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THE ANALYSIS EFFECT OF MACROECONOMIC VARIABLES ON SHARIAH AND CONVENTIONAL MARKET SHARE AT INDONESIA

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ABSTRACT

The purpose of this study is to examine and analyze the effect of macroeconomic variables on shariah and conventional stock markets in Indonesia. This study examines and analyzes long-term equilibrium relationships then the effects of short and long term and lastly examines and analyzes the causal relationship of macroeconomic variables on shariah and conventional stock markets. We used the Autoregressive Distributed Lag (ARDL) Test with the Bound Test then used the ARDL estimation test to examine short and long term and finally, we use the Vector Error Correction Model (VECM) to answer the causality relationship between variables. We found that there is cointegration or a long-term balance relationship between macroeconomic variables on the two stock markets. Then the ARDL estimation test results show that there is a long-term positive influence on the macroeconomic variable on the industrial production index, the export value on the conventional stock market, while the interest rate has a negative effect. In the Shariah stock market, the industrial production index has a positive effect, for the open unemployment rate has a negative effect. In the short-term relationship, only interest rates have no influence on conventional stocks while Shariah stocks are all influential variables. Finally, there is no two-way causality relationship between macroeconomics and the stock market, there is only a one-way relationship, namely JII ER IPI on export value, level open unemployment to JII and ER, in conventional markets only one-way causality, IPI and XR to the JCI were found. TK to ER, ER to XR. So it's important for policy makers to maintain macroeconomic variables in formulating decisions.

Introduction

Economic growth towards a better direction can provide opportunities for people to be more advanced, open themselves up including investing their funds in the existing stock market. Investments made must be properly calculated so that the investment made can generate future profits in accordance with the main objective. I Putu (2018) has state that few facilities of investment are available in capital market nowadays besides investing in banks.

It can be said that in the stock exchange there is an extraordinary system where as the system easily provides access buyers and sellers of securities to make transactions either directly or through their elected representatives. The function of the stock exchange includes maintaining market continuity and creating a fair price for securities through the supply and demand mechanism. (Soemitra, 2016).

The composite stock price index (IHSG) could say that the one of performance indicators on the Indonesia Stock Exchange (IDX) where they record historical traces of stock price movements listed in it, this movement in share value is one that makes investors interested in making transactions The Indonesian Stock Exchange either buys, sells shares or even holds.

Changes in macroeconomic factors, assumptions and indicators of stock exchanges abroad have an impact on changes in stock market prices in a country. Thus investors can see, read and study the existing patterns of change so that they can understand the behavior patterns of stock movements and changes. Changes in stock prices as a whole in a capital market will affect the stock price index of a country. Previous research has found that the Granger causality test detects the relationship of macroeconomic variables with stock prices in the five ASEAN stock markets. (Wongbangpo, 2002). This study takes the Composite Stock Price Index for the conventional stock market and the Jakarta Islamic Index for the Shariah stock market.

According to Pananda Pasaribu (2008), Indonesia as a developing country has had a considerable influence from the effects of the global financial crisis. Various policies were taken by the government to reduce the bad effects of the crisis, ranging from raising interest rates, raising oil prices, and tightening foreign currency traffic.

The exchange rate is a macroeconomic variable that affects the volatility of the index. Changing exchange rates have a negative effect on stocks, meaning that there is an inverse effect on the value of foreign currencies and stock prices. The result is sluggish trading, due to the high value of the currency which encourages investors to invest in the money market. On the other hand, when the value of the foreign currency decreases, it causes an increase in stock prices, and a decrease in foreign currency will attract investors to invest in the stock market. (Catona: 2018).

The results of research conducted by Catona (2018) found a short and long term effect of net exports on stock prices. Natassyari (2006), Bhattacharya and Mukherjee (2000) found a positive effect of net exports on stock prices.

The labor market is one of the variables that also affects economic growth. There is no doubt that the absorption of labor, coupled with good wages, will have a positive impact on the economy. Likewise, the unemployment rate will have the opposite impact on the economy.

Setiawan (2010) The results of his research show that the number of business

units, investment value, output value and minimum wage simultaneously have a significant effect on the number of workers, based on research on the analysis of labor absorption in the small and medium enterprises (UKM) sector in Semarang City.

Unemployment is a macroeconomic problem that affects humans directly and is the most serious. For most people, losing a job means a decrease in the standard of living and psychological associations. So it is not surprising that unemployment is a topic of frequent discussion in political debates and politicians often claim that the policies they offer will help create jobs. (Mankiw, 2003).

Atika and Salamatusun (2018), Budiman and Michael (2015) found the conclusion from their research that the unemployment rate variable partially there is no significant effect in stock prices. The different with Sirucek's (2012) research, the inflation and unemployment variables are significant for the Dow Jones Industrial Average and the Standard and Poor's 500 have a significant negative effect.

Syarif and Nadia (2015) reveal that changes in the fed interest rate have no effect on changes in ISHG. Syarif and Nadia (2015) in Surbakti (2011) The United States economic indicator that most influences stock prices is information about the state of labor (non-farm payroll). The non-farm payroll component covers 80% of the United States' Gross Domestic Product (GDP), if the non-farm payroll data increases indicating the economy in the United States is improving or vice versa.

In this study, researchers analyzed the effect of macroeconomic on conventional and shariah stock markets in Indonesia. The conventional stock market researchers took the JCI (Composite Stock Price Index) and for Shariah stocks the researcher took JII (Jakarta Islamic Index) as the dependent variable. As for the independent variable, the researchers took Gross Domestic Product, Labor, Exchange Rates, Export Value and Interest Rates.

With the explanation and background description above, the problems in this study are as follows:

Does the markroeconomic variable have a long-term equilibrium relationship with Shariah and conventional stock markets in Indonesia?

How do macroeconomic affect shariah and conventional stock markets in Indonesia in the short and long term?

What is the multivariate causality relationship between markroeconomic with shariah and conventional stock markets in Indonesia.

