SHARIA-SCREENING AND PERFORMANCE DETERMINANT IN INDONESIA

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Abstract

This study aims to compare the Islamic stock-screening and conventional stock and the determinants of performance both in Islamic stock and conventional stock. The data of this study uses monthly data from January 2010 – October 2018. This research uses Sharpe Ratio and Treynor Ratio to compare the performance of equity stock-screening by Jakarta Islamic Index, and conventional index measured by LQ45. We also calculate beta to to measure volatility of each index. The final step is by using Autoregressive Distributed Lag (ARDL) to capture the determinants of JII and LQ45 as the performance. The result shows that LQ45 has better performance than JII. In a range of seven years, LQ45 outperform JII in 7 years, whereas JII outperform LQ45 only in 2 years. The performance of Islamic screening stocks and Non-islamic screening stocks have no different. They are affected by JII and LQ45 of one previous period, japan rate of prior period, 3-month LIBOR, usd/idr rate, and usr/idr one previous period.

Keywords: Islamic Stock, Sharpe Ratio, Treynor Ratio, ARDL

Introduction

The screening process aims to identify stocks that violate sharia principles, such as usury, gambling (*maysir*) and uncertainty (*gharar*). In order to meet the interests of Muslim investors who expect their investment activities to be based on sharia principles, an index has been arranged in a number of world stock exchanges which specifically consist of components of stocks that do not conflict with the basic principles of sharia.

In Indonesia, the Islamic products for the first time in the Indonesian capital market was marked by the launch of Danareksa Syariah by PT. Danareksa Investment Management on July 3, 1997. Danareksa sharia is a stock mutual fund that first explicitly states its investment is sharia. In the end of 2000, Jakarta Stock Exchange (JSX) collaborated with PT. Danareksa Management Indonesia and issued the Jakarta Islamic Index (JII) which is the last index which consists of an index of 30 of the most liquid stocks and meets sharia criteria in accordance with the provisions of the National Sharia Council (DSN). The existence of Jakarta The Islamic Index (JII) has provided a more conducive atmosphere for the development of the Islamic finance business in Indonesia.

However, sharia products in Indonesian capital market were officially presented on March 14, 2003, where shares traded were stocks that had gone through a screening process based on the signing of a Memorandum of Understanding between the Capital Market and Financial Institution Supervisory Agency (Bapepam and LK) with the National Sharia Council of the Indonesian Ulema Council (DSN-MUI). The signing of the Memorandum of Understanding between Bapepam-LK and DSN-MUI became the foundation of strong support for the development of sharia-based capital markets in Indonesia. In general, the screening process has two

aspects that must be met by the issuer, then the company can be included in Islamic stock index, namely the qualitative and quantitative aspects. The qualitative aspects include the criteria for business objects, whether the company is engaged in a sector that is prohibited by elements of usury, gharar, and maysir. The quantitative aspects (accounting) are debt and equity ratio and the valuation of the results of the business appraisal concerned (Elfakhani and Hassan). The object of the emiten is the selection of the business carried out by each issuer in terms of its halal aspects. Halal and illegitimate criteria are fundamental criteria and are absolute for each issuer to become a sharia stock. The criteria of each country can certainly be different because it is an absolute decision by the sharia council in each country.

Based on DSN-MUI Fatwa Number: 40/DSN-MUI/X/2003 Article 3 paragraph 2 regarding issuers issuing Sharia Securities, it is clear that gambling and games classified as gambling or trading are prohibited, conventional financial institutions (ribawi) including conventional banking and insurance, illegal producers, distributors, and food and beverage traders, invest in issuers (companies) which at the time of the transaction level (nisbah) the company's debt to ribawi financial institutions are more dominant than their capital. The expected objection of Islamic screening is not only about negative screening (the issuer's object that is halal and haram), but also marks a positive screening of activities given to people and the world such as environmental preservation, minimal work, salary equality, and environmentally friendly products.

The companies listed in the Jakarta Islamic Index (JII) still use company debt with interest mechanisms. Even Indonesia can be up to 45% based on interest. The amount of this ratio is higher than the limit of the Sharia Suvervisory Board (SSB) to the DJIM with 33%. Therefore, it is not surprising that companies in Southeast Asia, including Indonesia, have a high level of debt. Financial Authority Service (OJK) also provides a limit on non-halal income between sharia indices, by setting no more than 10%. It appears that the allowance of investment in companies whose income contains ribawi is not consistent with the initial principle of the usury law in sharia principles. In practice, in Indonesia it still provides a number of concessions to issuers that are still engaged in non-halal income, with conditions not to exceed 10%. This step is done with the reason that it is almost impossible to get issuers who are not involved in interest in their business activities.

