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Risk Volatility Measurement: Evidence from Indonesian Stock Market

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Abstract

The purpose of this paper is to investigate the volatility of both Islamic and conventional stock market in Indonesia with the aim of identifying the most appropriate model for risk management practice. The study considers GARCH as a genre of model to measure the volatility of stock market movement. The results support the view that each model shows specific volatility from both Islamic and conventional stock market in Indonesia. In Islamic stock market, volatility is affected by exchange rate and money supply (M1) but not interest rate as interest is prohibited in Islam. However, interest rate is found as a principal factor that affects volatility of conventional stock market. The outcomes of this paper are of particular significance to policy makers, as it provides guidelines to maintain economic health. Furthermore, the findings may assist practitioners to understand the consequences of macroeconomic factors such as exchange rate, money supply and interest rate, which are very crucial for the market stability of Indonesian stock market. The paper enhances the understanding of stock market volatility and proposes guidelines risk management practices.

Keyword: Volatility, Money Supply, Stock Market, Exchange Rate, Interest Rate, Indonesia, Islamic.

JEL Classification Codes: G15, G31, E51, F31, N35.

1. Introduction

Risk plays a significant role in almost every single business. Risk is viewed as a necessary evil that should be minimized or mitigated in best possible way. Particularly, in a globalized world, it becomes increasingly important to identify, manage, and explore risk across organizations to accomplish business success and longevity. The frequent financial crisis where the poor quality of underlying assets significantly impacted the value of investments show that demand for transparency around risk is yet to reach the satisfactory level. Therefore, the necessity of having appropriate regulatory requirements in business to expend significant resources to address risk is heavily researched in finance. Usually, unpredictable nature of risk further complicates overall business performance. Hence, the success and survival of a business significantly depends on its capacity to handle the risk. In general, organizations cannot avoid risk but can minimize its impact through adopting suitable risk management strategies.

Stock market investment is considered as risky investment as there is no promise of return. Profit opportunity in volatile market is comparatively more than other types of investment. Gatfaoui (2013) documented that high levels of volatility illustrate important price movement whereas low levels of volatility illustrate stable market behaviours. It is believed that people who must be aware with the volatility in stock investment are the investors, financial analyst, portfolio managers and others who are directly and indirectly involved with its stake. Rhee and Wang (2009) reported that from January 2002 to August 2007, liquidity on the Jakarta Stock Exchange improved substantially with the average bid-ask spread more than halved and the average depth more than doubled. Moreover, research done by Yang and Hamori (2014) showed that the average return for the stock market from

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January 1990 until December 2012 resulted that Indonesian stock market has been observed as the highest return and volatility compared to Thailand and Singapore. Researchers have proposed various models for predicting the volatility risk in stock market investment. They also suggested solutions for managing the volatility risk but there are issues whether in reality, the investors are using these models in their practice. However, these models could be useful for portfolio managers because they have proper strategies for their portfolio investments. But there is also issue whether these models are really beneficial for their strategy. Besides, Muslim investors are concern whether the risk management that they are taking is according to Islamic principles or conventional principles.

Therefore, the objectives of the study are as follows; first, to investigate the volatility of stock market in Indonesia both Islamic and conventional stock market. Second, to analyse the pattern of volatility in stock market in Jakarta Islamic Index compared to Jakarta Composite Index. Third, to see whether the best practice for investor to put their money in stock market or hold it during the huge volatile wave in stock market. Fourth, to give best option of risk management to avoid lost upon the volatility risk in stock market. Finally, to see the impact of macroeconomic variable in affecting the volatility of both stock markets.

2. Literature Review

Undoubtedly, capital market plays an important role in an economic system of the country. The potential impact of capital market to promote development effectiveness mainly in term of varying entrepreneurial activities and materializing quality of life and social welfare (Kleinbrod, 2006). Several roles of capital market which continuously cited as ways to promoting economic welfare are risk sharing, capital allocation and inter-temporal smoothening (Allen & Gale, 1994). The return for investors as a compensation for their investment, however, doesn't come without any "price", as the investors keep exposed to investment risk. Several common investment risks challenge investor including market risk, interest rate risk, purchasing power risk, business risk, credit risk and volatility.