Conceptual Framework and Hypotheses Development

Composite Stock Price Index (IHSG), which is also known as a stock market index used by the Indonesia Stock Exchange. As an indicator of stock price movements on the JSE, the JCI was introduced for the first time on April 1, 1983 with a combination of price movements for common stock and preferred stock. The basis for calculating the IHSG is August 10, 1982, with a value of 100 and the current registered shares totaled 13 shares. (Maskur, 2009).

On July 3, 1997, PT Danareksa Investment Management issued the first Sharia Mutual Funds and continued with the collaboration with the Indonesia Stock Exchange on July 3, 2000, the first Jakarta Islamic Index was issued which opened space for the public to invest in accordance with Sharia guidelines and principles.

Macroeconomic variables can be said to be factors outside the company and

are directly or indirectly related to company performance. Tandelilin (2010) states that in making investment decisions that benefit the ability of investors to predict and understand macroeconomic conditions in the future will greatly affect.

Gross domestic product growth is an indicator of national income that can be used as a measure of a country's economic growth. According to Todaro (1994) the level of prosperity of a country as measured by the Gross-Gross Domestic Product (GDP) is income, by dividing the amount of GDP achieved by the population, it can be seen that the level of income per capita, but the results cannot guarantee prosperity.

Effective company monitoring allows allocation of resources to the best managed and innovative companies, leading to reduced unemployment.

Economists classify the exchange rate into two, namely:

1. The real exchange rate, namely the relative price of goods of the two countries.
2. Nominal exchange rate, namely the relative price of the currencies of two countries.

Net exports are the difference in value between export value and import value. An increase in net exports which mean is the value of exports greater than the value of imports. (Mankiw, 2012). The balance of payments is influenced by an increase in net exports which will create a surplus in the balance of payments. In Case & Fair (2007) the position of positive net export value indicates that exports are higher than imports and vice versa when the net export value is negative it means that exports are lower than imports.

According to Keynes, the interest rate is determined by supply and demand on the money market. When there is a desire to invest in securities, it occurs because of changes in interest rates. This happens at the interest rate, if the interest rate decreases, the securities increase and vice versa. So it is possible for securities holders to suffer capital loss or capital gains. (Wardani, 2003; Kustina et al., 2019).

This study intends to examine whether there is a relationship between gross domestic product, open unemployment rate, exchange rate, export value and interest rates on the shariah stock market and conventional stock markets both in the short and long term.

Data and Methodology

The scope of this research consists of seven variables to be tested, namely GDP, interest rates, net exports, exchange rates, and labor by looking at the influence of each variable on the conventional stock market and the Shariah stock market in Indonesia. The use of data in this study covers the last 6 years, from 2013 to 2019 on a monthly basis.

In this study, there are three model analysis methods used to answer the predetermined hypotheses, first using co-integration to answer the balance of long-term relationships, secondly using the Autoregressive Distributed Lag (ARDL) Approach to see short-term and long-term relationships, and third using (Vector Error Correction). Model) VECM to see the causality relationship between macroeconomic variables.

The first test to perform regression analysis of the data is the stationarity test. This stationarity test is intended to prove and analyze variables having a stable or stationary pattern. There are options that can be used to test stationary data,

such as using the Augmented Dickey-Fuller Test (ADF) and the Phillips Perron Test (PP).

In general, ordinary least squares (OLS) can be applied to the Lag Distribution Autoregression (ARDL) model, using Alt and Timbergen's sequential (sequential) method to determine the optimum lag length. (Gujarati, 1995). The sequential procedure stops when the regression coefficient of the lag variable starts to become statistically insignificant or the coefficient of one variable changes sign from positive to negative or vice versa.

The optimal lag can be determined by setting the lag value obtained from LR (Sequential Modified LR Test Statistics), FPE (Final Prediction Error), AIC (Akaike Information Criterion), SC (Schwarz Information Criterion), and HQ (Hannan-Quinn Information Criterion).

The cointegration test is used to analyze whether there is a long-term balance relationship between the independent variable and the dependent variable, so that it can be used in long-term estimation. By using both models, namely, Autoregressive Distributed Lag and Vector Error Correction Model.

Perform ARDL bounds test to determine whether or not there is a long-term relationship (cointegration) between the variables used in the model. The cointegration procedure Bound F-test uses the Wald statistical or F-statistic restriction and is compared against the upper and lower band critical values. Pesar et al. (2001) explained that there are three possible results from this Bound F-test, namely as follows:

1. F-stat is greater than upper band and lower band critical value, then there is cointegration or rejects H_0 (not cointegrated).
2. F-stat is below the upper band and lower band critical value then it accepts H_0 .
3. The f-stat between the upper band and lower band critical value, there is no decision.

Autoregressive Distributed Lag (ARDL) model was introduced by Pesar and Shin in 1995 with a cointegration approach. This model is used because the data used is not too much. In regression analysis, the final results obtained will show whether the independent variable will affect the dependent variable that can be used for research estimation. (Gujarati, 2012).

The model used can be seen with the econometric approach equation below which is used as data analysis. Which then transforms into the respective variables used, where the dependent variable is the Jakarta Islamic Index and the Jakarta Islamic Index, and the independent variables are Gross Domestic Product, Open Unemployment Rate, Exchange Rate, Export Value and Interest Rate.

$$\ln IHS G_t = a + b \ln IPI_t + c TK_t + d \ln ER_t + e \ln XR_t + f IR_t + \varepsilon_t \dots\dots (1)$$

$$\ln JII_t = a + b \ln IPI_t + c TK_t + d \ln ER_t + e \ln XR_t + f IR_t + v_t \dots\dots\dots (2)$$

Keterangan:

- IHSG = *Composite Stock Price Index*
 JII = *Jakarta Islamic Index*
 IPI = *Industrial Production Index*
 TK = *Open unemployment rate*
 ER = *Exchange rate*
 XM = *Export Value*
 IR = *Interest Rate*

$\varepsilon, v = \text{Error Term}$

In addition, the error correction model (ECM) can be derived from ARDL through simple linear transformations (Banerjee et al., 1993). ECM integrates short-run dynamics with long-run equilibrium, without losing long-run information.

