Do political events affect stock return volatility on Indonesian Stock Exchange

Vina Nurlita¹, Prima Naomi²*

Paramadina University, Jl. Gatot Subroto No.97, RT.4/RW.4, Mampang Prpt., Kec. Mampang Prpt., Kota Jakarta Selatan, Daerah Khusus Ibukota Jakarta 12790, Indonesia

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ABSTRACT

This study has the purpose to examine the effect of political events on the volatility of stocks traded on the Indonesia Stock Exchange (IDX). Furthermore, this study also sees whether such political events also influence the shares that have direct links with the participants in presidential elections. The political event being examined was the Indonesian Presidential Election held in 2014. The researchers used the daily data on the shares of all companies listed on the Indonesia Stock Exchange (IDX) in 2014. The hypothesis testing were done using the GARCH (Generalized AutoRegressive Conditional Heteroscedasticity) estimation and its derivatives namely EGARCH (Exponential GARCH) and TARCH (Threshold GARCH). It was found that the 2014 Presidential Election asymmetrically affected stock return volatility on IDX and contrary to the leverage effect, which means that positive shocks (good news) have better influence than negative shocks (bad news). Out of all listed companies that have direct links with participants in the presidential election, 3 companies have their stock volatility affected by this Presidential Election; some with symmetric effect and some others with asymmetric effect.

1. INTRODUCTION

Political events occurring in a certain country is interesting to review and observe because they have impacts on various aspects of social, economy, security, and so forth. For economic players, a political event cannot be overlooked, as it can pose either positive or negative risks on the continuity of their economic activities. There are several political events in Indonesia, one of which is general election. General election in Indonesia is one of democratic arenas for the citizens. Since 2004, there have been 3 (three) general elections, namely legislative member election, Presidential and Vice presidential election, as well as elections of Regional Heads and Vice Regional Heads.

General election is a rare political event which may bring about major changes (Bialwoski et al., 2008). General elections are a determining moment for most countries as they affect activities on capital markets. There are three reasons that can be presented herein to explain why a general election affects the activities of capital markets. First, a general
election is followed by changes in certain policies and politics that are believed to be important to reform the economic and social structures of a country (Nadeu, Lewis-Beck, & Belanger, 2011). Fiscal policies regulated by the government represent a fundamental change that will depict the business and economic capability of the country to achieve welfare reflected in the stock market prices (Chien, YiLi, Cole, & Lustig, 2012). Markets are sensitive to information related to political decisions that have an impact on fiscal and monetary decisions (Pantzalis, Stangeland, & Turtle, 2000). General election with low prediction level, in which the government has just been formed, may cause market fluctuation that has the potency to cause systematic changes in the long term (Vuchelen, 2003). Second, in most cases, general election is shadowed by high uncertainty so that it poses challenge to the business communities in formulating an appropriate strategy to be applied in that year (Bialwoski et al., 2008). In an unpredicted general election, the market’s response will vary because of doubted campaign promises and this causes the stock market to be very unstable during the general election. Goodell & Vahama (2013) maintain that volatility in stock market during the US presidential election was influenced by political uncertainty. Third, regulations on general election applicable in several countries may give room for establishment of the government and investors’ certain behavior patterns. Study by Stovall (1992) on general elections in the United States found that investors’ optimism raised at the end of a presidential term because at the time it is clear that a popular president will be re-elected and non-popular president will be replaced.

The above three reasons give a basis for possible influence of the 2014 presidential election on stock volatility in Indonesia. The 2014 General Election is important to depict Indonesia’s economic performance in years to come. Observing the present situation, Indonesia is in good situation with many expectations, both from domestic and foreign investors, for better economic progress, and the subsequent elected president has many important milestones related to this issue. Unlike the previous general elections which results could be predicted, the 2014 general election was very difficult to predict. In 2009, a survey conducted earlier indicated that President SBY would be elected with the possible margin of 60 percent. Meanwhile, in the 2014 general election there were none of the Presidential candidates that could get high electability score. Therefore, the investors’ perception of the stock market condition during the general election was quite varied. Some saw the condition as positive, as the general election might trigger economic growth. Some other investors however were of the opinion that the general election could potentially create uncertainty, especially in the event of turmoil.

