an organized and efficient Islamic capital market when it formed the Islamic Capital Market Department (ICMD) or the Department of Islamic Capital Markets and Shariah Advisory Council. (SAC) or Sharia Advisory Board. The role of the sharia advisory board, with the assistance of ICMD, is to advise the Securities Commission (Malaysian capital market authority) on all matters relating to the development of a comprehensive Islamic capital market. and serves as a reference center for all Islamic capital market issues. Now, Malaysia has become a country with a highly developed Islamic capital market, both in terms of quality and quantity. Referring to IDX data, the share of sharia stock in the Indonesian capital market has only reached 65% of the total number of issuers, while in Malaysia the share of sharia stock has reached 76% of the total. As of April 12, 2019, there were 629 issuers on the IDX, but in Malaysia it has reached 911 issuers. Until the end of December 2018, the market share of Islamic stock investors was only 5.2% of the total investor shares listed at the Indonesian Central Securities Depository (KSEI).

Several empirical studies have shown that the long-term cointegration relationship and short-term causal relationship among Asian stock markets have strengthened during the financial crisis compared to before the crisis (eg: Sheng and Tu. 2000; Yang et al., 2003; and Ratanapakorn and Sharma, 2002). Some studies show no long-term relationship (ie, cointegration) among emerging Asian stock markets (eg Chan, et al, 1992; Hung and Cheung, 1995; Nath and Verma, 2003), while others show a long-term relationship. (eg: Darrat and Zhong, 2002; Bessler and Yang, 2003).

Based on empirical facts from previous research and from the literature studied, it shows that the indices in the capital market are integrated with each other, while for the sharia index, especially in Indonesia, there are not many facts that support it. Therefore, it is important to conduct research on the integration of sharia shares in Malaysia and Indonesia, besides that the existence of a threshold in the stock price index is also important to analyze.

II. METHODS AND MATERIAL

The data used in this study is secondary data that is quantitative. The type of data used is time series data. The time series data used is daily data for January 2019 – December 2020. The data used in this study is sourced from the Indonesia Stock Exchange (IDX), as well as the yahoo finance network. Data processing using Microsoft Excel software, Eviews 9 and R application.

The analytical tool used in this study are the Vector Auto Regression (VAR) method and Threshold Vector Autoregressive). In some case in the time series data there is a relationship between the variables that have a nonlinear tendency. Threshold Vector Autoregressive (TVAR) model is one model that can be used to capture nonlinear phenomena in multivariate time series data.

Before estimating the VAR model, first, stability, causality, cointegration, linearity are carried out. In general, the TVAR model can be written as follows:

$$
\begin{aligned}
Yt = {} & B_1(L)Y_{t-1}I(Y_{t-d} \leq \gamma_1) \\
& + B_2(L)Y_{t-1}I(\gamma_1 < Y_{t-d} \leq \gamma_2) \\
& + B_3(L)Y_{t-1}I(Y_{t-d} > \gamma_2) + e_t
\end{aligned}
$$

Description:

Yt = Vector of endogenous variables

$B_i(L)$ = Lag polynomial matrices

Y_{t-d} = Threshold variable

γ = Threshold values

I = Indication function

e_t = Error

III. RESULTS AND DISCUSSION

In this era of globalization, almost all countries pay great attention to the capital market because it has a strategic role in strengthening the economic resilience of a country. The occurrence of capital flight abroad is not only the impact of the decline in the value of the rupiah or high inflation and low interest rates in a country, but because of the unavailability of profitable investment alternatives in that country, or at the same time, portfolio investments in other countries' stock exchanges promise profits. higher.

More companies are listed in Southeast Asia whose stock fall into the category of sharia stock. Two countries in Southeast Asia with the largest Islamic finance industry, namely Indonesia and Malaysia, have set records in the Islamic capital market by recording the highest number of Islamic stock.

Quoting from Islamic Finance News, the Indonesian Islamic capital market recorded a record with the highest number of sharia stock since the Jakarta Islamic Index was formed in 2000, while Malaysia recorded a record with the highest number of sharia stock in the last four years. This also strengthens the presence of capital markets in their respective countries.

A. VAR Stability Test

The VAR stability test shows that if the modulus value is less than one, then the VAR model is stable so that the resulting IRF analysis is valid.

Table 1. VAR Stability Test

Root	Modulus
0.999414	0.999414
0.952071	0.952071
-0.373073 - 0.505739i	0.628455
-0.373073 + 0.505739i	0.628455
0.524610 - 0.217144i	0.567774
0.524610 + 0.217144i	0.567774
0.133649 - 0.460797i	0.479788
0.133649 + 0.460797i	0.479788
-0.295204 - 0.201057i	0.357168
-0.295204 + 0.201057i	0.357168

This can be seen in the table above where the roots have a modulus value smaller than one.