The ARDL representation model for equations (1) and (2) can be written as follows:

$$\begin{aligned} \Delta \ln IHS G_t = & a_0 + \sum_{i=1}^{n1} b_1 \Delta \ln IHS G_{t-i} + \sum_{i=1}^{n2} b_2 \Delta \ln IPI_{t-i} + \sum_{i=1}^{n3} b_3 \Delta TK_{t-i} \\ & + \sum_{i=1}^{n4} b_4 \Delta \ln ER_{t-i} + \sum_{i=1}^{n5} b_5 \Delta \ln XR_{t-i} + \sum_{i=1}^{n6} b_6 \Delta IR_{t-i} \\ & + \theta_1 \ln IHS G_{t-1} + \theta_2 \ln IPI_{t-1} + \theta_3 TK_{t-1} + \theta_4 \ln ER_{t-1} \\ & + \theta_5 \ln XR_{t-1} + \theta_6 IR_{t-1} + \varepsilon_t \quad (3) \end{aligned}$$

$$\begin{aligned} \Delta \ln JII_t = & a_1 + \sum_{i=1}^{n1} b_7 \Delta \ln JII_{t-i} + \sum_{i=1}^{n2} b_8 \Delta \ln IPI_{t-i} + \sum_{i=1}^{n3} b_9 \Delta TK_{t-i} \\ & + \sum_{i=1}^{n4} b_{10} \Delta \ln ER_{t-i} + \sum_{i=1}^{n5} b_{11} \Delta \ln XR_{t-i} + \sum_{i=1}^{n6} b_{12} \Delta IR_{t-i} \\ & + \theta_7 \ln JII_{t-1} + \theta_8 \ln IPI_{t-1} + \theta_9 TK_{t-1} + \theta_{10} \ln ER_{t-1} \\ & + \theta_{11} \ln XR_{t-1} + \theta_{12} IR_{t-1} + v_t \quad (4) \end{aligned}$$

The term with addition signs in the above equation represents the dynamics of error correction while the second part (the term with ns) deals with the long term relationship.

The short run error correction model is also used for the purpose of identifying short-term dynamic estimates. This correction requirement (ECT) is expected to have a negative and significant sign on the dependent variable (Makun, 2018). The short-term model in research is as follows.

$$\begin{aligned} \Delta \ln IHS G_t = & \alpha_{0i} + \sum_{i=1}^n \alpha_5 \Delta \ln IHS G_{t-i} + \sum_{i=1}^n \alpha_6 \Delta \ln IPI_{t-i} + \sum_{i=1}^n \alpha_7 \Delta TK_{t-i} \\ & + \sum_{i=1}^n \alpha_8 \Delta \ln ER_{t-i} + \sum_{i=1}^n \alpha_8 \Delta \ln XR_{t-i} + \sum_{i=1}^n \alpha_8 \Delta IR_{t-i} \\ & + ECM_{t-1} + \varepsilon_t \end{aligned}$$

$$\begin{aligned} \Delta \ln JII_t = & \alpha_{0i} + \sum_{i=1}^n \alpha_5 \Delta \ln JII_{t-i} + \sum_{i=1}^n \alpha_6 \Delta \ln IPI_{t-i} + \sum_{i=1}^n \alpha_7 \Delta TK_{t-i} \\ & + \sum_{i=1}^n \alpha_8 \Delta \ln ER_{t-i} + \sum_{i=1}^n \alpha_8 \Delta \ln XR_{t-i} + \sum_{i=1}^n \alpha_8 \Delta IR_{t-i} \\ & + ECM_{t-1} + \varepsilon_t \end{aligned}$$

With this short-run model, we can look for causality between variables that can produce causality in the short run and causality in the long run. This causality procedure uses VECM.

The serial correlation test is used to determine whether or not there are deviations from the classical assumptions of serial correlation, which is what occurs between the residuals in one observation and another observation in the regression model. The condition that must be met is the absence of serial correlations in the regression model. The test method that is often used is the Durbin-Watson test (DW test). Apart from using the Durbin Watson test, serial correlation testing can also be done with the Breusch-Godfrey Serial Correlation LM Test.

Heteroscedasticity is used to determine whether or not there are deviations from the classic assumption of heteroscedasticity. The heteroscedasticity testing method can be seen from several tests such as Breusch-Pagan-Godfrey, White, Harvey, Glejser, and ARCH.

MAIN FINDING

From table 4.1 the ADF and PP Unit Root Test below, if it is found that the t-statistics value is greater than the critical value, at the level of 1 percent, 5 percent and 10 percent then H_0 is rejected, which means that the data is stationary. After testing the variables on the first difference, the composite stock price index, Jakarta Islamic index, industrial production index, open unemployment rate, exchange rate, net exports and interest rates are stationary, as we can see in the table below.

Table 4.1 Stationarity Test Results

P	ADF Test Statistics		PP Test Statistics	
	At Level	1 St Difference	At Level	1 St Difference
lnIHSG	-1.791	-7.531*	-1.773	-7.531*
lnJII	-2.736*	-	-2.904	-7.816*
lnIPI	-0.914	-7.240*	-2.228	-51.011*
TK	0.028	3.607*	-0.880	-1.846*
lnER	-1.627	9.714*	-1.606	-9.720*
lnXR	-1.777	9.657*	-4.468	-19.966*
IR	-1.127	-4.032*	-0.876	-8.044*

Ket : () : probabilitas, *, **, *** : Signifikan 1% ,5%, 10%

Based on the lag test results of the two models in Table 4.2, it can be seen that the optimal lag in both conventional and Shariah stock markets is in the third lag. The selection of this lag is intended so that all the information obtained can be included in the analysis model, besides that the relatively long sample size is still possible to use.