This study specifically focuses on volatility risk that existed in Islamic capital market. The term volatility itself is widely agreed by finance academicians as percentage changes in price or rates of return (Schwert, 1989). Volatility has become a major concern of investors as the financial history has witnessed that market crash at major stock exchange during global financial crisis, exhibits a wide range of volatility which further challenge macroeconomic policies on regional and international level. The contagious stock market crash on October 1987 and the sharp drop down in stock prices on October 13, 1989 have heightened public perceptions of issue around volatility of market. Since then, an extensive studies have been carried out to examine the effect of index arbitrage, and advance investment techniques on the stock market volatility (Schwert, 1989; LeRoy & Porter, 1981; Shiller, Robert & Shiller 1981; Zhong, Darrat & Anderson, 2003). To be bold, market volatility has been the top list of greatest concerns for some institutional investment, i.e. public pension plans, and nonprofit organizations as it has been outstandingly volatile in recent years, especially during the financial crisis.

Several studies on the determinants of volatility shocks have revealed various elements that possibly strongly associated with market volatility. Mandelbrot (1997) claimed that large changes always causes large changes, either positively or negatively, and vice versa. The author's claim points to the existence of positive serial correlation in volatility. Several researchers including Fama (1965) and Roll (1992) revealed that both trading and non-trading days lead to market volatility. For instance, the more volatile market on Monday presumably because the stock prices movement reflects information arriving over a 72-hour period, while on most other week trading days, the movement of stock price reflect information arriving over 24-hour period. The other studies which reveal the contributor of market volatility was carried out by Schwert (1989) and also Officer (1973). They found that during financial and economic recessions, stock market volatility tends to be more fluctuated. Investors in stock markets have good argument to feel shocked by multiple and repeated setbacks as new research reveal the wild fluctuations among world leading indices. One among reactions to the highly fluctuated market is to keep away stock markets. However, there are several ways to cope with the swings of stock market. One of them is combining assets which imperfectly correlated in order to smooth out the investment, especially in the current macroeconomic situations. A widely accepted method to cope with stock market volatility is forecasting future volatility.

2.1. Volatility Forecasting

McMillan and Speight (2007) attempted to forecast weekly volatility in order to find the most suitable model for risk management, i.e. hedge ratios and VaR. In order to achieve their objective, GARCH genre models (TGARCH, Component GARCH) and recent realized volatility approach are employed. The finding shows that realized volatility approach provides better volatility forecast than GARCH. Moreover it reveals improved hedge ratio and VaR calculations. The data involved in their research was weekly

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data of FTSE 100 index and FTSE 100 index future, period 1990 to 2004.

2.2. Volatility Measurement (Modeling)

Many prior studies have observed the measurement of stock market volatility. For example, Parkinson (1980) assessed volatility based on the low and high of the day compare to the close to close volatility. The result showed that no obvious trend was detected over time. The findings indicate that there was no evidence that intraday high and lows were drifting further and further over time, although this conclusion depends on price changes and distribution. Castaldo (2002) observed the volatility of daily S&P 500 returns, period 1928 to 1999. Two statistical test including Lilliefors and Wilk-Saphiro tests were employed to measure the month to month change of log-volatility, which was not normally distributed. Their result contradicted with the most common theoretical model of volatility change, which follows Geometric Random Walk. In other word, they found a very volatile returns movement. Their findings suggested that behavioural finance could be helpful in explaining volatility spikes of stock markets.

