

The Impacts of the Political Factors on the Stock Market Index

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Abstract: This paper examines the impacts of the political factors on the stock market index, taking the Beirut Stock Exchange as a practical case. It shed light on the most important political events and decisions that happened in Lebanon during the period (2017-2020) and linked it directly to the stock market index. This paper depends on the database of BLOM index, where I use the rate of the daily observations of the stock market index to perform empirical tests and regression model to analyze the data and study its correlation. In addition, the political events and news were collected from the National News Agency (NNA). The results show that both negative and positive political events have significant impacts on the BSE returns. Moreover, the magnitude of the impact of negative events appears to be more influential than the impact of positive events. Also, the results of variance show that there are positive and negative impacts of the political events on BSE volatilities. It is obvious that the political events and news have a significant effect on BSE volatility, where it seems that the returns and volatilities of BSE are more sensitive to negative political events than positive political events. Finally, the results show that political events and news affect the stock market index at different levels especially in the short run which in turn affects the performance of the stock market exchange.

Key words: stock market index, beirut stock exchange, political factors, political events

JEL codes: G10, G14, G15, G18

1. Introduction

Politics is closely related to the economic and financial policy of any country, where the domestic and international political events affect these policies to a certain degree. Osterloh (2010) mention that the political environment of any country can affect its economic performance in several ways. In addition, Gupta (2018) addresses that politics and economics are co-determined, where politics has a strong influence on the national economy and the fiscal policy of any country.

Several researchers have conducted a lot of studies about the impact of politics on the performance of stock markets index, the results showed that financial markets were historically affected by political events. According to Jensen and Schmith (2005), political events that lead to the enactment of market-friendly policies increase stock market returns. Conversely, political events that are expected to have a negative impact on the economy and companies lead to decline in stock market returns. Moreover, Wisniewski (2016) mention that there is a close correlation between the transition of political executive power or during the electoral cycle with the movements of the stock market index. Political events such as wars, terrorist attacks, revolutions, and political instability have

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their effect on the performance of the stock market. Furthermore, Lobo (1999) addresses the impact of politics and U.S. elections on the stock market depending on jump–diffusion models of daily stock returns from 1965 to 1996. Where he tracks the political events and linked it to the stock market performance and especially to the stock returns and notice that the pattern of stock market performance of routine trading varies with the political calendar.

As for Lebanon, its economy witnessed a remarkable deterioration in the last years especially during the period (2017-2020) after the failure of the financial and economic policy over many years, that was accompanied by a sterile political performance that failed to find appropriate solutions despite some serious attempts to improve the economic situation, which led finally to the accumulation of the crisis to reach its climax in 2020. There are previous studies about the impact of Lebanese political events and news on the Beirut Stock Exchange. For example, El-Chaarani (2015) addresses the impact of the announcement of Lebanese political news - which include favorable and unfavorable political news - on the returns and volatility of the Beirut Stock Exchange (BSE) from 2005 to 2014. It is worth noting that favorable and unfavorable political news announcements increase the BSE's volatility. The results show that unfavorable political news has greater impacts on BSE's volatility and returns than favorable political news. Where BSE investors appear to be more sensitive to unfavorable political news causing them to avoid feeling regret by following the market's direction.

In this paper, I address the impacts of the political events and news on the stock market index taking Beirut Stock Exchange as a case study. The paper linked the political events — positive and negative - with the performance of the stock market index where there are few studies about the Lebanese case. Therefore, this paper shows how the political events and discussions affect the stock market index, through analyzing the performance of Beirut Stock Exchange and its returns.

According to the nature of the topic and the data collected in this study. This paper is useful for academics specializing in the field of finance and economic, as this study shows the impact of politics on stock market index. The results can be adopted in subsequent studies for those who interested in this field and can assist financial analysts by adopting the results of this study in analyzing similar cases. It is also beneficial to the Lebanese Government for knowing that taking any political decision may leave its consequences on the Beirut Stock Exchange.