Islamic capital market is part of the ethical investment referred to in the teachings of Islam. Islamic stocks are part of the sharia capital market that must not conflict with Islamic teachings through fiqh muamalat. Selection (screening) of company activities is a manifestation of the implementation of the principle of fiqh muamalat so that companies categorized as sharia can be accessed by Muslims. The selection process will give confidence and comfort to Muslim investors and investors in general in investing. Selection criteria for sharia companies include two things, business object criteria and quantitative criteria (accounting). The criteria relating to business objects by the stock index are currently wider than the object prohibited in fiqh muamalat. The production of weapons, hotels, restaurants and pornography is a business object categorized as illegitimate. Qualitative criteria lead to halal-haram a company's core business. The quantitative criteria are based more on the company's financial performance relating to the maximum amount of corporate debt, the maximum amount of non-halal income, the maximum number of accounts receivable and placement in securities. Determination of

these criteria is based on the opinions of scholars by looking at the condition of the company. The difference in criteria for each index refers to the opinion of the jurists.

Therefore, this study aims to compare the Islamic stock-screening and conventional stock and the determinants of performance both in Islamic stock and conventional stock.

Previous Research

The previous researches of equity's screening have been done widely. The popular research is from Hassan and Antoniou (2007), they examined the effect of Islamic stocks screening on performance by comparing the performance of Islamic stock indexes (Dow Jones Islamic Market Index - DJIM) with conventional stock benchmark (Datastream Global Index - DGI). The result showed that the DJIM performed better than DGI based on the performance index such as Jensen, Treynor, and Sharpe ratio. The research also suggest that the growth of Islamic stock depend on the innovations of different investment strategies and the tool in assessing risk.

Nainggolan, et al. (2015) studied the performance of Islamic Equity Funds (IEFs) as the sample. The study found out that Islamic Equity Funds surpassed the Conventional Equity Funds (CEF) with the average of 40 points basis per month. The media also stated IEFs are safer than the CEFs. However, this research also showed that there is a negative relationship between the performance of fund and the intensity of stock screening.

Ashraf and Khawaja (2016) compared the performance of Islamic stock-screened by using Shariah-compliant portfolios (SCPs) and conventional stock which is represented by benchmark portfolios (CBPs) from the United Stated of America, Canada, Europe, Gulf Cooperation Council Countries, and Japan. The result showed Shariah-compliant portfolios are less risky than conventional benchmark portfolio. However, the research suggest that Islamic stock-screened has no influence on return performance. Using book value of total assets approach, the Shariah compliant portfolios showed a better nominal and risk-adjusted returns than using market value equity approach.

Bousalam (2016) studied the Shariah-stock screening from Moroccan stock market. The research used four different methodologies of world leading equity index providers (i.e., Dow Jones Islamic Market World Index; S&P Global BMI Shariah Index; MSCI ACWI Islamic; FTSE Shariah All-World Index). The results of the research suggested that returns of constructed Moroccan Islamic indices were higher and more volatile compared to that of the MASI. This indicates that investors in Shariah-compliant stocks do not sacrifice financial performance for their risky investment

Akhtar and Jahroni (2017) examined the Islamic stocks and conventional stocks in Malaysia. The research suggest that Islamic-screened stocks are more efficient than conventional stocks because there is risk reduction on the similar returns. The average standard deviation of Islamic stocks is in 3.43–3.78 percent points lower than conventional stocks.

Lusyana (2017) examined the effect of the Indonesia Shariah-compliant Stock Index (ISSI) on financial performance. The research showed that Islamic-equity screening which is represented by ISSI has a positive effect on the financial performance and it performed better than conventional stock which is represented by Jakarta Composite Index (JCI). The result also provides the evidence that Islamic-screening has a significant influence on stock market returns performance. The result from

Indonesian stock exchange is also by Pranata and Nurzanah (2017). They found out that there is no significant difference on performance between Islamic stock screening (JII) and conventional stock screening (LQ45). The result also shows that mostly LQ45 is more volatile than JII. The performance of Islamic stock screening is mostly less affected by external factors. They suggest a challenge for the authorities to educate society, because Islamic stock screening has no much differences from conventional index and less volatile.

Research Method

The data of this study uses monthly data from January 2010 – October 2018 which are the complete and the latest monthly dataset available in IDX website, Central Bank of Indonesia (BI), and US Central Bank (The Federal Reserve). This research uses Sharpe Ratio and Treynor Ratio to compare the performance of equity stock-screening by Jakarta Islamic Index, and conventional index measured by LQ45. We also calculate beta to to measure volatility of each index. The final step is by using Autoregressive Distributed Lag (ARDL) to capture the determinants of JII and LQ45 as the performance.