The relation between the volatility of stock price and political events as above indeed draw attention. In fact, the impact of a political event cannot be separated from movement of stock prices. According to Pantzalis, Stangeland, & Turtle (2000), political events are the main control variable in the financial market. Viewed from its characteristics, the volatility resulting from the impact of a political event is included in seasonal volatility (Schwert and Smith, 1992).

The purpose of this study is to find out:
1. the effect of the 2014 presidential and vice presidential election on the volatility of stock returns on the IDX,
2. the effect of the 2014 presidential and vice presidential election on the volatility of stock returns of the shares of companies having links to participants in the presidential election.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Stock Volatility

Volatility of stock returns represents the risk of returns from stock prices. According to Jones & Wilson (1989), volatility is the extent of change in the price of stock or percentage of stock price change. The higher the volatility, the higher the uncertainty level from stock returns earned. Volatility is categorized as a systematic risk faced by investors. Price volatility at the time of t is estimated at t-1 hence generally it is measured under the deviation standard (Engle, 1982). The volatility of stock markets in developing countries (emerging markets) is generally much higher than in developed countries as expressed by Bekaert & Wu (2000) and Wang & Lin (2007).

Volatility can be influenced by several factors, both macro and micro factors (Schwert, 1989). According to Paneta, et al, (2006), the factors that determine the volatility are as follows:
1. Factor of real sector: the volatility tends to increase during crisis period and lowers when the economy grows fast (Schwert, 1989; Gerlach, Ramasway, & Scatigna, 2006). Stock volatility is significantly influenced by industrial production (Schwert, 1989; Dritsaki, Ditsaki, & Adamopoulos, 2004). Volatility of stock price is also influenced by movement of commodity prices in the world market, such as petroleum (Zan & Wei, 2003).

2. Factor of financial sector: trade volume influences the volatility of stock returns (Schwert, 1989; Jones et al., 1989; Chan & Fong, 2000). Development of investment products also significantly influences the volatility of stock returns (Tucker, 2005). Investors’ behaviors that tend to follow the applicable trends (herding behavior) also affect to increased volatility (Pritsker, 2005). Increasingly high number of active hedge funds in the capital markets also increases the volatility of stock price.

3. Monetary policy on volatility rate is significantly influenced by inflation, interest rate and growth of total circulating money (Schwert 1989; Zan & Wei, 2003; and Dritsaki, 2003). Fluctuation of exchange rate also has positive influence on the volatility of stock returns (Zan & Wei, 2003).

4. Extraordinary events (shock): market volatility occurs because of new information in the market or stock exchange. The consequence is that the market players revalue the assets they are trading. For example: Panetta et al. (2006) noted occurrence of oil price spike in 2004-2005, which also affected the volatility of stock returns on capital markets in the United States. This was shaped by various events taking place in 2004-2005, such as hurricane, low debt rating of the automotive sector, and political upheavals in Thailand and the Philippines.

For capital markets in Indonesia, Sukamulja (2004) proposes that volatility in Indonesian capital markets is determined by several factors as follows: 1) Investors do not have adequate information, hence creating mispricing; 2) Investors overreact against a piece of information; 3) Investors carry out transactions under the motive of speculation; 4) Domestic investors tend to follow the transaction pattern of foreign investors (herding behavior); 5) Trading noise such as analyst’s recommendation, rumors, and stock exchange holiday; 6) Availability of data and data accessibility; 7) Economic and non-economic factors outside Indonesia.

Volatility means the conditional variance of an asset (Ahmed & Suliman, 2011). Volatility analysis is useful in formation of a portfolio, risk management and price formation (Hien, 2008). This volatility is also used in predicting risks. In predicting risks, volatility has an important influence in making investment decision. Therefore, it is necessary to have volatility modeling (Batra, 2004).