The rest of the paper is structured as follows. Chapter 2, addresses the theoretical background and hypothesis of the study. Chapter 3, describe the data and methodology, that include the empirical tests. Chapter 4 show the results and discussion of the study. Chapter 5 includes the conclusions and limitations.

2. Theoretical Background & Hypothesis Development

Political factors such as elections, revolutions and instability have a lot of impacts on the financial and economic policy especially on the stock market performance. So, to what extent can the recent Lebanese political events and news affect the performance of the Beirut Stock Exchange?

Fama (1970) initiated the impact of the information on the financial markets performance before being developed theoretically and empirically by many studies. His work sparked a lot of discussions trying to understand the degree of market efficiency by introducing the efficient market hypothesis where he revealed that strong and efficient stock markets react to any kind of information. Fama (1970) indicated that there are three forms, the first form is the strong form of efficiency, the second form is the semi-strong in which the price of a security reflects the information available to the public while the third form is the weak in which the price of the security reflects its historical data. According to efficient market hypothesis, all the information about political events such as

dissolution of government, formation of new government, elections, politician's assassination and political disputes could change the economic situation and consequently the stock market performance.

Many researchers around the world investigate about the reaction between politics and stock market where they analyze the impacts of the political events on the stock market performance. For example, Lei (2018) analyze the political factors on the stock market by applying empirical study about the impact of the political events such as U.S. election on the S&P 500 market, where the results show that political factors has a lot of impacts on the stock market. Moreover, Chau (2014) discusses the impact of political uncertainty and instability in the MENA countries on the stock market volatility using a variety of GARCH models, where the results show that political turmoil and events increased stock market volatility. Also, Lehkonen & Heimonen (2015) examines the impacts of political risk on stock market using annualized panel data for 49 emerging markets for the period between [2000–2012]. The results show that political risk has an impact on the stock market returns.

In the past years, political factors and security events in Lebanon contributed directly to the financial and economic policy, which led to a noticeable deterioration of the economy during the past years. At the mid of 2019, the economy deteriorated more especially after the devaluation of the national currency, where citizens taking the streets to demand reform measures and holding the political class accountable for their performance over the last years. According to Mokalled (2019), the situation that we have reached from the deterioration in the economic sector and the collapse of the national currency, is the result of wrong political practices and ineffective financial policies over years. In addition, Ajaka (2019) mention that the economic crisis in Lebanon came as a result of the crises that befell Lebanon and the region, and he expected that the crisis will remain if the basic causes of the crisis are not corrected. He stated that if the government didn't make a positive shock to the markets, the situation maybe going to a worsen situation.

Furthermore, Lebanon has witnessed many prominent internal political events in addition to many international political events that have left their impact on the financial and economic sector. According to Mokalled (2020), since the beginning of 2019, Lebanon has witnessed a series of political events that left their mark on our economy starting from October 17th which was considered the beginning of the popular demonstrations in Lebanon, and the resignation of the Government of Saad Al-Hariri which fail to meet the demands of the protesters and gaining the confidence of the international community. Then the formation of a government of specialists headed by Hassan. Diab, which submitted its resignation later due to the inability to continue under these difficult circumstances while Lebanon was going through an economic and financial crisis. In addition to the explosion of the Beirut port on August 4, 2020, which led to the damage of a large portion of the capital Beirut and was considered a fatal blow to the national economy. In addition to the emergence of the global Covid-19, which contributed to the closure of the country several times and affecting its economy.

Moreover, there are many factors that leave its impacts on Beirut Stock Exchange over the years. For example, Mahmasani (2014) — the President of the BSE - talking about the impact of political and security events on the performance of the Beirut Stock Exchange, saying that the movement is much lighter than it was previously due to the political instability in the country in addition to the economic recession. The recent political events, such as the formation and resignation of governments, in addition to corruption and waste rooted in state institutions are all basic factors affecting the economic situation in Lebanon, as well as leaving their impact on the Beirut Stock Exchange.