Sharpe Ratio and Treynor Ratio draw marginal return of each index weighted with its risk that represented by the index's return volatility, the higher the ratios the better the better its portfolio performance. The formulas of Sharpe (1966) and Treynor (1965) Ratio:

$$Sharpe\ Ratio = \frac{(R_{i,t} - R_{f,t})}{\boldsymbol{\sigma(R_{i,t})}}$$

$$Treynor\ Ratio = \frac{(R_{i,t} - R_{f,t})}{\beta_i}$$

$R_{i,}$ is the average stock return of index i in specific period of time, $R_{f,t}$ denotes return of risk free rate in specific period of time which is represented by BI Rate, σ ($R_{i,t}$) is standard deviation of average stock return of index i. Meanwhile, βi denotes beta of market index, which reflects its volatility towards benchmark index.

We use a simple calculation to measure both indices volatility towards benchmark index to compare the volatility of JII and LQ45. The market return is Jakarta Composite Index (JCI).

$$\beta_i = \frac{cov(R_{i,t} - R_{M,,t})}{\beta_i}$$

This study uses two dependent variables and eight independent variables. The dependent variables are Islamic-screening index which is measured by JII and conventional stocks by LQ45. The independent variables consist of the rate of USD, rate of Japan, the currency of USDIDR, money supply, LIBOR-3 months, inflation (Consumer Price Index), BI Rate, and oil price. The stocks' price movement of JII or LQ45 constituents will automatically be calculated in their belonging indices, which affect JII price and LQ45 price.

Autoregressive Distributed Lag (ARDL) is used to find out the determinants of stock performance. If the unit root test is stationer in level or first different, the ARDL test can be conducted. However, we should test the variable using unit root to identify the stationary level of each variable. Below are results of Unit Root with Break Test.

Variables	Level	First Difference
lnJII	-2.504	-10.698**
lnLQ45	-2.292	-10.525**
USDRate	-2.187	-20.982**
JapanRate	-5.923**	-33.820**
lnUSDIDR	-24.928**	-68.527**
lnM2	-16.508**	-907.592**
LIBOR-3M	2.877	-6.259**
CPI	-2.052	-7360**
BI Rate	-4.209**	-22.557**
lnOil	-1.360	-8.648**

The result shows the variables are not all stationer at level. Therefore, we cannot use Ordinary Least Square (OLS) as the methodology because it will lead to spurious regression. However, since none of variables are stationer at level, we can apply Autoregressive Distributed Lag (ARDL) as the methodology to compare the determinants effect of JII and LQ45. After adding structural break variable, we run an ARDL regression to estimate the optimum model for determining the lag number using Akaike info Criterion (AIC) with maximum lag number of 4;

$$lnPriceIndex_t = \alpha_0 + \alpha_1 lnPriceIndex_{t-1} + \alpha_2 BIRate_t + \alpha_3 BIRate_{t-1} + \alpha_4 BIRate_{t-2} + \alpha_5 CPI_t + \alpha_6 CPI_{t-1} + \alpha_7 CPI_{t-2} + \alpha_8 CPI_{t-3} + \alpha_9 CPI_{t-4} + \alpha_{10} JapanRate_t + \alpha_{11} JapanRate_{t-1} + \alpha_{12} JapanRate_{t-2} + \alpha_{13} JapanRate_{t-3} + \alpha_{14} USDRate_t + \alpha_{15} LIBOR3M_t + \alpha_{16} lnM2_t + \alpha_{17} lnOilPrice_t + \alpha_{18} lnOilPrice_{t-1} + \alpha_{19} lnOilPrice_{t-2} + \alpha_{20} lnOilPrice_{t-3} + \alpha_{21} lnOilPrice_{t-4} + \alpha_{22} lnUSDIDR_t + \alpha_{22} lnUSDIDR_t + \alpha_{23}$$

Result and Discussion

	Sharpe		Treynor		Beta	
	JII	**LQ45**	**JII**	**LQ45**	**JII**	**LQ45**
2010	0.303	**0.368**	0.200	**0.242**	1.113	**1.226**
2011	-0.060	**-0.038**	-0.040	**-0.025**	**-1.334**	-1.267
2012	**0.107**	0.079	**0.050**	0.036	1.099	**1.256**
2013	-0.144	**-0.134**	-0.094	**-0.081**	**-1.121**	-1.087
2014	0.371	**0.673**	0.084	**0.150**	0.766	**1.022**
2015	-0.322	**-0.264**	-0.178	**-0.145**	-1.108	**-1.128**
2016	**0.220**	0.162	**0.074**	0.053	1.006	**1.107**
2017	0.163	**0.521**	0.042	**0.129**	**0.994**	0.981
2018	-0.538	**-0.479**	-0.210	**-0.170**	-0.972	**-1.198**