Nam (1998) emphasized the importance of volatility phenomenon in financial market. The author observed both linear and nonlinear volatility models. For linear method, the author used EGARCH & GJR models, while Logistic Smooth Transition ARCH (LSTARCH) and Generalized Threshold ARCH (GTARCH) were employed as nonlinear methods. Daily, weekly and monthly equal-weighted stock index return series data on NYSE were collected. The data collection period was from 1962 to 1994 and total number of observations was 8179. All the stock return series were transformed into percentage nominal return by multiplying with 100. The result showed that nonlinear method surpassed its linear counterpart in term of log likelihood value, magnitude of R square, skewness and kurtosis of residuals. The other conclusion was that the dynamic process of the expected returns demonstrates more randomness and less predictability under future volatility. The study by Tripathy and Rahman (2013) employed GARCH model to measure the conditional market volatility based on the daily closing value of 23 years' data for Shanghai Stock Exchange (SSE) and Bombay Stock Exchange (BSE). The result showed that GARCH model is an appropriate method to forecast the future volatility in both markets.

2.3. Volatility and Macroeconomics

The nexus between macroeconomic variables and stock market volatility has gained extensive attention in academic world. Majid and Yusof (2009) examined the relationship between volatilities of both Islamic and conventional stock market in Malaysia and volatility of monetary policy variables. The study recognized money supply (M1 and M2), interest rate, exchange rate and Industrial Production Index as variables of monetary policy, while Kuala Lumpur Composite Index (KLCI) and Rashid Hussain Berhad Islamic Index are used as proxies for conventional and Islamic stock markets. The researchers also included U.S monetary policy variable as measurement for global determinant which possibly affecting both stock markets. In their study, they combined GARCH and VAR to analyse the data from January 1992 to December 2000. Their study found that interest rate was highly affecting volatility of conventional stock market but its effect didn't imply to Islamic counterpart. Furthermore, their findings suggested that stabilization of interest rate would not have any significant impact on the Islamic stock market volatility.

A study was carried in Middle East market by Al-Raimony and El-Nader (2012) and revealed the source of Amman Stock Exchange (ASE) price index volatility. The monthly data form 1991-2010 was analysed using ARCH/ GARCH to achieve their research objective. They also implemented Impulse Response Function (IRF) to measure the shock of each macro variables included. They defined several macroeconomic variables as their independent variables including real money supply, consumer price index, real exchange rate, GDP, dummy variable, and weighted average interest rate on loan. The results revealed that volatility stock returns and the selected macroeconomic variables namely money supply, inflation, exchange rate, interest rate and dummy variable have a negative correlation, for instance a high level of interest rate would trigger the drop down of stock price which subsequently causing return to fall. However, GDP has positive impact to volatility of stock return in ASE. Their result suggests that monetary policy maker need to focus more on the changes of inflation. Lee (2008) attempted to examine the volatility of stock market by both parametric and non-parametric methods. The data generated from Dow Jones, Nasdaq, and S&P 500, from 1988 to 2006. For parametric method, the author used the linear regression and logit regression (GARCH approach). Moreover, for non-parametric method, neural network employed to forecast Value-at-Risk and then the result was compared with the traditional GARCH approach. The research measured the return volatility based on the sentiment of investor. Instead of using macroeconomic variables as common independent variables to measure volatility, it used trading volume of the market as a proxy of investors' sentiment. The finding shows that when investor sentiment is high, the volatility of stock return is more likely to be higher; vice versa. The result also

shows that the non-parametric method is a good alternative to forecasting Value-at-Risk in the market.

There have been long debates whether macroeconomic variables has a significant correlation with stock market volatility. Mertens (2009) examined the consequences of excess volatility in stock market on macroeconomic fundamentals of small open economy. The author explained that while individual investors may suffer only small losses due to slight unbalance portfolios, the external factors of the resulting excess volatility are large. Highly volatile market stimulates investors to demand higher premium, later the higher premium will depress the level of capital invested at the stochastic steady state.

