

# INDONESIA SHARI'AH COMPLIANCE STOCK RETURN BEHAVIOUR

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## ABSTRACT

*This study aims to measure the behaviour of Indonesia Shari'ah compliance stock return. The measurement of return behaviour toward volatility will prove the capability of Indonesia Shari'ah compliance toward volatility that happened in Indonesia during the period of observation. Investing in Shari'ah compliance is quite different than investing in conventional stock which followed the capital market set of rules and law, Shari'ah compliance follows not only the capital market set of laws and but also the Islamic principles of principles. Most of the previous studies examine issues related to the conventional stocks and market. The present study take one step further by investigating issue related to Shari'ah compliance instrument. In the case of Shari'ah stock price in Indonesia, the dynamics volatility of the stock price can be minimized by taking an integrated screening process to the listed company, as precautions steps toward volatility.*

**Keywords:** *Indonesia Shari'ah compliance, Return Behaviour, Stock price, Stock Market Volatility*

## I. INTRODUCTION

The study of Efficient Market Hypothesis (EMH) related with the information availability and how market prices fully reflect all available information particularly price reaction toward news and events that known as stock return behaviour has evolved over the years. The evolution of these studies has contributed to the development of EMH as a theory into many concepts and areas of research interest. Several studies have focused on the role of EMH toward investor behaviour and stock return behaviour, such as return behaviour, seasonal anomaly, equity market integration and stock market volatility. These issues have many times been tackled by the researchers using conventional stock market background. Meanwhile, studies that focus on Islamic capital market are still limited and rare.

Islamic capital market has a number of diversifications in the implementations, such as *Ijarah*, *Sukuk* and *Shari'ah* compliance. This research focuses on *Shari'ah* compliance since it represents one of the biggest funding accumulations in *Shari'ah* financial industry besides *Shari'ah* banking. For the last Eleven years the growth of

*Shari'ah* compliance has shown a major influence not only on capital market industries but also on the economic growth in one country. The distinguished feature of *Shari'ah* compliance that differentiate from the conventional stock market is the screening process of *Shari'ah* classified companies that is based on *Shari'ah* law or principle.

The most potential growth of *Shari'ah* compliances consists of three groups. Most of the asset accumulations are integrated in Gulf Cooperation Council<sup>1</sup> (GCC) and Malaysia. The second group encompasses Islamic countries or countries with large Islamic populations. Indonesia is currently holding the biggest Muslim population with 174 million (85%) of from 230 million of population (Indonesian Statistics Biro, 2013). The third group comes from European and US. These countries with their significant and relatively wealthy Muslim population are also potentially lucrative markets for *Shari'ah* compliances fund integration.

The measurement of Efficient Market Hypothesis is very important in *Shari'ah* compliance. In terms of market price, the stock price of classified company in *Shari'ah* compliance should reflect the real condition of the company which issues a stock. Meanwhile, the efficiency of *Shari'ah* compliance is believed to be the main factor that can be used in answering the market price problem in *Shari'ah* compliance. The efficiency of *Shari'ah* compliance refers to the condition where the price of stock fully reflects all available information. The process of creating market efficiency in *Shari'ah* compliance begins with screening process, fair trading system and transparent information to all investor that invest their fund in *Shari'ah* compliance companies.

This research is very important to conduct since it will provide special treatment for the *Shari'ah* compliance in one side and realize the core concepts of *Shari'ah* compliance regulation and decide what the best concept for *Shari'ah* compliance in the future in order to achieve efficient market in term of fairness, transparency, protection to investor and reducing systematic risk.

## II. LITERATURE REVIEW

During the period of observations (2000-2010), stock price in Indonesia stock exchange is very volatile due to several related factor. CPO price, interest rate and financial crisis are several related national issues that influence the volatility of Indonesia stock exchange. Since, conventional and *Shari'ah* compliance trading is integrated, makes the volatility of conventional stock market will also gives the same impact to *Shari'ah* compliance. Ginting (2011), trying to capture the volatility of *Shari'ah* stock price in Jakarta Islamic Index during the most volatile period in Indonesia stock exchange. National securities issues was one of the shocking event that gives the highest volatility to *Shari'ah* stock price in Indonesia, while monetary policy is giving less impact to the volatility since this events were categorize as public information and can be analyze by investor. The findings of Ginting suggested that investor in Jakarta Islamic index are rational investor based in responses and decision behaviour.