Table 4.2 Optimal Lag Test Results

Model	Lag	FPE	AIC	SC	HQ
IHSG	0	4.33e-12	-9.139318	-8.951061	-9.064294
	1	1.35e-17	-21.82347	-20.50567	-21.29830
	2	2.19e-19	-25.96030	-	-24.98499
	3	1.71e-20*	-28.56061*	23.51296	-27.13516*
				-	24.98373*

Model	Lag	FPE	AIC	SC	HQ
JII	0	2.67e-12	-9.622802	-9.434545	-9.547778
	1	2.10e-17	-21.37704	-20.05924	-20.85187
	2	4.22e-19	-25.30393	-22.85659	-24.32862
	3	3.20e-20*	-27.93591*	-	-26.51046*
				24.35902*	

Keterangan: FPE= *Final Prediction Error*, AIC= *Akaike Information Criterion*, SC= *Schwarz Information Criterion*, HQ= *Hannan-Quinn Information Criterion*.

The ARDL model mentioned has its own advantages compared to VECM, one of which is the lag used is different from one variable to another. If in VECM it is found that the optimal lag is 3 then all variables must use the same lag. Meanwhile, the optimum ARDL lag is different. This research has 2 models, namely the JCI model and the JII model, the lag test results for the JCI model are (4, 5, 2, 2, 1, 5). The optimal lag test in this study uses the Akaike Info Creterion (AIC) method.

While the results of the test we get for the Jakarta Islamic Index (JII), the best model is the ARDL model (4, 5, 2, 2, 4, 3) with the Akaike Criterion value. The lag test results for the JII model are (4, 5, 2, 2, 4, 3). The optimal lag test in this study uses the Akaike Info Creterion (AIC) method.

Table 4.3 Results of JII & JCI Bounds Test

Test Statistic	Value	JII	IHSG
F Statistics			5.628472
K Significance	5	I(0) Bound	I(1) Bound
	10%	2,193	3,161
	5%	2,564	3,65
	1%	3,373	4,717

In Table 4.3, the F-Statistics value obtained is 5.778471 for the Shariah stock market (JII) and 6.868754 for the conventional stock market (IHSG) above the critical value of 1 percent I (0) and I (1) so that it can be concluded that both markets occur. cointegration or long-term equilibrium relationship.

The ARDL estimation test is to see the long-term and short-term effects between the dependent variables, namely the Jakarta Composite Stock Price Index and the Jakarta Islamic Index, as well as the independent variables, namely the industrial production index, open unemployment rate, exchange rate, export value and interest rates on Shariah and conventional stock markets.

Table 4.4 Results of Long-Term Estimation for the JCI ARDL: (4, 5, 2, 2, 1, 5)

Variable	Coefficient	Std. Error	t-Statistic	Prob*
LIPI	1.4083	0.2850	4.9403	0.0000
LER	-0.2633	0.2571	-1.0240	0.3109
LXR	0.2797	0.0696	4.0183	0.0002
IR	-0.0228	0.0109	-2.0836	0.0425

Variable	Coefficient	Std. Error	t-Statistic	Prob*
TK	-0.0879	0.0852	-1.0323	0.3071
C	-1.7549	3.0195	-0.5811	0.5638
EC = LOG(IHSG) - (1.4083*LOG(IPI) -0.2633*LOG(ER) + 0.2797*LOG(XPR) -0.0228*IR -0.0880*TK1 -1.7549)				

Table 4.4 is the estimation test result of the long-term effect of the ARDL IHSG or the conventional stock market, the estimation results show that the industrial production index variable, the export value has significant positive effect at the one percent level. This consistently with research that conducted by Tanjung (2014), Masyami (2004), Adisetiawan (2011) and Surbakti (2016). Increasing service and industrial products will increase the availability of goods for export. An increase in exports will result in an increase in income and will ultimately affect the share price.

. Table 4.5 JII Long-Run Estimation Test: (4, 5, 2, 2, 4, 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob*
LIPI	0.8046	0.3012	2.6704	0.0104
LER	-0.0632	0.2965	-0.2130	0.8322
LXR	0.1096	0.1141	0.9606	0.3416
IR	0.0040	0.0124	0.3186	0.7514
TK	-0.1862	0.0811	-2.2938	0.0263
C	1.4255	4.3304	0.3291	0.7435
EC = LOG(JII) - (0.8046*LOG(IPI) -0.0632*LOG(ER) + 0.1096*LOG(XPR) + 0.0040*IR -0.1862*TK1 + 1.4255)				

Interest rates have a significant negative effect at the five percent level. It could interpreted 1 percent increase in industrial production index and export value will have an impact on the 1.48 and 0.26 percent increase in the JCI. The interest rate has a significant negative effect at the five percent level where a 1 percent increase in the interest rate will decrease 0.02 percent on the JCI.

Table 4.5. is the cointegration test result of the long-term influence of ARDL JII or the shariah stock market, the estimation results show that the industrial production index variable and the open unemployment rate have positive and negative significant results at the level of five percent. This is consistent with research conducted by Majid and Yusof (2009), Sani and Wahyudi (2013), Mark J. Holmes and Nabil Maghrebi (2016).

Furthermore, observations on the ARDL model of this study also estimate the short-term Error Correction Model (ECM) which is carried out to determine the effect of lag and balance variables. The ECM condition or condition is that the coefficient must have a negative slope which indicates convergence. If a positive value is obtained, there will be a pattern of moving away from the balance point or diverging.

In table 4.6, the estimation results show that the CointEq value shows a negative coefficient of -0.6394, which indicates that 64 percent of the imbalance from the previous period (shocks) will return to the Long-term point

on the 19th day period. In the short term there are 4 variables that affect the conventional market, namely IPI, ER, XPR and TK1 (open unemployment rate).