2.1 Hypothesis Development

Researchers have always studied the impact of politics on finance, especially the impact of political events such as the election results and the nature of the political system, including its ideas and trends, in addition to government decisions and their impact on the country's economic and financial policy. Martinez and Santiso (2003) studied the impact of political events on the performance of financial markets over the years. Some researchers saw that political events have a short-term impact on the stock market, while others saw that such events do not leave a significant impact. Some also argue that the financial markets located in unstable political countries are often the most responsive to these factors.

According to the previous opinions, we can conclude that there are two main opinions. The first one assures that political events have a direct impact on the stock market, especially in the short run. While others believe that political events don't have much effect on the stock markets where this depend on the political situation of every country. So, according to the two assumptions, we can build two hypotheses [H0 & H1] as below.

H0: The political factors and events have no impact on the stock market index.

H1: The political factors and events have a direct impact on the stock market index.

3. Data and Methodology

In order to study the impact of political factors and security events on the Lebanese financial market, the Beirut Stock Exchange (BSE) daily index was analyzed from January 2017 to December 2020. Stock market data were collected from BSE while political news and related events were provided from the National News Agency (NNA) and the most political newspaper and websites in the country. Major political and security events were collected which had influence in the country for the four years. Therefore, the impact of these political factors and events on the performance of the Beirut Stock Exchange will be analyzed in terms of their impact before, during and after their occurrence.

There are some models that used in this study to analyze the data and to show the impacts of the political factors and events on Beirut Stock Market. First we develop the Generalized Autoregressive Conditional Heteroscedasticity model (GARCH) which used to test the impact of Lebanese political events on stocks volatility and returns. According to Bollerslev (1987), Engle & Granger (1987), the GARCH model can capture the levels of volatility, skewness and leptokurtosis. Also, this model uses the return history as information set which allows users to gain more efficiency in terms of generalization and estimation. The model suggests that the prediction of market volatility evolves each period in response to new observations on market returns. The GARCH model formula can be presented as follow:

$$R_t = \alpha_0 + \alpha_1 \sigma_t^2 + e_t \quad (1)$$

Where, R_t is the market return in t period based on a set of information collected in the previous period Φ_{t-1} . α_0 refers to the constant coefficient of the model. α_1 refers to the magnitude of the effect imposed by the error in term e_{t-1} in conditional variance σ_t . e_t is the error term where σ_t^2 is the time varying variance. α_1 coefficient indicates to the impact of volatility on stocks returns. A positive or negative coefficient means that the investor was compensated with higher/lower return at higher level of risk.

Two dummy variables [eq. 2 & 3] were developed in order to capture the asymmetry between positive and negative Lebanese political events, the two equations are as follow:

$$R_t = \alpha_0 + \alpha_1 \sigma_t^2 + \alpha_2 R_{t-1} + \alpha_3 NE + \alpha_4 PE + e_t \quad (2)$$

$$\sigma_t^2 = a_0 + a_1 e_{t-1} + a_2 \sigma_{t-1}^2 + a_3 NE + a_4 PE \quad (3)$$

Where (PE) is a dummy variable that takes the value 1 in the case of positive events and 0 otherwise. While (NE) is a dummy variable that takes the value 1 in the case of negative events and 0 otherwise. We can distinguish between two types of events; Positive events (such as: formation of a new government, issuing an optimistic laws) are events that are likely to positively affect the BSE performance. While the negative events (such as: resignation of the government, revolution) that are likely to have negatively effect on the BSE performance. It should be noted that there are some political events that do not show a positive or negative indicator on the BSE and their impact remains relatively limited.

The coefficients values of error (α_1) and variance (α_2) is used to test the persistence level of political impact on stocks volatility and returns. For Engle (1982) and Bollerslev (1987) if the summation of ($\alpha_1 + \alpha_2$) equals to 1, it means that there is a persistence of impact over the time. While if the value of ($\alpha_1 + \alpha_2$) is greater than 1, it means an increasing of volatility over the time.