B. Causality Test

Causality test is conducted to determine whether an endogenous variable can be treated as an exogenous variable.

Table 2. Granger Causality Test

Detail	Prob
JII does not Granger Cause DJMY	0.9631
DJMY does not Granger Cause JII	0.2771

The DJMY variable statistically did not significantly affect JII and vice versa, the JII variable did not significantly affect the DJMY variable as evidenced by the probability values greater than 0.05, namely 0.9631 and 0.2771, so it can be concluded that there is no causality for the two variables and there is no two-way relationship between JII and DJMY.

C. Cointegration Test

Cointegration testing in this study use the Johansen test approach.

Table 3. Johansen Cointegration Test

Hypothesis	Trace Statistic	Critical Value 5%	Max-Eigen Statistic	Critical Value 5%
None	10.6352	15.49471	8.326287	14.26460
At most 1	2.308935	3.841466	2.308935	3.841466

There is no long-term cointegration relationship between DJMY and JII. This is indicated by the value of the trace statistic and the maximum eigen value statistic which is smaller than the critical value of 5%.

D. Linearity Test

In some case in the time series data there is a relationship between the variables that have a tendency to be nonlinear. For this reason, it is necessary to do a linearity test to determine the right method for analyzing time series data. This study uses the RESET Test.

Table 4. Ramsey RESET Test

Statistic	Value	Prob
F-statistic	97120.08	0.0000

it can be concluded that the relationship between DJMY and JII tends to be nonlinear, it can be seen from the probability F-statistic which is smaller than 0.05.

E. Threshold Vector Autoregressive (TVAR)

The VAR model is applied when there is a non-linear relationship between variables in the VAR system that causes inconsistent relationships between variables.

Coefficient	First Regime (13.40%)		Second Regime (61.80%)		Third Regime (24.80%)	
	Δ DJMY	Δ JII	Δ DJMY	Δ JII	Δ DJMY	Δ JII
Intercept	64.295	-47.116	88.701	29.526	245.587	-2.135
	42.295	33.082	37.860***	29.613	43.089***	33.703
DJMY t -1	0.925	0.098	0.948	-0.018	0.844	0.007
	0.0592***	0.046***	0.029***	0.023	0.300***	0.023
JII t -1	0.008	0.92	-0.055	0.981	-0.098	0.989
	0.0312	0.024***	0.018***	0.014***	0.030***	0.024***
AIC	4345.693					
BIC	4428.791					
SSR	100922.4					
Threshold Value	938.92 and 1106.79					

The threshold value obtained divides the model into three regimes with a percentage of each regime of 13.40%, 61.80%, and 24.80%. In the table above, the intercept values are significant in regimes two and three. In regime two, the absolute value of the DJMY intercept is 88,701 which is greater and significant than the absolute value of the JII intercept of 29,526. This shows that the Malaysian Syariah stock price index (DJMY) has increased faster than the Indonesian Syariah stock price index (JII).

IV. CONCLUSION

Based on the results of the research and discussion in this study, it was concluded that there is no integration between the Malaysian and Indonesian Islamic stock markets and there is no long-term relationship between the two indices. It obtained threshold values of 938.92 and 1106.79. Based on the results above, the best TVAR model is using 2 thresholds, with the percentage values for each regime, namely 13.4%, 61.8%, and 24.8%.

V. REFERENCES

[1] Aprilia A. Anindita R, Syafrial, Tsai G, Chien LHH, "Threshold cointegration at Indonesia corn market," AGRISE Journal, 2014.

[2] Ardina dan Trias, "Analisis Integrasi Bursa Saham ASEAN 5," Jurnal Ekonomi dan Kebijakan Pembangunan, 2015

[3] Arize AC, Osang T, and Slottje DJ, "Exchange-Rate Volatility and Foreign Trade: Evidence from Thirteen LDC's," Journal of Business & Economic Statistics, 2000.

[4] Balke, NS, Fomby, TB, "Threshold cointegration. International Economic Review," 1997.

[5] Balke NS, "Credit and economic activity: credit regimes and nonlinear propagation of shocks," Economics and Statistics Review. 2000

[6] Box, G.E.P, Jenkins, G.M & Reinsel, G.C, "Time Series Analysis Forecasting and Control," New Jesrsey: John Wiley and Sons Inc, 2008

[7] Chan, K. C., Gup, B. E., dan Pan, M. S, "An empirical analysis of stock prices in major Asian markets and the United States," The Financial Review, 1992.