The measurement of stock return behaviour in *Shari'ah* compliance is very important to conduct to measure how volatile *Shari'ah* compliance stock price compared to conventional stock price. *Shari'ah* stock return behaviour will determine not only the pattern of volatility, but also pattern of risk, return and investor behaviour. Both *Shari'ah* compliances in Indonesia and Malaysia is vulnerable toward economic, political and social securities issues, research that focusing on the stock price volatility will only provide analysis to weak EMH, while

<sup>1</sup> GCC s include Bahrain, Kuwait, Oman, Qatar, the United Arab Emirates, and Saudi Arabia

research that focusing on the response of investor toward news and events will provide analysis about the stability of *Shari'ah* stock price to prevent investor for taking speculation or gambling activity (Ginting, 2011). Furthermore, a study of stock return behaviour in Indonesia and Malaysia will proves the stability of *Shari'ah* compliance stock price during crisis and other shocks in economy, since companies that classified in finance and banking industries are not allowed to be classified in the *Shari'ah* compliance because of interest rate implementation.

In *Shari'ah* compliance, stock return behaviour is a result from investor behaviour. Investors tend to response toward news and events in certain pattern that will influence *Shari'ah* compliance stock price. "Good" or "bad" news often forming "up" or "down" trends in stock market. Stock return behaviour in *Shari'ah* compliance is an equilibrium price from supply and demand mechanism in stock exchange, where intrinsic value of stock price describes the present value from cash flow that should be received by investor in the future. Present value of stock price should represented risk and time of the stock price. When new information is arrive to stock market, investor will make adjustment by buying or selling the securities, resulting to changing of current price real value. On the contrary, uninformed investor in *Shari'ah* compliance, response with a delayed toward information either because the cost of acquiring information is high or information is unreliable. Therefore the relationship between prices and information flow in *Shari'ah* compliance may be non linear. Volatility of stock returns behaviour toward news and events also describing the availability of public information. The process of measuring stock return behaviour toward news and events is by examining time lag between how long information is available to stock price adjustment. In efficient market context, efficient information happened if stock market price change immediately and unbiased upon the arrival of new information (Gaunt, 2000; Lai, *et al.*, 2003 and Lihara *et al.*, 2004). The changing showed that the volatility of price through normal condition, seldom lead investor to earn abnormal profit (Meidawati and Harimawan, 2004). Several news and events is considered to have significant influence, particularly to stock return behaviour. Other than financial information, news and events in politics, economy and national securities issue will also reflected in stock price.

Beaulieu *et al.* (2006) used political risk as news events that affecting the return behaviour. The reason for choosing political risk is based on believed that political risk is not merely a national scale issues but also considered as international scale issues that will affecting domestic and foreign investor. The result stated that uncertainty around political news events gives short run influence to stock return. Beaulieu *et al.* (2006) confirms that stock market was directly influenced by the political risk and uncertainty, it is implies that every political policy announcement creates abnormal returns to share holders depends on period of stock price adjustment.

Ardi *et al.* (2011) examines overreaction toward stock value by stressing on the phenomenon of stock value reversal that bring negative return for same period of time and then move toward positive return, on the other hand high-return stocks for while become worse and stock value go down. The result showed that market overreact signed loser portfolio exceed winner portfolio in 2005, after that both of groups stock value movement quite stabile. Triani (2011) analyze the influence of macroeconomic factors through volume of transactions, exchange rates, and interest rates of Jakarta Islamic Index. Fundamental reason for choosing interest rates as one of the variables is based on the major objective of investor is to gain

profit or margin from their investment showed by the sharing of interest rate particularly for banking industry. The result showed that there is influence from macro economy variables such as interest rate and transaction volume towards Jakarta Islamic Index, where the influence of interest rate to Jakarta Islamic Index is more significant compared to volume of transaction, meaning that the increasing in interest rate will also increase companies expenditure to fulfill debt and lowering the level of profitability, while level of profitability is one of the main factor that can decrease or increase stock price of a company in stock market. In other concept, interest rate will also influence investor preferences of selecting investment portfolio. The higher the interest rate, the more investor preferences goes to banking industry, while the lower the interest rate, the more investor preferences goes to capital market (Sitinjak and Kurniasari, 2003).