Table 4.6 Results of the JCI Pandek Term Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob*
DLOG(IPI)	0.0803	0.0643	1.2490	0.2177
DLOG(IPI(-1))	-0.7640	0.1226	-6.2316	0.0000
DLOG(IPI(-2))	-0.6631	0.1239	-5.3517	0.0000
DLOG(IPI(-3))	-0.4959	0.1069	-4.6372	0.0000
DLOG(IPI(-4))	-0.2938	0.0754	-3.8924	0.0003
DLOG(ER)	-0.8692	0.1184	-7.3363	0.0000
DLOG(ER(-1))	-0.4438	0.1344	-3.3018	0.0018
DLOG(XPR)	-0.0178	0.0308	-0.5772	0.5665
DLOG(XPR(-1))	-0.1189	0.0307	-3.8647	0.0003
D(IR)	0.0050	0.0125	0.4007	0.6904
D(TK1)	-1.6129	6.7107	-0.2403	0.8111
D(TK1(-1))	1.5853	21.4803	0.0738	0.9415
D(TK1(-2))	23.866	29.8438	0.7997	0.4278
D(TK1(-3))	-42.686	21.9914	-1.9410	0.0581
D(TK1(-4))	18.969	6.8535	2.7678	0.0080
CoinEq(-1)*	-0.6394	0.0796	-8.0266	0.0000

R-squared 0.727, Adjusted R-squared 0.636, Durbin-Watson stat 2.236

Table 4.7 JII Short-Term Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob*
DLOG(IPI)	0.0154	0.0835	0.1850	0.8540
DLOG(IPI(-1))	-0.5662	0.1347	-4.2020	0.0001
DLOG(IPI(-2))	-0.5309	0.1414	-3.7535	0.0005
DLOG(IPI(-3))	-0.4458	0.1236	-3.6051	0.0008
DLOG(IPI(-4))	-0.2850	0.0921	-3.0942	0.0033
DLOG(ER)	-0.7620	0.1516	-5.0260	0.0000
DLOG(ER(-1))	-0.3520	0.1594	-2.2073	0.0322
DLOG(XPR)	-0.0446	0.0399	-1.1170	0.2696
DLOG(XPR(-1))	-0.0732	0.0401	-1.8229	0.0747
D(IR)	0.0045	0.0186	0.2410	0.8105
D(IR(-1))	-0.0306	0.0194	-1.5793	0.1210
D(IR(-2))	-0.0539	0.0184	-2.9281	0.0052
D(IR(-3))	-0.0532	0.0184	-2.8835	0.0059
D(TK1)	-1.130.8	5.2717	-2.1450	0.0372
D(TK1(-1))	2.340.8	10.466	2.2365	0.0301
D(TK1(-2))	-1.349.6	5.4450	-2.4787	0.0168
CoinEq(-1)*	-0.7482	0.1122	-6.6655	0.0000

R-squared 0.6540, Adjusted R-squared 0.5300, Durbin-Watson stat 2.0766

In table 4.7, the estimation results show that the CointEq value shows a negative coefficient of -0.7482 which indicates that 75 percent of the

imbalance from the previous period (shocks) will return to the long-term point on the 23rd day period. In the short term IPI, ER, XPR the previous month, IR two and three months earlier and TK had a significant effect on the Jakarta Islamic Index.

Table 4.8 explains that only the error correction term (ECT) coefficient of the Composite Stock Price Index, industrial production index and interest rate is founded negative and significant at the one percent and five percent levels. Meanwhile, the open unemployment rate, the exchange rate and the export value were found to be negative and insignificant. These findings suggest that the short-run adjustment burden for the long-run equilibrium relationship between the composite stock price index variables and the industrial production index and interest rates will move towards long-run equilibrium to eliminate short-run imbalances.

Table 4.8 Multivariate Granger Causalities Results for VECM Conventional Stock Markets

Dependent Variable: (DLIHS) (DLIPI)	Independent Variable: (DTK) (DLER)		(DLXR (DIR)	ECT(-1)			
DLIHS	-	4.103**	1.889	0.637	2.225*	0.046	-0.397*
G		(0.011)	(0.143)	(0.594)	(0.097)	(0.986)	[0.000]
DLIPI	0.424	-	0.537	0.435	0.049	0.430	-1.037*
	(0.736)		(0.659)	(0.729)	(0.985)	(0.732)	[0.002]
DTK	0.261	0.517	-	0.162	0.156	1.816	-0.0002
	(0.853)	(0.672)		(0.921)	(0,925)	(0.156)	[0.659]
DLER	0.157	0.128	3.919**	-	0.845	0.534	-
	(0.924)	(0.943)	(0.014)		(0.476)	(0.661)	0.162
							[0.341]
DLXR	1.428	0.945	0.875		-	1.985	- 0.236
				3.289*			
	(0.246)	(0,425)	(0.460)	(0.028)		(0.128)	[0.289]
DIR	0.347	0.245	0.238	0.811	0.864	-	- 0.117**
	(0.791)	(0.864)	(0.869)	(0.494)	(0.466)		[0.020]

Ket : () : probabilitas, *, **, *** : Signifikan 1% ,5%, 10%

Table 4.8 shows that the industrial production index and export value have a one-way relationship with the composite stock price index, the open unemployment rate has a one-way relationship with the exchange rate, the exchange rate has a one-way relationship with the export value. Those results are consistent with research conducted by Harjito & McGowan (2004), Oskooee & Sohrabian (2006), Maitra & Mukhopadhyay (2012), Mark & Nabil (2016), Cantona (2018) and Xolani, Rangan & Mark (2019).

Table 4.9 explains that only the error correction term (ECT) coefficient of

the Jakarta Islamic indexes, industrial production index, export value and interest rate is founded negative and significant at the one and five percent levels. These findings suggest that the short-run adjustment burden for the long-term equilibrium relationship between the Jakarta Islamic indexes, industrial production index, export value and interest rate variables will move towards long-run equilibrium to remove short-term imbalances. Meanwhile, the open unemployment rate and the exchange rate are not negative and insignificant.