2.4. Volatility in Islamic Market

Herwany and Febrian (2013) aimed to assess risk-return behaviour of Islamic stock and measure the volatility of both conventional and Islamic stocks. In order to achieve their objective, they employed Value-at-Risk and Multi-index model. The empirical finding showed that Islamic portfolio investment is highly correlated with the movement of selected macroeconomic indicators, i.e. exchange rate and interest rate during financial downturn. James and Karoglou (2010) studied the linkage between stock market volatility in Indonesia and financial liberation. Using Jakarta Composite Index (JCI) they identified the stock market volatility concurred with the timing of major economic events. The finding suggested that there was a substantial volatility decrease after the official opening of the Indonesia stock market to foreign investor participation. The results also revealed an increasing volatility in the year prior to market opening complying regulation that eased entry requirements. Another important finding was that volatility significantly increased at the time of Asian financial crisis 2008.

2.5. Volatility in Indonesia Stock Market

Indonesian capital market has been categorized as emerging market (Morck, Yeung, & Yu, 2000). This market is highly volatile and the policy makers need to pay close attention as even a small change in specific transaction activities in monetary policy that can possibly affect the stock price significantly. Fajrihan (2010) attempted to observe the partial and simultaneous effect of dividend pay-out ratio, dividend yield, earning volatility, firm size, and growth in assets to LQ-45 index volatility. Using multiple regressions for data from period 2005-2009, the author found that dividend pay-out ratio was the most significant variable that affects volatility of LQ-45. Following dividend pay-out ratio was dividend yield, earning volatility, firm size and growth in assets. Wang (2007) revealed a dominant

effect of foreign selling on market volatility in Indonesia and Thailand. Before market liberalization, local investors were the price setters, but once both the market is liberalized, local agents had become price followers. It reflects a substantial change in the fundamental macro relationship between trading activities and market volatility. By analysing daily transactions of foreign investors, the study found that foreign sales led to significant negative returns in Indonesia and Thailand, which means volatility increased. International stock markets in this study refers to Malaysia, Singapore, U.S, and few European countries. In order to achieve the objective, VAR/VECM and ARCH/ GARCH were employed. The findings showed that JCI and LQ-45 were highly influenced by stock market movement of France, England, Germany, Malaysia, U.S (S&P), Taiwan and Thailand. Other independent variables that negatively affect the JCI and LQ-45 were Industrial Production Index and JIBOR, while exchange rate has positive and significant influence on it.

3. Methodology

3.1 Data

The secondary data were collected from Jakarta Islamic Index, Bank Central of Indonesia, Badan Statistic Nasional Indonesia, World Bank Data and Bloomberg Database. The study uses monthly basis data series from 2008 to 2013. Year 2008 to 2009 was considered as Asian financial crisis where it would illustrate how the stock moved in volatile environment during the economic turmoil. Next, from 2010 to 2013 was assumed as the post crisis period, to see the pattern of stock market volatility after the crisis for both Jakarta Islamic Index (JII) and Jakarta Composite Index (JCI). In addition, the study employs E-Views 7 to analysis the data. <Figure 1> shows the proposed research model for this study.

3.2 Instrumental Variables

Macroeconomic variables that are used as independent variables in this study are money supply (M1 & M2), interest rate (e.g., Jakarta Interbank Offered Rate JIBOR), Industrial Production Index Indonesia (Al-Raimony & El-Nader, 2012) to represent the GDP, CPI (Al-Raimony & El-Nader, 2012), and exchange rate (Majid & Yusof, 2009).