After developing the GARCH model, we can move to the next model which is the Exponential Generalized Autoregressive Conditional Heteroscedasticity model (EGARCH) which represented in equation 4. EGARCH model used to capture the asymmetric effects between positive and negative political events on BSE returns. According to Nelson (1991), Koutmos and Booth (1995), EGARCH model can be represented as follow:

$$\log(\sigma_t^2) = \alpha_0 + \alpha_2 \log(\sigma_{t-1}) + \gamma (e_{t-1} / \sigma_{t-1}) + \tau (|e_{t-1}| / |\sigma_{t-1}|) + \alpha_3 NE + \alpha_4 PE \quad (4)$$

Where τ represents the magnitude impact of Lebanese political events on BSE volatilities. γ is used to capture the leverage effect of Lebanese political events on BSE volatilities. If $\gamma > 0$, this means that the BSE volatility is more sensitive and developed after the release of negative events than positive events. Whereas, if $\gamma < 0$, this means that Lebanese positive events increases volatility more than negative events.

In addition, the Autoregressive Conditional Heteroscedasticity model (ARCH) was applied in this study to verify the asymmetry impact of the Lebanese political events on BSE volatility. According to Engle (1982), ARCH model is a statistical model depend on time series data that describes the variance of the current error term as a function of the actual sizes of the previous time periods' error terms. The importance of ARCH model lies in studying the long memory effect through δ which arises when the effect of volatility shock declines slowly in the short run. The ARCH model is represented as follow:

$$\sigma_t^2 = \alpha_0 + \sum \alpha_i x_{t-i}^2 \quad (5)$$

For Bera and Higgins (1993), the ARCH model characterize the distribution of the stochastic error ϵ_t conditional on the realized values of the set of variables $\Psi_{t-1} = \{y_{t-1}, x_{t-1}, y_{t-2}, x_{t-2}, \dots\}$ where $\alpha_0 > 0$ & $\alpha_i \geq 0$; $i = 1, \dots, q$ and x_t is usually the error term in a time series regression model. In the ARCH model, the error variance of the current ϵ_t conditional on the realized values of the lagged errors ϵ_{t-i} , $i = 1, \dots, q$ is an increasing function of the magnitude of the lagged error, irrespective of their signs. The order of lag q determines the length of time for which a shock persists in conditioning the variance of subsequent errors.

In this context, several researchers study the relation between politics and stock market performance. For example, Khalid and Rajaguru (2010) addressed a study about the impact of political events on financial market volatility using a Markov Switching process. Where they investigate the impact of political shocks (positive and negative) on financial markets, using data from Pakistan for the period between January 1999 to September 2006, they link the political events to the financial market volatility. Moreover, El-Chaarani (2015) investigate about the relation between Lebanese political shocks and financial market returns. His study examines the impact of Lebanese political news announcements on Beirut Stock Exchange (BSE) returns and volatility from 2005 to 2014. In addition,

Lei (2018) made an empirical analysis about the link between politics and stock market behavior, where the study focus on three specific political aspects and investigate how these aspects affect stock market performance.

4. Results and Discussions

In this part, we examine the observations of the BSE returns during the last four years (2017-2020) depending on BLOM stock index, and applying of regression models in order to understand the impacts of the political factors whether it is positive or negative on stock market returns, taking the Beirut Stock Exchange as a practical case. If we look at figure 1, which reflect the impact of the political events on the stock index returns, we will notice that most of the positive political events are associated with the rise in the graph, while most of the negative political events are associated with the decline in the graph. These means that the political events leave its impacts on the BSE performance in different levels on the short run. So, the rising of stock index return is associated with positive events, while its decline is associated with negative events.