Table 4.9 Results of the VECM Multivariate Granger Causalities Sharia Stock Market

Dependent Variable: (DLPI)	Independent Variable: (DLX, DLXR, DIR, ECT(-1))						
	(DLJII)	(DTK)	(DLXR)	(DIR)	(DLR)	(DLX)	(DLX)
DLJII	-	0.069	2.350***	0.754	1.345	0.514	-
		(0.975)	(0.080)	(0.525)	(0.270)	(0.674)	0.515**
DLPI	0.243	-	0.760	0.596	0.186	0.109	-
	(0.865)		(0.547)	(0.620)	(0.905)	(0.954)	1.017*
DTK	0.050	0.421	-		0.116	1.870	-8.45
	(0.985)	(0.739)		0.122	(0.946)	(0.147)	[0.890]
DLR	0.337	0.084	3.515**	-	0.727	0.700	-
	(0.798)	(0.968)	(0.022)		(0.540)	(0.566)	0.030
DLXR	2.580*	2.489**	1.831	3.402*	-	1.829	-0.730*
	**	*		*			
	(0.064)	(0.0713)	(0.153)	(0.024)		(0.154)	[0.000]
DIR	0.377	0.250	0.247	0.891	0.842	-	0.125**
	(0.769)	(0.860)	(0.862)	(0.452)	(0.477)		[0.024]

Ket : () : probabilitas, *, **, *** : Signifikan 1% ,5%, 10%

In table 4.9 it is found that the Jakarta Islamic index, industrial production index and exchange rate have a one-way relationship with export values, while the open unemployment rate has a one-way relationship with the Jakarta Islamic Indexes and the exchange rate. This is consistent with research conducted by Mark & Nabil (2016) and Xolani, Rangan & Mark (2019).

**Table 4.10 JCI Serial Correlation Test
Breusch-Godfrey Serial Correlation LM Test**

F-statistic	1.148928	Prob. F(2,46)	0.3259
Obs*Rquared	3.473104	Prob. Chi-Square(2)	0.1761

**Table 4.11 Serial Correlation Test JII
Breusch-Godfrey Serial Correlation LM Test**

F-statistic	0.179660	Prob. F(2,45)	0.8362
Obs*Rsquared	0.578281	Prob. Chi-Square(2)	0.7489

The autocorrelation test in this study used the Breusch-Godfrey Serial Correlation LM Test. The autocorrelation test results in Table 4.10 and Table 4.11 show the Prob value. Obs * R-squared is greater than 0.05, namely 3.473104 and 0.578281 so it can be concluded that the analyzed model is free from serial correlation problems.

In Table 4:12 the results of Harvey's test on the composite stock price index show the value of Prob. Obs * R-squared 28.55191 is greater than Alpha 0.05, meaning that it can be concluded that H1 is rejected and H0 is accepted, so there is no heteroscedasticity problem in the data. The same in Table 4.13, the case with the Jakarta Islamic Index probability value Obs * R-squared 29.05061 is greater than Alpha 0.05, meaning that it can be concluded that H1 is rejected and H0 is accepted, so there is no heteroscedasticity problem.

**Table 4.12 JCI Heteroscedasticity Test
Heteroskedasticity Test Harvey**

F-statistic	1.284731	Prob. F(24,48)	0.2260
Obs*Rsquared	28.55191	Prob. hi-Square(24)	0.2375
Scaled explained SS	27.47172	Prob. chi-Square(24)	0.2829

**Table 4.13 Heteroscedasticity Test JII
Heteroskedasticity Test Harvey**

F-statistic	1.242683	Prob. F(25,47)	0.2552
Obs*Rsquared	29.05061	Prob. hi-Square(25)	0.2618
Scaled explained SS	37.16524	Prob. chi-Square(25)	0.0557

CONCLUDING REMARK

The conclusions from the results of this study are based on the analysis carried out on the described hypotheses. The results showed that there was cointegration or long-term equilibrium relationship between macroeconomic variables with shariah and conventional stock markets. Then the ARDL estimation test results show that there is a long-term influence on the shariah stock market for the industrial production index variable has a significant positive effect and the open unemployment rate has a significant negative effect, the three other variables do not have a long-term effect on the shariah market.

For conventional stock markets, the industrial production index and export value have a significant positive relationship while interest rates have a significant negative relationship. Meanwhile, the other two variables have no influence on the conventional stock market.

The study shows that a two-way causality relationship is not found between macroeconomics and the stock market, there is only a one-way relationship, namely between the Jakarta Islamic Index, the Industrial Production Index and the exchange rate to the export value, the open unemployment rate has a one-way relationship to the Jakarta Islamic Index and value. exchange rate, the exchange rate has a one-way relationship to the

export value for the shariah

market. Whereas for conventional markets, it was found that the industrial production index and export value had a one-way causality relationship to export value. The open unemployment rate has a one-way causality relationship to the exchange rate and finally the exchange rate has a one-way relationship to the export value.