The dependent variables are Jakarta Islamic Index (represents the Islamic stock market) and Jakarta Composite Index (represents the conventional stock market) (Sukmana & Kholid, 2013).
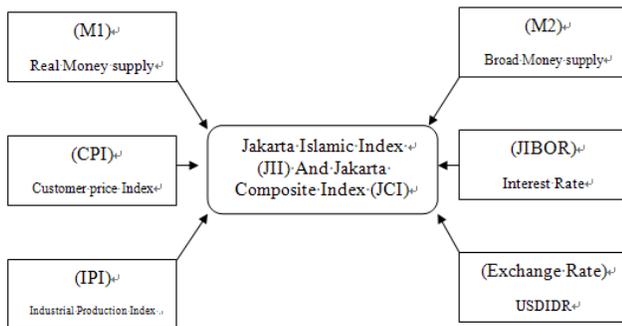
<Figure 1> Research Model

3.3. Volatility Measure

The volatility of variables is commonly observed in financial time series (Mandelbrot, 1997). Garman and Kohlhagen (1983) illustrated a "leverage effect" in which stock prices change with a perfectly negative correlation to the change of volatility. Based on that phenomenon, an investigation on this financial time-series has come to various range of changeable variance models to estimate and forecast volatility. In 1982, Eagle has introduced the first model of time-series conditional variance based on an Autoregressive Conditional Heteroscedasticity model (ARCH) which is designed to measure volatility. This ARCH processes using lagged disturbances. Next, the second step of ARCH model was developed by Bollerslev (1990) which is called Generalized Autoregressive Conditional Heteroscedasticity (GARCH). This GARCH model is a preferred approach that has been used in real measurement due to its benefit with providing much real context than other model in terms of predicting stock prices, interest rates, and other variable in which could affect volatility of financial market. Bollerslev, Chou and Kroner (1992) used various testing models of changing volatility that have proved to be various forms of GARCH models. In GARCH model, the volatility measurement was conducted to be dependent upon in both past movement and past innovations. In this study, GARCH model is adopted since it allows for heteroscedasticity in the residual series. In empirical result, the GARCH (p,q) adopts low orders for the length p and q, such as GARCH (1,1) and GARCH (1,2). This paper adopts GARCH model with the purpose to increase the understanding of the relationship between microeconomic variables and Indonesian Islamic and conventional stock market volatility.

3.4. GARCH Model

The following standard equation of GARCH is taken into account to generate the volatility estimations for the macroeconomic variable and stock market price index;

$$R_t = \sum_{i=1}^{m} \alpha_I \ R_{t-1} + \delta_I d_{i,t} + \varepsilon_t \qquad (1.1)$$
$$h_t^2 = \beta_0 + \beta_1 \varepsilon^2{}_{t-1} + \beta_2 h^2{}_{t-1} \qquad (1.2)$$

Next, the macroeconomic variables inserted into the model, the formulation is below;

$$R_{xt} = \sum_{i=1}^{m} \phi \ Rx_{t-i} + \delta_I d_i + \varepsilon_t \qquad (1.3)$$
$$h_{xt}{}^2 = \beta_0 + \beta_1 \varepsilon \ x^2{}_{t-1} + \beta_2 hx^2{}_{t-1} \qquad (1.4)$$

The above model (1.1) in GARCH (1.1) show the existence of the first order of ARCH effect and a first order of GARCH effect. In the ordinary ARCH model, a special case of the GARCH specification is used where there is no lagged forecast variance in the conditional variance formulation.

3.5. Regression Analysis

In order to analyze the relationship between stock market volatility and monetary variable volatility, the study employs the regression analysis for the Islamic stock market and conventional stock market in Indonesia. The model is formulated as follows:

Jakarta Composite Index (JCI) for the conventional stock market

Model (1)
$$Ln\,JCI_t = \alpha_0 + \alpha_1 LnM1_t + \alpha_2 LnIPI_t + \alpha_3 IDRUSD_t + \alpha_4 LnJibor_t + \alpha_5 LnCPI_t + \pi_t$$

Model (2)
$$Ln\,JCI_t = \delta_0 + \delta_1 LnM2_t + \delta_2 LnIPI_t + \delta_3 IDRUSD_t + \delta_4 LnJibor_t + \delta_5 LnCPI_t + \tau_t$$

Jakarta Islamic Index (JII) for the Islamic stock market;