Many researches have been carried out on stock returns and its volatility in various countries, with or without its links to other determinant variables formed structurally. These researched were carried out by among others (Hull, 2000; Wibowo, 2004; Manurung & Nugroho, 2005) which prove that stock returns in various countries demonstrate the behavior of time varying volatility.

For time-varying volatility modeling, an econometric-based prediction and forecasting method has been developed referred to as Autoregressive Conditional Heterodasticity (ARCH), specifically designed to model and predict conditional variance. The ARCH model was first introduced by Engle in 1982, then developed by Bollerslev in 1986 known as Generalized Autoregressive Conditional Heteroscedasticity (GARCH). The ARCH and GARCH models are presently very popular and continually develop with their various variances.

Asymmetric effect or leverage effect occurs when the effect on volatility is different between the cases of good news and bad news. Asymmetry occurs if the good news and bad news do not have the same impact on the volatility of stock returns. The asymmetric effect in the volatility model of ARCH-GARCH is applied to become the exponential model of GARCH (EGARCH) that has been examined by Lobo & Tufte (1998) and Laopodis (2003). In addition to EGARCH, other asymmetrical models used in this study are the Threshold AutoRegressive Conditional Heteroscedastic (TARCH) model. The TARCH Model was developed separately by Zakoian in 1990, then in 1993 by Glosten, Jagannathan and Rukle. This model is the development of ARCH and GARCH models. The advantage of the TARCH model is that this model can deal with non-constant variances. In addition, this model
can also be applied to deal with asymmetric influence on the research data.

Political Events and Their Effect on Stock Volatility
Several previous researches that can be used as reference in this study are as follows:
1. Khalid & Rajaguru (2010) examined the (positive and negative) political impacts in financial markets. By using data from Pakistan for the period of January 1999 up to September 2006, they connected political events with volatility of financial market. The result of this study is change of market volatility as a result of several domestic and international events. The result also indicates that the markets have several short-term relations but not supporting long-term causal relations.
2. Kulwarothai (2013) analyzed the influence of political risk measured through political news during political instability in Thailand in the period of 2006-2011 on the volatility of stock returns in Thailand. The result from GARCH-M indicates that political news gives significant impacts on the volatility of returns. Meanwhile, the result from EGARCH-M indicates that negative impact from disadvantageous news give more effect on the stock volatility than the positive impact of advantageous news.
3. Ong, Soh, Teh, & Ng (2015) investigated the impact of General Elections in Malaysia on stock market indices. They found that the currency is mediating the effect of general election on the stock market.

Hypothesis
Martinez and Santiso (2003) found interactions between political uncertainty and volatility of financial market in developing countries. In addition, Beaulieu, Jean-Claude, & Essaddam (2006) indicates that the stock market is directly influenced by political risks and uncertainty. Furthermore, their study also found that announcement of an event may affect the stock returns received by the shareholders.

Hypothesis 1: The 2014 Presidential and Vice Presidential Election affected the volatility of stock returns of shares listed on the Indonesia Stock Exchange.

Hypothesis 2: The 2014 presidential and vice presidential election affected the volatility of stock returns from shares of companies that have link with the participants in the presidential election.

3. RESEARCH METHOD

Data
The data used in this study is the daily data on the shares of all companies listed on the Indonesia Stock Exchange (IDX) in 2014 sourcing from the website of the Indonesia Stock Exchange (www.idx.co.id). For the second research question, the data to be used is the daily data of shares of listed companies that have ownership link with participants in the 2014 presidential and vice presidential elections which were widely covered in the national media consisting of 11 companies.

Yet, the data on the schedule of general election originates from Regulation of the General election Commission No. 4 Year 2014 regarding Stages, Programs and Schedule of Organization of Presidential and Vice Presidential Election year 2014.