By calculating Sharpe ratio and Treynor ratio as the methodology to measure and to compare the performance of JII and LQ45 using the complete and the latest dataset available in IDX, from January 2010 to October 2018, the result shows that LQ45 has better performance. In a range of seven years, LQ45 outperform JII in 7 years, whereas JII outperform LQ45 only in 2 years. This means the sharia-screening does not perform really well in Indonesian Stock Exchange. This occurs because the conventional stocks have more profitability, such as banking industry. Regarding the reason behind the outperformance of either JII or LQ45 in certain years will be discussed in the part of interpretation of ARDL regression result. In addition, the result of bound test can be seen in Table 3.

Table 3. Bound Test (JII)

Bounds Test				
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	5.396615	10%	2.26	3.34
K	8	5%	2.55	3.68
		2.5%	2.82	4.02
		1%	3.15	4.43

The value of F-stat is 5.3966 which is higher than the value of I(1). This means the null hypothesis is rejected which stated that no long run relationship exist. The result of bound test shows that there is an existence of long run relationship.

Table. 4 Bound Test (LQ45)

F-Bounds Test				
Test	Value	Signif.	I(0)	I(1)

Statistic			Asymptotic: n=1000	
F-statistic	4.416557	10%	2.26	3.34
k	8	5%	2.55	3.68
		2.5%	2.82	4.02
		1%	3.15	4.43

The value of F-stat is 4.4165 which is higher than the value of I(1). This means the null hypothesis is rejected which stated that no long run relationship exist. The result of bound test shows that there is an existence of long run relationship.

Table 5. Result of JII as Dependent Variable

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNJII(-1)	0.605725	0.070915	8.541533	0.0000
BIRATE	-0.002397	0.005229	-0.458451	0.6477
CPI	-0.004073	0.003834	-1.062457	0.2908
APANRATE	0.044981	0.076812	0.585602	0.5596
JAPANRATE(-1)	-0.179734	0.075145	-2.391810	0.0188
USDRATE	0.089857	0.043644	2.058870	0.0424
LIBOR3	-0.137989	0.036863	-3.743242	0.0003
LNM2	-0.137049	0.185161	-0.740163	0.4611
LNOILPRICE	0.026406	0.022425	1.177544	0.2420
LNUSDIDR	-0.026406	0.022425	-1.177544	0.2420
LNUSDIDR(-1)	0.266817	0.117834	2.264342	0.0259
C	-0.025851	0.009039	-2.860058	0.0053
@TREND	6.491178	3.120905	2.079902	0.0403
	0.004273	0.002270	1.882397	0.0630

R-squared	0.945664	Mean dependent var	6.426611
Adjusted R-squared	0.938499	S.D. dependent var	0.143885
S.E. of regression	0.035683	Akaike info criterion	-3.711843
Sum squared resid	0.115865	Schwarz criterion	-3.381294
Log likelihood	206.0158	Hannan-Quinn criter.	-3.577928
F-statistic	131.9813	Durbin-Watson stat	1.868884
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

Based on the table, the Islamic screening stock which is represented by Jakarta Islamic Index is affected by JII of one previous period, japan rate of prior period, 3-month LIBOR, usd/idr rate, and usr/idr one previous period. Meanwhile, LQ45 is affected by LQ45 of one previous year, USD rate, 3-months LIBOR, and exchange rate of of USD/IDR. Jakarta Islamic Index and LQ45 of current period are positively affected by the JII and LQ45 of one previous period. Therefore, a good performance of JII and LQ45 of current period indicates a good performance for the next period.