### 3. RESEARCH METHOD

#### 3.1 Data

This Section offers a brief description of the research method and the data set, using daily closing price of Indonesia *Shari'ah* compliance from the period of 2000: 1 to 2010: 12. Since Indonesia stock market has experienced major structural changes with the potential for affecting market efficiency, we divide our chosen sample period into three following sub periods of differing market stages:

1. January 1, 2000 – December 29, 1 2004 periods during its early stages of Indonesia *Shar'iah* compliance. In the early stages showed that many turbulences influence the establishment of *shari'ah* indices in both countries especially in term of policy and socialization.
2. January 1, 2005 – December, 29, 2008 periods during which the Indonesia *Shari'ah* compliance stock market grew significantly in size and number. The growth of Indonesia *Shari'ah* compliance because Indonesia has implemented and formulated socialization process.
3. January 1, 2009 – December, 29, 2010 periods after market crash. The period after market crash showed that *Shari'ah* compliance in Indonesia reluctant to several crises that happened in specially the subprime mortgage crisis in United States of America and in Europe.

#### 3.2 Methodology

##### Testing the Assumption of linearity

Interest toward non-linearity and chaotic processes increased after a large movement of stock price because of severe crisis and stock market crash (Hsieh, 1990). The indication of large movement in stock market in term of capital has triggered unanticipated decision toward news and events particularly news and events with a huge shock and impact to stock market. As a form to challenging EMH and forecasting stock price movements, chaos and non-linearity observed the chaotic toward a large movement of stock price due to response of "bad or good" news. However, the assumption of non-linearity is limited in financial time series, particularly in term of autocorrelation-based procedures in testing the weak-form EMH. According to Patterson and Ashley (2000), 'Successful non-linear time series modeling will improve forecasts and produce a richer notion of business cycle dynamics than linear time series models allow. For this to happen, two conditions are necessary. First, economic time series must contain non-linearity. Second,

reliable statistical methods to summaries and understand the non-linearity that is suitable for time series of the typical macroeconomic length. Hinich and Patterson (1989) stated that several early researchers failed to assume the observed time series that is generated from Gaussian process and testing for white noise using correlation structure, thus making the ignoring possible non-linear relationships between consecutive price changes. Independent and identically distributed (i.i.d.) increments areas of white noise (i.e. serially uncorrelated), but the converse is not true unless the series is normally distributed. From a statistical perspective, the distinction between white noise and pure white noise is nontrivial when non-linear dependence is present.

There are number of studies that focus on non linearity in emerging markets. McMillan (2001) find evidence that stock market returns follow a non-linear dynamic system particularly in term of the relation with macroeconomic variables and financial variables due to the movement of small and large returns. Harrison and Moore (2012) found similar evidence that emerging market move with the same pattern of volatility, thin trading and low liquidity followed a nonlinear dynamic system. In the implementation, nonlinearity occurs in many statistical form, the five statistically test are; McLeod and Li (1983) and Engle (1982) test for (G) ARCH), Brock *et al.* (1996) BDS test for randomness, Tsay's (1986) test for threshold effects and the Hinich and Patterson (1995) and Hinich (1996) bi-covariance test.

### **Volatility Modeling**

Modeling and forecasting stock return volatility is central to modern finance because risk volatility increased due to market uncertainty and the attempt from market participant to manage asset pricing, asset allocation and risk management. Two approaches generally used are the GARCH and stochastic volatility (SV) models. In their standard forms, the ensuing volatility processes are stationary and weakly dependent with autocorrelations that decrease exponentially (Lu and Perron, 2009).

Arguably, volatility, as measured by standard deviation or variance of returns where there is a dispersion of returns for a given security or market index. Volatility clustering and leptokurtosis are commonly observed in financial time series (Mandelbrot, 1963). The idea of explicitly modeling time variation in second or higher order moments began only in the early 1980s; The autoregressive conditional heteroscedastic ARCH (Engle, 1982).