Model (1)
$$Ln\,JII_t = \beta_0 + \beta_1 LnM1_t + \beta_2 LnIPI_t + \beta_3 IDRUSD_t + \beta_4 LnJibor_t + \beta_5 LnCPI_t + \varepsilon_t$$

Model (2)
$$Ln\,JII_t = \lambda_0 + \lambda_1 LnM2_t + \lambda_2 LnIPI_t + \lambda_3 IDRUSD_t + \lambda_4 LnJibor_t + \lambda_5 LnCPI_t + \mu_t$$

After formulating the model for both markets, model (1) is more specified in using real money supply (M1) as the monetary policy variable, whereas model (2) is more specified in using board money (M2), while other monetary variables remains unchanged in both models. In this study, M1 and M2 are considered as monetary variables. The hypothesis of this study is that there is no significant

differences for Islamic stock market compared to conventional stock market in response of stock movement of volatility to the macroeconomic variables. The assumption here for other variables such as real money supply (M1), broad money supply (M2), Industrial Price Index (IPI) and Customer Price Index (CPI) that they will have the similar impact to the Islamic stock market and the conventional stock market. However, in the Islamic stock market, interest rate will not have any impact as it is not allowed in Islam.

<Table 1> GARCH model (1.1) estimates for stock market

	JCI Conventional Stock Market	JII Islamic Stock Market
c	0.0268	0.0182
y_jci/y_jii	0.998494	0.941906
Resid	0.567805	0.430139
	(0.0309)	(0.080)
GARCH	-0.220079	-0.164705
Prob. Chi-Square(1)	0.7452	0.4820
Durbin Watson	1.895	1.827482
Normality test	1.937	2.241
Prob	0.379	0.326
ARCH LM	F-statistic;	F-statistic:
	0.102088	0.481331
	(0.750548)	(0.490688)
	Observed-R2	Observed-R2
	0.924131	0.925438

4. Findings and Discussions

The research findings show several relationships between the growth rate of the monetary variables and the index behavior. The table below illustrates the result of GARCH model for equation 1.1 and 1.2 for Islamic and Conventional stock market.

<Table 1> shows that there is no ARCH effect. In another words, there is no issue using heteroskedasticity to test the Probability Chi-Square, which is calculated to be 0.74 and 0.48 for the Conventional and Islamic stock market, respectively. The Durbin Watson also shows there is no autocorrelation of the variables. This model is modestly accepted with the Durbin Watson 1.89 for the conventional market and 1.82 for the Islamic market. Moreover, the Jarque-Bera test depicts the normality test of distribution shows the data series of both JCI and JII is well distributed with 1.93 and 2.24 respectively. In addition, the coefficient is 0.26 for the conventional stock market and 0.18 for the Islamic stock market. Both are less than unity, therefore they satisfies the non-explosiveness of the conditional variance.

The next table shows the GARCH model (1.1) with specification on the equation for Islamic and conventional stock market. In equation 1, the real money supply M1 is included while the broad money supply M2 is excluded. In second equation 2, M2 has been included to see the significance volatile. The result shows that macroeconomic variables in both lagged values of the squared residuals and lagged values of conditional variance in the variance values are statistically significant, except for the IPI, CPI and M2. The coefficient of both lags of squared and conditional variance are 0.54, 0.45, 1.06, 1.08, 0.98, and 0.33 for IPI, CPI, JIBOR, USDIDR, M1 and M2 respectively. The macroeconomic variables volatility shows the non-explosiveness of the macroeconomic variable variance (Yusuf & Majid, 2007).

The regression model that has been formulated in the research method for M1 and M2 are included. This regression is ran to see the impact that results from the volatility of market. The volatility of the exchange rate USDIDR significantly affected the conventional market volatility in the time of observation. This emphasizes the stock valuation model in which the stock price represent the discounted value of the company's future inflows. Furthermore, the interest rate which is represented by JIBOR in terms of conventional stock market has significantly affected the volatility of the market. This study supports the previous study by Yusuf and Majid (2007). This study found that the global financial crisis contributed to the volatility of Indonesian stock market. Table 3 presents the regression results.