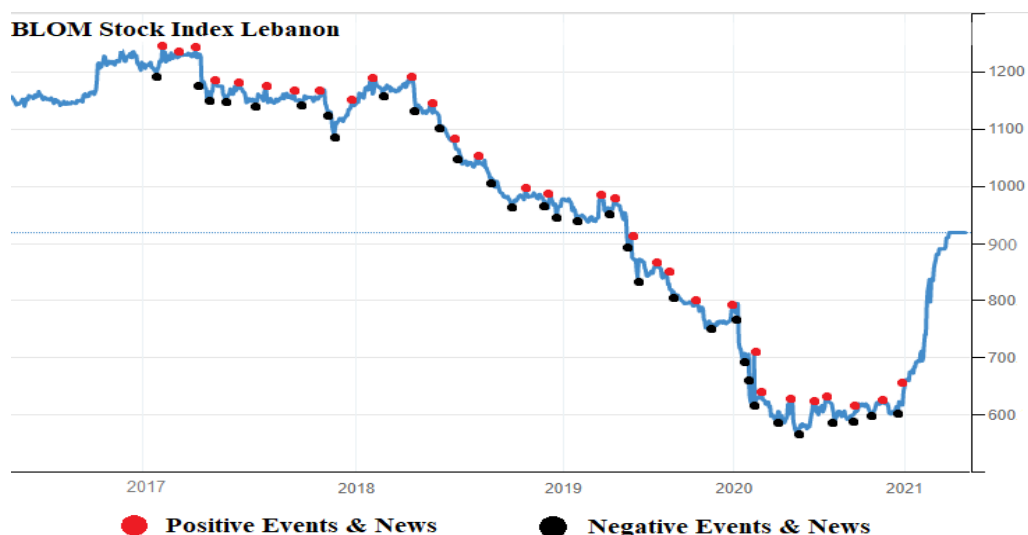


Figure 1 The Impact of Positive and Negative Political Events On Stock Market Index.

Source: Own work, based on Trading Economics, 2021.

Table 1 below reports the descriptive statistics of BLOM index returns from January 2017 to December 2020. After applying the descriptive statistics for 1430 observations we can notice from table 1 that the mean is 897.9, where the median is 867.7 and the standard deviation is \$ 145.2 meaning that the data is spread around the mean by 145.2 units. The minimum return for BSE was 550.1 while the maximum return was 1245.8. Usually the skewness is a measure of a dataset's symmetry or lack of symmetry. Here, the skewness is 0.4 which means that the data are moderately skewed. Kurtosis used to describe the distribution, where it is a measure of the combined weight of a distribution's tails relative to the center of the distribution. Here the Kurtosis is 1.71 which means that the distribution is too peaked.

Table 1 Descriptive Statistics

Parameters	Ratio
Mean	897.9
Median	867.7
Maximum	1245.8
Minimum	550.1
Std. Dev.	145.2
Skewness	0.40
Kurtosis	1.71
Probability	0.000
Observations	1430

Source: Own Work.

P-value = 0.0000 < 0.05 [$\alpha=5\%$ (significant level)].

This means that there is a low probability that H0 is true. So, reject H0 and accept H1.

Hence the model is significant.

4.1 Arch, Garch & Egarch Models

To test the impact of Lebanese political events on BSE returns and volatilities; ARCH, GARCH and EGARCH models have been applied using two dummy variables such as (PE) for positive political events and (NE) for negative political events. The dummy variables equations were added to explore the impact of positive and negative political events on BSE returns.

According to Kenton (2020), autoregressive conditional heteroscedasticity (ARCH) model is a statistical model used to analyze volatility in time series to forecast the future volatility which reflect the real markets. Moreover, Engle (1982) developed generalized autoregressive conditional heteroscedasticity (GARCH) model which is a statistical model used to analyze and estimate the volatility of returns for stocks, bonds, and market indices. GARCH Model was used to analyze the impact of the political events on the stock market index and knowing to which extent this event can affect on its performance. According to Ezzat (2012), EGARCH model is the method of choice for modeling the volatility in order to investigate the long memory and the effect of the political events on the volatilities. Volatility is considered a measure of uncertainty in the changes of asset pricing. EGARCH model helped to focuses on the estimation of the stock return volatility and the persistence of shocks to volatility. EGARCH model was used to analyze the impact of the political events and shocks on the stock market index and knowing to which extent this event can affect on it.