## **4. RESULT AND DISCUSSION**

### **Preliminary Evidence: AR (p) Model**

An AR ( $p$ ) model was fitted to the returns of Indonesia *Shari'ah* compliances to ensure the pre-whiten residual before testing the evidence of non linearity. Stock market returns are of the modeled as autoregressive time series with random disturbances having conditional heteroscedastic variances, particularly with GARCH type processes. This research are analyzing two data sets of stock prices, fitting an AR ( $p$ ) model to the series by ordinary least squares regression yielded the results in Table 1

	Indonesia
$\mu$	0.191(42)
$\phi 1$	0.1033.756
$\phi 2$	-
$\phi 3$	0.1809.230
$\phi 4$	0.0542380
$\phi 5$	0.19199
$\phi 7$	0.10366
$\phi 8$	0.039207
$\phi 10$	0.014153
<i>DW</i>	2.017035
<i>B.G(5)</i>	0.73[0.424]
<i>LBQ(12)</i>	2.13[0.621]
<i>LBQ(24)</i>	12.121[0.761]

**Table 1.**  
AR (p)  
Pre-Whitening MODEL  
(Indonesia *Shari'ah*  
Compliances)

Notes: \*, \*\*, and \*\*\* indicates significance at 10%, 5% and 1% levels respectively,  $\mu$  is the constant.  $\phi$  indicate the AR coefficients. B.G. is Breusch-Godfrey test for higher order serial correlation; D. W is the Durbin-Watson test for autocorrelation; LBQ (12), LBQ (24) indicates the Ljung-Box statistics for 12 and 24- lags respectively. Test statistics are shown in ( ) while p-values are shown in [ ].

*Shari'ah* compliances in Indonesia following the low order autoregressive with general assumption that Indonesia is follows the AR (1) process. Having fitted an AR (p) model, it is now necessary to examine an adequate and useful functional form for the data generating process. To eliminate of spurious autocorrelation, AR (p) also has a function to investigated, fitting and examined whether the nonlinear dynamics are localized in time. In the case of *Shari'ah* stock price in Indonesia, the dynamics volatility of the stock price can be minimized by taking an integrated screening process to the listed company, as precautions steps toward volatility.

Item	Indonesia		Malaysia	
	Asymptotic	Bootstrap	Asymptotic	Bootstrap
McLeod-LI (20 lags)	0.000	0.000	0.017	0.017
McLeod-Li (24 lags)	0.000	0.000	0.000	0.000
Bicovariance (17 lags)	0.000	0.000	0.000	0.005

**Table 2.A**  
Nonlinearity  
Test on AR (p)  
Residuals

	Engle LM			
1	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000
4	0.000	0.000	0.002	0.005
5	0.000	0.000	0.000	0.000
Tsay	0.000	0.000	0.010	0.002

Dimension	Indonesia		
	EPS= 1	EPS=2	EPS=5
			<b>Bootstrap</b>
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
			Asymptotic
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000

**Table 2B.**

BDS Test on AR ( $p$ )  
Residuals

The existence of linearity in Indonesia *Shari'ah* compliances showed that *Shari'ah* compliances in Indonesia is open for gaining abnormal return, where in the case of *Shari'ah* principle, gaining abnormal return is prohibited or against the principle of *Shari'ah*. Moreover, the existence of linearity in *Shari'ah* compliance also showed the capability of predicts returns and lead to inefficiency in *Shari'ah* compliance, since information are not available to all *Shari'ah* compliance participant. On the other hand, follower investor tends to reacts quickly to information based on their belief that following other investor reaction is the best investment decision. The mentality of following other investor decision will create higher transaction cost and lazy investor. Higher transaction cost is occurs due to the implication of undistributed information while lazy investor occurs due to the implication of waiting other investor to make decision. Such behaviour often occur in emerging market like Indonesia and the implication for *Shari'ah* compliance is that this action is against the principle of *Shari'ah* compliance, which is transparency, fairness, support risk sharing and equal distribution of information.

## 5. CONCLUSION

The existence or non existence of nonlinearity in *Shari'ah* compliance is crucial not only for *Shari'ah* compliance as portfolio but also for investor to determine appropriate strategy for trading. For example, if *Shari'ah* securities follow nonlinear behaviour, than it may not be profitable for investor to use linearity based on trading strategies. Furthermore, nonlinearity test are very effective tools that can be used as diagnostic test to explore and understand the nature of the underlying dynamics in stock returns.

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