Table 5. Result of LQ45 as Dependent Variable

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNLQ45(-1)	0.661299	0.069723	9.484642	0.0000
BIRATE	7.93E-05	0.005882	0.013475	0.9893
CPI	-0.005597	0.004238	-1.320522	0.1899
JAPANRATE	-0.030160	0.065607	-0.459714	0.6468
USDRATE	0.122875	0.048221	2.548169	0.0125
LIBOR3	-0.148985	0.040826	-3.649297	0.0004
LNM2	0.116972	0.204838	0.571044	0.5694

LNOILPRICE	0.012922	0.024759	0.521906	0.6030
LNUSDIDR	0.260719	-0.133428	-1.954004	0.0537
LNUSDIDR(-1)	0.006832	0.003619	1.887705	0.0622
C	5.833182	3.404073	1.713589	0.0900
@TREND	0.004600	0.002502	1.838509	0.0692

R-squared	0.951657	Mean dependent var	6.669728
Adjusted R-squared	0.945877	S.D. dependent var	0.170405
S.E. of regression	0.039644	Akaike info criterion	-3.509607
Sum squared resid	0.144589	Schwarz criterion	-3.204485
Log likelihood	194.4995	Hannan-Quinn criter.	-3.385993
F-statistic	164.6430	Durbin-Watson stat	1.907601
Prob(F-statistic)	0.000000		

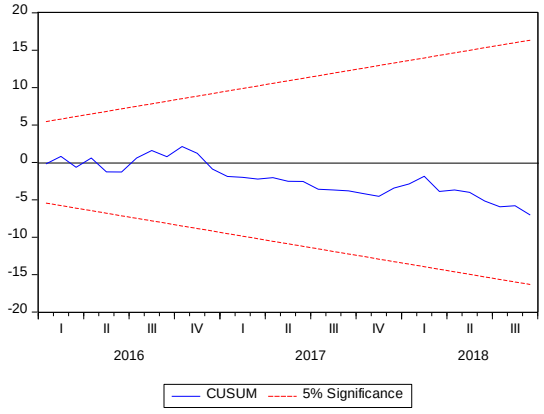
*Note: p-values and any subsequent tests do not account for model

selection.

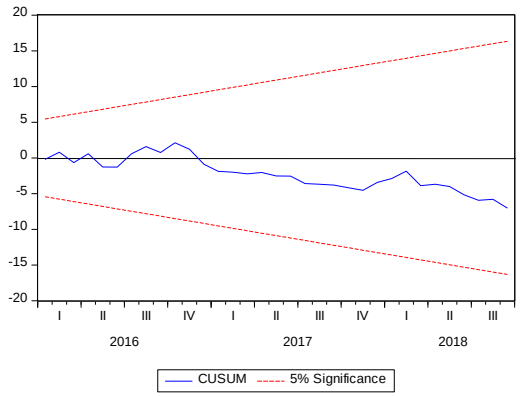
The 3-month LIBOR negatively affects JII and LQ45. This occurs because LIBOR represents interest rates, therefore if the low LIBOR will generally increases stock prices. However, at any given time many factors affect international financial markets. A high Interest rates will make a low stock prices because investors can get higher return from rate of return on bonds. The investors also have a lower risk, so they move money out of stocks and into bonds. When interest rates go down, stock prices go up as investors move money from bonds into stocks because the return on bonds has fallen. In more indirect ways, higher interest rates can lead to the lower prince of stocks because the difficulty of borrowing funds inhibits growth. Raising interest rates of consumers will make customers have more debt (Günay, 2015).

The high USD rate both in current and one previous year significantly decrease JII. This is a normal condition since a high rate of USD/IDR will decrease performance of JII since it can lead to higher inflation in the future, which occurs uncertainty about the companies performance both Islamic and non-Islamic stocks. The reason of the relationship between exchange rates and stock prices is the 'portfolio balance approach', which advocates that the causality runs from exchange rate to stock prices. It is based on the idea that the market value of firms can be significantly affected by the health of the national currency. It suggests that when a country's currency is weakened, its exported goods become cheaper internationally, which can help to fuel growth and lead to a potential increase in profits for companies whose earnings are export based. The result is consistent with Pranata and Nurzanah (2015) and Arfaoui and Rejeb (2017).

CUSUM JII



CUSUM LQ45



From the results of the CUSUM test, it can be seen that the model of JII and LQ45 are stable because the cusum line is still between the significant 5 percent line (red line). The model has no problem and can be used for the research.

Conclusion

The result shows that LQ45 has better performance than JII. In a range of seven years, LQ45 outperform JII in 7 years, whereas JII outperform LQ45 only in 2 years. This means the sharia-screening does not perform really well in Indonesian Stock Exchange. This occurs because the conventional stocks have more profitability, such as banking industry.

The performance of Islamic screening stocks and Non-islamic screening stocks have no different. by Jakarta Islamic Index is affected by JII of one previous period, japan rate of prior period, 3-month LIBOR, usd/idr rate, and usr/idr one previous period. Meanwhile, LQ45 is affected by LQ45 of one previous year, USD rate, 3-months LIBOR, and exchange rate of of USD/IDR. Both of them have the same result regarding the variables affecting them.

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