REFERENCES

- Adisetiawan, R. (2011). *Keseimbangan Jangka Panjang antara Variabel Makro Ekonomi dengan Indeks Harga Saham*. Trikonomika, ISSN 1411-514X. Vol. 10, No. 2: 72–84.
- Alwi, I. Z. (2013). *Pasar Modal: Teori dan Aplikasi, Panduan Praktis*. Jakarta: Nasindo
- Ardana, Y. (2016). Pengaruh Variabel Makroekonomi Terhadap Indeks Saham Syariah di Indonesia: Model ECM. *Esensi: Jurnal Bisnis dan Manajemen*, P-ISSN: 2087-2038; E-ISSN: 2461-1182. Vol. 6, No. 1: 17-30.
- Atika P. Dewi & Salamatun A (2018). Pengaruh Kurs Rupiah, Tingkat Suku Bunga dan Tingkat Pengangguran Terhadap Harga Saham Pada Perusahaan Sub Sektor Pertambangan Minyak dan Gas Bumi yang Tercatat di Bursa Efek Indonesia Periode 2012 - 2017. *JURNAL FOKUS*. Vol. 8, No. 2 September 2018.
- Badan Pusat Statistik. (2015). *Pengertian Pendapatan Nasional*. Jakarta: BPS.
- Bahmani-Oskooee, M., Bohl, M.T., (2000). German monetary unification and the stability of the German M3 money demand function. *Economics Letters* 66 (2), 203–208.
- Bank, E. C. (2011, October). The Supply of Money – Bank Behaviour and The Implications for Monetary Analysis. *Monthly Bulletin*. 63-79.
- Bank Indonesia. (2016). *Transmisi Kebijakan Moneter*. Jakarta: Bank Indonesia.
- Benny, J. (2013). Ekspor dan Impor Pengaruhnya Terhadap Posisi Cadangan Devisa di Indonesia. *Jurnal EMBA*. Vol. 1, No. 4: 1406-1415.
- Budiman, Aland Michael Aji. (2015). Analisis Pengaruh Tingkat Pengangguran, Indeks Korupsi, Indeks Nikkei 225, Harga Minyak dan Harga Emas terhadap IHSG periode 1984 - 2014 . *Jurnal Parsimonia*. Vol. 2, No. 1 April 2015. Universitas Ma Chung
- Case, Karl E., & Fair, Ray C. (2017). *Prinsip-prinsip Ekonomi*. Edisi Keduabelas. Penerbit Erlangga. Jakarta.
- Catona. (2018). Interaksi Dinamis Variabel Makroekonomi dengan Pasar Saham Konvensional dan Syariah: Sebuah Analisis Komparatif. *Thesis Fakultas Ekonomi dan Bisnis Universitas Syiah Kuala*.
- Christie, M. B., Khairunnisa, & Dillak, V. J. (2017). Impact of Macroeconomic Variables on Stock Market: Evidence from Indonesia Stock Exchange (IDX) Period 2006-2015. *e-Proceeding of Management*, ISSN: 2355-9357. Vol. 4, No. 1: 395-401.
- Dornbusch, Rudiger, & Fischer, Stanley. (1998). *Macroeconomics: Fourth Edition*. Singapore: McGraw-Hill Publications.
- Gujarati, Damodar N, & Dawn C. Porter. (2018). *Dasar-Dasar Ekonometrika*, Edisi delapan, Buku Dua. Penerbit Salemba Empat. Jakarta.
- Halim, J., & Surya, S. M. (2009). Correlation Analysis Between Jakarta

- Composite Index and LQ45 Index With Net Asset Value of Equity Mutual Fund and Balanced Mutual Fund. *Journal of Applied Finance and Accounting*, Vol. 1, No. 2: 281-301.
- Harjito, D. A., & McGowan, C. B. (2004). Stock Price and Exchange Rate Causality: The Case of Four Asean Countries. *Southwestern Economic Review*. 103-114.
- Hartono, J. (2013). *Teori Portofolio dan Analisis Investasi Edisi Kedelapan*. Yogyakarta: BPFE-Yogyakarta.
- Hussin, M. M., Muhammad, F., Abu, M. F., & Awang, S. A. (2012). Macroeconomic Variables and Malaysian Islamic Stock Market: A Time Series Analysis. *Journal of Business Studies Quarterly*, ISSN: 2152-1034. Vol. 3, No. 4: 1-13.
- Imam, P., & Kpodar, K. (2013). Islamic Banking: How Has It Expanded? *Emerging Markets Finance and Trade*. 112-137.
- I Putu Eka Sari & I Gde Kanjeng Bagaskara. (2018). Nilai Tukar, Nilai Ekspor dan Pertumbuhan Ekonomi Terhadap Profitabilitas Eksportir *Food & Beverages* E-Jurnal Manajemen Unud, Vol. 7, No 8 2018:4181-4210
- Iqbal, Z., & Tsubota, H. (2006). Emerging Islamic Capital Markets: a Quickening Pace and New Potential. In *The Euromoney Yearbooks (2006): International Debt Capital Markets Handbook*. Washington, DC: The World Bank.
- Kewal, S. S. (2012). Pengaruh Inflasi, Suku Bunga, Kurs dan Pertumbuhan PDB Terhadap Indeks Harga Saham Gabungan. *Jurnal Economica*. Vol. 8, No. 1: 53-64.
- Kustina, K.T., Dewi, G.A.A.O., Prena, G.D., Suryasa, W. (2019). Branchless banking, third-party funds, and profitability evidence reference to banking sector in indonesia. *Journal of Advanced Research in Dynamical and Control Systems*, 11(2), 290-299.
- Longstaff, F. A. (2004). The Flight-to-Liquidity Premium in U.S. Treasury Bond Prices. *Journal of Business*. Vol. 77, No. 3: 511-526.
- Majid, M. A. (2016). Dynamic Interactions Between The Islamic Stock Prices and Macroeconomic Variables: Evidence From Malaysia. *De La Salle University Business & Economics Review*. Vol. 26, No. 1: 92-100.
- Majid, M. A. (2016). The Short-Run and Long-Run Relationship in Indonesian Islamic Stock Returns. *Jurnal Ilmu Ekonomi Syariah (Journal of Islamic Economics)*. Vol. 8, No. 1: 1-18.
- Majid, M. A., Dewi, S., Aliasuddin, & Kassim, S. H. (2017). Does Financial Development Reduce Poverty? Empirical Evidence from Indonesia. *Journal of The Knowledge Economy*, ISSN: 1868-7865. 1-18.
- Majid, M. A., & Yusof, R. M. (2009). Long-Run Relationship Between Islamic Stock Returns and Macroeconomic Variables (An Application of The Autoregressive Distributed Lag Model). *Humanomics*. Vol. 25, No. 2: 127- 141.
- Mankiw, G. N. (2015). *Teori Makro Ekonomi*. Edisi Kesembilan. Jakarta: Erlangga.
- Marjohan, M. (2015). Effect of Stock Price Index in Global Stock Against Composite Stock Price Index (CSPI) Study on The Indonesia Stock Exchange. *IOSR Journal of Economics and Finance (IOSR-JEF)*, e-ISSN: 2321-5933, p-ISSN: 2321-5925. Vol. 6, Issue 2: 15-23.
- Mark J. Holmes & Nabil Maghrebi. (2016). Financial market impact on the real economy: An assessment of asymmetries and volatility linkages