The results in Table 2 show that both negative and positive political events have significant impacts on the BSE returns (Rt). The negative political news has a negative significant impact at 95% confidence level while the positive political news has a positive significant impact at 95% confidence level. Similar findings were discovered in many studies. The results confirm that Lebanese political events (negative & positive) has a direct impact on the BSE returns.

The magnitude of the impact of negative political events appears to be more influential than the impact of positive political events where the magnitude of positive events is about + 0.025 while the magnitude for negative events is about -0.045 in ARCH, GARCH and EGARCH model. In GARCH model the impact of positive events is 0.0023 while the impact of negative news is -0.0047. The results in EGARCH model are 0.0028 for positive events and -0.0045 negative events. Moreover, the results of ARCH model are consistent with GARCH and EGARCH

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models. In ARCH model the positive events have a positive impact of 0.0021 while the negative events have a negative impact of -0.0043.

Table 2 The Results of ARCH, GARCH & EGARCH Models

Variables	Models		
Mean Rt	ARCH	GARCH	EGARCH
α_0	0.0241 (0.211)	0.4216 (0.231)	0.4725 (0.284)
α_1	0.0581 (0.551)	0.2108 (0.631)	0.3245 (0.358)
α_2	-0.0412 (0.198)	-0.0606 (0.211)	-0.0445 (0.225)
α_3	-0.2104** (0.141)	-0.2226** (0.138)	-0.4816** (0.122)
α_4	0.1198** (0.165)	0.1211** (0.173)	0.1363** (0.152)
Variance σ_t^2			
a0	0 (0.425)	-0.5912*** (0.002)	-0.3220*** (0.032)
a1	-	0.1003*** (0.000)	0.4781*** (0.002)
a2	-	0.0121*** (0.000)	0.0275*** (0.000)
a3	0 (0.562)	0.0145** (0.010)	0.0498** (0.011)
a4	0 (0.325)	0.0096** (0.064)	0.0323** (0.275)
γ	0.2875*** (0.001)	0.2385*** (0.000)	0.1255*** (0.000)
τ	-	-	0.0305 (0.235)
δ	2.4453*** (0.000)	-	-
β_1	0.0892*** (0.000)	-	-
β_2	0.6988*** (0.000)	-	-
Log Likelihood	-2095.58	-2181.62	-2290.04
R-squared	0.6521	0.6778	0.6612
Adj. R-squared	0.6415	0.6698	0.6525

The results of variance in GARCH and EGARCH models show that there are a positive and negative impacts of the Lebanese political events on BSE volatilities. Also, the coefficients of negative and positive political events are significant at 95% confident level in GARCH and EGARCH model. It is obvious that the Lebanese political events have a significant effect on BSE volatility, where it seems that the returns and volatilities of BSE are more sensitive to negative political events than the positive political events.

Moreover, in GARCH and EGARCH models the values of a_3 and a_4 ($a_3 > a_4$) indicate that negative political events have a higher impact on volatility than positive events. The ratio of γ indicates a positive and significant value at 95% confident level, which confirms that negative political events in Lebanon increases volatility more than positive events. The positive value of δ show that there is a long memory of volatility, which indicates that the impact of volatility shock declines slowly over the time. These results were confirmed in parallel with the summation of a_1 and a_2 where their sum were less than 1 ($a_1+a_2 < 1$). The log-likelihood values show a high level of

suitability for the three used models (ARCH, GARCH & EGARCH) to explain the impact of political events on BSE returns and volatility. The higher value of the log-likelihood, means that the model is better fitted.

In addition, R-squared explain the degree to which input variables explain the variation of output variables where it's ranges from 0 to 1. The value of R-squared in the in ARCH, GARCH and EGARCH model is approximately 0.66 which means that 66% of the variation in the BSE returns are explained by the political shocks. The value of Adj. R-squared seems significant in the regression model.

Based on the results of ARCH, GARCH & EGARCH models, we can say that the unstable political situation in Lebanon makes investors more sensitive to negative events that leads them to retire from their investments and transfer it to other countries and markets, considering the Lebanese economy is very sensitive to the political shocks and effected from the political atmosphere surrounding it.