[8] Chan, K.S, "Consistency and Limiting Distribution of the Least Squares Estimator of a Threshold Autoregressive Model," The Annals of Statistics. 1993.

[9] Click RW, Plummer MG, "Stock Market Integration in Asean After The Asian Financial Crisis," Working Paper Series, 2003.

[10] Enders W, "Applied Econometric Time Series Second Edition," New Jersey (USA): John Wiley & Sons, 2014.

[11] Fatmawati, SW, "The Effect of International Sharia Stock Price Index and Macroeconomic Variables on JII," Journal of Al-Iqtishad, 2014.

[12] Firdausi, AN, "The Effect of the ASEAN Regional Stock Price Index and Macroeconomic Variables on the Indonesian Sharia Stock Price Index (ISSI)," Journal of Al-Muzara'ah, 2016.

[13] Granger E, "Co-integration and error correction representation, Estimation and Testing," The Econometric Society, 1987.

[14] Hakim, Sam dan Manochehr Rashidian, "Risk & Return of Islamic Stock Market Indexes," Dept of Finance, Seaver College of Business, Pepperdine University, Malibu, CA and Energetix LLP, Los Angeles, CA USA, 2002.

[15] Hansen, BB, "Endogenous Sample Splitting and the Estimation of Threshold", Mimeo, Boston College, 1995.

[16] Hansen B, "Testing for nonlinierity", Journal of Economic Surveys, 1995.

[17] Hansen, B.E, "Testing For Linearity," JSTOR, 1999.

[18] Hansen B, Seo B, "Testing for two regime threshold cointegration in vector error correction models," Journal of Econometrics, 2002.

[19] Huda, N & ME Nasution, "Investment in Islamic Capital Market", Jakarta: Kencana Prenada Media Group, 2008.

[20] Hung, B. dan Y.L. Cheung, "Interdependence of Asian emerging equity markets", Journal of Business Finance & Accounting, 1995.

[21] Husni, Q, "Prediction of Sharia Stock Index with Threshold Vector Error Correction Model (TVECM) Method", Yogyakarta: UIN Sunan Kalijaga, 2015.

[22] Hussin, M.Y.M, et.al, "Macroeconomic Variable and Malaysian Islamic Stock Market: A time Series Analysis", Journal of Business Studies Quarterly, 2012.

[23] Johansen S, Juselius K, "Maximum likelihood estimation and inferenceon cointegration with applications to the demand for money", Oxford Bulletin of Economics and Statistics, 1990

[24] Kusdarwati, Heni, "Threshold Vector Autoregressive (TVAR) modeling for selling rates and buying rates for EURO", Finance and Banking Journal, 2011.

[25] Mackinnon, J.G, "Critical Values for Cointegration Tests, in R.F. Engle and C.W.J. Granger, eds., Long-Run Economic Relationships: Readings in Cointegration", Oxford University Press, 1991.

[26] Mankiw, N. Gregory, "Principle of Economics (2th ed)", Orlando: Harcourt Brace & Company, 2021.

[27] Miskhin, Frederic, "Financial Markets Institutions and Money", Harper Collins College, New York, 1995

[28] Mobius, J. Mark., "Mobius on Emerging Market: Investment Prospects in New Markets, Jakarta: PT. Elex Media Komputindo, 1998.

[29] Nath, G.C. dan Verma, S, "Study of common stochastic trend and cointegration in the emerging markets; A case study of India, Singapore and Taiwan", 2003.

[30] Puspitasari Ardina, Hermanto Siregar, Trias Andati, "Analysis of ASEAN 5 Stock Exchange Integration", Journal of Economics and Development Policy, 2015.

[31] Ratanapakorn, O., dan Sharma, "Interrelationships among regional stock indices", Review of Financial Economics, 2002.

[32] Salvatore, Dominick, "International Economics(11thed)", New York: John Wiley and Sons Inc, 2013.

[33] Sheng, Hsiao-Ching dan Tu, H. Anthony, "A study of cointegration and variance decomposition among national equity indices before and during the period of the Asian financial crisis", Journal of Multinational Financial Management, 2000.

[34] Sims CA, "Macroeconomics and reality", JSTOR, 1980.

[35] Tsay, R.S, "Testing and Modeling Multivariate Threshold Models", JSTOR, 1998.

[36] Wei, W.W.S, "Time Series Analysis: Univariate and Multivariate Methods", Addison-Wesley Publishing Company, Inc. New York, 1994.

[37] Wu L, "Price linkages between Chinese and world main food markets", Beijing (CN): China Agricultural University, College of Economics and Management, 1999.

[38] Yang, J., Kolari, J., dan Min, I, "Stock market integration and financial crisis: The case of Asia", Applied Financial Economics, 2003.

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