Based on the findings, it is reasonable to conclude that conventional market is merely affected by the exchange rate and also the interest rate. While, only two variables that significantly affect the volatility of Islamic stock market are money supply (M1) and exchange rate. The exchange rate has moderate level of significance. Moreover, the real money supply (M1) has affected with greater significance level with 1 % and 1.9 %. This finding reflects that Islamic stock market comes across the real financial sector that directly affected. One of the interesting findings is that interest rate has no significant result in affecting the volatility of Islamic stock market, where this is reflecting the impermissibility of interest rate into Islamic transactions. The exchange rate is an indicator of economic stability. When the exchange rate is volatile, it affects real economic industry as the Islamic stock market get in touch with the real sector economy. Therefore, Government or regulatory policy makers should emphasize on the stability of exchange rate of their currency and money supply (M1).

<Table 2> The estimation for stock market with the macroeconomics variable

	IPI	CPI	JIBOR	USDIDR	M1	M2
c	0.54	0.45	1.06	1.08	0.98	0.33
Resid	0.07	0.25	0.31	0.26	0.39	0.88
GARCH	-0.14	0.45	1.22	0.33	-0.43	1.33
Prob. Chi-Square (1)	0.76	0.98	0.86	1.32	1.55	1.85
Durbin Watson	1.89	1.16	1.09	1.43	2.01	1.98
Normality test	2.32	1.23	0.89	0.99	1.33	2.2
Prob.	0.87	0.58	0.63	0.34	0.78	0.89
ARCH LM	F-stats;	F-stats;	F-stats;	F-stats;	F-stats;	F-stats;
	0.65	0.93	1.02	0.25	0.54	0.96
	Obs-R2	Obs-R2	F-stats;	F-stats;	F-stats;	F-stats;
	0.85	0.77	0.68	0.95	0.82	0.91

<Table 3> Regression result on stock market volatility on macroeconomic variables

C	IPI	CPI	JIBOR	USDIDR	M1	M2	R2
JCI, Conventional Stock Market							
0.000	0.823	0.893	0.083*	0.100*	0.893	-	0.973
0.000	0.857	0.991	0.085*	0.098*	0.930	0.891	0.941
JII, Islamic Stock Market							
0.000	0.473	0.954	0.264	0.061*	0.001**		0.825
0.000	0.813	0.906	0.760	0.069*	0.019**	0.223	0.812

Note: the signal ***, ** and * it means that 1%, 5 % and 10 % level of significant.

5. Conclusion

This study aims to investigate the volatility of conventional stock market and Islamic stock market in Indonesia using the stock market data from 2008 to 2013 with some selected monetary policy variables, such as real money supply (M1), broad money supply (M2), customer price index (CPI), industrial production index (IPI), exchange rate (USDIDR) and interest rate (JIBOR). This study used GARCH (1.1) model to estimates the results. The findings support the view that each model shows specific volatility from both Islamic and conventional stock market in Indonesia. In Islamic stock market, volatility is affected by exchange rate and money supply (M1) but not interest rate as interest is prohibited in Islam. However, interest rate is found as a principal factor that affects volatility of conventional stock market. The outcomes of this paper are of particular significance to policy makers, as it provides guidelines to maintain economic health. Furthermore, the findings may assist practitioners to understand the consequences of macroeconomic factors such as exchange rate, money supply and interest rate, which are very crucial for the market stability of Indonesian stock market. The paper enhances the understanding of stock market volatility and proposes guidelines risk management practices. Future research should include more economic variables to explain the volatility of the stock market. Comparative study can be more insightful in explaining the volatility of stock market. Like any other study this study has some limitations such as small sample size, consideration of few econo

mic variables, and others.

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