According to the Lebanese market volatility (σ^2), the graph in Figure 2 show a high level of fluctuation for BSE returns. It seems that the political events in Lebanon during the studied period, where the year 2017 witnessed a lot of political and security events, especially after the election of General Michel Aoun as president of the republic and the assumption of Saad Hariri, as prime minister, in what was known as the "consensus deal" that ended the presidential vacuum that lasted nearly two and a half years. The government also ratified the new electoral law, which was approved by the Lebanese Parliament in June of that year. In May 2018, parliamentary elections were held in Lebanon after a nine years on the basis of the proportional law and the calculation of the preferential vote. Then, the revolution at Oct. 17, 2019, and the resignation of Saad Hariri government and the formation of Hassan Diab government during the last years, in addition to the explosion of the Beirut port at Aug. 4, 2020, which lead to the declaration of a state of emergency in the country. All these political and security events caused a high level of volatilities over the four years (2017-2020). It can be concluded that the negative and positive political events had their effect on the stock market index in the short term and at different levels. The Lebanese economy seems very sensitive to the political conditions and security events around it.

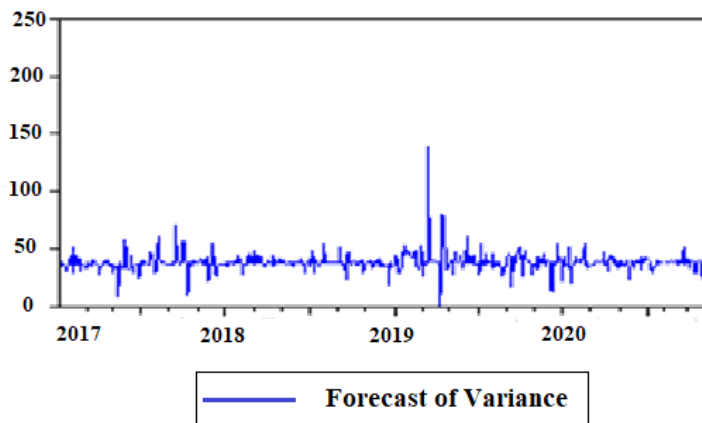


Figure 2 Beirut Stock Exchange (BSE) Volatility During the Period 2017-2020.

5. Conclusions and Limitations

This paper examines the impacts of the political and security events - positive and negative- on stock market index, taking the Beirut Stock Exchange as a practical case. It shed light on the most important political events and decisions that happened in Lebanon during the period (2017-2020) and linked it directly to BSE performance. We tried to shed light on the Lebanese political factors on the BSE returns and volatility using the autoregressive

conditional heteroscedasticity (ARCH) model, generalized autoregressive conditional heteroscedasticity (GARCH), and the exponential generalized autoregressive conditional heteroscedasticity (EGARCH) to determine the impact of Lebanese political events on the performance of BSE. The implementation of GARCH and EGARCH models was to capture the asymmetric impact of political events.

By using 1430 observations from Jan. 2017 till Dec. 2020, the results show that the positive political events have a significant positive impacts on BSE returns while the negative political events have a significant negative impacts. As the Lebanese economic indicators show, it appears that the political and security events in Lebanon have a great impact on the investors who appear very sensitive to any political news in the country. In addition, the results indicate that the BSE investors are more sensitive to the negative political events. The high level of risk adverse and the instable political situation in Lebanon lead the investors to sell their portfolios after any bad news. It can be said that BSE investors are risking more and selling under evaluated shares to avoid more losses rather than making more gains. It is clear that the political and security events leave it's impacts on the stock market performance in a different portion especially at the short run. So, we can conclude that the above results support H1 hypothesis, which assure that the political factors and events have a direct impact on the stock market index.

This paper has two main limitations. First, this paper required a lot of time due to the collection of the political events which considered sensitive issues and need objectivity in reporting news from reliable sources. Second, the BLOM Index include a small portion of listed companies compared to another indexes around the world.

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