Research Variables
There are 2 variables used in this research, namely volatility of stock returns as the dependent variable, and political dummy as the independent variable. The data on stock returns uses the daily close price. The variable of political dummy is political events which in this case is the period of presidential and vice presidential general election in 2014. The method for providing dummy in this research has the score of 1 if the schedule of programs/activities is implementation of the election, and the score of 0 if there are no programs/activities. The 2014 Presidential Election period commenced as from March 3, 2014 up to August 24, 2014 and October 20, 2014. Meanwhile, the period of 2014 non Presidential election was 1 January 1- March 2, 2014, August 25- October 25, 2014, and October 21 - December 31, 2014.

Data Analysis Techniques
The data analysis techniques used in this research is the GARCH. With regard to information, volatility may occur asymmetrically related to existing information. The existence or non-existence of asymmetrical volatility in stock returns in the IDX Composite Index (IHSG), can be seen using two asymmetrical GARCH response modeling techniques, namely the models of GARCH Threshold (TARCH) from Zakoian (1990) and Exponential GARCH
The following is the formula used to make decision in the tests of EGARCH (1,1) and TARCH (1,1) (Wang & Lin, 2007):

\[ R_t = \alpha_0 + (\alpha_1 - \alpha_0)D + \sum_{i=1}^{\infty} \beta_i R_{t-i-1} + \epsilon_t \]

Where:
- \( R_t \) is the stock return at \( t \), \( R_{t-1} \) and \( \epsilon_t \) is the stock return at \( t-1 \)
- \( D \) is the dummy from the 2014 Presidential Election. Variable \( D \) is used to give description whether or not the 2014 Presidential election affected the volatility of stock returns on the Indonesian Stock Exchange in 2014.

**4. DATA ANALYSIS AND DISCUSSION**

The result of research using the specification of GARCH model (1,1) can be viewed in table 1.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Estimated Volatility of Stock Returns in IHSG under GARCH (1,1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>Prob.</td>
</tr>
<tr>
<td>C</td>
<td>-0.016396</td>
</tr>
<tr>
<td>DPOL</td>
<td>0.138879</td>
</tr>
<tr>
<td>Variance equation</td>
<td></td>
</tr>
<tr>
<td>RESID(-1)^2</td>
<td>-0.055495</td>
</tr>
<tr>
<td>GARCH(-1)</td>
<td>1.030234</td>
</tr>
</tbody>
</table>

Source: Data process

With regard to information, volatility may occur asymmetrically related to existing information. Existence or non-existence of asymmetrical volatility in the stock returns in the IHSG can be seen in the two asymmetrical GARCH response modeling techniques, namely the TARCH model and EGARCH. The results viewed in table 2.

Table 3 presents the result of GARCH (1,1), EGARCH (1,1) and TARCH (1,1) estimation on Data of Stock Returns from Shares of Companies having link to participants in the Presidential Election.

Meanwhile, there are 3 shares that are affected by the 2014 Presidential election. These three shares are BHIT, MNCN and VIVA. These three shares are included in the sectors of industry that are directly affected by the 2014 Presidential election namely the sectors of trade, service and investment. BHIT is included in the sub sector of investment companies, while MNCN and VIVA are included in the sub sector of advertising printing media. Descriptively, the stock returns from these shares can be viewed in table 4.

**Analysis on the Effect of 2014 Presidential and Vice Presidential Election on the Stock Returns from Shares Listed on Indonesia Stock Exchange (IDX)**

As presented on Table 1, the result accepts hypothesis 1 (H1) which maintains that the 2014 presidential and vice presidential election influenced the volatility of stock returns from the shares listed on the IDX. The positive sign in the coefficient indicates that if there are (no) agenda/activities in the period of Presidential election then there will be an increase (decrease) in one direction on the stock returns in the IHSG. For example, if on a certain day there is an agenda for Presidential Election such as announcement of candidate pairs in the Presidential Election, implementation of general election and so forth, then the volatility of stock returns in the IHSG will also rise.