- between the stock market and unemployment rate. *The Journal of Economic Asymmetries* 13 (2016) 1-7.
- Maskur, A. (2009). Volatilitas Harga Saham Antara Saham Konvensional dan Syariah. *Dinamika Keuangan dan Perbankan*. Vol. 1, No. 2: 82 - 94.
- Maysami, R. C., Howe, L. C., & Hamzah, M. A. (2004). Relationship Between Macroeconomic Variables and Stock Market Indices: Cointegration Evidence from Stock Exchange of Singapore's All-S Sector Indices. *Jurnal Pengurusan*. 47-77.
- Mishkin, F. S. (2017). *The Economics of Money, Banking and Financial Markets*. Seventh Edition. International Edition, New York: Pearson Addison Wesley Longman
- Murthy, U., Anthony, P., & Vighnesvaran, R. (2017). Factors Affecting Kuala Lumpur Composite Index (KLCI) Stock Market Return in Malaysia. *International Journal of Business and Management*, ISSN: 1833-3850, EISSN: 1833-8119. Vol. 12, No. 1: 122-132.
- Muzammil. (2011). Analisis Pengaruh Indeks Saham Asia Tenggara Terhadap IHSG di Bursa Efek Indonesia. *e-Journal Ekonomi*. Jakarta: UPN
- Oskooee, M. B., & Sohrabian, A. (2006). Stock Prices and The Effective Exchange Rate of The Dollar. *Applied Economics*, 459-464.
- Pasaribu, R. B., & Firdaus, M. (2013). Analisis Pengaruh Variabel Makroekonomi Terhadap Indeks Saham Syariah Indonesia. *Jurnal Ekonomi & Bisnis*. Vol. 7, No. 2: 117-128.
- Phelps, E. S. (1994). *Structural slumps: The modern equilibrium theory of unemployment interest and assets*. Cambridge, MA.: Harvard University Press.
- Phelps, E. S. & Zoega G (2001). *Structural Booms: Productivity expectations and asset valuations*. *Economic Policy*, 16, 85 – 126.
- Purba, B. (2014). Analisis Kointegrasi Antara Indeks Harga Saham Gabungan (IHSG), Jumlah Uang Beredar (JUB) dan Indeks Harga Pedagang Besar (IHPB) di Indonesia Periode Tahun 2007-2013. *Jurnal Saintech*. Vol. 06, No. 04: 16-22.
- Ratnasari, D., & Chabachib, H. (2012). Analisis Faktor-faktor yang Mempengaruhi Perataan Laba pada Perusahaan Manufaktur yang Tercatat di Bursa Efek Indonesia. *Diponegoro Journal of Management*. Vol. 1, No. 1: 1-7.
- Rosyida, A. G., & Mawardi, I. (2015). Perbandingan Tingkat Pengembalian (*Return*), Risiko dan Koefisien Variasi Pada Saham Syariah dan Saham Non Syariah di Bursa Efek Indonesia (BEI) Periode 2011-2013. *Jurnal Ekonomi Syariah Teori dan Terapan*, Vol. 2, No. 4: 288-304.
- Silim, Lusiana. (2013). Pengaruh Variabel Ekonomi Makro Terhadap Indeks Harga Saham Gabungan Pada Bursa Efek Indonesia Periode 2002-2011. *Jurnal Ilmiah Mahasiswa Universitas Surabaya*, Vol. 2, No. 2: 1-18.
- Sirucek, Martin. (2012). Macroeconomic Variable and Stock Market: US Review. *MPRA Paper*. No. 39094, Posted 29. Mendel University in Brno, Czech Republics.
- Suciningtias, S. A., & Khoiroh, R. (2015). *Analisis Dampak Variabel Makro Ekonomi Terhadap Indeks Saham Syariah Indonesia (ISSI)*. 398-412.
- Sunariyah. (2011). *Pengantar Pasar Modal*, Edisi 6. Penerbit UPP STIM YKPN. Yogyakarta.
- Surbakti, E. H., Achسانی, N. A., & Maulana, T. N. (2016). The Impact of Macroeconomic Variables on JCI's Stock Return Volatility in Pre and

- Post Global Economic Crisis. *International Journal of Scientific and Research Publications*, 6(3): 213-220.
- Tandelilin, Eduardus. (2010). *Portofolio dan Investasi: Teori dan Aplikasi*. Edisi Pertama. Yogyakarta: Kanisius
- Tanjung, H., Siregar, H., Sembel, R., & Nurmalina, R. (2014). Factors Affecting the Volatility of the Jakarta Composite Index Before and After the Merger of Two Stock and Bond Markets in Indonesia. *Asian Social Science*, 10(22): 91-99.
- Triyono. (2008). Analisa Perubahan Kurs Rupiah Terhadap Dollar Amerika, *Jurnal Ekonomi dan Pembangunan*, 9(2): 156-167.
- Utama, C., & Agesy, S. S. (2016). The Effect of Macroeconomic Variables on The Yield Spread of Indonesian Government's Bond. *Journal of Indonesian Applied Economics*. Vol. 6, No. 2: 155-175.
- Vejzagic, M., & Zarafat, H. (2013). Relationship Between Macroeconomic Variables and Stock Market Index: Co-Integration Evidence From FTSE Bursa Malaysia Hijrah Shariah Index. *Asian Journal of Management Sciences & Education*, ISSN: 2186-845X, ISSN: 2186-8441. Vol. 2 No. 4: 94-108.
- Wongbangpo, P., & Sharma, S. C. (2002). Stock Market and Macroeconomic Fundamental Dynamic Interactions: ASEAN-5 Countries. *Journal of Asian Economics*. Vol. 13, No. 1: 27-51.
- Wijaya, T. S. (2015). Faktor-faktor yang Mempengaruhi Nilai IHSG yang Terdaftar di Bursa Efek Indonesia. *Jurnal Ilmu dan Riset Manajemen*, Vol. 4, No. 1: 1-16.
- Xolani Sibande, Rangan Gupta & Mark E Wohar (2019). Time-varying causal relationship between stock market and unemployment in the United Kingdom: Historical evidence from 1855 to 2017. *Journal of Multinational Financial Management* 49 (2019) 81-88.
- Yusof, R. M., & Majid, M. A. (2007). Stock Market Volatility Transmission in Malaysia: Islamic Versus Conventional Stock Market. *J.KAU: Islamic Economy*. Vol. 20, No. 2:17-35.