According to Firat Demir (2006), socio-political upheavals and instability can upset market activities and investment decisions because of increased economic risk and uncertainty. This view is in congruent with the result of output above which maintains that the factor of political events influences the volatility of stock returns in the IHSG. Hence, various agenda in the period of Presidential election cause uncertainty in market activities particularly in the stock market. This uncertainty is reflected in the stock returns in the IHSG which experience high fluctuation or volatility.

In Table 2 the coefficient of EGARCH means the asymmetric response applies. This indicates that good news has higher impact on the conditional variance as compared to bad news in future. This result contradicts the leverage effect in which bad news usually has higher impact on financial data (Campbell et al., 1997).

The same is the case for TARCH(1,1), the coefficient of TARCH (news parameter <0)) means the market responds better to the good news rather than bad news. This strengthens the result from EGARCH output which states that the case of stock return volatility in the IHSG caused by the 2014 Presidential and Vice Presidential Election in Indonesia contradicts the leverage effect that is common in financial data.

There were several announcements that reflected the same result as in the analysis
of EGARCH(1,1) and TARCH(1,1) above. One of which was as reported in Kompas.com (18/03/2014) that the market responded to it positively, even tended to be excessive following stipulation of Joko Widodo as a presidential candidate. After closed lower in the morning session, the IHSG on the IDX immediately soared in the noon session, Friday (14/03/2014), an increase by 3.2 percent reaching 4.878, the highest level in 2014, after Joko Widodo was officially nominated as president. Moreover in the Kompas daily, the Communications Director of Bank Indonesia (BI), Peter Jacobs, referred to the market sentiment as the Jokowi Effect. Even though acting as a temporary market sentiment, the Jokowi Effect can be deemed as a signal that presidential candidate Jokowi can be accepted by the market (Ansyori, 2014).

However, it is not the only factor that makes the market react more on good news, but also includes the factor of public distrust especially of investors in rumors, black campaigns, and issues that endeavor to undermine competitors. The public awareness of such matter is already very good, connected to matters related to politics particularly general elections in which frauds and deceits often take place. Therefore, investors have anticipated and considered the risk of bad news during the period of the 2014 Presidential Elections in their investment activities. Based on what the public particularly investors have done, this has been in line with what Bruce (1992) said that the political factor is important as one of risks the investors must observe when they make their investment plan scenario.

Subsequently, the public and investors have also been in conformity with the findings of Bernhard & Leblang (1999) which maintain that economic agents have collected all information available both economic and political information when making economic decisions.

However, political processes (general election, cabinet formation, cabinet change, cabinet dissolution and so forth) will create political uncertainty on the composition of future government (leadership, policy priority, and competency) and as the consequence, uncertainty of commitment to the stock returns.

Analysis on the Effect of the 2014 Presidential and Vice Presidential Election on the Stock Returns from Shares of Companies Having Link to Participants in the Presidential Election

In Table 3, the result of GARCH(1,1) which shows 8 shares is not influenced by the 2014 Presidential Elections namely the shares of BCAP, BMTR, BRAU, BRMS, BUMI, ENRG, IATA, and MSKY. The eight shares are the majority of shares which are included the mining sector. This sector is not easily affected by the risk of political events because in this sector the major risk is in the phase of exploration up to construction. In addition, investment in this sector is a long-term investment, hence even though in the event of change of head of state, as expected or otherwise, the investment will remain continue and not easily cancel investment that has been placed.

Based on Table 4, the shares that experienced the highest loss are the shares of BHIT. BHIT has negative mean. In addition, VIVA shares are the shares that have the highest risk among the other 2 shares. This is indicated by its highest deviation standard value of 2.463133. In line with the above, Kontan daily explains that VIVA is included in 10 shares with the lowest growth in semester I year 2014 namely 5.45% (Cicilia et.al, 2014). This strengthens the elucidation in the result of GARCH analysis (1,1) that VIVA is significantly affected by political events namely the 2014 Presidential and Vice Presidential Election.

Further analysis is intended to see in more detail the positive and negative signs of the market upheaval (response). Table 4 shows that BHIT shares have EGARCH coefficient confirms that asymmetric effect does not apply. The same is the case for the coefficient of TARCH confirms the result of EGARCH(1,1) that asymmetric effect does not apply. From the
two asymmetrical GARCH response modeling, the variable of DPOL (events of Presidential Election) is not asymmetrically significant on the volatility of BHIT stock returns. In other words, throughout the period of the 2014 Presidential Election, the response of volatility to a shock is the same, whether it is good news such as promises given during campaigns by Presidential and Vice Presidential Candidate pairs or bad news such as black campaign with the purpose to rid of competitors.

Under the Company’s Articles of Association, the scope of BHIT activities particularly covers the fields of industry, mining, transportation, agriculture, development (contract work), services and trading. This company is the holding company for several subsidiaries and engages in investment sector (PT MNC Investama Tbk, 2014). Although this company is included in the sectors of trade, service and investment, which are affected by the Presidential election, the investment activities performed are in the fields that have long-term fixed assets such as industry, mining, agriculture and so forth. These fields are not much influenced by the news developing in the market be positive or negative news. Hence, it is clear that the influence of the Presidential Election on the volatility of BHIT stock return is symmetrical.

It is different from the shares of MNCN and VIVA as these two shares have negative and significant EGARCH (1,1) and TARCH(1,1) coefficient, which means that asymmetric response applies. Hence these shares respond better when the news is negative (bad news) rather than positive (good news). In other words, the leverage effect applies to these two shares. It can be concluded that these two shares are congruent with the literature of financial theories namely the response (market upheaval) is higher when there is bad news rather than good news (Campbell, Andrew, & MacKinlay, 1997).

MNCN and VIVA are the companies whose owners support the Prabowo Subianto–Hatta Radjasa pairs and are included in the Merah Putih Coalition (KMP). These two companies are the companies that engage in the sector of television media. These two shares
become the media that was subject to sentiment from Indonesian community because of their broadcast which were mostly about Prabowo-Hatta campaigns and their news coverage on different survey results (Merdeka.com, 2014). This was responsible for the appearance in the public of a hashtag #TV one Memang Beda or Tvone is indeed different, which received negative response and massive attacks in social network, and also created negative sentiment in the capital market. In the trading on July 10, 2014, VIVA shares dropped by almost 4.85 percent to the level of 255 rupiah per share while in its initial trading the share price of the company owned by the Bakrie family was opened at 267 per share. The same was the case for MNCN shares in the initial trading their stock price was at the level of 2,780 per share, but at the close of exchange, collapsed by 160 points or reaching 5.86 percent to the level of 2,570 points (Merdeka.com, 2014).

In news coverage in Merdeka.com (2014), Head of Research of Universal Broker Indonesia, Satrio Utomo, said that displaying different quick count result will affect the credibility of the media concerned. He continued that this will directly affect the coming adverts and commercials and will affect the investors who would start leaving the shares. This is one of evidences of the result of EGARCH(1,1) and TARCH(1,1) models that have been analyzed previously that the case of different display of result of survey that receive negative response (bad news) will have big impact on the shares of VIVA and MNCN.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

This study endeavors to examine the effect of the 2014 Presidential Election on stock volatility. The conclusion is as follows:

Political events have significant effect on the volatility of trading shares listed on the Indonesia Stock Exchange (IDX). Presence (absence) of agenda/activities in the period of Presidential Election caused an increase (decrease) in the same direction of stock returns from shares listed on IDX. In addition, an asymmetric effect was also found, which indicates that positive shocks (good news) have higher effect on the conditional variance rather than negative shocks (bad news) in future. This contravenes the leverage effect under which usually negative shocks (bad news) have higher impact on financial data.

With respect to shares that have links to the participants in the presidential election, out of 11 shares, only 3 shares have significant influence, namely the shares of BHIT, MNCN and VIVA. In BHIT shares asymmetric effect does not apply throughout the period of the 2014 Presidential Election, while for the shares of MNCN and VIVA it is significantly negative and asymmetric response applies.

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